air pollution control district
SANTA BARBARA COUNTY

PERMIT TO OPERATE 9103 - R6

and

PART 70 OPERATING PERMIT 9103

Platform Harvest

Parcel OCS P-0315
Point Arguello Oilfield
Outer Continental Shelf

EQUIPMENT OPERATOR

Freeport-McMoRan Oil & Gas, LLC

OWNERSHIP

Freeport-McMoRan Oil & Gas, LLC.

Santa Barbara County
Air Pollution Control District

November 2023

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ABBREVIATIONS/ACRONYMS

APCO	Air Pollution Control Officer
AP-42	USEPA *Compilation of Emission Factors* document
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
ATC	Authority to Construct permit
BS&W	Basic sediment and water
bhp	brake horsepower
bpd	barrels per day (42 gallons per barrel)
BSFC	brake-specific fuel consumption
Btu	British thermal unit
CAAA	Clean Air Act Amendments of 1990
CAM	Compliance Assured Monitoring
CAP	Clean Air Plan
CARB	California Air Resources Board
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
clp	component-leak path
CO	carbon monoxide
CO_2	carbon dioxide
COA	corresponding offshore area
ERC	emission reduction credit
FHC	fugitive hydrocarbon
FR	Federal Register
gr	grain
g	gram
gal	gallon
GOHF	Gaviota Oil Heating Facility
HHV	higher heating value
H_2S	hydrogen sulfide
H&SC	California Health and Safety Code
IC	internal combustion
I&M	inspection and maintenance
k	thousand
kV	kilovolt
lb	pound
LHV	lower heating value
MACT	Maximum Achievable Control Technology
MCC	motor control center
MDEA	methyl diethanolamine
MM, mm	million
MMS	Minerals Management Service
MSDS	Material Safety Data Sheet
MW	molecular weight, Megawatts
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NGL	natural gas liquids
NO_x	oxides of nitrogen (calculated as NO_2)
NSPS	New Source Performance Standards
OCS	Outer Continental Shelf
PFD	process flow diagram

P&ID	piping and instrumentation diagram
PTO	Permit to Operate permit
PTO Mod	Permit to Operate Modification permit
ppmv	parts per million volume (concentration)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PM	particulate matter
PM_{10}	particulate matter less than 10 um in size
$PM_{2.5}$	particulate matter less than 10 um in size
PSV	pressure safety valve
PTE	potential to emit
PTO	Permit to Operate
PRD	pressure relief device
PVRV	pressure vacuum relief valve
ROC	reactive organic compounds
SBCDistrict	District
scf	standard cubic feet
scfd	standard cubic feet per day
scfm	standard cubic feet per minute
SCAQMD	South Coast Air Quality Management District
SO_x	sulfur oxides
TEG	triethylene glycol
TOC	total organic compounds
tpq	tons per quarter
tpy	tons per year
Trn O/O	transfer of owner/operator permit application
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency or EPA
UPS	uninterrupted power supply
VRS	vapor recovery system
wt %	weight percent

1.0 Introduction

1.1 Purpose

General: The Santa Barbara County Air Pollution Control District (District) is responsible for implementing all applicable federal, state and local air pollution requirements that affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 60, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the District's Rules and Regulations.

Santa Barbara County is designated as a non-attainment area for the state PM_{10} ambient air quality standard. On July 1, 2020, the County achieved attainment status for the ozone state ambient air quality standards, however in February 2021, the California Air Resources Board took action at a public hearing to change Santa Barbara County's designation from attainment to nonattainment for the State ozone standard. This change was based on data measured at multiple locations in the County for the 3-year period from 2017 to 2019. The California Office of Administrative Law (OAL) finalized the designation change on September 27, 2021.

Part 70 Permitting: The issuance of this Part 70 permit to Platform Harvest satisfies the permit issuance requirements of the District's Part 70 operating permit program. The initial permit renewal was issued April 2001 in accordance with the requirements of the District's Part 70 operating permit program. This permit is the sixth renewal of the Part 70 permit and may include additional applicable requirements and associated compliance assurance conditions. This permit also incorporates any Part 70 minor modifications since the last renewal and is being issued as a combined Part 70 and District reevaluation permit.

Platform Harvest is a part of the *Point Arguello Project Stationary Source* (SSID = 1325), which is a major source for VOC[1], NO_x, CO and Greenhouse gases. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the District, the USEPA and the public since these sections are federally-enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet three objectives. First, compliance with all conditions in this permit would ensure compliance with all federally enforceable requirements for the facility. Second, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance. Third, this permit is a consolidation of Title V Part 70 permitting requirements, renewal of the existing Part 70 PTO 9103 permit (including several Part 70 minor modifications to this permit) and the reevaluation of District PTO 9103.

[1] VOC as defined in Regulation XIII has the same meaning as reactive organic compounds as defined in Rule 102. The term ROC shall be used throughout the remainder of this document, but where used in the context of the Part 70 regulation, the reader shall interpret the term as VOC.

Tailoring Rule. This reevaluation incorporates greenhouse gas emission calculations for the stationary source. On January 20, 2011, the District revised Rule 1301 to include greenhouse gases (GHGs) that are "subject to regulation" in the definition of "Regulated Air Pollutants".

The facility's potential to emit has been estimated; however, the greenhouse gas PTE is not an emission limit. The facility will not become subject to emission limits for GHGs unless a project triggers federal Prevention of Significant Deterioration requirements under Rule 810.

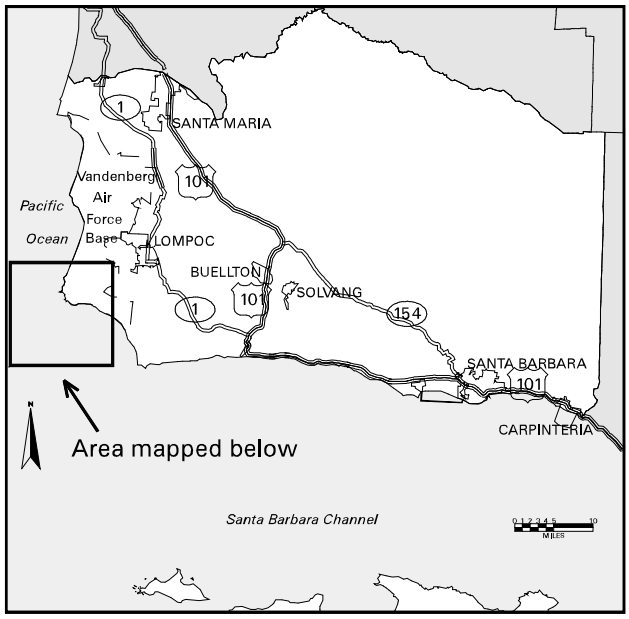
1.2 Facility Overview

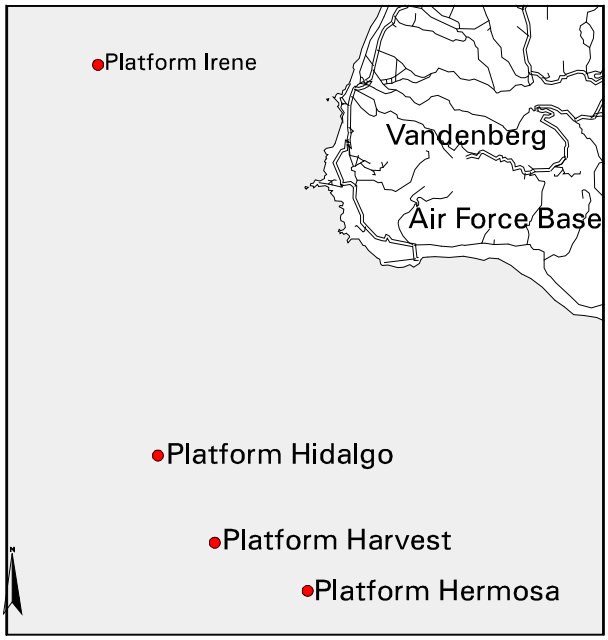
1.2.1 Facility Overview: Platform Harvest is located on offshore lease tract OCS-P-0315, approximately ten miles offshore of Point Arguello, California (Latitude 34º28'42" North, Longitude 120º40'46.169" West). The platform is located in the Southern Zone of Santa Barbara County. Figure 1.1 shows the relative location of Platform Harvest off the Santa Barbara County coast. The platform is operated by Freeport-McMoRan Oil & Gas, LLC. (FM O&G). Platform operations have been suspended since May 2015 due to the failure of AAPL's pipeline that formerly transported crude oil from the Gaviota Oil Heating Facility (GOHF) to oil refining facilities. There are no active oil and gas operations at the GOHF which has been depermitted and is being decommissioned. With the exception of equipment needed during the decommissioning of the platform, most of the platform processing facilities are being depermitted in this permit renewal. The process operations described below are those formerly in place on the platform.

The eight leg, five-deck platform is set in 675 feet of water and was installed in 1985. Initial production commenced in 1991. Platform Harvest is a self-contained, manned drilling and producing platform with (1) locations for a maximum of 50 well slots, (2) facilities for gas and oil production, and (3) accommodation quarters for platform personnel.

The production systems on Platform Harvest were designed for the processing 60,000 barrels per day (bpd) of dry oil, 50,000 barrels per day of water and 50 million standard cubic feet per day (MMscfd) of natural gas. Under normal operating conditions, oil and gas was separated and was treated on Platform Harvest before the oil was sent to Platform Hermosa by pipeline (1.8 miles away) then from Hermosa to the Gaviota Oil Heating Facility (GOHF) via a 12-inch submerged pipeline.

Figure 1-1 - Location Map for Platform Harvest





The Point Arguello Project is comprised of the following facilities:

Platform Hermosa: Installed in 1985 by Chevron and operated by FM O&G. This platform is subject to PTO 9104.

Platform Hidalgo*:* Installed in 1986 by Chevron and operated by FM O&G. This platform is subject to PTO 9105.

Platform Harvest**:** Installed in 1985 by Texaco and currently operated by FM O&G. This platform is subject to PTO 9103.

Gaviota Oil Heating Facility (GOHF): Installed in 1989 by Chevron and operated by FM O&G. The facility has been decommissioned and the operating permit PTO 5704-R5 was cancelled on June 29, 2020. A diesel-fired firewater pump engine remains permitted under PTO 15455.

1.2.2 Facility New Source Review Overview: Since the issuance of the initial Part 70 operating permit on April 19, 2001 the following permitting actions have occurred. Each of these permitting actions have been incorporated into the appropriate permit renewal.

ATC/PTO 9103-01: Removal of the unplanned flaring sulfur concentration limit of 10,000 ppmv. The District determined that compliance for unplanned flaring can be determined through the permitted mass emission limits alone.

ATC/PTO 9103-02: An increase of the quarterly average sulfur concentration ceiling to 17,000 ppmv for produced gas flared as "planned other". There was no increase in flare emissions.

ATC/PTO 9103-05: Revisions to the visible emissions monitoring requirements listed in permit condition 9.B.2.

ATC/PTO 9103-06: An increase in the number of allowable pigging vents.

PTO 11246: Installation of Selective Catalytic Reduction (SCR) controls on three gas-driven turbine compressors.

ATC/PTO 11660: An increase in the number of pigging events and pigging emissions.

PTO 11928: Installation of two emergency firewater pumps and two emergency electrical generators due to the loss of the Rule 202.F.1.d exemption.

PTO 9103-08: Replacement of MERC emission reduction credits with credits generated by the installation of SCR emission controls on natural gas-driven turbine compressors on Platform Harvest.

Trn O/O 9103-07: Change of Project Ownership, Inc. (removal of Texaco Harvest, LLC)

Trn O/O 9103-08: Transfer of Platform Operatorship from Arguello, Inc. to Plains Exploration and Production Co. (PXP)

PTO 9103-09: Temporary use of an equivalent replacement air flotation cell.

PTO 9103-10: Modification of turbine diesel CO emissions equation.

PTO 9103-12: Modify the carbon monoxide emissions equation specified for diesel operation of the turbine generators.

PTO 9103-13: Modify planned flaring limits and SOx emissions liability.

ATC/PTO 13504: Replace the flare tip.

ATC/PTO 13676: Replace two production heater vessels.

ATC/PTO 12763: Installation and operation of a Unicel vessel.

Trn O/O 9103-08: Transfer of Platform Operatorship from Plains Exploration and Production Co. (PXP) to Freeport-McMoRan Oil and Gas, LLC. (FM O&G)

ATC 13866: Installation of one shipping pump and one LACT pump.

ATC 14141: Install oxidation catalysts on platform crane engines to control carbon monoxide emissions as required by 40 CFR 63 Subpart ZZZZ.

ATC 14275: Permit deminimis emissions and associated equipment.

PTO 9103-14: Corrections to fugitive I&M component leakpath count.

PTO 9103-15: Permit language postponing compliance requirements.

PTO 15269: Modify use of the M/V Challenger/Modify CO emission factor.

PT-70 ADM 15586: Change responsible official.

1.3 Emission Sources

Listed below are the original primary sources of emissions which occurred prior to platform decommissioning activities and current emissions from the remaining active platform equipment. Section 4 of the permit provides the District's engineering analysis of the current emission sources. Section 5 of the permit describes the allowable emissions from each remaining permitted emissions unit and lists the potential emissions from non-permitted emission units.

Original primary sources of emissions which occurred prior to platform decommissioning activities included:

- Five dual fired turbine generators used for electrical power generation. The turbines typically burn sweetened produced gas, however diesel fuel may be used during times when the gas supply has been interrupted
- Three gas turbine engines used to drive the sales gas compressors. The turbines burn sweetened produced gas only
- Three pedestal cranes operated by diesel driven internal combustion engines
- Two stand-by diesel driven generators used in emergency situations
- Two stand-by diesel driven fire water pumps used in emergency situations

- Supply and emergency response boats
- High and low pressure flare
- Helicopters
- Solvent cleaning

Current emissions from the remaining active platform equipment include:

- Three pedestal cranes operated by diesel driven internal combustion engines
- Supply and emergency response boats
- Helicopters
- Solvent cleaning

A list of all permitted equipment is provided in Attachment 10.3.

1.4 Emission Control Overview

Air quality emission controls are utilized on Platform Harvest for a number of emission units. The emission controls employed on the platform include:

- Use of Tier 2 and Tier 3 engines for the supply boat main engines to achieve a NO_x emissions rate of 8.40 g/bhp and 5.99 g/bhp-hr, respectively.

- Oxidation catalysts on the crane engines CR-800A and CR-800B to reduce CO emissions.

1.5 Offsets/Emission Reduction Credit Overview

1.5.1 Emission Offsets and Emission Reduction Credits: See Sections 7.3 and 7.4 for a detailed discussion of facility emission offsets and emission reduction credits.

1.5.2 Emission Reduction Credits (ERCs) - Platform Shutdown: Decision of Issuance No. 108 was issued final March 1, 2019 for the purpose of generating ERCs from the depermitting of various processing equipment on Platform Harvest. An ERC certificate will be issued for these ERCs once the District has confirmed this equipment is out of service.

1.6 Part 70 Operating Permit Overview

1.6.1 Federally-enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under "applicable requirements." These include all SIP-approved District Rules, all conditions in the District-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All permits (and conditions therein) issued pursuant to the OCS Air Regulation are federally enforceable. All these requirements are enforceable by the public under CAAA. (*see Tables 3.1 and 3.2 for a list of federally enforceable requirements)*

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities must be listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units.

1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. (*See Section 5.4 for the federal PTE for this source)*

1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the District. Permit shields cannot be indiscriminately granted with respect to all federal requirements. FM O&G has not made a request for a permit shield.

1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally enforceable rules.
FM O&G made no request for alternative operating scenarios.

1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application and, be re-submitted annually on or before March 1st or on a more frequent schedule specified in the permit. Each certification is signed by a "responsible official" of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (*see Section 1.6.9 below)*

1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data. This permit may be re-opened in the future to address new monitoring rules, if the permit is revised significantly prior to its first expiration date. *(see Section 4.9.3, CAM Rule).*

1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources by requiring maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. See Section 5.6.

1.6.9 Responsible Official: The designated responsible official and his mailing address is:

Todd Cantrall, Vice President of Operations
Freeport-McMoRan Oil & Gas, LLC
21 Waterway Ave. Suite 250
The Woodlands, Texas 77380-3121

2.0 Process Description

2.1 Process Summary

Note: The process summary described below is a description of the original platform processes and equipment. Most of this equipment has been decommissioned as of the issuance of this permit renewal.

2.1.1 *Production*: The well bays are arranged in two groups with five rows of five wells per group. Flow lines from wells in each group are connected to identical manifold systems (North Bay and South Bay). The manifolds allow flow from the wells to be switched to either the production or test separation systems. Lines for well cleanup, casing gas recovery or gas lift, hydraulic control, and associated instrumentation are provided for each wellhead. Initially, each well flowed under its own pressure many now require gas lift.

2.1.2 *Gas, Oil and Water Separation*: Two separation systems operate on Platform Harvest: (1) the production separation system and (2) the test separation system. The production separation system is described in this section, while the test separation system is described in the section dealing with well testing and maintenance.

The production separation system separates gas, water, and sediment from the crude oil. Oil emulsion flows from the production preheaters (X-100A and B) through a single production header into two identical production separators (V-102A and B) which normally operate in parallel, but which are capable of operating in series. The preheaters are designed to heat the production fluids from approximately 80°F to 200 °F. The oil emulsion is heated and mixed with demulsifying agents then routed to the production separators.

The production separators operate at a pressure of approximately 45 psig and 200 °F with a capacity of 80,000 bpd of oil emulsion and 50 MMscfd of gas. Gas from the top of the separators is compressed in the main gas compressors (K-200A, B, and C). The water level is automatically controlled, with the excess being drained off the bottom of the separator, collected in the produced water header, and sent to the oily water coalescers (U-304A and B) for further processing. The crude oil is separated from the water and flows through the electrostatic dehydrator (V-101), the crude oil stabilizer (V-900), and finally enters the wet oil surge tanks (V-103A and B) for subsequent metering, sampling, and pumping to Platform Hermosa. The stabilizer uses stripping gas to reduce vapor pressure and H_2S content to meet the pipeline sales specifications. Gas recovered from the oil surge vessels is collected by the vapor recovery system and directed to the vapor recovery compressors.

2.1.3 *Waste Water Treatment*: The produced water treatment system on Platform Harvest consists of the oily water coalescers (U-304A and B), air flotation cell (U-305), and the skim pile (T-303). Liquids collected in the production drain sump are routed to the production separators. The coalescers employ a sweet gas blanket and are connected to vapor recovery. The flotation cell uses a nitrogen gas blanket and the sump employs a sweet gas blanket, and both are connected to the flare relief system.

2.1.4 *Well Testing and Maintenance*: The test separation system is used to determine the output of a well and the amount of demulsifying agent and operating conditions necessary to optimize separation of gas, water, and sediment from a well. Each well is tested on initial start-up and periodically thereafter to determine the trend of oil, gas, and water production.

Two test separator systems operate on Platform Harvest. Crude oil from the test headers are routed to one of the test separators (V-100 A or B). The systems are similar to the production separation systems described above, but are designed for production from only one well at a time and are of lower capacity.

The primary function of the well cleanup system is to remove produced fluids and solids from new and reworked wells before bringing the wells into production in the production separation system. The well cleanup system forwards crude oil associated with BS&W (basic sediment and water) to the dirty oil storage vessels before processing in the production separation system. All wells are connected to the well cleanup header. The system is designed for either continuous or intermittent operation.

The well cleanup vessel (V-801) receives produced fluids and contaminated solids from the wellhead to bring in or clean up a well. The produced fluid stream flows to a production heater or test separator for further processing.

2.1.5 *Emulsion Breaking and Crude Oil Storage*: The primary function of the oil shipping, metering, and pipeline system is to pump and record the amount of crude oil shipped from the platform. The lease automatic custody transfer (LACT) units continually register the oil shipped from the platform. A bi-directional positive displacement meter prover is used to prove the meters. The oil pipeline system also includes pig receivers and a pig launcher for pigging the oil pipelines with a brush type pig to remove solids from the oil pipeline.

2.1.6 *Crude Oil Shipping*: The wet oil surge tanks (V-103A and B) have two functions: they provide a small reservoir of crude (approximately 15 minutes at full pumping capacity), and maintain a liquid suction head to the LACT charge pumps (P-101A, B, and C). After passing through the LACT unit, the oil is delivered to the pipeline pumps (P-100A, B, C, and D) to raise the pressure from 200 psig to about 500 psig for pipeline transfer to Platform Hermosa.

2.1.7 *Gas Dehydration and Compression*: There are two gas compressor systems on Platform Harvest: the main gas compression (MGC) system and the vapor recovery compression (VRC or VRU) system (described in the following section).

Gas removed at the production separators is directed to a suction scrubber which removes any entrained liquids and then to the sales gas compressors (K-200 A, B, and C). The sales gas compressors are three-stage machines that compress the gas from approximately 40 psig to about 900 psig. The discharge from each compression stage includes a gas cooler and a scrubber; the gas is cooled to prevent compressor overheating. Cooling the gas results in the condensation of liquids that is removed in the scrubber to prevent damage to the compressors. From the sales gas compressors, gases are directed to the triethylene glycol (TEG) dehydration system (V-500), which removes any remaining water. All gas handled on Platform Harvest, whether produced or from vapor recovery, is dehydrated.

The glycol dehydration system consists of an eight tray contactor tower, flash tank, and glycol reboiler for regeneration of the rich (i.e., water laden) glycol from the contactor tower. The primary purpose of the dehydration system is to reduce the amount of water vapor in the gas stream to prevent hydrates and subsequent freezing in the chiller. The dehydration tower operates at the same pressure as the sales gas compressor (about 1000 psig), and has a design capacity of 54 MMscfd. The glycol recirculation rate is approximately 15 gallons per minute. Vapors

generated from the regenerator are stripped of glycol and this vapor stream is sent to the low-pressure flare scrubber.

Excess produced gas from the main gas compressors (K-200 A, B, and C) is sent to a gas injection compressor, K-202. This gas is reinjected back into the reservoir. Excess gas can also be routed to Platform Hidalgo via pipeline for reinjection.

2.1.8 *Condensate Removal System*: After the gas stream has been dehydrated, it is directed to the condensate removal system. Condensate that is removed in this process is collected in a knockout drum, stripped of light ends at elevated temperature and lower pressure (to stabilize the condensate), and then sent to the LACT. Gas is then sent to a discharge header in the well bay for either gas lift or gas re-injection. The gas lift compressor (K-300) has a capacity of 18 MMscfd, and the gas injection compressor (K-202) has a capacity of 13 MMscfd. Volumes are metered at each well gas flow line.

2.1.9 *Gas Sweetening and Sulfur Recovery*: Fuel gas for use by the turbine-driven electrical generators is produced as a side stream of sales gas downstream of the dehydration and refrigeration systems. The gas is sweetened in the amine fuel gas treatment and regeneration system. This amine system (V-501) uses an amine based absorbent chemical to remove H_2S and CO_2 from the production gas, which is sweetened to a specification of 50 ppmv or less H_2S.

The amine system consists of the contactor tower, flash tank, and amine regenerator. The rich amine flows from the contactor to the flash tank where dissolved hydrocarbons are removed by flashing at reduced pressure. Rich amine is regenerated in the amine regenerator, cooled and filtered, and returned to the amine contactor.

2.1.10 *Vapor Recovery Systems*: The vapor recovery system collects vapors from various tanks and vessels and delivers them to the gas compression system. The vapor recovery compression system is upstream of the main gas compressors described in the preceding section and recovers the low-pressure gases that are released into the vapor recovery system, compresses them in four stages to about 900 psig, and delivers them to the glycol dehydration system.

Two 100 percent reciprocating gas compressors (K-201A and B) are used for compression of recovered vapors; each compressor has four cylinders and is driven by a 600 bhp electric motor.

2.1.11 *Heating and Refrigeration*: There are no fuel-fired process heaters or process refrigeration systems on Platform Harvest.

2.1.12 *Flare Relief System*

2.1.12.1 *Flare System Design*: Platform flaring is performed to safely dispose of excess gas created by planned or unplanned (upset) conditions. The relief and flare system collects process vent and relief streams from all hydrocarbon systems for safe, continuous burning at the flare.

The high-pressure/low-pressure flare tip (U-204/205) is a low radiation type emitting a maximum of 2,525 Btu/hr/ft^2 of radiant heat. The KMI-12-3 Multi-Point flare has three small diameter flare tips on a common body. There are three continuous pilot burners with thermocouples for flame-out detection and automatic re-ignition of the flare via the flame front generator (U-200). Sweet fuel gas (50 ppmv or less H_2S) is used for pilot flame ignition and purge.

2.1.12.2 *Planned Flaring Scenarios*: There are four common or routine planned flaring scenarios that occur on Platform Harvest:

(1) During startup, each unit is manually initiated to sweep atmospheric air from the system. This minimizes the possibility of having combustible gas mixtures in the process.

(2) During the shutdown of equipment, shut down valves (SDVs) will close and blowdown valves (BDVs) will open automatically to release pressure from the system. This is a requirement of federal regulations.

(3) During maintenance of equipment, the systems are purged with nitrogen or fuel gas and blown down to the flare system.

(4) During peak operations, low-pressure gas and blanket gas are released from the low-pressure vents if process set-points are exceeded.

All vents from production process equipment, tanks, relief valves, burst plates, and similar devices are piped to the flare system. Flaring due to pigging operations may occur up to two times per day with each event lasting for as long as 18 minutes. Pig receivers are purged with sweet gas, thus reducing the sulfur content to 50 ppmv or less as H_2S of the flared gas associated with pigging.

Flaring due to planned oil train shutdown may occur four times per year with each event lasting approximately four hours. Flaring caused by planned and controlled gas plant shutdown may occur once per year and last for approximately five hours. Flaring due to gas-fired pilots occurs continuously. Flaring may also occur due to testing of safety devices.

2.1.12.3 *Unplanned Flaring Scenarios*: Unplanned flaring events on Platform Harvest most commonly occur due to equipment shutdowns. Each system after blowing down will manually initiate a purge cycle before start up. These equipment shut downs are directly related to the instrumentation set point tolerances imposed by federal regulations. Unplanned flaring events are defined as all flaring that does not meet the definition of planned flaring under Rule 359. Unplanned flaring includes emergency and breakdown events.

2.2 Support Systems

2.2.2 *Power Generation*: The platform requires minimal power to operate which is provided by a solar power energy source.

2.2.3 *Supply Boats*: Supply boats service the Point Arguello platforms on the same round trip from Port Hueneme. The dedicated project vessel is fitted with emission controls on the main engines as described in section 4.4 below. Other supply boats may be used provided the main engines meet the controlled emission factor and the total boat potential to emit (all engines) is demonstrated to be under the permitted supply boat emissions.

2.2.5 *Helicopters*: Crew transport is normally accomplished by helicopter from Santa Maria Airport.

2.3 Drilling Activities

Not applicable. Drilling activities no longer occur on Platform Harvest.

2.4 Maintenance/Degreasing Activities

2.4.1 *Paints and Coatings:* There is ongoing maintenance painting on Platform Harvest. Pollution prevention measures are in effect; tarps are used to help create a more controlled environment and all solvents are recycled or properly disposed.

2.4.2 *Solvent Usage*: Solvents not used for surface coating thinning may be used on the platform for daily operations. Usage include cold solvent degreasing and wipe cleaning with rags.

2.5 Planned Process Turnarounds

Process turnarounds on platform equipment are scheduled to occur when the onshore receiving facilities are required to shut down for maintenance. Major pieces of equipment such as turbine generators, and coolers have maintenance schedules specified by the manufacturer, and that equipment is removed from service, inspected, and repairs are made as necessary. Maintenance of critical components is carried out according to the requirements of Rule 331, *Fugitive Emissions Inspection and Maintenance*. The emissions from planned process turnarounds are incorporated in the emissions category for planned flaring.

2.6 Other Processes

FM O&G has stated that no other processes exist that would be subject to permit.

2.7 Detailed Process Equipment Listing

Refer to Attachment 10.3 for a complete listing of all permitted and exempt emission units.

3.0 Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to Platform Harvest.

3.1 Rule Exemptions

➔ District Rule 321 (Control of Degreasing Operations): Per Section J.2, an exemption for all solvent degreasers with a liquid surface area of less than 929 square centimeters (1.0 square foot).

3.2 Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52 {*New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration*)}: Platform Harvest was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of September 4, 1992 are subject to District NSR requirements. Compliance with District Regulation VIII (*New Source Review*), ensures that future modifications to the facility will comply with these regulations.

3.2.2 40 CFR Part 55 {*OCS Air Regulation*}: FM O&G is operating Platform Harvest in compliance with the requirements of this regulation.

3.2.3 40 CFR Part 61 {*NESHAP}*: There is no equipment in this permit subject to the requirements of Part 61.

3.2.4 CFR 60 Subpart OOOO {*Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution*}: This subpart does not apply to operations in the outer continental shelf (OCS). As defined in 60.5365, this regulation applies to owners and operators

of "onshore affected facilities". The OCS is specifically excluded from the definition of onshore as found in section 60.5430.

3.2.5 40 CFR Part 63 Subpart ZZZZ {NESHAP}: Subpart ZZZZ applies to owners and operators of stationary reciprocating IC engines (RICE). For area sources of HAP emissions, stationary RICE are "existing" if construction or reconstruction commenced before June 12, 2006. Engines that are not categorized as existing are considered "new".

The diesel-fired IC engines on the platform were installed prior to June 12, 2006 and are therefore considered existing for the purpose of this subpart. Operating requirements for the emergency standby generators and the emergency standby firewater pumps are:

(1) change the oil and filter every 500 hours of operation or annually, whichever comes first;
(2) inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first; and
(3) inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.

In lieu of changing the oil, FM O&G may instead conduct an oil analysis. The analysis measures the Total Base Number, the oil viscosity, and the percent water content. The oil and filter will be changed if any of the following limits are exceeded:

(1) The tested Total Base Number is less than 30 percent of the Total Base Number of the oil when new;
(2) The tested oil viscosity has changed by more than 20 percent from the oil viscosity when new;
(3) The tested percent water content (by volume) is greater than 0.5 percent.

The Total Base Number is the amount acid necessary to neutralize the base reserve in one gram of oil. It is expressed in the equivalent number of milligrams of potassium hydroxide and is a measure of the ability of the oil to neutralize acids created during combustion. If FM O&G chooses to change the oil at the specified frequencies, no analysis is required.

Per Section 63.6625(e) the engines must be operated and maintained according to the manufacturer's written instructions, or FM O&G must develop their own maintenance plan to minimize emissions.

Per Section 63.6645, existing stationary RICE that are not subject to numerical emission standards do not have to submit an initial notification. No reporting requirements are identified in Section 63.6650 for these units. Per Section 63.6655, FM O&G must keep records of maintenance on the engines.

Emission limits for the two pedestal crane engines greater than 500 bhp (CR-800A and CR-800B are:

(1) 49 ppmvd CO @ 15% O2; or
(2) a 70% or more reduction in CO emissions

ATC 14141 authorized the installation of an oxidation catalyst for control of CO emissions. Additionally, an open crankcase filtration emission control system was

installed for the purpose of complying with 40 CFR 63 Subpart ZZZZ §63.6625(g). Performance testing, conducted in October 2013, demonstrated that each crane engine complies with NESHAP subpart ZZZZ emission standards.

Operating requirements for the pedestal crane engine (Device ID 5002) are:

(1) change the oil and filter every 500 hours of operation or annually, whichever comes first;
(2) inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first; and
(3) inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.

3.2.6 40 CFR Part 70 {*Operating Permits*}: This Subpart is applicable to Platform Harvest. Table 3.1 lists the federally enforceable District promulgated rules that are "generic" and apply to Platform Harvest. Table 3.2 lists the federally enforceable District promulgated rules that are "unit-specific". These tables are based on data available from the District's administrative files and from FM O&G's Part 70 Operating Permit application. Table 3.4 includes the adoption dates of these rules.

In its Part 70 permit application (Form I), FM O&G certified compliance with all existing District rules and permit conditions. This certification is also required of FM O&G semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that FM O&G complies with the provisions of all applicable Subparts.

3.3 Compliance with Applicable State Rules and Regulations

3.3.1 Division 26. Air Resources {California Health & Safety Code}: The administrative provisions of the Health & Safety Code apply to this facility and are enforced by the District. These provisions are District-enforceable only.

3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at Platform Harvest are required to conform to these standards. Compliance is assessed through onsite inspections. These standards are District-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

3.3.3 Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) Engines (CCR Section 93115, Title 17): This ATCM applies for all stationary diesel-fueled engines rated 50 brake horsepower (bhp) and greater at this facility. On March 17, 2005, District Rule 202 was revised to remove the compression-ignited engine (e.g. diesel) permit exemption for units rated above 50 bhp to allow the District to implement the State's ATCM for Stationary Compression Ignition Engines. Compliance shall be assessed through onsite inspections and reporting. The operating requirements and emission standards outlined in the ATCM do not apply to stationary diesel-fueled engines solely used on the OCS. However, these OCS engines are required to meet fuel, recordkeeping, reporting, and monitoring requirements outlined in the ATCM. On January 30, 2006 the DICE ATCM was incorporated into 40 CFR Part 55, making the requirements of the DICE ATCM federally enforceable on the OCS.

3.3.4 Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (CCR Title 17, Section 95665 *et. Seq.*): On October 1, 2017, the California Air Resources Board (CARB) finalized this regulation, which establishes greenhouse gas emission standards for onshore and offshore crude oil and natural gas production facilities. As defined in this regulation, offshore means all lands located within the State of California. Therefore, this regulation does not apply to operations within the outer continental shelf (OCS), and Platform Harvest is exempt from the requirements of this regulation.

3.3.5 California Administrative Code Title 17 Section 93118.5: The Airborne Toxic Control Measure (ATCM) for Diesel Engines on Commercial Harbor Craft Operated within California Waters and 24 Nautical Miles of the California Baseline specifies emission standards and operational requirements for new and in-use engines. This ATCM only regulates fuel sulfur content in the OCS for the supply boats. All vessels now operating in the OCS must be controlled to the ATCM emission standards by the fact that operation of these vessels begin and end at a California port.

3.4 Compliance with Applicable Local Rules and Regulations

3.4.1 Applicability Tables: Tables 3.1 and 3.2 list the federally enforceable District rules that apply to the facility. Table 3.3 lists the non-federally-enforceable District rules that apply to the facility. Table 3.4 lists the adoption date of all rules that apply to the facility.

3.4.2 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

The following is a rule-by-rule evaluation of compliance for Platform Harvest:

Rule 201 - Permits Required: This rule applies to any person who builds, erects, alters, replaces, operates or uses any article, machine, equipment, or other contrivance which may cause the issuance of air contaminants. The equipment included in this permit is listed in Attachment 10.3. An Authority to Construct is required to return any de-permitted equipment to service and may be subject to New Source Review.

Rule 210 - Fees: Pursuant to Rule 201.G: District permits are reevaluated every three years. This includes the re-issuance of the underlying permit to operate. Fees for this facility are recovered under the cost reimbursement provisions of this rule.

Rule 301 - Circumvention: This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and District rules and regulations. To the best of the District's knowledge, FM O&G is operating in compliance with this rule.

Rule 302 - Visible Emissions: This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringlemann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringlemann Chart. Sources subject to this rule include all diesel-fired piston internal combustion engines on the platform. Improperly maintained diesel engines have the potential to violate this rule. Compliance is assured by requiring periodic visible emissions evaluations. In addition, all engines are to be maintained according to manufacturer maintenance schedules.

Rule 305 - Particulate Matter, Southern Zone: Platform Harvest is a Southern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of specified concentrations measured in gr/scf. The maximum allowable concentrations are determined as a function of volumetric discharge, measured in scfm, and are listed in Table 305(a) of the rule. Sources subject to this rule include all diesel-fired IC engines on the platform. Improperly maintained diesel engines have the potential to violate this rule. Compliance is assured by requiring all engines to be maintained according to manufacturer maintenance schedules.

Rule 309 - Specific Contaminants: Under Section "A", no source may discharge sulfur compounds and combustion contaminants in excess of 0.2-percent as SO_2 (by volume) and 0.3 gr/scf (at 12% CO_2) respectively. All diesel powered piston IC engines have the potential to exceed the combustion contaminant limit if not properly maintained (see discussion on Rule 305 above for compliance).

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H_2S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, it is expected that FM O&G will comply with this rule.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted on Platform Harvest to 0.5-percent (by weight) for liquids fuels and 15 gr/100 scf (calculated as H_2S) {or 239 ppmvd} for gaseous fuels. All piston IC engines on the Platform Harvest and on the supply boats are expected to comply with the liquid fuel limit as determined by fuel analysis documentation.

Rule 317 - Organic Solvents: This rule sets specific prohibitions against the discharge of emissions of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used on the platform during normal operations for degreasing by wipe cleaning and for use in paints and coatings in maintenance operations. There is the potential to exceed the limits under Section B.2 during significant surface coating activities. FM O&G is required to maintain records to ensure compliance with this rule.

Rule 318 - Vacuum Producing Devices or Systems - Southern Zone: This rule prohibits the discharge of more than 3 pounds per hour of organic materials from any vacuum producing device or system, unless the organic material emissions have been reduced by at least 90-percent. FM O&G has stated that there is no equipment subject to this rule.

Rule 321 - This rule sets equipment and operational standards for degreasers using organic solvents. FM O&G states that there are no cold solvent cleaning units at this facility. Compliance will be determined through District inspections of the facility.

Rule 322 - Metal Surface Coating Thinner and Reducer: This rule prohibits the use of photochemically reactive solvents for use as thinners or reducers in metal surface coatings. FM O&G is required to maintain records during maintenance operations to ensure compliance with this rule.

Rule 323.1 - Architectural Coatings: This rule sets the standards for any architectural coating that is supplied, sold, offered for sale, or manufactured for use within the District.

Rule 324 - Disposal and Evaporation of Solvents: This rule prohibits any source from disposing more than one and a half gallons of any photochemically reactive solvent per day by means that will allow the evaporation of the solvent to the atmosphere. FM O&G is required to maintain records to ensure compliance with this rule. Solvents used during operations (e.g., for degreasing and wipe cleaning) are limited to the non-photochemically reactive type.

Rule 325 - Crude Oil Production and Separation: This rule, adopted January 25, 1994, applies to equipment used in the production, processing, separation, gathering, and storage of oil and gas prior to custody transfer. The primary requirements of this rule are under Sections D and E. Section D requires the use of vapor recovery systems on all tanks and vessels, including waste water tanks, oil/water separators and sumps. Section E requires that all produced gas be controlled at all times, except for wells undergoing routine maintenance.

Rule 326 - Storage of Reactive Organic Liquids: This rule applies to equipment used to store reactive organic compound liquids with a vapor pressure greater than 0.5 psia. There is no platform equipment subject to this rule.

Rule 327 - Organic Liquid Cargo Tank Vessel Loading: There are no organic liquid cargo tank loading operations associated with Platform Harvest.

Rule 328 - Continuous Emissions Monitoring: This rule details the applicability and standards for the use of continuous emission monitoring systems ("CEMs"). Per Section B.2, the Point Arguello Project Stationary Source emits to the atmosphere more than 5 lb/hr of non-methane hydrocarbons, oxides of nitrogen and sulfur oxides and more than 10 lb/hr of particulate matter, thereby triggering the Section C.2 requirement that the need and application of CEMs be evaluated.

Rule 330 - Surface Coating of Metal Parts and Products: This rule sets standards for many types of coatings applied to metal parts and products. In addition to the ROC standards, this rule sets operating standards for application of the coatings, labeling and recordkeeping. It is not anticipated that FM O&G will trigger the requirements of this rule. Compliance is based on site inspections.

Rule 331 - Fugitive Emissions Inspection and Maintenance: This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. Ongoing compliance with the provisions of this rule are assessed through implementation of a District-approved Fugitive Inspection and Maintenance Plan, platform inspection by District personnel using an organic vapor analyzer and through analysis of operator records. There are no components in active oil and gas service on the Platform Harvest. Platform Harvest does not perform any routine venting of hydrocarbons to the atmosphere.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels. The diesel-fired pedestal crane engines on Platform Harvest are subject to the NO_x standards under Section E.4 of 700 ppmv at 15-percent oxygen. Ongoing compliance is achieved by implementation of the most current version of the District-approved Rule 333 Inspection and Maintenance Plan (required under Section E and through biennial source testing.

Rule 343 - Petroleum Storage Tank Degassing: This rule applies to the degassing of any above-ground tank, reservoir or other container of more than 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 2.6 psia or between 20,000 gallons and 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 3.9 psia. Ongoing compliance with this rule is achieved through the section F and G reporting and recordkeeping requirements of the rule.

Rule 359 - Flares and Thermal Oxidizers: This rule applies to flares for both planned and unplanned flaring events. Compliance with this rule has been documented. A detailed review of compliance issues is as follows:

§ D.1 - Sulfur Content in Gaseous Fuels: Part (a) limits the total sulfur content of all planned flaring from South County flares to 15 gr/100 cubic feet (239 ppmv) calculated as H_2S at standard conditions.

§ D.2 - Technology Based Standard: Requires all flares to be smokeless and sets pilot flame requirements.

§ D.3 - Flare Minimization Plan: This section requires sources to implement flare minimization procedures so as to reduce emissions and document these procedures in a Flare Minimization Plan.

Rule 505 - Breakdown Conditions: This rule describes the procedures that FM O&G must follow when a breakdown condition occurs to any emissions unit associated with Platform Harvest. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment that causes a violation of an emission limitation or restriction prescribed in District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;

b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;

c. Is not the result of improper maintenance;

d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;

e. Is not a recurrent breakdown of the same equipment.

Rule 360 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers. This rule applies to water heaters, boilers, steam generators and process heaters with rated heat input capacities greater than or equal to 0.750 MMbtu/hr up to, and including, 2.000 MMbtu/hr. There are no units at this facility subject to this rule.

Rule 603 - Emergency Episode Plans: Section "A" of this rule requires the submittal of Stationary Source Curtailment Plan for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. FM O&G submitted a revised Emergency Episode Plan in February 2005.

Rule 810 - Federal Prevention of Significant Deterioration: This rule was adopted January 20, 2011 to incorporate the federal Prevention of Significant Deterioration rule requirements into the District's rules and regulations. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

3.5 Compliance History

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the District's Administrative file.

3.5.1 Facility Inspections. Platform Harvest is inspected by the District each calendar quarter. The inspection reports associated with these inspections were reviewed as part of the permit renewal process. Since the previous permit renewal, multiple enforcement actions were issued as a result of these inspections, as well as, violations issued as a result of District review of the semi-annual compliance reports or from Deviation Report submittals. In addition, multiple violations were issued prior to issuance of the 2018 permit renewal that should have been documented in this renewal, but were not. See Section 3.5.2 below for a summary of enforcement actions.

3.5.2 Violations. The following enforcement actions were issued to this facility since May 2017. Compliance has been achieved for each violation.

VIOLATION NUMBER	DATE ISSUED	DESCRIPTION/RULE VIOLATION
No. 11161	05/26/2017	Violation of Rule 206. Failure to utilize water injection on Turbine G-92.
No. 11164	05/26/2017	Violation of Rule 206. Failure to utilize water injection on Turbine G-93.
No. 11166	05/26/2017	Violation of Rule 331. Exceeding number of allowable major leaks.
No. 11281	01/05/2018	Violation of Rule 206. Exceeding G-700D turbine permitted fuel use limits.
No. 11294	06/08/2018	Violation of Rule 206. Exceeding 5% max data loss limit of the ADGS.
No. 12028	09/25/2019	Violation of Rule 206. Failure to perform ICE portable analyzer inspection.

3.5.3 Significant Historical Hearing Board Actions: There have been no significant historical Hearing Board actions since issuance of the previous Part 70 permit renewal.

Table 3.1. Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants
RULE 102: Definitions	All emission units	Emission of pollutants
RULE 103: Severability	All emission units	Emission of pollutants
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Applicable emission units, as listed in form 1302-H of the Part 70 application	Insignificant activities/emissions, per size/rating/function
RULE 203: Transfer	All emission units	Change of ownership

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 204: Applications	All emission units	Addition of new equipment of modification to existing equipment.
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants
RULE 206: Conditional Approval of ATCs or PTOs	All emission units	Applicability of relevant Rules
RULE 207: Denial of Applications	All emission units	Applicability of relevant Rules
RULE 208: Action on Applications - Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment of modification to existing equipment.
RULE 212: Emission Statements	All emission units	Administrative
RULE 301: Circumvention	All emission units	Any pollutant emission
RULE 302: Visible Emissions	All emission units	Particulate matter emissions
RULE 305: PM Concentration South Zone	Each PM source	Emission of PM in effluent gas
RULE 309: Specific Contaminants	All emission units	Combustion contaminants
RULE 311: Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
RULE 317: Organic Solvents	Emission units using solvents	Solvent used in process operations.
RULE 318: Vacuum Producing Devices – Southern Zone	All systems working under vacuum	Operating pressure
RULE 321: Solvent Cleaning Operations	Cold solvent cleaning unit EQ No. 14-2	Solvent used in process operations.
RULE 322: Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
RULE 323.I: Architectural Coatings	Paints used in maintenance and surface coating activities for paints made on or after 01/01/2015.	Application of architectural coatings.
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
RULE 505.A, B1, D: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	FM O&G - Point Arguello Project is a major source.
REGULATION VIII: New Source Review	All emission units	Addition of new equipment of modification to existing equipment.

Generic Requirements	Affected Emission Units	Basis for Applicability
		Applications to generate ERC Certificates.
RULE 810: Federal Prevention of Significant Deterioration	All emission units	Sources subject to any requirement under 40 Code of Federal Regulations, Part 52, Section 52.21
RULE 901: New Source Performance Standards (NSPS)	All emission units	Applicability standards are specified in each NSPS.
RULE 1001: National Emission Standards for Hazardous Air Pollutants (NESHAPS)	All emission units	Applicability standards are specified in each NESHAP.
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	FM O&G - Point Arguello Project is a major source.

Table 3.2. Unit-Specific Federally-Enforceable District Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
RULE 325: Crude Oil Production and Separation	EQ Nos. 9-1, 10-1, 10-2, 11-1, 12-1, 12-2	All pre-custody production and processing emission units.
RULE 331: Fugitive Emissions Inspection & Maintenance	EQ Nos. 4-x, 5-x	Components emit fugitive hydrocarbons.
RULE 333: Control of Emissions from Reciprocating IC Engines	EQ Nos. 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7	IC engines exceeding 100 bhp rating.
RULE 359: Flares and Thermal Oxidizers	EQ No. 3-1, 3-2	Flaring
RULE 360: Emissions from Oxides of Nitrogen from Large Water Heaters and Small Boilers	None	Units greater than or equal to 0.75 MMbtu/hr and less than or equal to 2.0 MMbtu/hr.
RULE 361: Small Boilers, Steam Generators and Process Heaters	None	Units rated greater than 2.0 MMbtu/hr and less than 5.0 MMbtu/hr.

Table 3.3. Non-Federally-Enforceable District Rules

Requirement	Affected Emission Units	Basis for Applicability
RULE 210: Fees	All emission units	Administrative
RULES 501-504: Variance Rules	All emission units	Administrative
RULE 310: Odorous Org. Sulfides	All emission units	Emission of organic sulfides

RULE 352: Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters	All emission units	Upon Installation
RULE 505.B2, B3, C, E, F, G: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULES 506-519: Variance Rules	All emission units	Administrative
RULE 361: Small Boilers, Steam Generators and Process Heaters	None	Units rated greater than 2.0 MMbtu/hr and less than 5.0 MMbtu/hr.

Table 3.4. Adoption Dates of District Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption Date
Rule 101	Compliance by Existing Installations: Conflicts	June 21, 2012
Rule 102	Definitions	August 25, 2016
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	June 21, 2012
Rule 202	Exemptions to Rule 201	August 25, 2016
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	August 25, 2016
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of Authority to Construct or Permit to Operate	October 15, 1991
Rule 207	Denial of Applications	October 23, 1978
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	October 23, 1978
Rule 305	Particulate Matter Concentration - Southern Zone	October 23, 1978
Rule 309	Specific Contaminants	October 23, 1978

Rule No.	Rule Name	Adoption Date
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 318	Vacuum Producing Devices or Systems - Southern Zone	October 23, 1978
Rule 321	Solvent Cleaning Operations	June 21 , 2012
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323.I	Architectural Coatings	January 1, 2015
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	July 19, 2001
Rule 326	Storage of Reactive Organic Compound Liquids	January 18, 2001
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating Internal Combustion Engines	June 19, 2008
Rule 342	Boilers, Steam Generators, and Process Heaters (5 MMBtu/hr and greater)	April 17, 1997
Rule 343	Petroleum Storage Tank Degassing	December 14, 1993
Rule 344	Petroleum Sumps, Pits and Well Cellars	November 10, 1994
Rule 353	Adhesives and sealants used in process operations	June 21, 2012
Rule 359	Flares and Thermal Oxidizers	June 28, 1994
Rule 360	Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr)	March 15, 2018
Rule 361	Boilers, Steam Generators, and Process Heaters (Between 2 – 5 MMBtu/hr)	June 20, 2019
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review	August 25, 2016
Rule 802	Nonattainment Review	August 25, 2016
Rule 804	Emission Offsets	August 25, 2016
Rule 805	Air Quality Impact and Modeling, Monitoring, and Air Quality Increment Consumption	August 25, 2016
Rule 806	Emission Reduction Credits	August 25, 2016

Rule No.	Rule Name	Adoption Date
Rule 810	Federal Prevention of Significant Deterioration (PSD)	June 20, 2013
Rule 901	New Source Performance Standards (NSPS)	September 20, 2010
Rule 903	Outer Continental Shelf (OCS) Regulations	November 10, 1992
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	August 25, 2016
Rule 1302	Permit Application	January 18, 2001
Rule 1303	Permits	January 18, 2001
Rule 1304	Issuance, Renewal, Modification and Reopening	January 18, 2001
Rule 1305	Enforcement	November 9, 1993

4.0 Engineering Analysis

4.1 General

The engineering analyses performed for this permit were limited to the review of:

- → emission factors and calculation methods for each emissions unit
- → emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- → emission source testing, sampling, CEMS, CAM
- → process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the District's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 7/13/98 (ver 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2 Stationary Combustion Sources

The stationary combustion sources associated with Platform Harvest consist of diesel-fired internal combustion engines driving three pedestal cranes.

4.2.1 *External Combustion Equipment*: There is no external combustion equipment on Platform Harvest.

4.2.2 *Piston Internal Combustion Engines*: All platform internal combustion engines are diesel-fired. The three pedestal crane engines are subject to permit and Rule 333 requirements. Other stationary IC engines on the platform include two emergency electrical generators and one survival craft. Applicability of permit requirements and associated controls for this temporary equipment will be determined according to the rules in effect at the time of use. The calculation methodology is similar for all stationary IC engines:

$$ER = [(EF * BHP * BSFC * FCF * HPP) \div 10^{6}]$$

where: ER = emission rate (lb/period)
EF = pollutant specific emission factor (lb/MMBtu)
BHP = engine rated max brake-horsepower (bhp)
BSFC = engine brake specific fuel consumption (Btu/bhp-hr)
FCF = liquid fuel correction factor, LHV to HHV
HPP = operating hours per time period (hrs/period)

The emission factor is an energy-based value that incorporates the higher heating value (HHV) of the fuel gas. As such, an energy based BSFC value must be also based on the HHV. Manufacturer BSFC data are typically based on LHV data and thus require a conversion (LCF) to the HHV basis. For diesel fuel oil, the HHV values are typically 6-percent greater than the corresponding LHV data. Volume or mass based BSFC data do not need any conversions.

4.2.3 *Crane Engines*: Two of the pedestal cranes are driven by identical Caterpillar Model 3408B engines rated at 503 bhp. The third crane engine is a Caterpillar Model 3306 PCT rated at 270 bhp. The emission factors for PM, CO and ROC are from USEPA AP-42, Table 3.3-1 (7/93) and the SO_x emission factor is based on mass balance. The NO_x emission factors of 2.66 lb/MMBtu for the Caterpillar 3408B engines and 2.49 lb/MMBtu for the Caterpillar 3306 engine are based on the limit of 8.4 g/hp-hr found in District Rule 333. Crane engine NO_x emissions are controlled

by turbocharging, 4° timing retard, enhanced intercooling and aftercooling.

Crane engines CR-800A and CR-800B have been equipped with a Clean Emissions Products Inc. oxidation catalyst model P/N IC-10-600 and an open crankcase filtration emission control system in order to comply with 40 CFR 63 Subpart ZZZZ emission standards. The CO emission factor is 30 percent of the factor listed in USEPA AP-42, Table 3.3-1. This reduction occurs since the oxidation catalysts have a 70 percent emission control guarantee.

Source testing is conducted biennially to determine concentrations (ppmvd) and mass emission rates (lbs/hr) of NO_x, CO, and ROC from three cranes engines. The cranes are tested under simulated maximum operating loads.

Diesel fuel flow metering is accomplished by use of positive displacement meters on all three crane engines and the turbine generators. All permanent equipment, except flares, are fitted with non-resettable elapsed time meters for determining operating hours.

4.3 *Fugitive Hydrocarbon Emissions*

There are no fugitive emitting components in active service on Platform Harvest.

4.4 Supply Vessels

Supply boats are used to support activities on Platform Harvest. Crew boats are not used in support of this platform.

Supply boat emissions are assessed based on two scenarios; (1) a composite of supply boat data comprised of the *M/V Victory Seahorse* and the *M/V Santa Cruz* and (2) operation of the *M/V Challenger* which incorporates the worst case operating scenario for CO emissions.

M/V Victory Seahorse and the *M/V Santa Cruz Composite*

The composite of these vessels consists in use of the largest engines on each vessel for the emission calculations. See Reference D at the end of this permit for specific engine size data for these vessels.

NOx emission liability based solely on a single emission factor (the cruise mode); 8.4 g/bhp-hr (337 lb/10000 gal). Sulfur oxide emissions are based on mass balance calculations assuming 0.0015 weight percent sulfur diesel fuel. Other main engine vessel emission factors are taken from USEPA, AP-42 (Volume II). For the auxiliary and bow thruster engines, emission factors are taken from USEPA, AP-42 (Volume I). Uncontrolled main engine NO_x emission factors for spot-charter supply boat usage are assumed to be 14 g/bhp-hr (561 lb/1000 gallons). The calculation methodology for the supply boat main engine emissions is:

$$ER = [(EF \times EHP \times BSFC \times EL \times TM) \div (10^3)]$$

where:
- ER = emission rate (lbs per period)
- EF = full load pollutant specific emission factor (lb/1000 gallons)
- EHP = engine max rated horsepower (bhp)
- BSFC = engine brake specific fuel consumption (gal/bhp-hr)
- EL = engine load factors (percent of max fuel consumption)
- TM = time in mode (hours/period)

M/V Challenger

Emission calculations for the *M/V Challenger* are included because the engines on this vessel represent the worst case operating scenario for CO emissions. The *M/V Challenger* is equipped with two Marine Tier III Caterpillar 3512C main engines rated at 1,911 bhp each and two Marine Tier III Caterpillar 32C generators rated at 1476 bhp each that drive electric motors on two bow thrusters and two stern thrusters.

Emission factors used for the M/V Challenger for NOx, ROC, CO and PM are based on EPA Marine Tier 3 factors for Category 1 vessels. A 1.25 Not-To-Exceed multiplier is applied to the NO_x and CO emission factors which ensures the worst case emissions are representative across all operating loads. SO_x emission factors are based on the fuel sulfur content and mass balance. A PM_{10}/PM ratio of 0.96 is used. $PM_{2.5}/PM_{10}$ ratio is assumed to be 1:1.

The permit assesses emission liability associated with the *M/V Challenger* based solely on a single emission factor (the cruise mode). The calculation methodology for the *M/V Challenger* supply boat main engine emissions is:

$$ER = \left(\frac{EF * EHP * BSFC * EL * TM}{10^3} \right) * NTE$$

where:
- ER = emission rate (lbs per period)
- EF = full load pollutant specific emission factor (lb/1000 gallons)
- EHP = engine max rated horsepower (bhp)
- BSFC = engine brake specific fuel consumption (gal/bhp-hr)
- EL = engine load factors (percent of max fuel consumption)
- TM = time in mode (hours/period)
- NTE = Not-to-Exceed-Emission Factor of 1.25 for NOx and CO

The calculations for the auxiliary engines are similar, except that a 50-percent engine load factor for the generators is utilized. Compliance with the main engine controlled emission rates shall be assessed through emission source testing. Ongoing compliance is assessed through implementation of the most current version of the District-approved *Point Arguello Project Boat Monitoring and Reporting Plan*.

In addition, a permanently assigned emergency response boat (i.e., the *Clean Seas III*) is associated with Platform Harvest. The engines on this vessel are uncontrolled. The approximate total engine horsepower, including auxiliary engines, is 4,400 bhp. Emissions liability is assigned in a prorated fashion among the four OCS platforms that utilize the vessel off the Santa Barbara coast (Platforms Harvest, Hermosa, Hidalgo and Irene). Emission factors, calculations and compliance procedures are the same as for the spot-charter supply vessels discussed above. If used, other emergency response boat fuel usage (and resulting emissions) shall be assessed against this emissions category.

Platform Harvest also has one marine survival craft equipped with a 62 bhp engine. Emissions are based on g/Bhp emission factors and a 200-hour per year operating limit.

4.5 Sulfur Treating/Gas Sweetening Unit

The sulfur treating/gas sweeting unit has been removed as part of decommissioning activities.

4.6 Tanks/Vessels/Sumps/Separators

Tanks: Platform Harvest has three diesel fuel storage tanks. The diesel storage tanks service the IC engines on the platform and are not controlled. Diesel tank storage and handling emissions are small and are assumed to be less than 0.10 tpy (200 lb/year). These tanks are exempt from permit based on District Rule 202.V.2. Detailed compliance calculations are performed using the methods presented in USEPA AP-42, Chapter 12.

4.7 Vapor Recovery Systems

The vapor recovery system has been removed as part of decommissioning activities.

4.8 Helicopters

Helicopters are used on Platform Harvest to transport crew from the Santa Maria airport. Sykorski Model 76A helicopters are used with typical round-trip times of 50 minutes in duration. Helicopter usage is shared with Platforms Hidalgo and Hermosa. Emission factors, in units of "lb/hr", for different type of helicopters have been established for each operating mode based on the turbine engine used. These modes (idle, climb, cruise and decent) make up the total cycle time for each trip segment. For Platform Harvest, there are two identical trip segments (Santa Maria Airport to Platform Harvest and Platform Harvest to Santa Maria Airport). The emission rate per trip segment is calculated as:

$$ER = \Sigma_{mode} [EF_{mode} \times TIM]$$

where:

ER = emission rate per trip segment (lb/segment)
EF = pollutant specific emission factor per mode (lb/engine-hr)
TIM = time in Mode (hr)

From this data, a platform specific emission rate per trip segment is calculated. One trip segment is simply doubled to obtain an emission rate per trip. Emission tracking is accomplished by reporting the number of trips per helicopter.

4.9 Greenhouse Gases

GHG emissions from combustion sources are calculated using emission factors found in Tables C-1 and C-2 of 40 CFR Part 98 and global warming potentials found in Table A-1 of 40 CFR Part 98. The follow emission factors apply. The derivation of these emission factors is provided in Attachment 10.1.

Internal Combustion Engines (Diesel): 556.60g/bhp-hr

4.10 Other Emission Sources

General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) occurs on Platform Harvest as part of normal daily operations. The usage includes cold solvent degreasing. Mass balance emission calculations are used assuming all unrecovered solvent used evaporates to the atmosphere.

Surface Coating: Surface coating operations typically include normal touch up activities. Entire platform painting programs are performed once every few years. Emissions are determined based on mass balance calculations assuming all unrecovered solvents evaporate into the atmosphere. Emissions of $PM/PM_{10/2.5}$ from paint overspray are not calculated due to the lack of established calculation techniques.

Abrasive Blasting: Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. The engines used to power the compressor are electric. Particulate matter is emitted during this process. A general emission factor of 0.01 pound PM per pound of abrasive is used (SCAQMD - Permit Processing Manual, 1989) to estimate emissions of PM. $PM_{2.5}$ and PM_{10}. A PM/PM_{10} and $PM/PM_{2.5}$ ratio of 1.0 is assumed.

4.11 BACT

There are no emission units on Platform Harvest subject to best available control technology (BACT), NSPS or NESHAP provisions.

4.12 Process Monitoring

4.12.1 Process Monitoring: In many instances, ongoing compliance beyond a single snap shot (source test) is assessed by the use of process monitoring systems. Examples of these monitors include engine hour meters, fuel usage meters, water injection mass flow meters and flare gas flow meters. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors are required to be operated, calibrated and maintained in good working order:

- Crane Diesel Fuel Meters
- Supply Boat Diesel Fuel Meters (main and auxiliary engines)
- Hour Meters (crane engines)

Calibration and maintenance is conducted according to the most current version of the District-approved *Process Monitor Calibration and Maintenance Plan*. This Plan takes into consideration manufacturer recommended maintenance and calibration schedules. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment is utilized.

4.13 Source Testing/Sampling

Source testing and sampling is required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit. The permittee is required to follow District *Source Test Procedures Manual* (May 24, 1990 and all updates). The following emission units are required to be source tested:

- Crane Engines (CR-800A and B)
- Crane Engine (CR-801)
- Supply Boat Main Engines and Generators

FMOG was previously required to sample and analyze the produced gas and fuel gas HHV, total sulfur, and hydrogen sulfide composition annually. The produced oil was required to be

analyzed for API gravity and TVP annual as well. These requirements have been removed in this permit reevaluation as all of the wells have been plugged and oil/gas operations have ceased.

TABLE 4.1.

Source Test Requirements

Emission Points	Pollutants/ Parameters	Test Methods
- Crane Engines - Supply Boat Main Engines	NO_x (outlet) (ppmv, lb/hr)	CARB 1-100 or USEPA 7E
	CO (ppmv, lb/hr)	CARB 1-100 or USEPA 10
	ROC (ppmv, lb/hr)	USEPA 18
	Fuel Flow Rate	meter
	Fuel High Heating Value	ASTM
	Total Sulfur Content	ASTM

Site Specific Requirements

a. All emissions tests to consist of three 40-minute runs or other duration approved by the District. Crane engine tests to consist of three 20-minute runs. Crane engines to be tested at maximum safe load. Supply boat main engines to be tested at cruise load. Supply boat generator engines to be tested at normal load during dynamic positioning operations. Subsequent testing may be required if loads are not achieved.
b. The specific project supply boat to be tested shall be determined by the District.
c. USEPA methods 1-4 to be used to determine O_2, dry MW, moisture content, CO_2, and stack flow rate. Alternatively, USEPA 19 may be used to determine stack flow rate.
d. SO_x emissions to be determined by mass balance calculation.
e. The main engines from one supply boat shall be tested annually. Source testing of supply vessel generator engines used for dynamic positioning shall be performed upon written request. Crane engines shall be tested biennially.
f. Procedures to obtain the required operating loads shall be clearly defined in the source test plan.

5.0 Emissions

5.1 General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by District Rule 202. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102). The following tables detail the facility emissions:

- Table 5.1 contains the operating equipment description, the equipment emission factors and the hourly, daily, quarterly and annual emissions for each equipment item.
- Table 5.2 summarizes the permitted emissions for each equipment group.
- Section 5.3 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301.
- Table 5.4 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emission.
- Table 5.5 provides the estimated Hazardous Air Pollutant (HAP) emissions from the permitted equipment.

In order to accurately track the emissions from a facility, the District uses a computer database. Attachment 10.2 contains the District's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the following pollutants:

→ Nitrogen Oxides (NO_x) [2]
→ Reactive Organic Compounds (ROC)
→ Carbon Monoxide (CO)
→ Sulfur Oxides (SO_x) [3]
→ Particulate Matter (PM) [4]
→ Particulate Matter smaller than 10 microns (PM_{10})
→ Particulate Matter smaller than 2.5 microns ($PM_{2.5}$)[5]
→ Greenhouse Gases (GHG)

Permitted emissions are calculated for both short term (hourly and daily) and long term (quarterly and annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations may be found in Section 4 and Attachment 10.1. Table 5.1-1 provides the basic operating characteristics. Table 5.1-2 provides the specific emission factors.

[2] Calculated and reported as nitrogen dioxide (NO_2)

[3] Calculated and reported as sulfur dioxide (SO_2)

[4] Calculated and reported as all particulate matter smaller than 100 μm

[5] Since the previous permit renewal, $PM_{2.5}$ has been added as a regulated pollutant, therefore $PM_{2.5}$ emissions have been quantified.

Tables 5.1-3 and 5.1-4 shows the permitted short-term and permitted long-term emissions for each unit or operation. All emission limits from Platform Harvest are federally enforceable per 40 CFR Part 55 {*OCS Air Regulation*}.

5.3 Permitted Emission Limits - Facility Totals

The total potential-to-emit for all emission units associated with the facility was analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics defined in Table 5.1-1 for each emission unit are assumed. Table 5.2 shows the total permitted emissions for the facility.

The facility's GHG potential to emit has been estimated, however the greenhouse gas PTE is not an emission limit. The facility will not become subject to emission limits for GHGs unless a project triggers federal Prevention of Significant Deterioration requirements under Rule 810.

Hourly and Daily Scenarios:

- Three crane engines
- Spot charter supply boat
- Auxiliary engines on supply boat provide half of maximum engine rating
- Bow thrusters on supply boat does not operate during peak hour-
- Solvent usage
- Degreaser usage

Quarterly and Annual Scenario:

- Three crane engines
- Controlled and uncontrolled supply boat
- Auxiliary engines on supply boat provide half of maximum engine rating
- Bow thrusters on supply boat
- Emergency response boat
- Solvent usage
- Degreaser usage

5.4 Part 70: Federal Potential to Emit for the Facility

Table 5.3 lists the federal Part 70 potential to emit. Being subject to the OCS Air Regulation, all project emissions are counted in the federal definition of potential to emit.

5.5 Exempt Emission Sources/Part 70 Insignificant Emissions

Equipment/activities exempt pursuant to Rule 202 include maintenance operations involving surface coating. Under the District's Part 70 regulation, equipment/activities that are exempt under Rule 202 are considered insignificant units emissions. In addition, *insignificant activities* such as maintenance operations using paints and coatings, contribute to the facility emissions. Table 5.3 lists these exempt emissions units and the expected emissions. These are emission estimates only, not emission limits.

5.6 Hazardous Air Pollutants (HAPs)

Total emissions of hazardous air pollutants (HAP) are computed based on the factors listed in Table 5.5-1 for each emissions unit. Potential Facility HAP emissions are shown in Table 5.5-2. Facility HAP emissions are shown in Table 5.5-3. Stationary Source HAP emissions are shown in Table 5.5-4. These are based on a combination of the worst-case scenario listed in Section 5.3.

Table 5.1-1
Point Arguello Project Platform Harvest: PTO 9103-R6
Operating Equipment Description

		Device Specifications				Usage Data		Maximum Operating Schedule					
Equipment Category	**Description**	**Fuel**	**% S**	**Size**	**Units**	**Capacity**	**Units**	**Load**	**hr**	**day**	**qtr**	**year**	**References**
Combustion - Engines	Crane CR-800A	D2	0.0015	475	bhp	6,962	Btu/bhp-hr	--	1.0	24	1,365	2,080	A
	Crane CR-800B	D2	0.0015	475	bhp	6,962	Btu/bhp-hr	--	1.0	24	1,365	2,080	
	Crane CR-801	D2	0.0015	270	bhp	7,446	Btu/bhp-hr	--	1.0	24	1,365	2,080	
Supply Boat	Main Engines - M/V Challenger[1]	D2	0.0015	3,822	bhp-total	0.055	gal/bhp-hr	0.65	1.0	14	661	2,644	
	Generator Engines - M/V Challenger[1,2]	D2	0.0015	2,952	bhp-total	0.055	gal/bhp-hr	0.5	1.0	24	1,232	4,932	
	Main Engines - con	D2	0.0015	5,000	bhp-total	0.055	gal/bhp-hr	0.65	1.0	11	459	1,837	B
	Main Engines - uncon	D2	0.0015	5,000	bhp-total	0.055	gal/bhp-hr	0.65	1.0	11	46	184	
	Generator Engines	D2	0.0015	600	bhp-total	0.055	gal/bhp-hr	0.50	1.0	11	459	1,837	
	Bow Thruster	D2	0.0015	515	bhp	0.055	gal/bhp-hr	1.00	1.0	2	78	312	
	Emergency Generator	D2	0.0015	115	bhp	0.055	gal/bhp-hr	1.00	1.0	2	78	312	
	Emergency Rsponse	D2	0.0015	4,400	bhp-total	--	--	0.65	--	--	32	127	
	Survival Craft	D2	0.0015	72	bhp-total	--	--	0.65	--	--	50	200	
Solvent Usage	Cleaning/degreasing	--	--	various		various	--	--	1.0	24	2,190	8,760	C

Notes:

[1] Dynamic positioning vessel generator engine fuel use limits (bhp*BSFC*load*days) are equal to the combined fuel usage of main engines and generator engines minus fuel used by the main engine. Only applies to vessels with dynamic positioning systems powered by generator engines such as the M/V Challenger.

[2] The maximum operating schedule for the M/V Challenger Generator engines assumes the entire alloted fuel use (equal to the main engine fuel use limits plus the aux engine fuel use limits) is used by the Generator Engines only.

Table 5.1-2
Point Arguello Project Platform Harvest: PTO 9103-R6
Equipment Emission Factors

		Emission Factors								
Equipment Category	**Description**	**NOx**	**ROC**	**CO**	**SOx**	**PM**	**$PM_{2.5/10}$**	**GHG[1]**	**Units**	**References**
Combustion-Engines	Crane CR-800A	2.660	0.30	0.285	0.002	0.31	0.30	556.60	lb/MMBtu	A
	Crane CR-800B	2.660	0.30	0.285	0.002	0.31	0.30	556.60	lb/MMBtu	
	Crane CR-801	2.487	0.30	0.95	0.002	0.31	0.30	556.60	lb/MMBtu	
Supply Boats	Main Engines - M/V Challenger	210.438	8.02	185.388	0.21	3.21	3.08	22309.6	lb/1000 gal	
	Generator Engines - M/V Challenger	199.363	8.02	185.388	0.21	3.21	3.08	22309.6	lb/1000 gal	
	Main Engines - con	337.00	16.80	78.30	0.21	33.00	31.68	556.60	lb/1000 gal	D
	Main Engines - uncon	561.17	16.80	78.30	0.21	33.00	31.68	556.60	lb/1000 gal	
	Generator Engines	600.00	48.98	129.26	0.21	42.18	40.49	556.60	lb/1000 gal	
	Bow Thruster	600.00	48.98	129.26	0.21	42.18	40.49	556.60	lb/1000 gal	
	Emergency Generator	179.00	48.98	129.26	0.21	42.18	40.49	556.60	lb/1000 gal	
	Emergency Response	561.17	16.80	78.30	0.21	33.00	31.68	556.60	lb/1000 gal	
	Survival Craft	1.08	90.40	212.00	0.27	24.00	24.00	556.60	g/bhp-hr	
Solvent Usage	Cleaning/degreasing	--	various	--	--	--	--	--	lb/gal	G

[1] GHG emission factors for all ICEs are based on g/bhp-hr.

Table 5.1-3
Point Arguello Project Platform Harvest: PTO 9103-R6
Hourly and Daily Emissions

		NOx		ROC		CO		SOx		PM		$PM_{2.5/10}$		GHG	
Equipment Category	**Description**	**lb/hr**	**lb/day**	**lb/hr**	**lb/day**	**lb/hr**	**lb/day**	**lb/hr**	**lb/day**	**lb/hr**	**lb/day**	**lb/hr**	**lb/day**	**lb/hr**	**lb/day**
Combustion - Engines	Crane CR-800A	9.32	223.78	1.05	25.24	1.00	0.13	0.01	0.13	1.09	26.08	1.04	25.04	582.86	13,988.62
	Crane CR-800B	9.32	223.78	1.05	25.24	1.00	0.13	0.01	0.13	1.09	26.08	1.04	25.04	582.86	13,988.62
	Crane CR-801	5.30	127.20	0.64	15.34	2.02	0.08	0.00	0.08	0.66	15.85	0.63	15.22	331.31	7,951.43
Supply Boat	Main Engines - M/V Challenger	28.75	402.55	1.10	15.78	25.33	364.66	0.03	0.42	0.44	6.31	0.42	6.06	3,048.31	43882.98
	Generator Engines - M/V Challenger	16.18	388.42	0.65	15.63	15.05	44.31	0.02	0.42	0.26	6.25	0.25	0.74	1,811.09	5,331.99
	Main Engines - con	60.24	662.63	3.00	33.03	14.00	153.96	0.04	0.42	5.90	64.89	5.66	62.29	6,135.36	67,488.98
	Main Engines - uncon	100.31	1,103.40	3.00	33.03	14.00	153.96	0.04	0.42	5.90	64.89	5.66	62.29	6,135.36	67,488.98
	Generator Engines	9.90	108.90	0.81	8.89	2.13	23.46	0.00	0.04	0.70	7.66	0.67	7.35	736.24	8,098.68
	Bow Thruster	17.00	33.99	1.39	2.77	3.66	7.32	0.01	0.01	1.19	2.39	1.15	2.29	631.94	1,263.88
	Emergency Generator	1.13	2.26	0.31	0.62	0.82	1.64	0.00	0.00	0.27	0.53	0.26	0.51	141.11	282.23
	Emergency Response	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Survival Craft	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Solvent Usage	Cleaning/degreasing	--	--	2.29	55.07	--	--	--	--	--	--	--	--	--	--

Note: 0.00 indicates emissions are less than 0.01. "--" indicates that emissions were not calculated for this category.

Table 5.1-4
Point Arguello Project Platform Harvest: PTO 9103-R6
Quarterly and Annual Emissions

		NOx		ROC		CO		SOx		PM		$PM_{2.5/10}$		GHG	
Equipment Category	**Description**	**TPQ**	**TPY**	**TPQ**	**TPY**	**TPQ**	**TPY**	**TPQ**	**TPY**	**TPQ**	**TPY**	**TPQ**	**TPY**	**TPQ**	**TPY**
Combustion - Engines	Crane CR-800A	6.36	9.70	0.72	1.09	0.68	1.04	0.00	0.01	0.74	1.13	0.71	1.08	1331.62	2029.14
	Crane CR-800B	6.36	9.70	0.72	1.09	0.68	1.04	0.00	0.01	0.74	1.13	0.71	1.08	1331.62	2029.14
	Crane CR-801	3.62	5.51	0.44	0.66	1.38	2.11	0.00	0.00	0.45	0.69	0.43	0.66	809.51	1233.54
Supply Boat	Main Engines - M/V Challenger	9.50	38.01	0.36	1.45	8.37	33.49	0.01	0.04	0.14	0.58	0.14	0.56	1006.93	4029.70
	Generator Engines - M/V Challenger	9.97	39.91	0.40	1.61	0.91	3.63	0.01	0.04	0.16	0.64	0.15	0.62	109.14	436.7
	Main Engines - con	13.82	55.33	0.69	2.76	3.21	12.86	0.01	0.03	1.35	5.42	1.30	5.20	1406.82	5630.36
	Main Engines - uncon	2.31	9.23	0.07	0.28	0.32	1.29	0.00	0.00	0.14	0.54	0.13	0.52	140.99	563.96
	Generator Engines	2.27	9.09	0.19	0.74	0.49	1.96	0.00	0.00	0.16	0.64	0.15	0.61	168.82	675.64
	Bow Thruster	0.66	2.65	0.05	0.22	0.14	0.57	0.00	0.00	0.05	0.19	0.04	0.18	24.62	98.50
	Emergency Generator	0.04	0.18	0.01	0.05	0.03	0.13	0.00	0.00	0.01	0.04	0.01	0.04	5.50	21.99
	Emergency Response	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.64	342.54
	Survival Craft	0.00	0.01	0.23	0.93	0.55	2.19	0.00	0.00	0.06	0.25	0.06	0.25	2.21	8.83
Solvent Usage	Cleaning/degreasing	--	--	0.62	2.47	--	--	--	--	--	--	--	--	--	--

Note: 0.00 indicates emissions are less than 0.01. "--" indicates that emissions were not calculated for this category.

Table 5.2
Point Arguello Project Platform Harvest: PTO 9103-R6
Total Permitted Facility Emissions

A. PEAK HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Combustion - Engines	23.95	2.74	4.02	0.01	2.83	2.72	1,497.03
Supply Boat	127.20	5.20	40.38	0.05	7.79	7.48	7,503.55
Emergency Response	--	--	--	--	--	--	--
Solvent Usage	--	2.29	--	--	--	--	--
	151.15	10.23	44.40	0.06	10.62	10.20	9,000.58

B. PEAK DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Combustion - Engines	574.76	65.82	0.34	0.34	68.01	65.29	35,928.68
Supply Boat	1,246.29	44.70	408.97	0.47	74.93	71.93	76,851.54
Emergency Response	--	--	--	--	--	--	--
Solvent Usage	--	55.07	--	--	--	--	--
	1,821.04	165.59	409.31	0.80	142.95	137.23	112,780.22

C. PEAK QUARTERLY (tpq)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Combustion - Engines	16.34	1.87	2.75	0.01	1.93	1.86	3,472.76
Supply Boat	19.07	1.00	9.28	0.01	1.70	1.63	1,741.26
Emergency Response	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Survival Craft	0.00	0.52	0.55	0.00	0.06	0.06	2.21
Solvent Usage	--	0.62	--	--	--	--	--
	35.41	4.01	12.57	0.02	3.69	3.55	5,216.22

D. PEAK ANNUAL (tpy)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Combustion - Engines	24.91	2.85	4.18	0.01	2.95	2.83	3,262.68
Supply Boat	76.30	3.99	37.12	0.04	6.79	6.51	1,741.26
Emergency Response	0.00	0.00	0.00	0.00	0.00	0.00	85.64
Survival Craft	0.01	0.93	2.19	0.00	0.25	0.25	2.21
Solvent Usage	--	2.47	--	--	--	--	--
	101.22	10.25	43.49	0.06	9.98	9.59	5,091.78

Table 5.3
Point Arguello Project Platform Harvest: PTO 9103-R6
Federal Potential to Emit

A. PEAK HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$
Combustion - Engines	23.95	2.74	4.02	0.01	2.83	2.72
Supply Boat	127.20	5.20	40.38	0.05	7.79	7.48
Emergency Response	--	--	--	--	--	--
Solvent Usage	--	2.29	--	--	--	--
Exempt Emissions	0.35	0.71	0.08	0.00	0.03	0.03
	151.50	10.95	44.48	0.07	10.65	10.22

B. PEAK DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$
Combustion - Engines	574.76	65.82	0.34	0.34	68.01	68.01
Supply Boat	1,246.29	44.70	408.79	0.47	74.93	71.93
Emergency Response	--	--	--	--	--	--
Solvent Usage	--	55.07	--	--	--	--
Exempt Emissions	8.44	17.15	1.81	0.11	0.60	0.60
	1,829.48	182.74	410.93	0.91	143.55	140.55

C. PEAK QUARTERLY (tpq)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$
Combustion - Engines	16.34	1.87	2.75	0.01	1.93	1.86
Supply Boat	19.07	1.00	9.28	0.01	1.70	1.63
Emergency Response	0.00	0.00	0.00	0.00	0.00	0.00
Survival Craft	0.00	0.23	0.55	0.00	0.06	0.06
Solvent Usage	--	0.62	--	--	--	--
Exempt Emissions	0.39	0.78	0.08	0.01	0.03	0.03
	35.80	4.50	12.65	0.03	3.72	3.58

D. PEAK ANNUAL (tpy)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$
Combustion - Engines	24.91	2.85	4.18	0.01	2.95	2.83
Supply Boat	76.30	3.99	37.11	0.04	6.79	6.51
Emergency Response	0.00	0.00	0.00	0.00	0.00	0.00
Survival Craft	0.01	0.93	2.19	0.00	0.25	0.25
Solvent Usage	--	2.47	--	--	--	--
Exempt Emissions	1.54	3.13	0.33	0.02	0.11	0.11
	102.76	13.38	43.81	0.07	10.09	9.70

Table 5.5-1
Point Arguello Platform Harvest: Permit to Operate 9103-R6
Equipment Hazardous Air Pollutant Factors

		Emission Factors																										
Equipment Category	**Description**	Hexane	Benzene	Toluene	Xylene	Iso-Octane [1]	Formaldehyde	PAHs (not incl. naphthalene)	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	**Units**	**References**
Combustion - Engines	Crane CR-800A	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	A
	Crane CR-800B	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	A
	Crane CR-801	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	A
Supply Boat	Main Engines - con	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
	Main Engines - uncon	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
	Generator Engines	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
	Bow Thruster	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
	Emergency Generator	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
	Emergency Response	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
	Survival Craft	2.69E-02	1.28E-01	5.60E-02	3.90E-02	--	1.62E-01	1.14E-02	1.16E-02	1.05E-01	1.27E-02	5.36E-03	2.00E-04	1.09E-02	1.86E-01	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	B1/B2
Solvent Usage	Cleaning/degreasing	--	5.00E-02	5.00E-02	5.00E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC	C

References:
A - VCAPCD AB 2588 Combustion Emission Factors (2001) - Diesel Combustion Factors (internal combustion)
B1 - USEPA, AP-42 Table 3.3-2. Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engines
B2 - VCAPCD AB 2588 Combustion Emissions Factors (2001) - Diesel Combustion Factors (internal combustion) - Used to supplement USEPA's AP-42 Table 3.3-2. VCAPCD's factors were used for HAPs not included in AP-42
C - APCD: Solvents assumed to contain 5% benzene, 5% toluene, 5% xylene

Notes:
1. The weight fraction for iso-Octane (i.e., 2,2,4-Trimethylpentane) is based on the conservative assumption that all isomers of octane are iso-Octane.

Table 5.5-2
Point Arguello Platform Harvest: Permit to Operate 9103-R6
Annual Hazardous Air Pollution Emissions (TPY)

Equipment Category	**Description**	Hexane	Benzene	Toluene	Xylene	Iso-Octane	Formaldehyde	PAHs (not incl. napthalene)	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium
Combustion - Engines	Crane CR-800A	6.75E-04	4.68E-03	2.65E-03	1.06E-03	--	4.33E-02	9.09E-04	4.95E-04	1.97E-02	8.51E-04	5.46E-03	5.02E-06	2.74E-04	4.68E-03	4.02E-05	--	3.77E-05	1.51E-05	--	2.08E-04	7.78E-05	5.02E-05	9.79E-05	5.52E-05
	Crane CR-800B	6.75E-04	4.68E-03	2.65E-03	1.06E-03	--	4.33E-02	9.09E-04	4.95E-04	1.97E-02	8.51E-04	5.46E-03	5.02E-06	2.74E-04	4.68E-03	4.02E-05	--	3.77E-05	1.51E-05	--	2.08E-04	7.78E-05	5.02E-05	9.79E-05	5.52E-05
	Crane CR-801	4.11E-04	2.84E-03	1.61E-03	6.47E-04	--	2.63E-02	5.52E-04	3.01E-04	1.20E-02	5.17E-04	3.32E-03	3.05E-06	1.66E-04	2.84E-03	2.44E-05	--	2.29E-05	9.16E-06	--	1.27E-04	4.73E-05	3.05E-05	5.95E-05	3.36E-05
Supply Boat	Main Engines - con	4.42E-03	2.10E-02	9.20E-03	6.41E-03	--	2.65E-02	1.87E-03	1.91E-03	1.73E-02	2.08E-03	8.79E-04	3.28E-05	1.79E-03	3.06E-02	2.63E-04	--	2.46E-04	9.85E-05	--	1.36E-03	5.09E-04	3.28E-04	6.40E-04	3.61E-04
	Main Engines - uncon	4.42E-04	2.10E-03	9.21E-04	6.42E-04	--	2.66E-03	1.87E-04	1.91E-04	1.73E-03	2.08E-04	8.81E-05	3.29E-06	1.79E-04	3.06E-03	2.63E-05	--	2.47E-05	9.87E-06	--	1.36E-04	5.10E-05	3.29E-05	6.41E-05	3.62E-05
	Generator Engines	4.08E-04	1.94E-03	8.49E-04	5.92E-04	--	2.45E-03	1.73E-04	1.76E-04	1.59E-03	1.92E-04	8.12E-05	3.03E-06	1.65E-04	2.82E-03	2.42E-05	--	2.27E-05	9.09E-06	--	1.26E-04	4.70E-05	3.03E-05	5.91E-05	3.33E-05
	Bow Thruster	1.19E-04	5.65E-04	2.48E-04	1.73E-04	--	7.14E-04	5.04E-05	5.13E-05	4.64E-04	5.60E-05	2.37E-05	8.84E-07	4.82E-05	8.23E-04	7.07E-06	--	6.63E-06	2.65E-06	--	3.67E-05	1.37E-05	8.84E-06	1.72E-05	9.72E-06
	Emergency Generator	2.65E-05	1.26E-04	5.53E-05	3.85E-05	--	1.60E-04	1.12E-05	1.15E-05	1.04E-04	1.25E-05	5.29E-06	1.97E-07	1.08E-05	1.84E-04	1.58E-06	--	1.48E-06	5.92E-07	--	8.19E-06	3.06E-06	1.97E-06	3.85E-06	2.17E-06
	Emergency Response	2.78E-04	1.32E-03	5.79E-04	4.04E-04	--	1.67E-03	1.18E-04	1.20E-04	1.09E-03	1.31E-04	5.54E-05	2.07E-06	1.13E-04	1.93E-03	1.65E-05	--	1.55E-05	6.20E-06	--	8.58E-05	3.21E-05	2.07E-05	4.03E-05	2.27E-05
	Survival Craft	7.17E-06	3.41E-05	1.49E-05	1.04E-05	--	4.31E-05	3.04E-06	3.10E-06	2.80E-05	3.38E-06	1.43E-06	5.33E-08	2.90E-06	4.96E-05	4.26E-07	--	4.00E-07	1.60E-07	--	2.21E-06	8.26E-07	5.33E-07	1.04E-06	5.86E-07
Solvent Usage	Cleaning/degreasing	--	1.24E-01	1.24E-01	1.24E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Total Facility HAPs (TPY):	**7.46E-03**	**1.63E-01**	**1.42E-01**	**1.35E-01**	**--**	**1.47E-01**	**4.78E-03**	**3.75E-03**	**7.35E-02**	**4.90E-03**	**1.54E-02**	**5.55E-05**	**3.02E-03**	**5.17E-02**	**4.44E-04**	**--**	**4.16E-04**	**1.66E-04**	**--**	**2.30E-03**	**8.60E-04**	**5.55E-04**	**1.08E-03**	**6.10E-04**

Notes:
1. These are estimates only, and are not intended to represent emission limits.
2. Based on CAAA, Section 112 (n) (4) stipulations, the HAP emissions listed above can not be aggregated at the source for any purpose, including determination of HAP major source status for MACT applicability.
3. Default fuel properties for diesel come from the SBCAPCD's Piston IC Engine Technical Reference Document (2002) - Table 5 Default Fuel Properties & Table 6 Default Engine Specifications.

Table 5.5-3
Point Arguello Project: Permit to Operate 9103-R6
Stationary Source Hazardous Air Pollutant Emissions (TPY)

Facility	Permit #	Hexane	Benzene	Toluene	Xylene	Iso-Octane	Formaldehyde	PAHs (not incl. naphthalene)	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Total - All HAPS
08013 - Platform Harvest	**PTO 9103-R6**	7.46E-03	1.63E-01	1.42E-01	1.35E-01	--	1.47E-01	4.78E-03	3.75E-03	7.35E-02	4.90E-03	1.54E-02	5.55E-05	3.02E-03	5.17E-02	4.44E-04	--	4.16E-04	1.66E-04	--	2.30E-03	8.60E-04	5.55E-04	1.08E-03	6.10E-04	7.58E-01
08014 - Platform Hermosa	**PTO 9104-R6**	7.12E+00	1.10E+00	8.46E-01	6.50E-01	5.83E+00	2.21E-01	5.68E-03	7.31E-03	8.35E-02	6.95E-03	1.86E-02	5.80E-05	4.29E-02	5.40E-02	1.48E-03	3.19E-05	1.38E-03	1.79E-03	4.73E-05	3.58E-03	6.72E-02	8.09E-04	2.55E-03	2.74E-03	1.61E+01
08015 - Platform Hidalgo	**PTO 9105-R6**	5.41E+00	9.91E-01	8.02E-01	6.54E-01	4.43E+00	2.39E-01	6.23E-03	8.47E-03	9.28E-02	7.73E-03	2.16E-02	6.03E-05	2.85E-02	5.62E-02	1.85E-03	4.25E-05	1.70E-03	2.32E-03	6.18E-05	4.07E-03	8.98E-02	9.05E-04	3.05E-03	3.48E-03	1.29E+01
Total Stationary Source - By Pollutant		**1.25E+01**	**2.25E+00**	**1.79E+00**	**1.44E+00**	**1.03E+01**	**6.07E-01**	**1.67E-02**	**1.95E-02**	**2.50E-01**	**1.96E-02**	**5.56E-02**	**1.74E-04**	**7.44E-02**	**1.62E-01**	**3.77E-03**	**7.44E-05**	**3.50E-03**	**4.27E-03**	**1.09E-04**	**9.95E-03**	**1.58E-01**	**2.27E-03**	**6.68E-03**	**6.84E-03**	**2.97E+01**

Notes:
1. These are estimates only, and are not intended to represent emission limits.
2. Based on CAAA, Section 112 (n) (4) stipulations, the HAP emissions listed above can not be aggregated at the source for any purpose, including determination of HAP major source status for MACT applicability.

6.0 Air Quality Impact Analyses

6.1 Modeling

Air quality modeling was not required for the issuance of this OCS operating permit.

6.2 Increments

An increment analysis was not required for the issuance of this OCS operating permit.

6.3 Monitoring

Air quality monitoring was not required for the issuance of this OCS operating permit.

6.4 Health Risk Assessment

A Health Risk Assessment was not required for the issuance of this OCS operating permit.

7.0 CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has not attained the state Ozone and PM_{10} air quality standards. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress toward attainment of federal and state ambient air quality standards. Under District regulations, any modifications at the source that result in an emission increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Increases above offset thresholds will trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 240 lbs/day for all attainment pollutants and precursors (except carbon monoxide and $PM_{2.5}$) and 25 tons/year for all non-attainment pollutants and precursors (except carbon monoxide and $PM_{2.5}$).

7.2 Clean Air Plan

The 2007 Clean Air Plan, adopted by the District Board on August 16, 2007, addressed both federal and state requirements, serving as the maintenance plan for the federal eight-hour ozone standard and as the state triennial update required by the Health and Safety Code to demonstrate how the District will expedite attainment of the state eight-hour ozone standard. The plan was developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

In December 2019, the District Board adopted the 2019 Ozone Plan. The 2019 Plan provides a three-year update to the 2016 Ozone Plan, (which was later revised in August 2017), and is the ninth triennial update to the initial State Air Quality Attainment Plan. As Santa Barbara County was designated nonattainment-transitional for the state eight-hour ozone standard at the time of the 2019 Ozone Plan publication, the county reached attainment status on July 1, 2020. The 2019 Ozone Plan demonstrates how the District plans to attain and keep that standard. The 2019 Ozone Plan therefore satisfies all state triennial planning requirements.

7.3 Offset Requirements

Increases in countywide emissions caused by a new project must be offset by commensurate reductions in emissions from another county source. District rules require existing source emission reductions to be in place prior to the initiation of and for the duration of the project's emissions. The emission reductions must be real, quantifiable, surplus, permanent, and enforceable. For permitted offset sources, a modification of existing permits is required to ensure that emission reductions will occur. For sources that are not owned or operated by the project applicant, a written agreement between the owner of the emission reduction source and the project applicant, with the District as third beneficiary, is required.

Chevron, the previous operator, entered into several agreements with the District identifying the sources of the emission reduction credits, the party providing the emission reduction credits (when not owned and operated by Chevron) and the specific reductions provided as offsets for the OCS platforms. A summary of these agreements and the offsets are provided in the OCS Ozone Mitigation Agreement (September, 1992).

The platform's emission totals (potential-to-emit) are detailed in the permits for each platform. However, the project is required to offset the "allowable emissions" from the platforms, not the potential-to-emit totals. The "allowable emissions" are stipulated in the OCS Ozone Mitigation Agreement subsequently revised by PTO 5704 (GOHF) Exhibit 1 and PTO 9104-20 (PANGL pipeline clps and pig receiver) and are summarized below in Tables 7.4-1 and 7.4-2.

7.4 Emission Reduction Credits

Selective Catalytic Reduction (SCR) was installed on the three turbine-driven compressors at Platform Harvest for the purpose of generating NOx emission reduction credits (ERCs). Installation of these control systems resulted in 38.065 tpy of NO_x ERCs as described in DOI 0035. A portion of these ERCs were used to replace expiring (MERC) ERCs at platform Harvest. See Table 7.3-1 below for a detailed summary of all ERCs dedicated to Platform Harvest.

Table 7.3-1
FM O&G Platform Harvest
SO_x Offset Requirements for Rule 359 Compliance[a][b]

OXIDES OF SULFUR (SOx)

Emissions Liability	TPY
Rule 359 Planned Flaring	9.12 SOx

Emission Reduction Sources	Emission Reductions tons/yr	Distance Factor	Offset Credit tons/yr
ERC Certificate 0149[c]	8.79 NO_x	1.0	8.79 SO_x
ERC Certificate 0032[d]	0.33 SO_x	1.0	0.33 SO_x
		Total	9.12 SO_x

Notes:

(a) Offsets for SO_x emissions are required for planned flaring pursuant to Rule 359 (§D.1.b)

(b) Inter-Pollutant trade (NO_x for SO_x) is approved based on PM_{10} precursor relationship.

(c) Platform Harvest SCR Project ERCs.

(d) Arguello Inc purchased 0.5 tpq SOx ERCs as documented in ERC Certificate 0032-1103. 0.33 tpy SOx from this amount was applied to the MERC program shortfall as documented in ERC Certificate 0033-1103.

(e) ERC certificate 0044 expired in December 2010 and no longer provides offset credits to the project. PTO Mod 9103-13 reduced planned flaring emissions so that the offset credits provided by ERC certificate 0044 are not required.

Table 7.3-2
Platform Harvest Project Operation Emissions and Offsets

REACTIVE ORGANIC COMPOUNDS (ROC)

PROJECT EMISSIONS

	TPY
Crude Stabilization Project	0.320
Unicel Project	0.640
Fugitive Emission Deminimis Increase	0.736
TOTAL	1.696

EMISSION REDUCTION SOURCES

	Emission Reductions TPY	Distance Factor	Offset Credit TPY
ERC Certificate 0005-0611 (Crude Stab. Proj.)	0.384	1.2	0.320
ERC Certificate 0143-0611 (Unicel)	0.288	1.2	0.240
ERC Certificate 0169-0611 (Unicel)	0.480	1.2	0.400
ERC Certificate 0283-0917 (Permit Deminimus clps)	0.883	1.2	0.736
TOTAL	2.035		1.696

Notes:

a) Emission units: TPY = tons per year.

Table 7.4-1 OCS NOx Emissions and Offsets

OCS EMISSIONS FROM PROJECT	TPY
OCS Mitigation Agreement Emission Limit	341.17
EMISSION REDUCTION SOURCES (OCS)	**TPY**
Control/Shutdown Engines at Phillips Tajiguas Gas Plant	2.76
Control IR Compressor Engines at Venoco Carpinteria Gas Plant	10.53
Control Cooper Compressor Engines at Venoco Carpinteria Gas Plant	76.70
Control/Shutdown Cooper Compressor Engine at Chevron Pt. Hope (CUSA)	118.84
Control/Shutdown Cooper Compressor Engine at Chevron Pt. Hope (ARCO)	14.28
Control Engines at Southern California Gas Co. Dehydration Plant - More Mesa[b]	96.06
E-4, E-7, E-9 Contract 30-Year Credit	22.00
TOTAL	**341.17**

Table 7.4-2 OCS ROC Emissions and Offsets

OCS EMISSIONS FROM PROJECT	TPY
OCS Mitigation Agreement Emission Limit	153.66
ROC Emissions from Fugitive I&M Corrections	58.88[a]
PANGL Pipeline & Pig Launch/Reciever ROC Emissions	3.83[d]

EMISSION REDUCTION SOURCES (OCS)	TPY
Fugitive Hydrocarbon I&M Program/Shutdown at Phillips Tajiguas Gas Plant	74.09
Fugitive Hydrocarbon I&M Program at Venoco Ellwood Oil and Gas Plant	56.05
Fugitive Hydrocarbon I&M Program at Venoco Carpinteria Gas Plant	13.46
Fugitive Hydrocarbon I&M Program/Shutdown at Chevron Pt. Hope (CUSA)	5.25
Venoco Seep Containment Device	4.61
E-4, E-7, E-9 Contract 30-Year Credit	0.20
TOTAL	**153.66**
Control Engines at Southern California Gas Co. Dehydration Plant - More Mesa[b]	57.48
Fugitive Hydrocarbon I&M Program/Shutdown at Phillips Tajiguas Gas Plant[c]	1.4
TOTAL	**58.88**

	Emission Reductions TPY	Distance Factor	Offset Credit TPY
Fugitive Hydrocarbon I&M Program at Venoco Ellwood Oil and Gas Plant	5.75	1.5	3.83
TOTAL			**3.83**

Notes:

a. This is an increase in actual emissions associated with corrections to the fugitive I&M inventories on Platforms Harvest (PTO 9013-14), Platform Hermosa (PTO 9104-18), and Platform Hidalgo (PTO 9105-15). The 153.66 tpy value is the limit of actual ROC emissions listed in the OMA.

b. These are NOx ERCs taken from the total NOx ERCs provided to the project (formerly 341.17 tpy) and applied to the ROC emission increase assoicated with the corrections to the fugitive I&M component leakpaths. This value does not match the 58.88 tpy valus listed above because FMO&G chose to apply the ERCs resulting from the decrease in ROC emissions (1.16 tpy) associated with the corrections to the fugitive I&M inventory at the GOHF.

c. Correctionss to the GOHF fugitive emission inventory resulted in a decrease of 1.16 tpy in fugitive emissions. The associated ERCs (1.4 tpy) were transferred to offset a portion of the fugitive emission increase at the platforms.

d. These emissions are from the transfer of the PANGL pipeline fugitive components and pig launch/reciever from GOHF to Platform Hermosa following the shutdown of the GOHF.

8.0 Lead Agency Permit Consistency

A Final Development Plan for the Point Arguello Project (85-DP-32-CZ) was approved by the Santa Barbara County Board of Supervisors as lead agency in California. The approved Plan contains a number of provisions that relate to the air quality aspects of the project. These provisions are designated the "E" conditions. Of particular interest are conditions E-4 (requirements for ambient air quality monitoring stations to examine onshore project impacts) and conditions E-7 and E-9 (requirements that all NO_x and ROC emissions that contribute to ozone standard violations be completely mitigated). The project applicants and the County entered into a legally binding contract outlining the implementation of conditions E-4, E-7, and E-9. In 1992, this contract was supplemented with an *OCS Ozone Mitigation Agreement* to clarify and augment requirements on ozone precursors. The Bureau of Safety and Environmental Enforcement (BSEE), formerly the Ocean Energy Management, Regulation and Enforcement (BOEMRE), approved the *Development and Production Plan* for Platform Harvest on January 15, 1985.

9.0 Permit Conditions

This section lists the applicable permit conditions for Platform Harvest. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally-enforceable (i.e., District only permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

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9.A Standard Administrative Conditions

The following federally enforceable administrative permit conditions apply to Platform Harvest. In the case of a discrepancy between the wording of a condition and the applicable District rule, the wording of the rule shall control.

A.1 **Condition Acceptance.** Acceptance of this operating permit by FM O&G shall be considered as acceptance of all terms, conditions, and limits of this permit. [*Re: PTO 9103*]

A.2 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit shall constitute grounds for the APCO to petition for permit revocation pursuant to California Health & Safety Code Section 42307 *et seq*. [*Re: PTO 9103*]

A.3 **Reimbursement of Costs.** All reasonable expenses, as defined in District Rule 210, incurred by the District, District contractors, and legal counsel for the activities listed below that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by the permittee as required by Rule 210. Reimbursable activities include work involving: permitting, compliance, CEMs, modeling/AQIA, ambient air monitoring and air toxics. *[Re: Rule 210; PTO 9103]*

A.4 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, FM O&G shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A. [*Re: PTO 9103*]

A.5 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rule, regulation, ambient air quality standard or air quality increment. [*Re: PTO 9103*]

A.6 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the permit analyses included in this permit. [*Re: PTO 9103*]

A.7 **Consistency with State and Local Permits.** Nothing in this permit shall relax any air pollution control requirement imposed on the Point Arguello Project by:

(a) The County of Santa Barbara in the *Chevron/Point Arguello Project Final Development Plan No. 85-DP-32-CZ* and any subsequent modifications (including the September 1992 *Ozone Mitigation Agreement for the Point Arguello Project*, the amended September 1992 *Contract for Implementation of Conditions E-4, E-7 and E-9 of the Chevron/Point Arguello Project Preliminary Development Plan No. 83-DP-32-CZ*, and all subsequent amendments or revisions.

(b) The California Coastal Commission in the consistency determination for the Project with the California Coastal Act. [*Re: PTO 9103*]

A.8 **Compliance with Department of Interior Permits.** FM O&G shall comply with all air quality control requirements imposed by the Department of the Interior in the *Development and Production Plan* for Platform Harvest on January 15, 1985 and any subsequent modifications. Such requirements shall be enforceable by the District. [*Re: PTO 9103*]

A.9 **Compliance with Permit Conditions.**

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.

(b) This permit does not convey property rights or exclusive privilege of any sort.

(c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

(d) 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.

(e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.

(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:

(i) Compliance with the permit, or

(ii) Whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. [*Re: 40 CFR Part 70.6.(a)(6), District Rules 1303.D.1]*

A.10 **Emergency Provisions.** The permittee shall comply with the requirements of the District, Rule 505 (Upset/Breakdown rule) and/or District Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the District, in writing, a "notice of emergency" within 2-days of the emergency. The "notice of emergency" shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [*Re: 40 CFR 70.6(g), District Rule 1303.F*]

A.11 **Compliance Plans.**

(a) The Compliance Plans for the stationary source, submitted by the permittee on application Forms 1302-I (1 & 2) and 1302-J (1 & 2), are a part of this permit.

(b) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term, in a timely manner.

(c) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. [*Re: District Rule 1302.D.2*]

A.12 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;

(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;

(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. [*Re: District Rule 1303.D.2*]

A.13 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. [*Re: District Rules 103 and 1303.D.1*

A.14 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the District. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the District rules.

The permittee shall apply for renewal of the Part 70 permit no later than 180-days before the permit expiration date. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application.

A.15 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. [*Re: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7*)]

A.16 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the District documenting each and every deviation from the requirements of this permit or any applicable federal requirements within 7-days after discovery of the violation, but not later than 180 days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to the District in accordance with Rule 505. Breakdown Conditions, or Rule 1303.F Emergency Provisions. *[District Rule 1303.D.1, 40 CFR 70.6(a) (3)]*

A.17 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six-months. A paper copy, as well as, a complete PDF electronic copy of these reports, shall be in a format approved by the District. These reports shall be submitted on District forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, whether the compliance was continuous or intermittent, and include detailed information on the

occurrence and correction of any deviations from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by August 1 and March 1, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [*Re: District Rules 1303.D.1, 1302.D.3, 1303.2.c*]

A.18 **Federally enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the District-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. [*Re: CAAA, § 502(b)(6), 40 CFR 70.6(b*)]

A.19 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;
(b) The date(s) analyses were performed;
(c) The company or entity that performed the analyses;
(d) The analytical techniques or methods used;
(e) The results of such analyses; and
(f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the District upon request. [*Re: District Rule 1303.D.1.f, 40 CFR 70.6(a)(3)*]

A.20 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source that has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30-day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is reopened, and revised, then it will be reissued with the expiration date applicable to the re-opened permit. [*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

9.B. Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. These rules apply to the equipment and operations at Platform Harvest as they currently exist. Compliance with these requirements is discussed in Section 3.4.2. In the case of a discrepancy between the wording of a condition and the applicable District rule, the wording of the rule shall control.

B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of District Rule 303. [*Re: District Rule 301*]

B.2 **Visible Emissions (Rule 302).** FM O&G shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour that is:

(a) As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above.

Failure to perform a required Method 9 inspection will not constitute a violation if the attempted VEE cannot be performed in accordance with procedures of Section 2 of Method 9 due to existing ambient conditions at the platform during the inspection and FM O&G fully documents the conditions that preclude the performance of the VEE.

Diesel ICEs: Once per calendar quarter FM O&G shall perform a visible emissions inspection for a one-minute period on each permitted and exempt engine when operating. If visible emissions are detected during any inspection, then a USEPA Method 9 visible emission evaluations (VEE) shall immediately be performed for a six-minute period. FM O&G staff certified in VEE shall perform the VEE and maintain logs in accordance with USEPA Method 9. The start-time and end-time of each visible emissions inspection shall be recorded in a log, along with a notation identifying whether visible emissions were detected.

Offshore Platform Cranes: During biennial source testing of each crane, FM O&G shall perform a visible emissions inspection on the crane for a one-minute period. If visible emissions are detected during any inspection, then a USEPA Method 9 visible emission evaluation (VEE) shall immediately be performed for a six-minute period. FM O&G staff certified in VEE shall perform the VEE and maintain logs in accordance with USEPA

Method 9. The start-time and end-time of each visible emissions inspection shall be recorded in a log, along with a notation identifying whether visible emissions were detected.

For the purposes of this condition, "certified in VEE" shall mean that each individual assigned to perform a VEE has completed smoke school training and obtained certification in accordance with Method 9, section 3. Continued certification every six-months is required. *[Re: District Rule 302; PTO 9103-05]*.

B.3 **PM Concentration - South Zone (Rule 305).** FM O&G shall not discharge into the atmosphere, from any source, particulate matter in excess of the concentrations listed in Table 305(a) of Rule 305. [*Re: District Rule 305*]

B.4 **Specific Contaminants (Rule 309).** FM O&G shall not discharge into the atmosphere from any single source sulfur compounds, carbon monoxide and combustion contaminants in excess of the applicable standards listed in Sections A, E and G of Rule 309. [*Re: District Rule 309*]

B.5 **Sulfur Content of Fuels (Rule 311).** FM O&G shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 239 ppm_{vd} or 15 gr/100 scf (calculated as H_2S) for gaseous fuel. Compliance with this condition shall be based on daily measurements of the fuel gas using (colorimetric gas detection tubes, ASTM, or other District-approved) methods and diesel fuel billing records or other data showing the certified sulfur content for each shipment. [*Re: District Rule 311*]

B.6 **Organic Solvents (Rule 317).** FM O&G shall comply with the emission standards listed in Rule 317.B. Compliance with this condition shall be based on FM O&G's compliance with Condition C.3 (*Solvent Usage*) of this permit. [*Re: District Rule 317*]

B.7 **Vacuum Producing Devices or Systems - Southern Zone (Rule 318).** FM O&G shall not discharge into the atmosphere more than 3 pounds of organic materials in any one hour from any vacuum producing devices or systems, including hot wells and accumulators, unless said discharge has been reduced by at least 90-percent. [*Re: District Rule 318*]

B.8 **Solvent Cleaning Operations (Rule 321).** FM O&G shall comply with the requirements listed in Sections D, G, I, P and Q of Rule 321. Compliance with this condition shall be based on FM O&G's compliance with Condition C.3 (*Solvent Usage*) of this permit as well as District inspections. [*Re: District Rule 321*]

B.9 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on FM O&G's compliance with Condition C.3 (*Solvent Usage*) of this permit and facility inspections. [*Re: District Rule 322*]

B.10 **Architectural Coatings (Rule 323.1).** FM O&G ExxonMobil shall comply with the rule requirements for any architectural coating that is supplied, sold, offered for sale, or manufactured for use within the District.

B.11 **Disposal and Evaporation of Solvents (Rule 324).** FM O&G shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on FM O&G's compliance with Condition C.3 (*Solvent Usage*) of this permit and facility inspections. [*Re: District Rule 324*]

B.12 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:

(a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately,

(b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Re: District Rule 353]*

B.13 **Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers (Rule 360).** This rule applies to water heaters, boilers, steam generators and process heaters with rated heat input capacities greater than or equal to 0.75 MMbtu/hr up to, and including, 2.0 MMbtu/hr. There are no units at this facility subject to this rule. [*Re: District Rule 360*]

B.14 **Oil and Natural Gas Production MACT.** As discussed in section 3.2.5 above, this facility is exempt from this MACT, however FM O&G is required, and shall, maintain records in accordance with 40 CFR 63.10(b)(3).

9.C Requirements and Equipment Specific Conditions

Federally enforceable conditions, including emissions and operations limits, monitoring, recordkeeping and reporting are included in this section for each specific group of equipment as well as other non-generic requirements.

C.1 **Internal Combustion Engines.** The following equipment are included in this emissions unit category:

EQ Device No.	Name
005000	Pedestal Crane CR-800A (503 bhp)
005001	Pedestal Crane CR-800B (503 bhp)
005002	Pedestal Crane CR-801 (270 bhp)

(a) Emission Limits: Mass emissions from the pedestal crane engines listed above shall not exceed the limits listed in Tables 5.1-3 and 5.1-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit. In addition, the following specific emission limits apply:

(i) *Pedestal Crane Engines*: Controlled emissions of NO_x from each diesel fired crane engine shall not exceed either 7.4 g/bhp-hr or 700 ppmvd at 15-percent oxygen or 2,124 ppmv at 3-percent oxygen. Compliance shall be based on quarterly inspections and biennial source testing. More frequent testing may be required, as determined by the District, if quarterly portable NO_x analyzer results show potential exceedances of the standard.

(ii) Emissions from crane engines CR-800A CR-800B shall not exceed a CO concentration in the exhaust of 49 ppmvd @ 15% O_2 or alternatively, CO emissions must be reduced by 70% or more.

(b) Operational Limits: The following operational limits apply:

(i) For crane engines CR-800A and CR-800B, maintain each engine, oxidation catalyst and crankcase filtration emission control system in a manner consistent with safety and good air pollution control practices for minimizing emissions;

(ii) For crane engines CR-800A and CR-800B, the idle time shall be minimized during startups to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes;

(iii) The following operating requirements shall apply to the 270 bhp pedestal crane engine (Device ID 5002):

(a) change the oil and filter every 500 hours of operation or annually, whichever comes first;

(b) inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first; and

(c) inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.

(iv) *Emission Controls*: FM O&G shall implement the requirements of District Rule 333. NO_x emissions from the cranes shall be reduced by using turbocharged engines with injection timing retarded by 4 degrees. Additionally, the cranes shall be equipped with a separate intercooling circuit.

(v) *Liquid Fuel Sulfur Limit*: Diesel fuel used by all IC engines shall have a sulfur content no greater than 0.0015 weight-percent as determined by District-approved ASTM methods.

(vi) *Fuel Use Limits*: FM O&G shall comply with the following fuel limits:

- Crane engine (CR-800A) shall not use more than: 645 gallons per day; 36,664 gallons per quarter; 55,868 gallons per year of diesel fuel.

- Crane engine (CR-800B) shall not use more than: 645 gallons per day; 36,664 gallons per quarter; 55,868 gallons per year of diesel fuel.

- Crane engine (CR-801) shall not use more than: 370 gallons per day; 21,048 gallons per quarter; 32,074 gallons per year of diesel fuel.

(vii) *Engine Identification and Maintenance*: Each IC engine shall be identified with a permanently-affixed plate, tag or marking, referencing either: (i) the IC engine's make, model, serial number, rated BHP and corresponding RPM; or (ii) the operator's unique tag number. The tag shall be made accessible and legible to facilitate District inspection of the IC engine.

(c) Monitoring: The following source testing and periodic monitoring conditions apply to the pedestal crane, turbine starters and emergency generators:

(i) *Fuel Meters*: The amount of fuel combusted in each engine shall be measured using permanently installed District-approved in-line fuel meters dedicated to each engine. As an alternative to in-line fuel meters, FM O&G may report individual engine hours of operation utilizing a District-approved elapsed time meter [6]. A monthly log shall be maintained that records the fuel usage (or hours of operation) of each engine.

(ii) *Inspection and Maintenance Plan (I&M Plan)*: FM O&G shall implement quarterly inspections on the each engine according to the most current version of the District-approved *Engine Inspection and Maintenance Plan* consistent with the requirements of Rule 333.E.

[6] The hours of operation, along with the engine horsepower rating and BSFC data as listed in Table 5.1-1 of this permit, a fuel correction factor of 1.06, and a high heating value of 138,200 Btu/gal will be used to determine the number of gallons of fuel consumed per time period.

(iii) *Source Testing*: For each pedestal crane engine, FM O&G shall perform source testing of air emissions and process parameters consistent with the requirement of the *Source Testing* permit condition below and in accordance with the requirements of Rule 333.

(iv) *Fuel Data*: FM O&G shall maintain documentation of the sulfur content (as determined by District-approved ASTM methods) of each diesel fuel shipment as certified in the fuel suppliers billing vouchers.

d) Recordkeeping: FM O&G shall keep the required logs, as applicable to this permit, which demonstrate compliance with emission limits, operation limits and monitoring requirements above. All logs shall be available to the District upon request. Written information (logs) shall include:

(i) For crane engines CR-800A and CR-800B:

(1) A copy of each notification and report that the owner and operator submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that the owner and operator submitted, according to the requirement in 40 CFR 63 Subpart ZZZZ §63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) of the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in 40 CFR 63 Subpart ZZZZ §63.10(b)(2)(viii) and §63.6655(a)(3).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63 Subpart ZZZZ §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(ii) For the pedestal crane engine CR-801:

(1) oil and oil filter changes.

(2) air cleaner inspections.

(3) hose and belt inspections.

(iii) Daily, quarterly and annual fuel usage in units of gallons for the pedestal crane engines.

(iv) The sulfur content (as determined by District-approved ASTM methods) of each fuel shipment as certified in the fuel suppliers billing vouchers. On an annual basis, the higher heating value of the diesel fuel (Btu/gal) shall be recorded. The billing vouchers shall be attached to the log.

(v) IC engine operations logs, including quarterly inspection results, consistent with the requirements of Rule 333.

(vi) If an operator's tag number is used in lieu of an IC engine identification plate, documentation which references the operator's unique IC engine ID number to a list containing the make, model, serial number, rated maximum BHP and the corresponding RPM.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of this permit. (*Re: District Rules 202, 311, 333 and 1303, PTO 9103, 40 CFR 70.6*)

C.2 **Supply Boats.** The following equipment are included in this emissions category:

EQ Device No.	Name
Supply Boat	
393353[1]	Supply Boat Main Engines (Basis M/V Challenger)
393354[1]	Supply Boat Generator Engines (Basis M/V Challenger)
005403	Supply Boat Main Engines
103117	Supply Boat Auxiliary Engines
105053	Supply Boat Bow Thruster
114331	Supply Boat Emergency Generator
Emergency Response Boat	
105057	Emergency Response Main/Aux Engines
102770	Marine Survival Craft

[1]These devices are included only in the Equipment List for Platform Hidalgo since this vessel services all three platforms and Device ID numbers can be assigned only to a single facility.

(a) Emission Limits: Mass emissions from the supply and emergency response boats listed above shall not exceed the limits listed in Tables 5.1-3 and 5.1-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit. In addition:

(i) With the exception of the Santa Cruz, controlled emissions of NO_x from each diesel fired main engine in each controlled crew boat and controlled supply boat shall not exceed 337 lb/1000 gallons (8.4 g/bhp-hr). Controlled emissions of NO_x from each diesel fired main engine of the Santa Cruz shall not exceed 270 lb/gal (5.99 g/bhp-hr). Spot charter supply boats and emergency response (e.g., *Clean Seas*) boats shall not be required to comply with this controlled NO_x emission rate. Compliance shall be based on annual source testing consistent with the requirements listed in Table 4.1 and the *Source Testing* condition.

(ii) The combined emissions from all supply boats serving the OCS platforms in the Point FM O&G Arguello Project (Platforms Harvest, Hermosa and Harvest) shall not exceed the emission limits listed in Table 9.1 below. The emissions from the emergency response boat and survival craft are not included in Table 9.1

Table 9.1
Point Arguello Source Limit
Supply Boat Emissions

	NOx	ROC	CO	SOx	PM	PM10
lbs/day	1,246.30	44.70	408.96	90.05	74.93	71.93
tons/year	76.25	3.99	37.11	8.18	6.79	6.51

(b) Operational Limits: Operation of the equipment listed in this section shall not exceed the limits listed below. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit.

(i) *Supply Boat Main Engine Limits:* The combined fuel use for all Point Arguello Project supply boat main engines shall not exceed: 1,967 gallons per day; 90,269 gallons per quarter; 361,254 gallons per year of diesel fuel.

(ii) *Supply Boat Auxiliary Engine Limits:* Except for vessels with Dynamic Positioning Systems powered by generator engines, the combined fuel use for all Point Arguello Project supply boat auxiliary engines (generators and bow thruster) shall not exceed: 239 gallons per day; 9,784 gallons per quarter; 39,149 gallons per year of diesel fuel.

(iii) *Supply Boat Auxiliary Engine Limits for Vessels with Dynamic Positioning Systems:* The combined fuel use for all Point Arguello Project supply boat main engines and generator engines on vessels with Dynamic Positioning Systems powered by generator engines shall not exceed: 2,206 gallons per day; 100,053 gallons per quarter; 400,403 gallons per year of diesel fuel.

(iv) The auxiliary generators on the Adel Elise shall not be operated simultaneously at any time.

(v) The M/V Challenger or other approved supply vessel with Dynamic Positioning Systems powered by generator engines, shall not be operated simultaneously with any other supply boat at any time in support of the Pt. Arguello OCS Platforms.

(vi) *Emergency Response Boat Engine Limits:* The emergency response boat engines shall not use more than: 20,000 gallons per quarter; 80,000 gallons per year of diesel fuel. The permittee's pro-rated allocation of allowable emergency response boat fuel usage shall not exceed: 5,000 gallons per quarter; 20,000 gallons per year of diesel fuel.

(vii) *Spot-Charter Limits*: The number of allowable annual spot charter supply boat trips shall not exceed ten-percent of the actual annual number of trips made by the controlled (i.e., primary) supply boats. A trip is defined as any time the boat makes a trip from port to the platform and back (i.e., a round trip).

(viii) *Marine Survival Craft*: The marine survival craft shall be limited to 200 hours of operation per year.

(ix) *Liquid Fuel Sulfur Limit*: Diesel fuel used by all IC engines shall have a sulfur content no greater than 0.0015 weight percent.

(x) *New and Replacement Supply Boats*: The permittee may utilize any new/replacement project boat without the need for a permit revision if that boat meets the following conditions:

(1) The main engines are of the same or less bhp rating; and

(2) The combined pounds per day potential to emit (PTE) of all generator and bow thruster engines is the same or less than the sum of the pounds per day PTE for these engines as determined from the corresponding Table 5.1-3 emission line items of this permit; and

(3) The NO_x, ROC, CO, PM and $PM_{10/2.5}$ emission factors are the same or less for the main and auxiliary engines. For the main engines, NO_x emissions must meet the 274 lb/1000 gallons emission standard.

The above criteria also apply to spot charter boats except for the NO_x emission standard noted in (3) above. Any proposed new/replacement supply or spot charter boat that does not meet the above requirements (1) - (3), shall first obtain a permit revision prior to operating the boat. The District may require manufacturer guarantees and emission source tests to verify this NO_x emission standard.

The permittee shall revise the *Boat Monitoring and Reporting Plan*, obtain District approval of such revisions and implement the revised Plan prior to bringing any new/replacement boat into service, except for the use of spot charters. If a new spot charter is brought into service then the permittee shall revise and resubmit the boat plan within thirty (30) calendar days after it is first brought into service. If the fuel metering and emissions computation procedures for a new spot charter are identical to a boat that is already addressed in the approved boat plan, a letter addendum stating this will suffice for the revision/resubmittal of the boat plan.

Prior to bringing the boat into service for the first time, the permittee shall submit the information listed below to the District for any new/replacement supply boat that meets the requirements set forth in (1) - (3) above, and for new spot charters that have not been previously used on the Point Arguello project. For spot charters, this information shall be submitted within thirty (30) calendar days after the boat is first brought into service. The permittee shall notify the District (via fax or E-mail) within three (3) calendar days after a new spot charter is first brought into operation. Any boat put into service that does not meet the requirements above as determined by the District at any time, shall immediately cease operations and all prior use of that boat shall be considered a violation of this permit.

- Boat description, including the type, size, name, engine descriptions and emission control equipment.

- Engine manufacturers' data on the emission levels for the various engines and applicable engine specification curves.

- A quantitative analysis using the operating and emission factor assumptions given in tables 5.1-1 and 5.1-2 of this permit that demonstrates criteria (2) above is met.

- Estimated fuel usage within 25-miles of Platform Harvest.

- Any other information the District deems necessary to ensure the new boat will operate consistent with the analyses that form the basis for this permit.

(xi) *Availability of Maintenance Logs*: Upon request, the permittee shall make available to the District engine maintenance logs that include details on injector timing, setting adjustments, major engine overhauls, and routine engine maintenance.

(c) Monitoring: FM O&G shall comply with the following requirements:

(i) The permittee shall implement the most current version of the District-approved *Boat Monitoring and Reporting Plan*. This plan shall be used for measuring, calculating, and reporting fuel use and emissions for all boats servicing the Point Arguello Project. The data collected and reported shall demonstrate that the boats are being operated consistent with the emission assumptions used in the issuance of this operating permit. Spot charter boats shall, at a minimum, track total fuel usage on a per trip basis using District-approved procedures. Emergency response boats shall, at a minimum, track fuel usage on a quarterly basis using District-approved procedures. These data shall be submitted in a District-approved format to the District.

(ii) *Source Testing*: Source testing of the supply boat main engines shall occur on an annual basis. Source testing of supply boat generator engines used for dynamic positioning of the vessel shall occur upon District written request. FM O&G shall perform source testing of air emissions and process parameters consistent with the requirement of the *Source Testing* permit condition.

(d) Recordkeeping: The following records shall be maintained in legible logs and shall be made available to the District upon request:

(i) *Maintenance Logs:* Maintenance log summaries that include details on injector timing, setting adjustments, major engine overhauls, and routine engine maintenance. These logs and summaries shall be made available to the District upon request.

(ii) *Supply Boat Fuel Usage*: Daily, quarterly and annual fuel use for the supply boat main engines, generator engines and bow thruster engine.

(iii) *Emergency Response Boat Fuel Usage*: Total quarterly and annual fuel use for the emergency response boat and Platform Harvest's allocation of that total.

(iii) *Spot Charters*: The name of each spot charter boat used and the number of round trips.

(v) The sulfur content of each fuel shipment as documented by fuel supplier records (e.g. billing vouchers or bills of laden). On an annual basis, the heating value of the diesel fuel (Btu/gal) shall be recorded based on measurement by FM O&G or certified by

the fuel supplier.

(e) Reporting: On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the District. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit. [*Re: District Rule 1303, PTO 9103, ATC/PTO 9883, 40 CFR 70.6]*

C.3 **Solvent Usage.** The following equipment are included in this emissions unit category:

EQ Device No.	Name
102913	Cleaning/Degreasing

(a) Emission Limits: Mass emissions from the solvent usage shall not exceed the limits listed in Tables 5.1-3 and 5.1-4. Compliance shall be based on the operational, recordkeeping and reporting requirements of this permit. For short-term emissions, compliance shall be based on monthly averages.

(b) Operational Limits: Use of solvents for cleaning, degreasing, thinning and reducing shall conform to the requirements of District Rules 317, 321 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections. In addition, FM O&G shall comply with the following:

(i) *Containers:* Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.

(ii) *Materials*: All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.

(iii) *Solvent Leaks*: Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernable continuous flow of solvent.

(iv) *Reclamation Plan*: Any disposal of any reclaimed solvent shall be in accordance with the most current version of the District-approved *Point Arguello Solvent Reclamation Plan.* All solvent disposed of pursuant to the Plan will have the appropriate solvent recovery factor for solvent use recordkeeping.

(c) Monitoring: None.

(d) Recordkeeping: FM O&G shall record in a log the following on a monthly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed for District-approved disposal; whether the solvent is photochemically reactive; and, the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a readily accessible location on the platform.

(e) Reporting: On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of this permit. [*Re: District Rules 317, 321, 324 and 1303, PTO 9103, 40 CFR 70.6*]

C.4 **Helicopter Use.** The following equipment is included in this emissions unit category:

EQ Device No.	Name
005573	Helicopters

(a) Emission Limits: None.

(b) Operational Limits: None.

(c) Monitoring: None.

(d) Recordkeeping: Manual records shall be maintained for all helicopters. Records shall be maintained at a readily accessible location for a period of two years, and the District shall be notified of such location. The format of the manual records shall be as follows:

(i) Helicopter description, including the type, size, name, and home base.

(ii) Make, model and horsepower of engine.

(iii) Date, flight time, and segment description of each flight.

(e) Reporting: On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of this permit. The following shall be included in the report:

(i) Helicopter model.

(ii) Frequency and description of flight segment.

(iii) Total NO_x and ROC emissions for each segment type, as well as total emissions for the reporting period. Helicopter emissions shall be calculated by multiplying the total number of each segment by the standard emissions per segment presented in Attachment 10.4 or other more representative emission factors. [*Re: PTO 9103 40 CFR 70.6*]

C.5 **Offsets and Clean Air Plan Consistency.** FM O&G shall comply with the procedures and requirements specified in Section 7.3 (Offset Requirements). Emission Reduction Credits (ERCs) sufficient to offset the annual emissions specified in Tables 7.3-1 and 7.3-2 shall be in place for the life of the project.

FM O&G shall provide emission reduction credits to offset project emissions listed in Tables 7.5-1 and 7.5-2. The "Contract for Implementation of Conditions E-4, E-7 and E-9 of the

Arguello/Point Arguello Preliminary Development Plan No. 83-DP-32-CZ" ("Arguello/District Contract") as amended on September 8, 1992 provides for mitigation of the entire project emissions which impact onshore air quality. FM O&G shall implement the Arguello/District Contract and the 1992 "OCS Ozone Mitigation Agreement" (and all subsequent amendments), which provides for reductions in offshore project emissions as well as application of additional controls on existing emission sources onshore and within State waters in order to mitigate the impact of OCS emissions. Through the implementation of the Contract and Agreement stated above, the District is able to make the finding that the project will result in a Net Air Quality Benefit and is consistent with the Clean Air Plan, as necessary for the issuance of this operating permit. FM O&G shall ensure that the emission reduction credits listed in Table 7.4-1 and 7.4-2 are in place for the life of the project.

C.6 **Diesel IC Engines - Particulate Matter Emissions.** To ensure compliance with District Rules 205.A, 302, 304, 309 and the California Health and Safety Code Section 41701, FM O&G shall implement manufacturer recommended operational and maintenance procedures to ensure that all project diesel-fired engines minimize particulate emissions. FM O&G shall implement the most current version of the District-approved *IC Engine Particulate Matter Operation and Maintenance Plan* for the life of the project. This Plan details the manufacturer recommended maintenance and calibration schedules that FM O&G will implement. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment shall be utilized. All project diesel-fired engines, regardless of exemption status, shall be included in this Plan. [*Re: District Rules 205.A, 302, 304, 309, PTO 9103*]

C.7 **Abrasive Blasting Equipment.** All abrasive blasting activities performed on Platform Harvest shall comply with the requirements of the California Administrative Code Title 17, Sub-Chapter 6, Sections 92000 through 92530. [*Re: District Rules 303, PTO 9103*]C.9

C.8 **Source Testing.** The following source testing provisions shall apply:

(a) The permittee shall conduct source testing of air emissions and process parameters listed in Table 4.1 of this Permit to Operate. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the APCO, occur.

- Source testing of the supply boat main engines shall occur on an annual basis. The supply boat engines shall be tested at normal cruise speeds (minimum of 70-percent of maximum engine load). For supply vessels with generator engines used for dynamic positioning, source testing of the generator engines shall be performed upon written request.

- Source testing of the crane engines shall be performed on a biennial schedule. The crane engines shall be loaded to the maximum safe load obtainable.

(b) The permittee shall submit a written source test plan to the District for approval at least thirty (30) days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's Source Test Procedures Manual (revised May 1990 and any subsequent revisions). The permittee shall obtain written District approval of the source test plan prior to commencement of source testing. The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a

mutually agreeable source test date when District personnel may observe the test.

(c) Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall document the permittee's compliance status with BACT requirements, mass emission rates in Section 5 and applicable permit conditions, rules and NSPS (if applicable). All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by the permittee as provided for by District Rule 210.

(d) A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the District. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without District's authorization shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.

The timelines in (a), (b), and (c) above may be extended for good cause provided a written request is submitted to the District at least three (3) days in advance of the deadline, and approval for the extension is granted by the District.

C.9 **Recordkeeping.** All records and logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection and log entry at the platform. These records or logs shall be readily accessible and be made available to the District upon request. [*Re: District Rule 1303, PTO 9103, 40 CFR 70.6*]

C.10 **Semi-Annual Compliance Verification Reports.** Twice a year, FM O&G shall submit a compliance verification report to the District. A paper copy, as well as, a complete PDF electronic copy of these reports, shall be in a format approved by the District. Each report shall be used to verify compliance with the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and shall be submitted no later than September 1st. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1st. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit (if applicable for that quarter). These reports shall be in a format approved by the District. All logs and other basic source data not included in the report shall be available to the District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, the

annual report shall include a completed *District Annual Emissions Inventory* questionnaire. The report shall include the following information:

(a) *Internal Combustion Engines*

(i) For crane engines CR-800A CR-800B:

(1) A copy of each notification and report that the owner and operator submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that the owner and operator submitted, according to the requirement in 40 CFR 63 Subpart ZZZZ §63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) of the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in 40 CFR 63 Subpart ZZZZ §63.10(b)(2)(viii) and §63.6655(a)(3).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63 Subpart ZZZZ §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(6) If any crane engine experienced a malfunction during the reporting period, FM O&G shall provide the following: (1) the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded, and (2) a description of actions taken by an owner or operator during a malfunction of a crane engine to minimize emissions in accordance with 40 CFR 63 Subpart ZZZZ §63.6605(b), including actions taken to correct a malfunction.

(7) For each deviation: (1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period, and (2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(ii) For the pedestal crane engine CR 801:

- oil and oil filter changes.
- air cleaner inspections.
- hose and belt inspections.

(iii) The daily, quarterly and annual fuel use for each pedestal crane in units of gallons, and resultant mass emissions for each.

(iv) The monthly and cumulative annual hours of operation for each emergency power generator (by ID number), and resultant mass emissions for each.

(v) Description of any temporary equipment, including type and horsepower. The amount and type of fuel consumed per month (for equipment using fuel as a basis for emission calculations) and the number of hours each equipment item operated each month, and resultant mass emissions for each.

(vi) Results of the quarterly Rule 333 portable NO_x analyzer readings.

(vii) Total sulfur content of each diesel fuel shipment. Annually, the higher heating value of the diesel fuel (Btu/gal).

(viii) Summary results of all compliance emission source testing performed.

(i) For Standby/Emergency Diesel IC Engines:

(a) emergency use hours of operation.
(b) maintenance and testing hours of operation.
(c) hours of operation for all uses other than for emergency use and maintenance and testing, along with a description of what those hours were for.
(d) written statement from fuel supplier if provided in lieu of fuel use records.

(ii) Records of oil and filter changes, air cleaner, hoses, and belts inspections.

(b) *Supply Boats.*

(i) Daily, quarterly and annual fuel use for the supply boat main engines and auxiliary engines while operating within 25-miles of Platform Harvest, itemized by regular supply boat (controlled ICE) usage and spot charter/emergency response boat (uncontrolled ICE) usage, and resultant mass emissions for each.

(ii) The sulfur content of each delivery of diesel fuel used by the supply boats.

(iii) Information regarding any new project boats servicing FM O&G's OCS platforms as detailed in Permit Condition 9.C.2 above.

(iv) If requested by the District staff, maintenance log summaries including details on injector type and timing, setting adjustments, major engine overhauls, and routine engine tune-ups. For spot charters this shall be provided as available.

(v) The number of boat trips made by, (a) the supply boats, and (b) the spot charter supply boats, both itemized by the trip dates and the boat names.

(vi) Summary results of all compliance emission source testing performed.

(c) *Helicopters.*

(i) Helicopter model.

(ii) Frequency and description of flight segment.

(iii) Total NO_x and ROC emissions for each segment type, as well as total emissions for the reporting period.

(d) *Solvent Usage.* On a monthly basis: the amount of solvent used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed; whether the solvent is photochemically reactive; and, the resulting emissions of ROC and photochemically reactive solvents to the atmosphere in units of pounds per month.

(e) *General Reporting Requirements*.

(i) On quarterly basis, the emissions from each permitted emission unit for each criteria pollutant.

(ii) On quarterly basis, the emissions from each exempt emission unit for each criteria pollutant.

(iii) A summary of each and every occurrence of non-compliance with the provisions of this permit, District rules, and any other applicable air quality requirement.

(iv) Breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.

(vi) Helicopter trips (by type and trip segments with emission calculations)

(vii) On an annual basis, the ROC and NO_x emissions from all permit exempt activities.

(viii) Tons per quarter totals of all pollutants (by each emission unit). The third/fourth quarter report shall include tons per year totals for all pollutants (by each emission unit).

(ix) A copy of the Rule 202 De Minimis Log for the stationary source. [*Re: PTO 9103*]

C.11 **Emergency Episode Plan.** FM O&G shall implement the most recently issued version of the District-approved Emergency Episode Plan during emergency episodes. [*Re: District Rule 1303, PTO 9104*]

C.12 **Permitted Equipment.** Only those equipment items listed in Attachment 10.3 are covered by the requirements of this permit and District Rule 201.B. [*Re: District Rule 1303, PTO 9103*]

C.13 **Mass Emission Limitations.** Mass emissions for each equipment item (i.e., emissions unit) associated with Platform Harvest shall not exceed the values listed in Tables 5.1-3 and 5.1-4. Emissions for the entire facility shall not exceed the total limits listed in Table 5.2. [*Re: District Rule 1303, PTO 9103, 40 CFR 70.6*]

C.14 **Documents Incorporated by Reference.** FM O&G shall implement, and operate in accordance with, each of the plans listed below. The documents listed below, including any District-approved updates thereof, are incorporated herein and shall the full force and effect of a permit condition of this operating permit:

a) *Boat Monitoring and Reporting Plan (approved November 2018)*

b) *Diesel IC Engine Particulate Matter Operation and Maintenance Plan (approved September 2002)*

c) *Process Monitor Calibration and Maintenance Plan* (*approved December 2002)*

d) *Source Test Plan (January 2008)*

e) *Emergency Episode Plan (approved February 2005)*

9.D District-Only Conditions

The following section lists permit conditions that are not enforceable by the USEPA or the public. However, these conditions are enforceable by the District and the State of California. These conditions are issued pursuant to District Rule 206 (*Conditional Approval of Authority to Construct or Permit to Operate*), which states that the Control Officer may issue an operating permit subject to specified conditions. Permit conditions have been determined as being necessary for this permit to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any condition specified pursuant to the provisions of Rule 206 shall be a violation of that rule, this permit, as well as any applicable section of the California Health & Safety Code.

→ There are no permit conditions that are District-only enforceable for this permit ←

AIR POLLUTION CONTROL OFFICER

_____

_____
Date

Notes:

a. Permit Reevaluation Due Date: July 2026
b. This permit supersedes Part 70/PTO 9103-R5, PTO 9103-15, PTO 15269 and Part 70 ADM 15586.

Attachments

10.1 Emission Calculation Documentation

10.2 IDS Tables

10.3 Equipment List

10.4 Helicopter Emission Tables

ATTACHMENT 10.1 EMISSION CALCULATION DOCUMENTATION

Reference A - Combustion Engines

- The maximum operating schedule is in units of hours

- The default diesel fuel #2 characteristics are:
  density = 7.043 lb/gal (36°API)
  LHV = 18,410 Btu/lb (129,700 Btu/gal)
  HHV = 19,620 Btu/lb (138,200 Btu/gal)

- BSFC (Caterpillar 3408 B engine) = 6,962 Btu/hp-hr
  energy based value using LHV
  engine specification = 27 gal/hr

- BSFC (Caterpillar 3306 engine) = 7,446 Btu/hp-hr
  energy based value using LHV
  engine specification = 15.5 gal/hr

- Emission factor units (lb/MMBtu) are based on HHV.

- FCF (LHV to HHV) value of 6 percent used.

- NO_x emission factor based on District Rule 333 limit (8.4 g/bhp-hr)
  $E_{lb/MMBtu}$ = [(8.4 g/bhp-hr) x (10^6)] / [(BSFC) x 1.06 x 453.6]

- ROC and PM emission factors based on USEPA AP-42, Table 3.3-1 (7/93)

  CO emission factor is based on 40 CFR 63 subpart ZZZZZ and is 30 percent of the factor listed in USEPA AP-42, Table 3.3-1

- SO_x emissions based on mass balance
  SO_x (as SO_2) = (%S) x (ρ_{oil}) x (20,000) / (HHV)

- Allowable sulfur content of 0.0015% wt.

- PM_{10}:PM ratio = 0.96; $PM_{2.5}$:PM_{10} ratio = 1.00; ROC:TOC ratio = 1.0

- Crane engine operational limits: General Equation

  Q = (BSFC) x (bhp) x (LCF) x (hours/time period) / (HHV, Btu/gal)

<u>CR-800A and CR-800B Crane Engines (each engine):</u>

Q = (6,962 Btu/bhp-hr) x (503 bhp) x (1.06) x (24 hours/day)/(138,200 Btu/gal)
= 645 gallons per day

Q= (6,962 Btu/bhp-hr)x(503 bhp) x (1.06) x (1,365 hours/qtr)/(138,200 Btu/gal)
= 36,664 gallons per quarter

Q = (6,962 Btu/bhp-hr) x (503 bhp)x(1.06)x(2,080 hours/yr)/(138,200 Btu/gal)
= 55,868 gallons per year

CR-801 Crane Engine:

Q= (7,446 Btu/bhp-hr) x (270 bhp) x (1.06) x (24 hours/day) / (138,200 Btu/gal)
= 370 gallons per day

Q= (7,446 Btu/bhp-hr) x (270 bhp) x (1.06)x(1,365 hours/qtr)/(138,200 Btu/gal)
= 21,048 gallons per quarter

Q= (7,446 Btu/bhp-hr) x (270 bhp) x (1.06)x(2,080 hours/yr)/(138,200 Btu/gal)
= 32,074 gallons per year

Reference B - Supply Boats

The maximum operating schedule is in units of hours.

- Supply boat engine data based on a composite of the *M/V Victory Seahorse* and *M/V Santa Cruz*, with the largest engines on each boat used in the emission calculations and operation of the *MV Challenge*.

- Two 2,500 bhp main engines (i.e., 5,000 bhp), two 300 bhp generator engines (i.e., 600 bhp) and one 515 bow thruster engine are utilized.

- Main engine load factor based on District *Crew and Supply Boat* study (6/87).

- Supply boat bow thruster engine only operates during maneuver mode.

- Supply boat generator engines provide half of total rated load; one generator engine operating continuously.

- The District has standardized the total time a supply boat operates (per trip) within 25 miles of platform to 11 hours. Typical trip is: 8 hours cruise, 2 hours maneuver and 1 hour idle. A trip includes time to, from and at the platform. Annual time based on 167 controlled trips. Spot-charter trips add about 184 hours.

- Main engine emission factors are based only on cruise mode values.

- *M/V Victory Seahorse* main engines achieve a controlled NO_x emission rate of 8.4 g/bhp-hr through the use of turbo-charging, enhanced inter-cooling and 4˚ timing retard. This emission factor equates to 337 lb/1000 gallons.

  EF_{NOx} = (8.4 g/bhp-hr) / (0.055 gal/bhp-hr) / (453.6 g/lb) X (1,000)

  M/V Santa Cruz main engines achieve a controlled NO_x emission rate of 5.99 g/bhp-hr through the use of turbo-charging, enhanced inter-cooling and 4˚ timing retard. This emission factor equates to 270 lb/gal.

  EF_{NOx} = (5.99 g/bhp-hr) / (0.055 gal/bhp-hr) / (453.6 g/lb) X (1,000)

- Operation of the *M/V Challenger* represents the worst case daily and annual emissions scenario for CO as the dedicated supply boat. The CO emission factor (185.39 lb/1000 gal) CO is based on EPA

Marine Tier 3 factors for Category 1 vessels. A 1.25 Not-To-Exceed multiplier is applied to h ensure the worst case emissions are representative across all operating loads.

Spot charter supply boat usage limited to 10 percent of actual annual controlled supply boat usage.

- Spot charter and Emergency Response vessels are uncontrolled for NO_x.

- Uncontrolled NO_x emission factor for main engines based on NO_x emission rate of 14 g/bhp-hr. This emission factor equates to 561 lb/1000 gallons:

  EF_{NOx} = (14 g/bhp-hr) / (0.055 gal/bhp-hr) / (453.6 g/lb) X (1,000)

- Uncontrolled ROC and CO emission factors for the main engines are based on USEPA AP-42, Volume II, Table II-3.3 (1/75) {cruise factor, 2500 bhp engine}.

- PM emission factor for the main engines are based on *Kelly, et. al.* (1981).

- PM_{10}:PM ratio = 0.96; $PM_{2.5}$:PM_{10} ratio = 1.0; ROC:TOC ratio = 1.0

- Sulfur content basis of 0.0015 wt %

- All SO_x emissions based on mass balance:

  SO_x (as SO_2) = (%S) X (ρ_{oil}) X (20,000) / (HHV)

- Auxiliary and bow thruster engine emission factors (uncontrolled) are based on USEPA AP-42, Table 3.3-1 (7/93). Table emission factors converted to fuel basis using:

  $EF_{lb/1000\ gal}$ = ($EF_{lb/MMBtu}$) X (19,300 Btu/lb) X (7.05 lb/gal) / (1,000)

- Spot charter engine set-up assumed to be equal to main supply boat.

- Emergency response vessel is permanently assigned to Torch Platform Irene and PXP Platforms Hermosa, Hidalgo and Harvest. Vessel data provided by applicants. Short-term emissions from this vessel are not assessed. Long-term emissions are assessed equally amongst the four affected platforms.

- Emergency response vessel emissions calculated as an aggregate (main and auxiliary engines) using the uncontrolled supply boat emission factors. Total vessel bhp assumed to be 4,400 bhp. The long term hours of operating are back-calculated based on the fuel usage allocation for this platform of 20,000 gallons per year (80,000 gal/yr basis).

  T_{yr} = {(20,000 gal/yr)/(0.055 gal/bhp-hr X 4,400 bhp X 0.65)} = 127 hr/yr

- Main and auxiliary engine operational limits: General Equation

  Q = (BSFC) X (bhp) X (hours/time period) X (load factor)

  <u>Main engines:</u>

  Q = (0.055 gal/bhp-hr) X (5,000 bhp) X (11 hours/day) X (0.65)

= 1,967 gallons per day

Q =(0.055 gal/bhp-hr) X (5,000 bhp) X (505 hours/qtr) X (0.65)
= 90,269 gallons per quarter

Q =(0.055 gal/bhp-hr) X (5,000 bhp) X (2,021 hours/yr) X (0.65)
= 361,254 gallons per year

Note: The quarterly and annual main engine hours include hours spent in controlled and uncontrolled operation.

Auxiliary engines – Generators:

Q = (0.055 gal/bhp-hr) X (600 bhp) X (11 hours/day) X (0.50)
= 182 gallons per day

Q =(0.055 gal/bhp-hr) X (600 bhp) X (459 hours/qtr) X (0.50)
= 7,574 gallons per quarter

Q =(0.055 gal/bhp-hr) X (600 bhp) X (1,837 hours/yr) X (0.50)
= 30,311 gallons per year

Auxiliary engines - Bow Thruster:

Q = (0.055 gal/bhp-hr) X (515 bhp) X (2 hours/day)
= 57 gallons per day

Q = (0.055 gal/bhp-hr) X (515 bhp) X (78 hours/qtr)
= 2,209 gallons per quarter

Q = (0.055 gal/bhp-hr) X (515 bhp) X (312 hours/yr)
= 8.837 gallons per year

Auxiliary engines – Emergency Generator[1]:

Q = (0.055 gal/bhp-hr) X (115 bhp) X (2 hours/day)
= 13 gallons per day

Q = (0.055 gal/bhp-hr) X (115 bhp) X (78 hours/qtr)
= 493 gallons per quarter

Q = (0.055 gal/bhp-hr) X (115 bhp) X (312 hours/yr)
= 1,973 gallons per year

[1] The emergency generator engine is a Tier III engine (4.5 g/bhp-hr/179 lb/1,000 gal) as reflected in Table 5.1-1.

Note: The increase in allowable fuel use for the auxiliary and bow thruster engines is a result of the increased bhp of these engines on the supply boat *M/V Adel Elise.* However, these engines are Tier II engines (5.99 g/bhp-hr/270 lb/1,000 gal) as compared to the auxiliary and bow thruster engines on the former supply boat vessels which were Tier 0 engines

14.0 g/bhp-hr (557 lb/1,000 gal). Thus, the total permitted emissions from these auxiliary and bow thruster engines on the *M/V Adel Elise* are less than the total emissions associated with the auxiliary and bow thruster engines on the former vessels (even though the bhp of each ICE is greater), thus, these ICEs meet the requirement of permit condition 9.C.5(b)(viii) of this permit. Based on this and the remaining two requirements of condition 9.C.5(b)(viii), the *M/V Adel Elise* was approved as a replacement of the former supply boat without the need for a permit as required by permit condition 9.C.5(b)(viii). These revised fuel use values, as well as, the reduced values associated with the main engines (based on smaller main engines in the *M/V Adel Elise)* and associated supply boat emissions are reflected here, in permit condition 9.C.5 and in Tables 5.0 - 5.5.

Reference C - Solvents

- All solvents not used to thin surface coatings are included in this equipment category
- Daily, quarterly and annual emission rates per the application
- Hourly emissions based on daily value divided by an average 8-hour day. Compliance with hourly data to be based on daily actual usage divided by 8.

Reference D - Greenhouse Gases

Combustion Sources:
GHG emissions from combustion sources are calculated using emission factors found in Tables C-1 and C-2 of 40 CFR Part 98 and global warming potentials found in Table A-1 of 40 CFR Part 98. CO2 equivalent emission factors are calculated for CO2, CH4, and N2O individually, then summed to calculate a total CO2e emission factor. Annual CO2e emission totals are presented in short tons.

For IC engines, the emission factor in lb/MMBtu heat input is converted to g/bhp-hr output based on a standard brake-specific fuel consumption.

For diesel fuel combustion the emission factor is:
(73.96 kg CO2/MMbtu) (2.2046 lb/kg) = 163.05 lb CO2/MMBtu
(0.003 kg CH4/MMBtu) (2.2046 lb/kg)(25 lb CO2e/lb CH4) = 0.165 lb CO2e/MMBtu
(0.0006 kg N2O/MMBtu) (2.2046 lb/kg)(298 lb CO2e/lb N2O) = 0.394 lb CO2e/MMBtu
Total CO2e/MMBtu = 163.05 + 0.139 + 0.410 = 163.61 lb CO2e/MMBtu

Converted to g/hp-hr:
(163.60 lb/MMBtu)(453.6 g/lb)(7500 Btu/hp-hr)/1,000,000 = 556.60 g/hp-hr as CO2

ATTACHMENT 10.2 IDS DATABASE EMISSION TABLES

Table 10.2-1
Permitted Potential to Emit (PPTE)

	NO_X	ROC	CO	SO_X	PM	$PM_{2.5/10}$
PTO 9103 – Pt-70 Permit to Operate						
lb/day	1,821.04	165.59	409.31	0.80	142.95	137.23
tons/year	101.22	10.25	43.49	0.06	9.98	9.59

Table 10.2-2
Facility Potential to Emit (FPTE)

	NO_X	ROC	CO	SO_X	PM	$PM_{2.5/10}$
PTO 9103 – Pt-70 Permit to Operate						
lb/day	1,821.04	165.59	409.31	0.80	142.95	137.23
tons/year	101.22	10.25	43.49	0.06	9.98	9.59

Table 10.2-3
Stationary Source Potential to Emit (SSPTE)

	NO_X	ROC	CO	SO_X	PM	$PM_{2.5/10}$
Pt. Arguello Project Stationary Source						
lb/day	5,099.48	479.74	1,09438	2.16	382.75	367.60
tons/year	314.53	51.29	109.08	0.18	30.64	29.45

ATTACHMENT 10.3 EQUIPMENT LIST

Santa Barbara County Air Pollution Control District – Equipment List

PT-70/Reeval 09103 R6 / FID: 08013 Platform Harvest / SSID: 01325

A PERMITTED EQUIPMENT

1 Stationary Internal Combustion Engines

1.1 IC Engine: Crane (800A)

Device ID #	**005000**	***Device Name***	**IC Engine: Crane (800A)**
Rated Heat Input		*Physical Size*	475.00 Brake Horsepower
Manufacturer	Caterpillar	*Operator ID*	HA-330-P-101A
Model	3408 B	*Serial Number*	CR-800A
Location Note	P-101A, Mod 333, +124		
Device Description	This crane engine's rated bhp is at 2100 rpm.		

1.2 IC Engine: Crane (800B)

Device ID #	**005001**	***Device Name***	**IC Engine: Crane (800B)**
Rated Heat Input	3.710 MMBtu/Hour	*Physical Size*	475.00 Brake Horsepower
Manufacturer	Caterpillar	*Operator ID*	HA-330-P-101A
Model	3408 B	*Serial Number*	CR-800B
Location Note	P-101A, Mod 333, +124		
Device Description	Engine's rated bhp is at 2100 rpm.		

1.3 IC Engine: Crane (CR801)

Device ID #	**005002**	***Device Name***	**IC Engine: Crane (CR801)**
Rated Heat Input		*Physical Size*	270.00 Brake Horsepower
Manufacturer	Caterpillar	*Operator ID*	HA-330-P-101A
Model	3306 PCT	*Serial Number*	CR-801
Location Note	P-101A, Mod 333, +124		
Device Description	This crane engine's rated bhp is at 2200 rpm.		

2 Speciality Units and Packages

2.1 Oxidation Catalyst 1

Device ID #	**386447**	***Device Name***	**Oxidation Catalyst 1**
Rated Heat Input		*Physical Size*	
Manufacturer	Clean Emission Products Inc.	*Operator ID*	
Model	P/N IC-10-600	*Serial Number*	
Location Note			
Device Description	Reduces carbon monoxide emissions from crane engine, 8,000 to 12,000 engine hour estimated lifespan		

2.2 Oxidation Catalyst 2

Device ID #	**386448**	***Device Name***	**Oxidation Catalyst 2**
Rated Heat Input		*Physical Size*	
Manufacturer	Clean Emission Products Inc.	*Operator ID*	
Model	P/N IC-10-600	*Serial Number*	
Location Note			
Device Description	Reduces carbon monoxide emissions from crane engine, 8,000 to 12,000 engine hour estimated lifespan		

3 Supply Boat (basis: M/V Adel Elise)

3.1 Emergency Response Boat Engines (basis: Clean Seas III)

Device ID #	**105057**	***Device Name***	**Emergency Response Boat Engines (basis: Clean Seas III)**
Rated Heat Input		*Physical Size*	4400.00 Brake Horsepower
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	A permanently assigned emergency response boat (i.e., the Clean Seas III) is associated with Platform Harvest. The engines on this vessel are uncontrolled. The approximate total engine horsepower, including auxiliary engines, is 4,400 bhp. Emissions liability is assigned in a prorated fashion among the four OCS platforms that utilize the vessel off the Santa Barbara coast. Emission factors, calculations and compliance procedures are the same as for the spot-charter supply vessels.		

3.2 Marine Survival Craft

Device ID #	**102770**	***Device Name***	**Marine Survival Craft**
Rated Heat Input		*Physical Size*	62.00 Brake Horsepower
Manufacturer	Perkins	*Operator ID*	
Model	4-154	*Serial Number*	
Location Note	Mod 334, +107		
Device Description	Less than 200 operating hours per quarter and per year. No emissions controls.		

3.3 Spot Charter Boat Engines

Device ID #	**105056**	***Device Name***	**Spot Charter Boat Engines**
Rated Heat Input		*Physical Size*	5000.00 Brake Horsepower
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Spot-charter vessels are normally uncontrolled for NOx. Spot-charter usage is limited to a maximum of 10-percent of the total support vessel usage in any one year (i.e., allowable usage is based on actual trips).		

4 Maintenance Activities

4.1 Maintenance Supply

Device ID #	**102917**	***Device Name***	**Maintenance Supply**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	Platform Harvest		
Device Description	Coating/solvent brand name Ameron T-5 Thinner Application Paint thinner Annual usage (gal per year) 120 Regulatory VOC content (g/l) ROC emission factor (lb/gal) 7.0 Emission controls used? Yes Emission controls description Overspary tarps		

4.2 Maintenance Supply

Device ID #	**102918**	***Device Name***	**Maintenance Supply**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	Platform Harvest		
Device Description	MEK cleaning solvent. Usage 150 gal/year. ROC emission factor 6.7 lb/gal; emission controls used.		

4.3 Maintenance Supply

Device ID #	**102919**	***Device Name***	**Maintenance Supply**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	Platform Harvest		
Device Description	Coating/solvent brand name 140 HT Thinner Application Cleaning solvent Annual usage (gal per year) 60 Regulatory VOC content (g/l) ROC emission factor (lb/gal)6.7 Emission controls used? Yes Emission controls description Tank lid kept closed		

5 Helicopters

Device ID #	**005573**	***Device Name***	**Helicopters**
Rated Heat Input		*Physical Size*	Tons of Solvent In Coating
Manufacturer	Sykorski Helicopter	*Operator ID*	
Model	SK-76	*Serial Number*	
Location Note	SMA to Platforms		
Device Description	See permit for trip details.		

B EXEMPT EQUIPMENT

1 Emergency Response Boat Engines SMALL

Device ID #	**102772**	***Device Name***	**Emergency Response Boat Engines SMALL**
Rated Heat Input		*Physical Size*	300.00 Brake Horsepower
Manufacturer	Johnson	*Operator ID*	
Model	OMC	*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.F.1.b. Engines Propelling Marine Vessels	
Location Note	Mod 332, +60		
Device Description	Two gasoline powered outboard engines of 150 hp each.		

2 Diesel Storage Tank

Device ID #	**102773**	***Device Name***	**Diesel Storage Tank**
Rated Heat Input		*Physical Size*	10400.00 Gallons
Manufacturer	Hyundai Heavy Ind. Co.	*Operator ID*	HA-330-F-113
Model		*Serial Number*	336-T-600
Part 70 Insig?	No	*District Rule Exemption:* 202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api	
Location Note	P-102A, Mod 336, +87		
Device Description	Vertical tank 6 feet diameter, shell height 50 feet, roof height 50 feet, average liquid height 22 feet.		

3 Diesel Storage Tank

Device ID #	**102774**	***Device Name***	**Diesel Storage Tank**
Rated Heat Input		*Physical Size*	10400.00 Gallons
Manufacturer	Hyundai Heavy Ind. Co.	*Operator ID*	HA-330-F-113
Model		*Serial Number*	336-T-602
Part 70 Insig?	No	*District Rule Exemption:* 202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api	
Location Note	P-102A, Mod 333 +87		
Device Description	Vertical tank 6 feet diameter, shell height 50 feet, roof height 50 feet, average liquid height 22 feet.		

4 Diesel Storage Tank

Device ID #	**102775**	***Device Name***	**Diesel Storage Tank**
Rated Heat Input		*Physical Size*	5625.00 Gallons
Manufacturer	Hyundai Heavy Ind. Co.	*Operator ID*	HA-330-F-112
Model		*Serial Number*	336-T-601
Part 70 Insig?	No	*District Rule Exemption:*	202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api
Location Note	P-102A, Mod 333 +87		
Device Description	Vertical tank 4.5 feet diameter, shell height 50 feet, roof height 50 feet, average liquid height 22 feet.		

ATTACHMENT 10.4 HELICOPTER EMISSION TABLES

Point Arguello Project Helicopter Emissions Summary

Sykorski SK-76 Helicopters

Trip Segment	Climbout (min)	Approach (min)	Idle (min)	Cruise (min)	NOx (lbs/segment)	ROC (lbs/segment)	CO (lbs/segment)
SBA-Harvest	2	2	4	22	0.79	0.97	2.38
SBA-Hermosa	2	2	4	20	0.73	0.96	2.29
SBA-Hidalgo	2	2	4	25	0.88	0.97	2.51
SBA-Irene	2	2	4	25	0.88	0.97	2.51
Harvest-SBA	2	2	4	22	0.79	0.97	2.38
Hermosa-SBA	2	2	4	20	0.73	0.96	2.29
Hidalgo-SBA	2	2	4	25	0.88	0.97	2.51
Irene-SBA	2	2	4	25	0.88	0.97	2.51
SMA-Harvest	2	2	4	15	0.58	0.95	2.07
SMA-Hermosa	2	2	4	15	0.58	0.95	2.07
SMA-Hidalgo	2	2	4	15	0.58	0.95	2.07
SMA-Irene	2	2	4	10	0.43	0.95	1.86
Harvest-SMA	2	2	4	15	0.58	0.95	2.07
Hermosa-SMA	2	2	4	15	0.58	0.95	2.07
Hidalgo-SMA	2	2	4	15	0.58	0.95	2.07
Irene-SMA	2	2	4	10	0.43	0.95	1.86
Harvest-Harvest	2	2	4	0	0.13	0.93	1.42
Harvest-Hermosa	2	2	4	2	0.19	0.93	1.51
Harvest-Hidalgo	2	2	4	3	0.22	0.94	1.55
Harvest-Irene	2	2	4	5	0.28	0.94	1.64
Hermosa-Harvest	2	2	4	2	0.19	0.93	1.51
Hermosa-Hermosa	2	2	4	0	0.13	0.93	1.42
Hermosa-Hidalgo	2	2	4	3	0.22	0.94	1.55
Hermosa-Irene	2	2	4	5	0.28	0.94	1.64
Hidalgo-Harvest	2	2	4	3	0.22	0.94	1.55
Hidalgo-Hermosa	2	2	4	3	0.22	0.94	1.55
Hidalgo-Hidalgo	2	2	4	0	0.13	0.93	1.42
Hidalgo-Irene	2	2	4	5	0.28	0.94	1.64
Irene-Harvest	2	2	4	5	0.28	0.94	1.64
Irene-Hermosa	2	2	4	5	0.28	0.94	1.64
Irene-Hidalgo	2	2	4	5	0.28	0.94	1.64
Irene-Irene	2	2	4	5	0.28	0.94	1.64

Emission Factors

(lbs/hr)	Climbout	Approach	Idle	Cruise
NOx	2.60	1.00	0.10	1.80
THC	0.10	0.50	14.40	0.10
ROC (95% THC)	0.10	0.48	13.68	0.10
CO	2.10	5.40	17.60	2.60

ATTACHMENT 10.5 RESPONSE TO COMMENTS ON DRAFT PERMIT

1) The turbines at Platform Harvest have been permanently shut down. The equipment (#5015, 5015 and 5016) should be removed from permit. Condition 9C.2 should be deleted.

   District Response: This equipment has been removed from the permit.

2) The high- and low-pressure flares (ID 113462) are permanently out of service. Condition 9C.3 should be deleted.

   District Response: This equipment has been removed from the permit.

3) All of the fugitive hydrocarbons have been removed from the platform. Condition 9C.4 should be deleted.

   District Response: This permit condition has been removed from the permit.

4) The oil and gas pipelines are permanently out of service. The pigging equipment should be removed from permit. Condition 9C.6 should be deleted.

   District Response: This equipment and permit condition have been removed from the permit.

5) The tanks, sumps and separators (ID# 5394 and 5395) no longer process hydrocarbon fluids. Condition 9C.7 should be removed.

   District Response: This equipment and permit condition have been removed from the permit.

6) Since the turbine generators have been permanently shut down, the two emergency generators (ID5003 and 5004) should be removed from permit, as they cannot be operated as currently permitted. Condition 9C.10 should be revised as necessary to only apply to the remaining crane IC engines (#5000, 5001, and 5002).

   The emergency generators have been removed from the permit.

7) Platform Harvest no longer has the capacity to produce any oil or gas. Conditions 9C.12 and 9C.13 are no longer relevant and should be deleted.

   District Response: These permit conditions have been removed from the permit.

8) There are no process monitoring systems in use on the platform. Condition 9C.16 should be deleted.

   District Response: The crane engine hour meters remain on permit. No change made.

9) Condition 9C.17 should be revised removing references to source testing of the turbine generators as these can no longer operate.

   District Response: This change has been made.

10) In condition 9C.19, sections (b), (c), (d), and (f) should be deleted as there is no related operating equipment on the platform.

   District Response: These requirements were removed.

11) Condition 9C.24 can be deleted as the pipelines are permanently out of service.

District Response: This permit condition has been removed.

12) In Table 5.1-1, 5.1-2, 5.1-3, 5.1-4, 5.2, 5.3, 5.5-1, and 5.5-2 the Combustion LP & HP Flare equipment should be removed.

District Response: This equipment has been removed from these tables.

13) In Table 5.1-1, 5.1-2, 5.1-3, 5.1-4, 5.2, 5.3, 5.5-1, and 5.5-2 the Fugitive Components equipment should be removed.

District Response: This equipment has been removed from these tables.

14) In Table 5.1-1, 5.1-2, 5.1-3, 5.1-4, 5.2, 5.3, 5.5-1, and 5.5-2 the Pigging Equipment should be removed.

District Response: This equipment has been removed from these tables.

15) In Table 5.1-1, 5.1-2, 5.1-3, 5.1-4, 5.2, 5.3, 5.5-1, and 5.5-2 the Sumps/Tanks/Separators Equipment should be removed.

District Response: This equipment has been removed from these tables.

16) In Table 5.1-1, 5.1-2, 5.1-3, 5.1-4, 5.2, 5.3, 5.5-1, and 5.5-2 the Combustion Turbine equipment should be removed.

District Response: This equipment has been removed from these tables.