



**DRAFT**

**PERMIT to OPERATE No. 8234-R7  
and  
PART 70 *RENEWAL* OPERATING PERMIT No. 8234-R7**

**VENOCO – ELLWOOD  
PLATFORM HOLLY**

**PARCEL 3242-1  
SOUTH ELLWOOD OFFSHORE FIELD  
SANTA BARBARA COUNTY, CALIFORNIA  
STATE TIDELANDS**

**OPERATOR  
Venoco, Inc.**

**OWNERSHIP  
Venoco, Inc.**

**Santa Barbara County  
Air Pollution Control District**

**December, 2008**



# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
<b>1.0 INTRODUCTION .....</b>	<b>1</b>
1.1 PURPOSE .....	1
1.2 FACILITY OVERVIEW .....	1
1.3 EMISSION SOURCES .....	5
1.4 EMISSION CONTROL OVERVIEW .....	5
1.5 OFFSETS/EMISSION REDUCTION CREDIT OVERVIEW .....	5
1.6 PART 70 OPERATING PERMIT OVERVIEW .....	6
<b>2.0 PROCESS DESCRIPTION .....</b>	<b>8</b>
2.1 PROCESS SUMMARY .....	8
2.2 SUPPORT SYSTEMS .....	12
2.3 OIL & GAS PRODUCTION ACTIVITIES: DRILLING .....	12
2.4 MAINTENANCE/DEGREASING ACTIVITIES .....	13
2.5 PLANNED PROCESS TURNAROUNDS .....	13
2.6 OTHER PROCESSES .....	13
2.7 DETAILED PROCESS EQUIPMENT LISTING .....	13
<b>3.0 REGULATORY REVIEW .....</b>	<b>14</b>
3.1 RULE EXEMPTIONS CLAIMED .....	14
3.2 COMPLIANCE WITH APPLICABLE FEDERAL RULES AND REGULATIONS .....	15
3.3 COMPLIANCE WITH APPLICABLE STATE RULES AND REGULATIONS .....	16
3.4 COMPLIANCE WITH APPLICABLE LOCAL RULES AND REGULATIONS .....	16
3.5 COMPLIANCE HISTORY .....	21
<b>4.0 ENGINEERING ANALYSIS .....</b>	<b>27</b>
4.1 GENERAL .....	27
4.2 STATIONARY INTERNAL COMBUSTION ENGINES .....	27
4.3 FLARE SYSTEMS .....	29
4.4 FUGITIVE HYDROCARBON SOURCES .....	31
4.5 CREW AND SUPPLY VESSELS .....	32
4.6 TANKS/VESSELS/SUMPS/SEPARATORS .....	33
4.7 OTHER EMISSION SOURCES .....	33
4.8 VAPOR RECOVERY/CONTROL SYSTEMS .....	34
4.9 BACT/NSPS/NESHAP/MACT .....	34
4.10 CEMS/PROCESS MONITORING/CAM .....	34
4.11 SOURCE TESTING/SAMPLING .....	35
4.12 PART 70 ENGINEERING REVIEW: HAZARDOUS AIR POLLUTANT EMISSIONS .....	36
<b>5.0 EMISSIONS .....</b>	<b>37</b>
5.1 GENERAL .....	37
5.2 PERMITTED EMISSION LIMITS - EMISSION UNITS .....	37
5.3 PERMITTED EMISSION LIMITS - FACILITY TOTALS .....	38
5.4 PART 70: FEDERAL POTENTIAL TO EMIT FOR THE FACILITY .....	38
5.5 PART 70: HAZARDOUS AIR POLLUTANT EMISSIONS FOR THE FACILITY .....	39
5.6 EXEMPT EMISSION SOURCES/PART 70 INSIGNIFICANT EMISSIONS .....	39
5.7 NET EMISSIONS INCREASE CALCULATION .....	39
<b>6.0 AIR QUALITY IMPACT ANALYSES .....</b>	<b>45</b>

6.1	MODELING .....	45
6.2	INCREMENTS.....	45
6.3	MONITORING .....	45
6.4	HEALTH RISK ASSESSMENT .....	45
<b>7.0</b>	<b>CAP CONSISTENCY, OFFSET REQUIREMENTS AND ERCS .....</b>	<b>47</b>
7.1	GENERAL: .....	47
7.2	CLEAN AIR PLAN .....	47
7.3	OFFSET REQUIREMENTS.....	47
7.4	EMISSION REDUCTION CREDITS .....	47
<b>8.0</b>	<b>CONSISTENCY WITH LEAD AGENCY PERMIT .....</b>	<b>48</b>
<b>9.0</b>	<b>PERMIT CONDITIONS .....</b>	<b>49</b>
9.A	STANDARD ADMINISTRATIVE CONDITIONS .....	49
9.B	GENERIC CONDITIONS.....	53
9.C	EQUIPMENT SPECIFIC CONDITIONS.....	56
9.D	APCD-ONLY CONDITIONS .....	72
<b>10.0</b>	<b>ATTACHMENTS.....</b>	<b>1</b>
10.1	EMISSION CALCULATION DOCUMENTATION .....	3
10.2	NEI CALCULATIONS.....	10
10.3	FEE CALCULATIONS: .....	13
10.4	IDS DATABASE EMISSION TABLES .....	18
10.5	PERMITTED EQUIPMENT LIST.....	20
10.6	PERMIT-EXEMPT EQUIPMENT LIST .....	48
10.7	COMMENTS ON DRAFT PTO 8234-R6 AND APCD RESPONSES.....	58

**LIST OF FIGURES and TABLES**

<b><u>TABLE/ FIGURE</u></b>	<b><u>PAGE</u></b>
FIGURE 1.1 - LOCATION MAP FOR PLATFORM HOLLY.....	2
TABLE 3.1 - GENERIC FEDERALLY-ENFORCEABLE APCD RULES.....	22
TABLE 3.2 - UNIT-SPECIFIC FEDERALLY ENFORCEABLE APCD RULES .....	24
TABLE 3.3 - NON-FEDERALLY ENFORCEABLE APCD RULES.....	24
TABLE 3.4 - ADOPTION DATES OF APCD RULES APPLICABLE AT ISSUANCE OF PERMIT .....	25
TABLE 5.1-1 - OPERATING EQUIPMENT DESCRIPTION.....	40
TABLE 5.1-2 - EMISSION FACTORS.....	42
TABLE 5.1-3 – DAILY AND ANNUAL EMISSIONS .....	43
TABLE 5.2 - TOTAL PERMITTED FACILITY EMISSIONS .....	44
TABLE 6.1-1 - WORST CASE FLARING SCENARIO .....	45
<b>TABLE 9.1 - FLARE VOLUME LIMITS .....</b>	<b>58</b>
TABLE 9.2 - DATA ACQUISITION SYSTEM .....	68
TABLE 9.3 - FEES FOR DAS OPERATION .....	68
– INSPECTION AND MAINTENANCE LOG .....	60

## ABBREVIATIONS/ACRONYMS

APCO	Air Pollution Control Officer
AP-42	USEPA <i>Compilation of Emission Factors</i> document
API	American Petroleum Institute
AQAP	Air Quality Attainment Plan
ASTM	American Society for Testing and Materials
ATC	Authority to Construct
bbl	barrel (42 gallons per barrel)
BS&W	Basic water and sediment
bhp	brake horsepower
bpd	barrels per day
BSFC	brake-specific fuel consumption
Btu	British thermal unit
CAAA	Clean Air Act Amendments of 1990
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 <sub>2</sub>	carbon dioxide
COA	corresponding offshore area
EOF	Ellwood Onshore Facility
ERC	emission reduction credit
FHC	fugitive hydrocarbon
FR	Federal Register
gr	grain
g	gram
gal	gallon
HHV	higher heating value
H <sub>2</sub> S	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
MCC	motor control center
MM, mm	million
MSDS	Material Safety Data Sheet
MW	molecular weight
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NGL	natural gas liquids
NO <sub>x</sub>	oxides of nitrogen (calculated as NO <sub>2</sub> )
NSPS	New Source Performance Standards
PFD	process flow diagram
P&ID	piping and instrumentation diagram
ppmv	parts per million volume (concentration)

psia	pounds per square inch absolute
psig	pounds per square inch gauge
PM	particulate matter
PM <sub>10</sub>	particulate matter less than 10 mm in size
PSV	pressure safety valve
PTO	Permit to Operate
PRD	pressure relief device
PVRV	pressure vacuum relief valve
ROC	reactive organic compounds
SBCAPCD	Santa Barbara County Air Pollution Control District, District, or APCD
scf	standard cubic feet
scfd	standard cubic feet per day
scfm	standard cubic feet per minute
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SO <sub>x</sub>	sulfur oxides
TEG	triethylene glycol
TOC	total organic compounds
tpq	tons per quarter
tpy	tons per year
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 (APCD) 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 APCD enforceable regulations can be found in the APCD's Rules and Regulations. This combined permitting action covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 8234*) as well as the State Operating Permit (*Permit to Operate No. 8234*).

The County is designated as an ozone nonattainment area for both the state and federal ambient air quality standards. The County is also designated a nonattainment area for the state PM<sub>10</sub> ambient air quality standard.

Part 70 Permitting. This is the third renewal of Platform Holly's (Holly's) Part 70 operating permit and satisfies the permit issuance requirements of the APCD's Part 70 operating permit program. The APCD triennial permit reevaluation has been combined with this Part 70 Permit renewal. Holly is a part of the *Venoco – Ellwood* stationary source (SSID = 1063), which is a major source for VOC<sup>1</sup>, NO<sub>x</sub> and CO. Conditions listed in this permit are based on federal, state, or APCD-enforceable rules and requirements. Sections 9.A, 9.B, and 9.C of this permit are enforceable by the APCD, 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. Conditions listed in Section 9.D are "APCD-only" 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 two 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.

### 1.2 Facility Overview

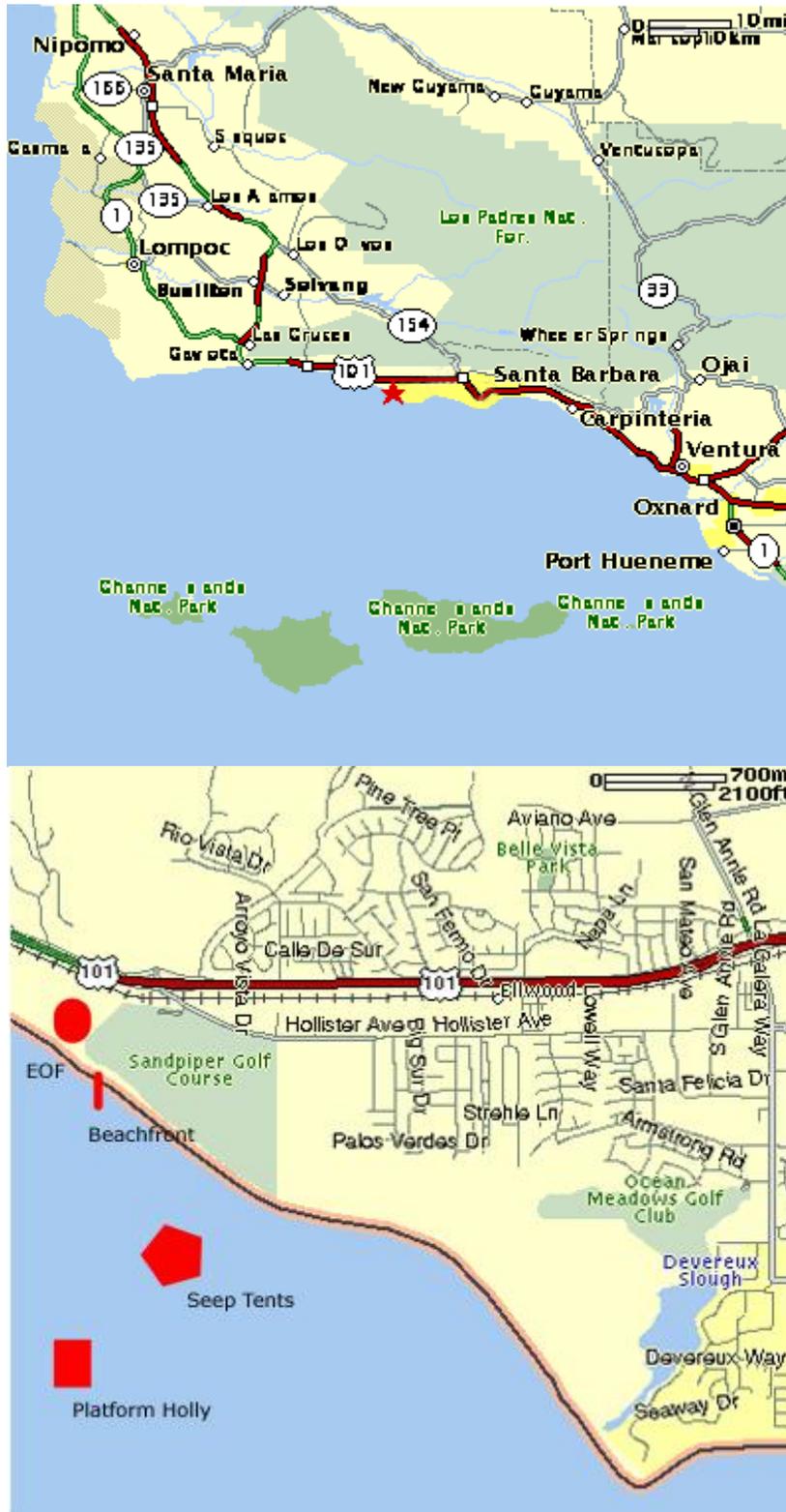
1.2.1 General: Venoco is the sole owner and operator of Holly, located on offshore lease tract 3242-1 (with wells located in PRC 3120 and 3242), approximately two miles southwest from the Coal Oil Point, California. Holly is situated in the Southern Zone<sup>2</sup> of Santa Barbara County. Figure 1.1 shows the relative location of Holly off the Santa Barbara County coast.

---

<sup>1</sup> 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.

<sup>2</sup> APCD Rule 102, Definition: "Southern Zone"  
FINAL Part 70/APCD Permit to Operate No. 8234-R6  
Santa Barbara County APCD

Figure 1.1 Location Map for Platform Holly



The platform consists of the following systems:

- Production wellhead and subsurface system
- Well cleanup system
- Test separation system
- Oil shipping, metering, and pipeline system
- Deck drain system
- Low-pressure compression system
- Gas compression system
- Gas shipping and metering system
- Electrical system
- Safety systems
- Vapor recovery system
- High-pressure and low-pressure flare systems
- Deck crane
- Drilling operations

1.2.2 Facility Operations Overview: Holly, a twelve-(12) leg, thirty-(30) well slot platform was installed in a water depth of 211 feet in 1966; drilling operations began in 1966. Oil and gas are produced from the wells on Platform Holly. The gas is separated from the oil/water emulsion, compressed, and sent via a 6-inch subsea pipeline to the Ellwood Onshore Facility (EOF) for further processing. Water is separated from the oil and injected into disposal wells located on Platform Holly. Remaining oil/water emulsion is pumped to the EOF via a 6-inch subsea pipeline for additional processing. The average gravity and RVP of the produced crude oil is 20.7° API (at 60 °F) and 2.2 psia, respectively. The platform has a design capacity of 20 million standard cubic feet gas per day and 20,000 barrels per day (bpd) of oil/water emulsion (wet crude oil). A crew boat makes periodic runs between Ellwood Pier and Holly for crew changes, and a supply boat brings supplies from Port Hueneme as needed.

All production equipment on Holly, except the pedestal crane and an emergency electrical generator, is powered by electricity via a Southern California Edison 16.5-kilovolt-subsea cable from shore. The platform operates 24 hours per day and 365 days per year.

The *Venoco – Ellwood* stationary source consists of the following 4 facilities:

- Platform Holly (FID= 3105)
- Ellwood Onshore Facility (FID= 0028)
- Beachfront Lease (FID= 3035)
- Seep Containment Device (FID= 1065)

1.2.3 New Source Review Permitting. This permit consolidates a number of outstanding NSR permit applications as part of this combined triennial Reevaluation and Part 70 Renewal process.

Holly operates under a combined Federal Part 70 Operating Permit No. 8234 and APCD Permit to Operate 8234, both issued by the Santa Barbara APCD. The APCD issued a permit (PTO 5097) to the facility for the first time in December 1982, based on a PTO application from the permittee

(ARCO). This PTO number was changed to 8234 during its 1989 triennial re-evaluation. There were no NSR permit actions prior to 1998.

Since the issuance of the initial Part 70 Operating Permit on September 25, 1998, the following permit actions have been taken:

*ATC 10106:* Replacement of existing single VRU compressor with two new smaller capacity VRU compressors. Not a routine, equivalent replacement, therefore subject to NSR. This permit was issued on 8/20/99.

*ATC/PTO 10106-01.* Amends ATC 10106 to include the relocation of a heat exchanger to the Glycol Overhead Cooler. This PTO/Part 70 permit incorporates the provisions of PTO 10106-01.

*ATC/PTO 10106-02.* Updates the fugitive component counts for the project. The final component count and associated air emissions are lower than originally permitted under ATC 10106. This PTO/Part 70 permit incorporates the provisions of PTO 10106-02.

*ATC 10134:* Temporary open-pipe flare permit. Flare was only allowed to operate for sixty days after it begins operations under its SCDP. This permit was issued on 5/20/99. This ATC was modified/superseded by ATC 10128 (see below).

*ATC Mod 10134-1:* Operating extension for Temporary open-pipe flare permit to September 30, 1999. This permit was issued on 7/19/99. This ATC was modified/superseded by ATC 10128 (see below).

*ATC 10128:* Installation of a permanent Kaldair-type high-pressure flare. The ATC was issued on 9/1/99.

*ATC Mod 10128-1/PTO 10128:* Addition of a low-pressure flare tip to the Holly permanent flare system to handle Glycol system releases. The ATC was issued on 1/13/00. A draft APCD permit to operate was issued on 06/01/2001. Subsequently, the draft PTO was rolled into Part 70/APCD PTO 8234-R5 on 11/08/2002.

*ATC/PTO 10786:* It increased the number of pigging launching operations per quarter and year. It also included emissions controls consisting of purging pig launchers with nitrogen or in-plant fuel gas to the vapor recovery system prior to opening. The application was deemed complete in February, 2002 and a draft ATC/PTO was issued in March, 2002; subsequently, the draft ATC/PTO was rolled into Part 70/APCD PTO 8234-R5 on 11/08/2002.

*ATC/PTO 11981:* Increased the Crew Boat main engine size limit from 1020 hp to 1605 hp. This permit was issued 8/7/2006.

*ATC 12804:* Authorized the replacement of the existing crane on the platform with a new, larger crane, to comply with the State ATCM for stationary compression engines. ATC 12804 was issued 8/11/2008. As of November, 2008 Venoco has installed the new crane engine, but has not conducted the required source testing or applied for a PTO. This PTO reeval 8234-R6 will be issued without incorporating the requirements of ATC 12804. After source testing the crane engine

Venoco will have to apply for a PTO and modify this Part 70 permit to incorporate the applicable requirements.

### **1.3 Emission Sources**

Air pollution emissions from Holly are the result of combustion sources, storage tanks, and piping components (e.g., valves and flanges). Section 4 of the permit provides the APCD's engineering analysis of these emission sources. Section 5 describes the allowable emissions from each permitted emissions unit, and lists the estimated emissions from non-permitted emission units.

Specifically, the emission sources include:

- Diesel-fired IC engines (pedestal crane, emergency electrical generator, engines associated with drilling operations)
- Combustion of produced gases in the high-pressure and low-pressure flare systems.
- Fugitive hydrocarbon emissions from valves, flanges, connections, and seals that release fugitive hydrocarbons into the atmosphere.
- Supply boats used for transport of equipment, fuel, and supplies to and from the platform.
- Crew boats used for transport of personnel and cargo to and from the platform.
- Oil and gas pig launchers.
- Wastewater tanks.
- Solvent and coating usage.
- Natural gas-fired generators supporting drilling operations.

Two emergency firewater pumps also service Holly. These pumps are driven by electric motors. A list of all permitted equipment is provided in Section 10.5.

### **1.4 Emission Control Overview**

Air quality emission controls are used on Holly for a number of emission units to reduce air pollution emissions. Additionally, the use of onshore utility grid power allows Holly to operate without engine-powered generators or compressors except for the IC engines powering the drilling rig. The emission controls employed on the platform include:

- A Fugitive Hydrocarbon Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from piping components, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 percent.
- Use of a vapor recovery and flare relief system to capture hydrocarbon gases from tanks, vessels and the glycol system. The flare system is comprised of a main high-pressure flare and a smaller low-pressure flare.
- Non-selective catalytic reduction systems on the gas-fired drilling generators.

### **1.5 Offsets/Emission Reduction Credit Overview**

Offsets: Holly does not require emission offsets.

Emission Reduction Credits: Holly does not generate emission reduction credits.

## 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 APCD Rules, all conditions in the APCD-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. 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 APCD Rule 1301 as any regulated air pollutant emitted from the unit, excluding Hazardous Air Pollutants (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. (*See Attachment 10.7*)
- 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 1.166 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 APCD. Permit shields cannot be granted indiscriminately with respect to all federal requirements. Venoco 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. Venoco made no request for permitted 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 semi-annually on or before March 1<sup>st</sup> and September 1<sup>st</sup>, as 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.
- 1.6.8. MACT/Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources through the imposition of 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 Sections 3.2.4, 4.9 and 5.5*).

1.6.9 Responsible Official: The designated responsible official and their mailing address are:

Ed O'Donnell, Senior Vice President  
Venoco, Inc.  
6267 Carpinteria Avenue, Suite 100  
Carpinteria, CA 93013-1423

## 2.0 Process Description

### 2.1 Process Summary

Holly produces oil and gas from leases PRC 3120 and 3242 located in state waters. The equipment consists of oil and gas wells, oil and gas separators, a gas dehydration unit, gas compressors, deck drain system, water treating equipment, oil shipping pumps, water injection pumps, a well cleaning and test system, and a flare relief system. The crude oil and natural gas produced are sour and have significant concentrations of hydrogen sulfide (H<sub>2</sub>S) and mercaptans.

Initial oil emulsion and gas separation takes place on the platform. The gas is separated from the oil/water emulsion, is compressed and sent via a 6-inch subsea pipeline to the Ellwood Onshore Facility (EOF) for further processing. Water is separated from the oil and injected into disposal wells located on Platform Holly. Remaining oil/water emulsion is pumped to the EOF via a 6-inch subsea pipeline for additional processing. The treated deck drain system water is mixed with the crude oil before being pumped to EOF.

- 2.1.1 Production: Holly has thirty (30) well slots located in one well room. A total of 30 wells were drilled, starting from 1966, into three production zones; the Rincon and Sespe zones that produce sweet gas and the Monterey zone that produces sour gas. Twenty-three (23) wells are currently producing, two are used for re-injecting gas, three are used for disposing of water, one is used for disposing of drill cuttings, and one well is abandoned. All but four are free-flow wells; four wells are lifted with variable speed drive (VSD) pumps. Although the wells are free-flow, gas is re-injected to assist in well production. Holly has a design production rate of 20,000 bpd of oil emulsion and 20 MMSCFD of gas.

Production flow lines from each wellhead tie into one of four separate piping manifolds or headers. The four manifolds are:

- Lease PRC 3242 production header
- Lease PRC 3242 test header
- Lease PRC 3120 production header
- Lease PRC 3120 test header

*Oil Production* — Gross well production from the leases is directed through two flow lines to Group Separators V-107 and V-108. The Group Separators operate at about 65 – 90 psig. The oil and water are separated in V-107 and V-108. The water phase is directed to Water Surge Drum V-110 and injected into disposal wells. The oil phase is directed to Surge Vessel V-109 and is pumped by shipping pump P-200 to Venoco's Ellwood Onshore Facility via a six-inch subsea pipeline. A flow meter at the pipeline inlet measures and totalizes the emulsion shipped from Holly.

The operator uses Test Separator V-106 to flow test the individual production wells. For the flow test, the well is switched from the production header to the test header. Only one well is tested at a time in each test separator. Emulsion from the test separators is commingled with oil emulsion from the group separators after metering.

*Gas Production* — Gas separated in the production and test separator is compressed by the single stage Ingersoll-Rand (IR) compressor to about 220 psig. It is then dehydrated in the Glycol dehydration unit. Part of the dehydrated gas stream is further compressed in the three-stage White Superior (WS) compressor to about 1100 psig and injected into the wells for gas lift and/or gas injection. The remainder is piped to Venoco's Ellwood Onshore Facility through a six-inch line for further processing. An orifice meter at the gas pipeline inlet records the gas flow rate from Holly.

Well casing gas and natural gas off crude oil surge vessel V-109 is compressed by one of two 50-bhp vapor compressors (C-100A or C-100B) to about 70 – 90 psig. The vapor compressor discharge is commingled with gas from the production and test separator. Both of the compressors are electrically driven.

- 2.1.2 Gas, Oil, and Water Separation: Fluid from the production wells is a mixture of oil, gas, and water. Separation of the liquid and gas streams is accomplished in gross oil group separators No. 3120 and No. 3242 (V-107 and V-108). These separators are horizontal, three-phase separators 6.5 feet in diameter by 20 feet long (seam-to-seam). Wells are produced directly into these separators and the normal production from all the wells on Holly is handled by these separators. These separators are usually in simultaneous operation, thereby maximizing the liquid retention time and providing optimum liquid and gas separation.

The gross oil group separators operate at 60-90 psig and 100°F. The gas section (top half) of the separator is designed to sufficiently reduce the velocity of the gas to cause any liquid to drop out. These separators also have a mist extractor to promote removal of liquid droplets from the gas stream. The operating pressure of the separators is automatically controlled by a pressure control valve in the gas outlet line. Gases from these separators flow into a common header leading to the main gas scrubber (V-113) of the I.R. main gas compressor. Oil emulsion removed in the scrubber flows to the surge vessel. There is no backup compressor for the I.R. main gas compressor.

The liquid section (bottom half) of the gross oil group separators is designed with sufficient retention time to allow most of the free water to collect in the inlet section of the vessel. The separator liquid levels are controlled by level control valves. The oil emulsion discharged from these separators flows to the surge vessel. The free water is sent to V-110 and then injected back into the Monterey formation in one of the disposal wells.

- 2.1.3 Waste Water and Process Waste Tanks: The Drain Sump Tank (T-1) collects storm water wash down from platform drains, as well as runoff from deluge/fire suppression testing. Water is pumped from the drain sump tank to V-110 and injected into one of the disposal wells. In the event of rain volumes in excess of what is being pumped off the bottom of the drain sump tank, it will overflow to the Overflow Sump Tank (T-4). Water that overflows to T-4 is then pumped back to V-110. Tank T-4 is equipped with an overflow pipe open at the bottom to the ocean.

Oil Sump Tank: Oil Sump Tank (T-5) is an open top tank that collects liquids from four sources at a rate of about 3 gallons per day. Tank T-5 contents were sampled in June 2002 and the TVP was found to trigger APCD Rule 325 controls applicability. To meet compliance with Rule 325, Venoco has taken T-5 out of service. This tank cannot be back in service without first obtaining an ATC to install controls (see Condition 9.C.5 later). Venoco also operates a lube oil tank (T-101) that is permit-exempt, based on special conditions attached (see Condition 9.C.16 later).

- 2.1.5 Well Testing and Maintenance: To measure the oil, gas, and water flow rates from a well, the well is produced into Test Separator (V-106), by closing the well flow line valve to the gross oil header and opening the well flow line valve to the test header. This Test Separator is a horizontal, two-phase separator 4 feet in diameter by 15 feet in length (seam-to-seam), with a capacity of 10,000 bpd dry oil and 10 MMscfd of natural gas. This separator capacity is smaller than the gross oil group separators since only one well is tested at a time. The Test Separator has a mist extractor to promote removal of liquid droplets from the gas stream. The separator has a pressure control valve to maintain the operating pressure at 60-70 psig. Gas separated in the separator is measured by an orifice meter in the outlet line and is commingled with the gas from the gross oil group separators.

The liquid from V-106 test separator is measured by a flow meter. This meter measures the total liquid flow of the combined oil and water stream. The water cut is determined by collection and analysis of samples. The oil and water from V-106 test separator is combined with the gross oil production ahead of the oil group separators.

- 2.1.6 Emulsion Breaking and Crude Oil Storage: There are no emulsion breaking or crude oil storage facilities on Holly. The produced oil/water emulsion is shipped to the Ellwood Onshore Facility for final processing.
- 2.1.7 Emulsion Shipping: Oil shipping surge vessel V-109 receives oil from the group separators and waste oil pumps. This surge vessel is a horizontal pressure vessel 6-feet 6-inch in diameter by 20 feet in length (seam-to-seam) operating at 3 to 5 psig. This vessel provides surge capacity to stabilize the flow of oil and prevent upsets in the downstream processing equipment. The system uses a shipping pump to transfer oil from surge vessel V-109. The oil shipping pump discharges into the 6-inch diameter subsea pipeline to the Ellwood Onshore Facility. A flow meter measures oil flow rate to the pipeline.
- 2.1.8 Gas Compression, Dehydration, and Disposition: Natural gas collected by the vapor recovery system and the annulus trap is compressed and mixed with gas from Test Separator V-106, and group separators before gas dehydration. A portion of the gas is shipped onshore and the rest is further compressed in the White Superior (WS) compressor and injected for gas lift and/or gas injection.

Vapor recovery unit (VRU) gas is commingled with the main gas production to the IR suction scrubber (V-113). The discharged gases from the IR and the WS compressors are cooled by fan coolers. Liquids condensed in these heat exchangers are removed in the gas scrubbers.

From final gas scrubber V-114, wet gas flows to the glycol dehydration unit, which is used to lower the water content of the gas. The dehydration unit consists of a glycol contactor, filters, exchangers, a dehydrator, a surge vessel, and pumps. Contactor V-115 is a trayed tower pressure vessel 5 feet 6 inches in diameter by 20.0 feet high (seam-to-seam) with a capacity of 40 MMscfd. Pressure in the contactor is maintained at 220 – 275 psig by a pressure control valve in the gas outlet line. Inside the contactor, the wet gas flows in contact with triethylene glycol (TEG), which absorbs water from the natural gas. The rich (wet) TEG from the contactor is regenerated in the dehydrator after passing through two filters to remove impurities picked up from the natural gas.

The dehydrator operates at atmospheric pressure and 395°F; it uses twelve, 40 kW (each) electric

immersion heaters to heat the TEG and boil off the entrained water and hydrocarbons. The vapor is vented to the vapor recovery system. The lean (regenerated) TEG from the dehydrator is cooled in the glycol exchangers, improving water absorption in the contactor and preheating the rich TEG going to the dehydrator. From the exchangers, the lean TEG flows into 5 foot diameter by 15 foot long storage tank V-122 that provides surge capacity to allow the lean TEG to be pumped back to the contactor. Two glycol pumps (P-106 A/B) move the glycol from storage tank V-122 to absorber V-115.

The dehydrated gas from contactor V-115 passes through after-scrubber V-116. Part of the gas from the after-scrubber is used for gas lift and/or gas injection and the rest flows directly to the six-inch diameter subsea pipeline to the Ellwood Onshore Facility. A flow meter is on the pipeline inlet records the gas flow rate from Holly.

- 2.1.9 Gas Sweetening and Sulfur Recovery: The gas produced from the Monterey Formation is sour. There are no gas sweetening or sulfur recovery devices on Holly.
- 2.1.10 Vapor Recovery System: Low-pressure gas from crude oil shipping surge vessel V-109 and annulus separator V-101 is compressed by one of two vapor recovery system compressors (C-100A or C-100B). The vapor recovery compressor compresses the gas to about 65 – 90 psig and discharges to the IR main gas scrubber where the gas is commingled with the gas from the gross oil and test separator.
- 2.1.11 Fuel Gas System: Holly receives EOF's in-plant fuel gas through the 4-inch utility pipeline from the Ellwood Onshore Facility that supplies fuel to the flare systems (H-100 and H-101) and the drill rig generator engines. Diesel #2 fuel, which contains less than 0.0015 percent sulfur by weight, is used by the pedestal crane and other diesel-fired equipment. Holly has one 1500-gallon capacity diesel storage tank (T-111) located in the crane pedestal.
- 2.1.12 Gas Relief Flare System: The permanent flare on Holly incinerates the sour gases released during process upsets, and other "unplanned" operating conditions (as defined under Rule 359). Such incineration will safely convert the H<sub>2</sub>S and ROC content of these gases to less objectionable SO<sub>2</sub>, and other combustion products.

Venoco's Platform Holly utilizes a glycol dehydration skid designed to lower the dew point of produced gas before it is re-injected or shipped to EOF via undersea pipeline. The glycol skid includes four low-pressure vessels (V-122, V-124, V-125, and V-126) that are protected by PSV-131 and 132 set to relieve at glycol pressures at 10 psig. Venoco routes these PSVs to the low-pressure flare tip.

*Planned Flaring Scenarios*: Venoco claims no planned flaring activities for Holly other than pilot and purge for the flares. All gases generated during planned activities are routed to the EOF.

*Unplanned Flaring Scenarios*: Unplanned flaring events on the platform most commonly originate from platform safety trips and compressor safety trips that cause equipment shutdowns.

## **2.2 Support Systems**

2.2.1 Piping Assemblies and Pipelines: The piping on Holly is designed, tested, and installed in general accordance with API 14C and 14E.

Four pipelines are associated with the platform: a 6-inch oil line, a 6-inch gas line, a 4-inch utility line, and a 2-inch fresh water line to the Ellwood Onshore Facility.

2.2.2 Power Generation: Southern California Edison provides electrical power for Holly from shore through a 16.5 kV subsea cable. The platform has a 250 kW diesel stand-by generator, which is used in the event of a power outage from Southern California Edison. During such a power failure, the Motor Control Center (MCC) on Holly supplies standby power from the diesel generator to critical equipment. A 24-volt battery backup system is provided for the essential platform controls.

2.2.3 Diesel-Powered Crane: Holly was equipped with a crane powered by a 92 bhp diesel-fired IC engine. As of November 1, 2008, the old crane was removed and replaced with a new crane powered by a 250 bhp diesel-fired IC engine. The new crane is operating under ATC 12804, but it has not yet been source tested to verify compliance with the conditions of ATC 12804. The crane is used to transfer supplies from supply boats to Holly.

2.2.4 Crew Boats: Venoco uses one crew boat for crew and light supply transport in support of Holly. The crew boat makes up to 6 round trips per day and 728 round trips per year to the platform from the Ellwood Pier in Goleta. In addition, Venoco also operates a small gasoline powered boat for deploying oil spill booms around the platform. This vessel is stored on the platform.

2.2.5 Supply Boats: Venoco uses supply boats for supply and equipment transport and emergency response drills in support of Holly. When the platform is in a production mode (i.e., no drilling or well repair), the supply boat activity is approximately 6-7 trips per year. During well drilling or well repair activity, the supply boat activity increases to about one trip every 2 days or more (up to 192 trips per year).

2.2.6 Helicopter: Although there is a helipad on Holly, helicopters are not used for routine offshore transportation.

2.2.7 Emergency Response Drills: Venoco conducts periodic and unannounced emergency response drills. Several plans have been developed for different types of emergencies that could occur on or around the platform. The plans include the Emergency Evacuation Plan and Oil Spill Contingency Plan. All of the plans have been prepared to comply with applicable rules and regulations and guidelines set forth by the appropriate regulatory agencies. Emissions from emergency response boats are documented and reported along with the supply boats information.

## **2.3 Oil & Gas Production Activities: Drilling**

2.3.1 Drilling Program: There is a resident drilling rig on Holly. There have been several drilling programs conducted on Holly from 1966 through 2006.

2.3.2 Well Work-over Program: Venoco occasionally performs well work-overs on Holly. Three gas-fired IC engines are used to provide electrical power for the drill rig. Portable diesel-fired IC engines are used to power the ancillary equipment used during drilling and well work-overs.

## **2.4 Maintenance/Degreasing Activities**

- 2.4.1 Paints and Coatings: Intermittent surface coating operations are conducted throughout the platform for occasional structural and equipment maintenance needs, including architectural coating. Normally only touch-up and equipment labeling or tagging is performed. All architectural coatings used must comply with APCD Rule 323, as verified through the rule-required recordkeeping.
- 2.4.2 Solvent Usage: Solvents not used for surface coating thinning may be used on the platform for daily operations. Solvent usage includes cold solvent degreasing and wipe cleaning with rags.

## **2.5 Planned Process Turnarounds**

Process turnarounds on the permitted equipment are scheduled to occur when the Ellwood Onshore Facility or Holly are shut down for maintenance. Major pieces of equipment such as the gas compressors have maintenance schedules specified by the manufacturer, that equipment be 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*). Venoco has not listed any emissions from planned process turnarounds that should be permitted.

## **2.6 Other Processes**

Pigging: Pigging operations occur between the Platform and the Ellwood Onshore Facility. The pigging system is connected to the Ellwood Onshore Facility's pig receivers. Holly has 3 pig launchers; one for pigging the pipeline sending produced gas to shore, one for pigging the pipeline bringing utility gas to Holly, and one for pigging the pipeline sending oil to shore.

Unplanned Activities/Emissions: Venoco does not anticipate or foresee any circumstances that would require special equipment use and result in excess emissions.

## **2.7 Detailed Process Equipment Listing**

Refer Attachment 10.5 for a complete listing of all permitted equipment and to Attachment 10.6 for a list of exempt equipment and equipment that is exempt from APCD permit, but does not qualify as an insignificant emissions unit per Part 70.

## 3.0 Regulatory Review

### 3.1 Rule Exemptions Claimed

☞ APCD Rule 202 (Exemptions to Rule 201): Venoco has requested a number of exemptions under this rule. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule. The following exemptions were approved by the APCD:

- Section D.6 (*De Minimis*). As of August 29, 2008, Venoco has documented the total de minimis emissions increase at Holly to be 10.41 lbs/day for ROC. Therefore, the total de minimis emissions from the stationary source are  $7.54 + 10.41 = 17.95$  lbs/day of ROC, there are no de minimis increases at the Beachfront or Seeps. Detailed records of the de minimis emissions changes can be viewed at the APCD's office.
- Section U.2.a for a cold cleaner degreaser unit with an evaporative surface area of less than 1 sq.ft.
- Section V.2 for one diesel fuel #2 storage tank with a 1500-gallon capacity.
- Section V.2 for one lube oil storage tank (T-101).

The three gas-fired generator engines used to power the drill rig were previously APCD permit exempt. Due to the revisions to Rule 202 on June 19, 2008, these engines are no longer permit exempt. PTO 12912, which is being issued concurrently with this permit reevaluation, permits the generator engines. The diesel-fired IC engines, which powered the associated equipment for the drilling and well work-over program, also lost their exemption. All diesel-fired IC engines used during well drilling and work-over will be registered in the Statewide Portable Equipment Registration Program and will be exempt from permit per Section F.2.

☞ APCD Rule 321 (Solvent Cleaning Operation): The following exemption was applied for and approved by the APCD:

- Section B.2.b for a cold cleaner degreaser unit with an evaporative surface area of less than 1 sq.ft.

☞ APCD Rule 325 (Crude Oil Production and Separation): The following exemptions were applied for and approved by the APCD:

- Section B.3 for wastewater tanks T-1 and T-4 (see also Permit Condition 9.C.4 for ongoing monitoring requirements).

☞ APCD Rule 326 (Storage of Reactive Organic Compound Liquids): The following exemptions were applied for and approved by the APCD:

- Section B.1.(a) for one lube oil storage tank (T-101).

☞ APCD Rule 331 (Fugitive Emissions Inspection and Maintenance): The following exemptions were applied for and approved by the APCD:

- Section B.2(c) for one-half inch and less stainless steel tubing fittings.
- Section B.3(c) for PRDs vented to a closed system.

- Section B.3(c) for components totally enclosed or contained.
- Section B.2.b for components buried below the ground.
- Section B.3.b for components handling liquids or gases with ROC concentrations less than 10 percent by weight.
- Sections F.1, F.2 and F.7 for components that are unsafe-to-monitor, as documented and established in a safety manual or policy, and with prior written approval of the Control Officer

☞ APCD Rule 333 (Control of Emissions from Reciprocating IC Engines): One diesel-fired IC engine is an emergency standby engine, as defined by 17 CCR, 93115. Therefore, that engine is exempt from Rule 333 per Section B.1.d.

### **3.2 Compliance with Applicable Federal Rules and Regulations**

- 3.2.1 40 CFR Parts 51/52 {New Source Review(Non-attainment Area Review and Prevention of Significant Deterioration)}: Holly was constructed and permitted prior to the applicability of these regulations. Compliance with APCD Regulations VIII (*New Source Review*) and XIII (*Part 70 Operating Permits Program*) ensures that any future modifications to the facility will comply with these regulations.
- 3.2.2 40 CFR Part 60 {New Source Performance Standards}: None of the equipment in this permit is subject to NSPS requirements.
- 3.2.3 40 CFR Part 61 {NESHAP}: None of the equipment in this permit is subject to NESHAP requirements.
- 3.2.4 40 CFR Part 63 {MACT}: On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Venoco submitted information on September 18, 2001 indicating that Holly is exempt from the requirements of MACT based on its “black oil” production per section 63.670(e)(1) of the subpart. Based on the information provided, the APCD concurs with the black oil exemption for this facility. Thus, only recordkeeping requirements apply to this facility, as specified in condition 9.B.12.
- 3.2.5 40 CFR Part 64 {Compliance Assurance Monitoring}: This rule became effective on April 22, 1998. This rule affects emission units at the source subject to a federally-enforceable emission limit or standard that use a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds. Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM. See section 4.10.3 for further information on CAM.
- 3.2.6 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to Holly. Table 3.1 lists the federally-enforceable APCD promulgated rules that are “generic” and apply to Holly. Table 3.2 lists the federally-enforceable APCD promulgated rules that are “unit-specific” that apply to Holly. These tables are based on data available from the APCD’s administrative files and from Venoco/Venoco’s Part 70 Operating Permit application No. 9553 filed in May, 1996 and their renewal application submitted on April 17, 2001 and on May 10, 2005. Table 3.4 includes the adoption dates of these rules.

In its Part 70 permit application, Venoco certified compliance with all existing APCD rules and permit conditions. This certification is also required of Venoco semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that Venoco 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 will be enforced by the APCD. These provisions are APCD-enforceable only.
- 3.3.2 California Code of Regulations, Title 17, Sub-Chapter 6, Sections 92000 through 92530: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at Holly are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-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 California Code of Regulations, title 17, section 93115: This section specifies the airborne toxic control measure (ATCM) to reduce diesel particulate matter (PM) and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines. Its provisions apply to any stationary CI engine operated in California with a rated horsepower of 50 bhp or greater. Portable, off-road, or marine vessel IC engines are exempt from this ATCM. The emergency standby IC engine powering an electrical generator and the IC engine powering the crane are subject to this ATCM. The old crane has been removed and replaced with a new crane powered by a Tier 3 engine controlled by a diesel particulate filter. The new crane engine will be source tested on the schedule established by ATC 12804 to verify compliance with the ATCM.
- 3.3.4 California Code of Regulations, title 17, section 93116: This section specifies the airborne toxic control measure (ATCM) to reduce diesel particulate matter (PM) and criteria pollutant emissions from portable diesel-fueled compression ignition (CI) engines. Its provisions apply to any portable CI engine operated in California with a rated horsepower of 50 bhp or greater. The portable diesel-fired IC engines used for the well drilling and work-over program are subject to this ATCM. Existing engines must be certified to meet a Tier standard by January 1, 2010. Any new engines must meet the most stringent Tier standard.

### **3.4 Compliance with Applicable Local Rules and Regulations**

- 3.4.1 Applicability Tables: Tables 3.1 and 3.2 list the federally enforceable APCD rules that apply to Holly. Table 3.3 lists the non-federally-enforceable APCD rules that apply to Holly. Table 3.4 lists the adoption date of all rules that apply to Holly.
- 3.4.2 Rules Requiring Further Discussion:  
The following is a rule-by-rule evaluation of compliance for Holly:

*Rule 210 - Fees*: Pursuant to Section I.B.2, APCD permits are reevaluated every three years. The fees for this facility are based on the APCD Rule 210, Fee Schedule A. Attachment 10.3 presents

the fee calculations for the reevaluated permit. The fees for this reevaluation are calculated per Section I.B.2.

*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 APCD rules and regulations. To the best of the APCD's knowledge, Venoco 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 Ringelmann 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 Ringelmann Chart. Sources subject to this rule include: the flare, all diesel-fired piston internal combustion engines on the platform and crew and supply boats. Compliance will be assured by requiring all engines to be maintained according to manufacturer maintenance schedules, and through visible emissions monitoring requirements in Condition 9.B.2 and 9.C.22. Rule 359 addresses the need for the flare to operate in a smokeless fashion.

*Rule 303 - Nuisance:* This rule prohibits Holly from causing a public nuisance due to the discharge of air contaminants. Compliance with this Rule is achieved based on the *Odor Abatement Agreement* between the APCD and Venoco (March 1995) and the *Complaint Response Plan* (May 1995), and the requirements of Abatement Order 99-6A. This permit contains federally-enforceable conditions (see Permit Condition 9.B.3) to minimize the potential for additional nuisances, such as operation limits and monitoring, to ensure compliance with this rule.

*Rule 305 - Particulate Matter, Southern Zone:* Holly is considered 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: the flare, all diesel-fired piston internal combustion engines on the platform and crew and supply boats. Improperly maintained diesel engines have the potential to violate this rule. Compliance will be assured by requiring all engines to be maintained according to manufacturer maintenance schedules according to an APCD-approved *IC Engine Particulate Matter Operation and Maintenance Plan*. Rule 359 addresses the need for the flare to operate in a smokeless fashion.

*Rule 309 - Specific Contaminants:* Under Section "A", no source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO<sub>2</sub> (by volume) and 0.3 gr/scf (at 12% CO<sub>2</sub>) respectively. Sulfur emissions due to flaring of sour gas under 20,000 ppmv H<sub>2</sub>S should comply with the SO<sub>2</sub> limit. 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<sub>2</sub>S 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, all produced gas from Holly is collected for sales, re-

injection or is collected by vapor recovery (i.e., no venting occurs). As a result, it is expected that compliance with this rule will be achieved. Further, the platform is equipped with numerous H<sub>2</sub>S monitors (alarms set to 10 ppmv). If the equipment leaks sour gas, the alarm sounds and the operator will take corrective action. These H<sub>2</sub>S monitors are connected to the APCD's DAS.

*Rule 311 - Sulfur Content of Fuels:* This rule limits the sulfur content of fuels combusted on Holly to 0.5 percent (by weight) for liquids fuels and 15 gr/100 scf (calculated as H<sub>2</sub>S, equivalent to 239 ppmvd) for gaseous fuels. All diesel-fired IC engines on Holly and on the crew and supply boats are expected to comply with the liquid fuel limit as determined by fuel analysis documentation. The drill rig generator engines are expected to comply with the gaseous fuel limits.

*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. Venoco will be required to maintain records to ensure compliance with this rule.

*Rule 321 - Solvent Cleaning Operations:* This rule sets equipment and operational standards for degreasers using organic solvents. There is a small (i.e., less than 1 sq.ft. evaporative surface) cold solvent degreaser unit on the platform; which is permit-exempt and also exempt from the Rule requirements except to keep its surface covered when not in use. Compliance will be determined through APCD inspections of the platform.

*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. Venoco will be required to maintain records during maintenance operations to ensure compliance with this rule.

*Rule 323 - Architectural Coatings:* This rule sets standards for the application of surface coatings. The primary coating standard that will apply to the platform is for Industrial Maintenance Coatings that have a limit of 250 gram ROC per liter of coating, as applied. Venoco is required to comply with the administrative requirements under Section F for each container on the platform.

*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. Venoco will be required to maintain records to ensure compliance with this rule.

*Rule 325 - Crude Oil Production and Separation:* This rule applies to equipment used in the production, processing, separation, gathering, and storage of crude 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, crude oil/water separators, and sumps. Section E requires that all produced gas be controlled at all times, except for wells undergoing routine maintenance. Production and test vessels and the shipping tanks on Holly are all connected to the gas gathering systems. Compliance with Section E is met by directing all produced gas to sales, injection, gas lift, or to the flare relief system.

The waste water tanks T-1 and T-4 on the platform were determined to be exempt from Rule 325.D.1 and D.2 after an inspection in 1997 because the ROC content of the liquid entering the wastewater tanks is less than 5 milligrams per liter. Sampling in June 2002 per Rule 325.F.2 showed 7,900 mg/l of ROC, but a subsequent sample in July 2002 showed less than 1.0 mg/l ROC. Further sampling has indicated the tanks meet the Rule 325.B.3 exemption; this permit retains *annual* sampling by using the testing procedures specified in Section G to justify the exemption.

*Rule 326 – Storage of Reactive Organic Compound Liquids:* This rule applies to equipment used to store ROC liquids with a vapor pressure greater than 0.5 psia. The contents of tank T-101 were sampled in June 2002 and found to have a vapor pressure greater than 0.5 psia. Tank T-101 is now limited by permit condition to only store fluids with a TVP less than 0.5 psia.

*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 *Venoco – Ellwood* 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. CEMS are not required for Holly.

*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 Venoco will trigger the requirements of this rule. Compliance shall be based on site inspections and records maintained by Venoco.

*Rule 331 - Fugitive Emissions Inspection and Maintenance:* This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. Venoco submitted a Fugitive Inspection and Maintenance Plan and received final APCD approval of the Plan on July 15, 1994. An update (including inventory) was submitted on June 20, 2002 and approved by the APCD. Ongoing compliance with the many provisions of this rule will be assessed via platform inspection by APCD personnel using an organic vapor analyzer and through analysis of operator records. Holly 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. All diesel-fired IC engines powering well drilling equipment are registered in the state PERP and are permit-exempt per APCD Rule 202. Therefore, they are exempt from Rule 333. The emergency standby IC engine is exempt from the requirements of Rule 333. The gas-fired generators used to power drilling equipment and the diesel-fired engine powering the crane are subject to Rule 333. The diesel-fired crane engine is currently permitted under ATC 12804, which enforces the requirements of rule 333. Upon completion of the Source Compliance Demonstration Period (SCDP), a PTO will be issued for the crane engine to incorporate it into this Part 70 permit.

The engines subject to Rule 333 are monitored quarterly to determine compliance with the emission limits of the rule.

*Rule 353 – Adhesives and Sealants:* This rule applies to the use of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers. Compliance shall be based on site inspections and records maintained by Venoco.

*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<sub>2</sub>S at standard conditions. Treated produced gas from the Ellwood onshore facility is used at the flare for purge and pilot gas (a planned flaring category) that is within the limits of this rule. Venoco has claimed that there will be no other planned flaring associated with platform operations, as all such gas will be routed to the Ellwood onshore facility. Unplanned flaring is exempt from the sulfur standards of this rule.

§ D.2 - Technology Based Standard: Requires all flares to be smokeless and sets pilot flame requirements. The flares on Holly are in compliance with this section.

§ D.3 - Flare Minimization Plan: This section requires sources to implement flare minimization procedures to reduce SO<sub>x</sub> emissions. Venoco has implemented the APCD-approved *Flare Minimization Plan*.

*Rule 505 - Breakdown Conditions:* This rule describes the procedures that Venoco must follow when a breakdown condition occurs to any emissions unit associated with Holly. 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 the APCD 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 item.

*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. Venoco submitted this plan in July 1994 and updated it in March, 2002. The Plan was approved in August, 2002.

### **3.5 Compliance History**

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

3.5.1 Variances: Venoco has not sought any variance from the APCD Hearing Board since December 22, 2005.

3.5.2 Violations: As of August 15, 2008 three (3) Notices of Violation (NOVs) and four (4) Notices to Comply (NTCs) have been issued since the last permit reevaluation:

*NTC No. 8560*: Issued 6/14/2006. Failing to perform monthly NO<sub>x</sub> sampling of Generator #3.

*NOV No.8739*: Issued 4/3/2007. Failing to control emissions of produced gas at all times.

*NOV No. 8809*: Issued 4/8/2008. Flare purge gas exceeded total sulfur limit on 7 days.

*NTC No. 8811*: Issued 6/5/2008. Failure to perform quarterly monitoring and submit an I&M plan for the crane engine.

*NTC No. 8812*: Issued 6/5/2008. Failure to perform weekly monitoring of the generator engines.

*NTC No. 8814*: Issued 7/24/2008. Operating equipment without a permit. Fugitive de minimis components had a Potential to Emit (PE) exceeding 24 lb/day, therefore they no longer qualified for the de minimis exemption.

*NOV No. 8896*: Issued 5/31/2007. Second offence, failing to perform required monitoring on generator engine #2.

3.5.3 Significant Historical Hearing Board Actions: The actions taken by the APCD and the Hearing Board in 1998 and 1999 resulted in the issuance of Abatement Order No. 99-6(A) to Venoco in April of 1999. This Order made findings that air emissions from Holly, EOF, and the Barge Jovalan resulted in several public complaints. Condition 11.b of the Order was modified in 2001 to clarify that the SIMQAP Plan for Holly may only be modified with approval of the Control Officer. The Hearing Board ordered Venoco to:

1. Perform a safety audit of Holly, the Ellwood Onshore Facility, Lease 421 (aka the Beachfront Lease), the Marine Terminal and Line 96. Venoco was required to comply with the recommendations of these audits.
2. Safety, Inspection, Maintenance and Quality Assurance Plan (SIMQAP). Venoco was required to prepare and implement a SIMQAP Plan for all its Ellwood stationary source facilities. The SIMQAP for Holly is reviewed by the APCD (the District may consult with third party experts, including members of other County Departments) every two years and is updated as needed. Venoco may only revise the SIMQAP for the other Ellwood facilities upon approval of the Systems Safety and Reliably Review Committee.

3. Significant Gas Releases; Shutdown and Restart Protocol. Venoco was required to suspend any production and drilling operations immediately in the event of any defined shutdown trigger events.
4. Install a permanent flare system on Holly.
5. Implement several facility improvements to address odors while loading crude oil at the Barge Jovalan.
6. Implement a number of hydrogen sulfide monitoring procedures.
7. Install an emergency backup generator at EOF.
8. Comply with the County-approved Emergency Action Plan for the Project.

Abatement Order measures applicable to Venoco’s Holly have been incorporated in the permit conditions of this permit.

**Table 3.1 - Generic Federally-Enforceable APCD Rules**

<b>Generic Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 101</u> : Compliance by Existing Installations	All emission units	Emission of pollutants
<u>RULE 102</u> : Definitions	All emission units	Emission of pollutants
<u>RULE 103</u> : Severability	All emission units	Emission of pollutants
<u>RULE 201</u> : Permits Required	All emission units	Emission of pollutants
<u>RULE 202</u> : Exemptions to Rule 201	Applicable emission units, as listed in Form 1302-H in Part 70 application 9553	Insignificant activities/emissions, per size/rating/function
<u>RULE 203</u> : Transfer	All emission units	Change of ownership
<u>RULE 204</u> : Applications	All emission units	Addition of new equipment or modification to existing equipment.
<u>RULE 205</u> : Standards for Granting Permits	All emission units	Emission of pollutants
<u>RULE 206</u> : Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
<u>RULE 207</u> : Denial of Applications	All emission units	Applicability of relevant Rules
<u>RULE 208</u> : Action on Applications - Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.
<u>RULE 212</u> : Emission Statements	All emission units	Administrative

<b>Generic Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission
<u>RULE 302</u> : Visible Emissions	All emission units	Particulate matter emissions
<u>RULE 303</u> : Nuisance	All emission units	Emissions that can injure, damage or offend.
<u>RULE 305</u> : PM Concentration - South Zone	Each PM source	Emission of PM in effluent gas
<u>RULE 309</u> : Specific Contaminants	All emission units	Combustion contaminant emission
<u>RULE 311</u> : Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
<u>RULE 317</u> : Organic Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 321</u> : Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.
<u>RULE 322</u> : Metal Surface Coating	Emission units using solvents	Solvent used in process operations.
<u>RULE 323</u> : Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
<u>RULE 324</u> : Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 353</u> : Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants use.
<u>RULE 505.A, B1, D</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULE 603</u> : Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Venoco – Ellwood is a major source.
<u>REGULATION VIII</u> : New Source Review	All emission units	Addition of new equipment of modification to existing equipment. Applications to generate ERC Certificates.
<u>REGULATION XIII (RULES 1301-1305)</u> : Part 70 Operating Permits	All emission units	Venoco – Ellwood is a major source.

**Table 3.2 - Unit-Specific Federally-Enforceable APCD Rules**

<b>Unit-Specific Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 325</u> : Crude Oil Production and Separation	Storage tanks: Emission units capable of venting gases	Venting prohibited under Rule 325.E
<u>RULE 330</u> : Surface Coating of Metal Parts & Products	All surface coating used for any metal coating operations	Metal surfaces.
<u>RULE 331</u> : Fugitive Emissions Inspection & Maintenance	Components (valves, flanges etc.) used to handle oil and gas: ID # 009601, 104754-104756	Components emit fugitive ROCs.
<u>RULE 333</u> : Control of Emissions from Reciprocating IC Engines	Crane IC Engine, ID # 002336 Generator Engines ID #s 001930, 001931, 001932	Diesel-fired engine >50 hp. Gas-fired engines > 50 hp.
<u>RULE 359</u> : Flares and Thermal Oxidizers	ID # 007982, 009603	Flaring

**Table 3.3 - Non-Federally-Enforceable APCD Rules**

<b>Requirement</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 210</u> : Fees	All emission units	Administrative
<u>RULE 310</u> : Odorous Sulfides	Process Units with emissions	Odorous sulfide emissions
<u>RULES 501-504</u> : Variance Rules	All emission units	Administrative
<u>RULE 505.B2, B3, C, E, F, G</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULES 506-519</u> : Variance Rules	All emission units	Administrative

Table 3.4 - Adoption Dates of APCD Rules Applicable at Issuance of Permit

<b>Rule No.</b>	<b>Rule Name</b>	<b>Adoption Date</b>
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	June 19, 2008
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	April 17, 1997
Rule 202	Exemptions to Rule 201	June 19, 2008
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	April 17, 1997
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 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 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	September 18, 1997
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323	Architectural Coatings	July 18, 1996
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	January 25, 1994
Rule 326	Storage of Reactive Organic Compound Liquids	December 14, 1993

<b>Rule No.</b>	<b>Rule Name</b>	<b>Adoption Date</b>
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	Control of Oxides of Nitrogen (NOx) from Boilers, Steam Generators and Process Heaters	April 17, 1997
Rule 343	Petroleum Storage Tank Degassing	December 14, 1993
Rule 344	Petroleum Sumps, Pits and Well Cellars	November 10, 1994
Rule 359	Flares and Thermal Oxidizers	June 28, 1994
Rule 360	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers	October 17, 2002
Rule 361	Small Boilers, Steam Generators, and Process Heaters	January 17, 2008
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	April 17, 1997
Rule 802	Nonattainment Review	April 17, 1997
Rule 803	Prevention of Significant Deterioration	April 17, 1997
Rule 804	Emission Offsets	April 17, 1997
Rule 805	Air Quality Impact and Modeling	April 17, 1997
Rule 806	Emission Reduction Credits	April 17, 1997
Rule 901	New Source Performance Standards (NSPS)	May 16, 1996
Rule 1301	General Information	September 18, 1997
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	November 9, 1993
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993
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 APCD's document titled "VOC/ROC Emission Factors and Reactivities for Common Source Types" dated 3/12/01 (version. 1.2) was used to determine non-methane, non-ethane fraction of THC.

### 4.2 Stationary Internal Combustion Engines

4.2.1 General: Stationary internal combustion engines associated with Holly consist of diesel and natural gas-fired piston IC engines.

Holly has two permanent diesel-fired IC engines. These are the newly installed 250 bhp pedestal crane engine and the 373 bhp emergency electrical generator engine. Operation of the new crane engine is currently permitted under ATC 12804. The operation of the new crane engine is described below only for information purposes, the conditions governing operation of the crane engine and the full engineering evaluation of the crane engine can be found in ATC 12804. The 373-hp IC engine is limited by the ATCM to 20 hours per year of testing and maintenance operations. Emergency uses of the engine are not limited. Fuel usage of the crane engine is limited to 28.5 gallons per day and 10,000 gallons per year.

The platform also has two natural gas-fired Caterpillar Model G399 SITA generator engines (803 bhp), and one natural gas-fired Caterpillar G3516 SITA generator engine (1,053 hp) used for well work-over and drilling operations.

Other diesel-fired IC engines (e.g., electric line unit, hydraulic unit for casing tongs, coil tubing units) are used for well work-over and drilling operations.

4.2.2 Emission Controls: The new crane engine is a Tier 3-certified engine, in addition, the engine is controlled by a diesel particulate filter in order to meet the ATCM PM limit of 0.01 g/bhp-hr or, alternatively, 85% reduction across the filter.

The drilling generators are each controlled by two 3-way NSCR catalysts and air-fuel ratio controllers.

Any diesel-fired engines brought to the platform for well drilling and work-over are rented engines. Venoco must ensure that any drilling and work over engines meet the requirements of the ATCM and are either permitted by the district or registered in the statewide PERP.

4.2.3 Emission Factors: Emission factors for the emergency generator are based on Table 3.3-1 of USEPA AP-42 for all criteria pollutants except for SO<sub>x</sub>, which is based on mass balance techniques. Emission factors for the crane engine are based on Tier 3 and ATCM standards. The manufacturer's supplied information on NO<sub>x</sub> and ROC emissions was used to convert the Tier NO<sub>x</sub>+NMOC standard into NO<sub>x</sub> and ROC emission factors. Emission factors for the gas-fired generators are based on the controlled emission factors previously approved under Exemption 10406.

4.2.4 Calculations: The following calculation methodology is used for the emergency-standby IC engine, which is subject to limits on the total hours of operation, and for the gas-fired generators:

$$ER = [(EF \times BHP \times BSFC \times CF \times HPP) \div 10^6]$$

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)  
 CF = fuel correction factor, LHV to HHV  
 HPP = operating hours per time period (hrs/period)

The emission factor is an energy-based value using the higher heating value (HHV) of the fuel. As such, the energy-based BSFC value must also be based on the HHV. Manufacturer BSFC data are based on lower heating value (LHV) data and require a conversion (CF) to the HHV basis. For diesel fuel oil, the HHV values are typically 6 percent greater than the corresponding LHV data, while for natural gas fuel this correction is typical 10 percent greater. Volume or mass-based BSFC data do not require conversion.

The crane engine is subject to daily and annual fuel use limits. Emissions are calculated based on the maximum rated horsepower, fuel consumption at the maximum rated horsepower, permitted emission factors, and the daily and annual fuel use limits:

$$E1, \text{ lb/day} = \text{Rating (bhp)} * EF \text{ (g/bhp-hr)} / \text{Fuel Consumption (gal/hr)} * (\text{lb}/453.6 \text{ g}) * (28.5 \text{ gal/day})$$

$$E2, \text{ tpy} = \text{Rating (bhp)} * EF \text{ (g/bhp-hr)} / \text{Fuel Consumption (gal/hr)} * (\text{lb}/453.6 \text{ g}) * (10,000 \text{ gal/year}) * (\text{ton}/2000 \text{ lb})$$

For each generator, hourly fuel consumption at maximum rated horsepower is provided by the manufacturer. Therefore, emissions are calculated as follows:

$$E1, \text{ lb/day} = EF \text{ (lb/MMBtu)} * \text{Fuel Consumption (scf/hr)} * \text{hr/day} / (1,050 \text{ btu/scf}) / (1,000,000)$$

$$E2, \text{ tpy} = EF \text{ (lb/MMBtu)} * \text{Fuel Consumption (scf/hr)} * \text{hr/year} / (1,050 \text{ btu/scf}) / (1,000,000) * (\text{ton}/2000 \text{ lb})$$

4.2.5 Monitoring: All IC engines are equipped with non-resettable hour meters. The crane engine and the gas-fired generators are equipped with non-resettable fuel use meters. The hours of operation of all the engines at the platform will be monitored. The fuel usage of the engines equipped with fuel use meters will also be monitored. In addition, the engines that are subject to Rule 333 will be monitored quarterly for NO<sub>x</sub> and CO.

### 4.3 Flare Systems

4.3.1 General: The flare relief system consists of two flares, high-pressure flare H-100, and low-pressure flare H-101. Pilot and purge gas for each flare is in-plant fuel gas from EOF. The in-plant fuel gas is delivered to Holly by a gas pipeline from the shore.

The high-pressure flare serves a header that connects to various PSVs on production and test vessels, compressors and pigging vessels. The high-pressure flare is a Kaldair model *INDAIR 1-24-H-VS-WB* self-assisted flare with a 10-inch diameter inlet; mounted to the existing vent stack boom; design rated to flare gas flow rates of up to 30 MMSCFD. The high-pressure flare pilot system uses one pilot, with a flow rate of up to 100 SCFH total and equipped with automatic igniters. The flare purge gas is manually controlled by a flow-control system (FCV-171) using a pressure gauge and flow orifice for up to 2,100 SCFH (equivalent to 50,400 SCFD). Small leaks from various sources around the plant may combine with the purge gas. This is allowed if the total flow does not exceed 50,400 SCFD and an H<sub>2</sub>S concentration of 239 ppmv.

The low-pressure flare serves the glycol system reboiler relief valves PSV-131 and PSV-132, and the IR compressor distance piece relief valve PSV-170. This low-pressure flare is a Kaldair model CAK-4 combined pilot/flare tip; mounted to an existing flare stack boom and permit limited to flare gas flow rates of up to 2000 SCFM. The low-pressure flare pilot system uses one pilot with a flow rate of up to 100 SCFH total and equipped with automatic igniters. Flare purge gas flow-control FCV-173 is a manual system using a pressure gauge and rotameter for up to 300 SCFH (equivalent to 7,200 SCFD). Other sources are also permitted in the planned continuous flaring provide that the total flow does not exceed 7,200 SCFD and an H<sub>2</sub>S concentration of 239 ppmv.

4.3.2 Emission Controls: The Kaldair INDAIR flare tip on the high pressure flare has a tulip shaped design that uses the Coanda Effect to reduce particulate emissions (i.e., smokeless design). The low-pressure flare has a Kaldair CAK-4 tip, which is not a smokeless design, but it is still subject to the visible emission limits of Rule 302.

4.3.3 Emission Factors: Emission factors are from Table 13.5-1 of USEPA's AP-42, with the exception of PM/PM<sub>10</sub> and SO<sub>x</sub> emission factors. The PM/PM<sub>10</sub> factor is based on Table 3.1.1 of the APCD's *Flare Study Phase I Report (7/91)*. SO<sub>x</sub> emissions are based on a mass balance of total flared gas sulfur content per APCD document titled "*Technical Information and References Gaseous Fuel SO<sub>x</sub> Emission Factor*" (Version 1.0, 1/31/97). The PM<sub>10</sub>/PM ratio is assumed to equal 1.0.

4.3.4 Calculations: The emissions for flaring events are calculated using the calculation methodology below:

$$ER = [(EF \times SCFPP \times HHV) \div 10^6]$$

where: ER = emission rate (lb/period)  
EF = pollutant specific emission factor (lb/MMBtu)  
SCFPP = gas flow rate per operating period (scf/period)  
HHV = gas higher heating value (Btu/scf)

4.3.5 Monitoring: The high-pressure flare flow-metering system (FI-170) is capable of metering gas flow rates between 0.050 MMSCFD (i.e., 35 SCFM) to 26 MMSCFD. The low-pressure flare flow-metering system (FI-172) is capable of metering gas flow rates between 5 SCFM to

2000 SCFM. A Houston Atlas H<sub>2</sub>S detector located at EOF monitors the H<sub>2</sub>S concentration of the purge and pilot gas. The sulfur content of the pilot gas may not exceed 12 ppmv, and the sulfur content of the purge gas may not exceed 239 ppmv.

Both the high-pressure flare and the low-pressure flare are equipped with gas volume metering systems to measure the total gas flared including the continuous purge gas systems. The high-pressure flare flow meter (FI-170) and the low-pressure flare flow meter (FI-172) are also required to continuously transmit their respective outputs to the APCD Data Acquisition System (DAS). The pilot systems for the flares are limited by their design flow capability based upon a fixed size flow-limiting orifice and monitored fuel gas delivery pressure.

The purge gas sulfur content will be monitored for H<sub>2</sub>S content and total sulfur at EOF. A correlation ratio between total sulfur and H<sub>2</sub>S is established for this system that will allow weekly compliance assessments of total sulfur content based on H<sub>2</sub>S monitoring alone. The H<sub>2</sub>S content of the mixture of purge gas and small leaks will be measured at V-127.

- 4.3.6 Flare Planned Operations (Purge and Pilot Emissions): Venoco specified that the flare pilots will consume EOF in-plant fuel gas (12 ppmv total sulfur and 4 ppmv H<sub>2</sub>S) at a rate of 200 SCF per hour (for both pilots combined). The purge rate to the flare that is used to prevent air intrusion and facilitate safe operations of the flare system has been specified at up to 2,100 SCF per hour (i.e., 35 SCFM). The purge gas is also EOF in-plant fuel gas, but small leaks from PSVs and other sources at the platform may mix with the purge gas in relief header V-127. This gas mixture will have a total fuel sulfur content of up to 239 ppmv. For emissions calculation purposes, both pilot and purge rates are presumed to occur at the maximum permitted flows 24 hours per day.
- 4.3.7 Flare Planned-Intermittent Operations: Venoco did not apply for any permitted emissions associated with this type of activity. Emissions from these activities typically occur from depressurizing of vessels and equipment for maintenance. Venoco will not use either of the flares for this type of activity, but will instead depressurize these gases to EOF using its vapor recovery unit (through either the normal 6-inch produced gas, or the 4-inch utility lines). Any of these gas flows into these piping systems can be scrubbed of H<sub>2</sub>S to Rule 359 limits prior to flaring onshore or commingling with EOF sales gas production.
- 4.3.8 Flare Unplanned Operations: Venoco applied for unplanned flaring of produced gas containing up to 17,000 ppmv of H<sub>2</sub>S. Unplanned flaring of such gas is authorized under Rule 359, if it is the result of emergencies and other process upsets or equipment failures beyond the normal control of Venoco. Venoco has applied for unplanned flaring volumes of up to 40,000 SCF total per month. This limit was derived through evaluating past venting records which show that no single event releases more than 20,000 SCF of gas, and that an average of two events might occur per month.
- 4.3.9 Flare Worst-Case Credible Rate Event: Venoco applied for a worst-case flare-event rate limit equivalent to the design gas flow rate capacity of Holly. This rate equates to 18,055 SCF per min of produced gas containing up to 17,000 ppmv of H<sub>2</sub>S. Such an event at this rate is estimated to last no more than 66 seconds. An analysis was performed of the associated NO<sub>x</sub>, SO<sub>x</sub> and CO impacts from this type of event. The results of the analysis are documented in Section 6 of this permit.

#### 4.4 Fugitive Hydrocarbon Sources

- 4.4.1 General: Fugitive hydrocarbon emissions occur from leaks in process components such as valves, connections, pumps, compressors and pressure relief devices. Each of these component types may be comprised of several potential "leak paths" at the facility. For example, leak paths associated with a valve include the valve stem, bonnet, and the upstream and downstream flanges. The total number of leak paths at the facility must be determined to perform fugitive emission calculations.
- 4.4.2 Emission Controls: A fugitive emissions control program is used to minimize potential leaks from the process components. Emission reductions are expected as a result of Venoco's implementation of an Inspection and Maintenance (I&M) program. The I&M program is designed to minimize leaks through a combination of pre- and post-leak controls. Pre-leak controls include venting of leaks from compressor seals to the vapor recovery system, venting of pressure relief devices to the flare system, and plugging of open-ended lines (an open-ended line is a valve that has one side of the valve seat in contact with the process fluid, and is open to the atmosphere on the other). Post-leak controls consist of regular inspection of each leak source for leakage and repair of all components found leaking. An emission control efficiency of 80 percent is credited to all accessible and inaccessible components that are safe to monitor (as defined per Rule 331) due to the implementation of an APCD-approved Inspection and Maintenance program for leak detection and repair consistent with Rule 331 requirements. Unsafe to monitor components are not eligible for I&M control credit. Ongoing compliance is determined in the field by inspection with an organic vapor analyzer and verification of operator records.
- 4.4.3 Emission Factors: Emissions of reactive organic compounds from piping components such as valves, flanges and connections have been calculated using emission factors pursuant to APCD P&P 6100.061 (*Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts - Modified for Revised ROC Definition*) for components in gas/light liquid and oil/emulsion service. The component leak paths were counted consistent with P&P 6100.061. This leak path count is not the same as the "component" count required by APCD Rule 331.
- 4.4.4 Calculations: The clp count for the fugitive components is the same as that listed in Venoco Holly CVR data (3/1/05). A count total of 6,469 oil/emulsion component leak paths and 9,477 gas/light-liquid component leak paths was acknowledged as representative by Venoco (Ref: e-mail from Walt McCarthy, Venoco to Brian Shafritz, APCD on 12/20/05 and subsequent meeting between Venoco and APCD on that date). The calculation methodology for the fugitive emissions is:

$$ER = [(EF \times CLP \div 24) \times (1 - CE) \times (HPP)]$$

<u>where:</u>	ER =	emission rate (lb/period)
	EF =	ROC emission factor (lb/clp-day)
	CLP =	component leak path (clp)
	CE =	control efficiency
	HPP =	operating hours per time period (hrs/period)

Note that the same emission factor and ROC/THC ratio is used for all component types on offshore platforms, so it is not necessary to break down the component leak path count by type in order to calculate emissions.

4.4.5 Monitoring: Inspections are performed with an Organic Vapor Analyzer consistent with EPA Method 21. Components are required to be repaired between 1 to 14 days, depending on the severity of the leak. Venoco’s I&M program is consistent with the requirements of APCD Rule 331. Venoco’s I&M program also includes a leak path identification system. Leak paths are physically identified in the field with a tag and given a unique number. An inventory of each tag is then maintained which describes the component type, service, accessibility and all associated leak paths. The leak path inventory serves as a basis for compliance with fugitive hydrocarbon emission limits.

**4.5 Crew and Supply Vessels**

4.5.1 General: Holly is serviced by both crew and supply boats. Crew boats are used to transport personnel and light supplies between Ellwood Pier and the platform. Supply boats are used to transport equipment and supplies, between Port Hueneme and the platform. Total mileage in the state coastal waters, from Holly to Ventura’s Port Hueneme is approximately 41 miles (one way). Total mileage between the Ellwood Pier and Holly is approximately 3.2 miles (one way).

Venoco does not have dedicated crew or supply boats for servicing Holly. Instead, Venoco uses whatever boats are available, provided that the boats meet the fuel limits set forth in Condition No. 9.D.7 (b) and emission limits set forth in this permit. Crew and supply boats that are permitted for use at Holly are listed in Venoco’s Boat Monitoring and Reporting Plan.

4.5.2 Emission Controls: There are no emission controls assumed for the project crew and supply boats.

4.5.3 Emission Factors: The permit assesses emission liability based solely on a single emission factor (the cruise mode). A full load NO<sub>x</sub> emission factor of 14 g/bhp-hr (561 lb/1000 gallons) is used. Sulfur oxide emissions are based on mass balance calculations assuming 0.40 weight percent sulfur diesel fuel. Other boat main engine 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), assumed to be 14 g/bhp-hr (561 lb/1000 gallons).

4.5.4 Calculations: The calculation methodology for the crew and 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)

The calculations for the auxiliary engines are similar, except that a 50 percent engine load factor for the generators is utilized.

4.5.5 Monitoring: Ongoing compliance will be assessed through implementation of an APCD-approved Boat Monitoring and Reporting Plan. This Plan will be required to follow the APCD *Data*

Reporting Protocol for Crew and Supply Boat Activity Monitoring document (dated June 21, 1991 and subsequent updates). The requirements include: fuel use and hours of operation.

4.5.6 Emergency Response Boat: A permanently assigned emergency response vessel (i.e., the *Clean Seas II*) is associated with Holly. The engines on these vessels are uncontrolled. The total engine horsepower, including auxiliary engines, is 1,770 bhp. Emissions liability is assigned in a prorated fashion among the sixteen offshore platforms that utilize the vessel off the Santa Barbara coast. Emission factors, calculations, and compliance procedures are the same as for the supply vessels discussed above. If used, other emergency response boat fuel usage (and resulting emissions) shall be assessed against this emissions category.

**4.6 Tanks/Vessels/Sumps/Separators**

4.6.1 Tanks: Holly has one diesel fuel storage tank and one glycol storage tank. The diesel storage tank servicing the various IC engines on the platform is not controlled. The glycol storage tank is also uncontrolled. Emissions from the diesel fuel and glycol tanks are small and are assumed to be less than 0.10 tpy (200 lb/year).

4.6.2 Vessels: Holly has several pressure vessels (e.g., production separators, a test separator, a glycol contactor, surge vessels, and scrubbers). Emissions from pressure vessels are due to fugitive hydrocarbon leaks from valves and connections.

4.6.3 Sumps: Oil Sump Tank T-5 collects liquids from the laboratory sink and sample drains. Fluids from this tank are pumped to V-109 or V-110 surge vessels. The platform also has a deck water drainage system that consists of two open top tanks in series (T-1 and T-4). Liquids from these tanks are pumped to V-109 or V-110 surge vessels. Vacuum trucks are periodically transported to the platform on the supply boat to remove solids from the tanks. The emissions from all three of these tanks are based on the CARB/KVB Report (*Emissions Characteristics of Crude Oil Production in California*, January 1983). These vessels are classified as being in tertiary production and light oil service and are all vented to the atmosphere. The calculation method is:

$$ER = [(EF \times SAREA \div 24) \times (1 - CE) \times (HPP)]$$

where: ER = emission rate (lb./period)  
 EF = ROC emission factor (lb/ft<sup>2</sup>-day)  
 SAREA = unit surface area (ft<sup>2</sup>)  
 CE = control efficiency  
 HPP = operating hours per time period (hrs/period)

Another tank, Tank T-101, is used exclusively as a case drain holding tank, and is not permitted to hold any fluid with a true vapor pressure of greater than 0.5 psia, and thus, is not included in the emission calculations.

**4.7 Other Emission Sources**

4.7.1 Pigging: Pipeline pig launching to the Ellwood Onshore Facility occurs on the platform. Some backpressure remains inside the launcher when it is opened to the atmosphere at the end of pigging. The APCD has assumed that this remaining pressure should not exceed 5 psig. Negligible ROC emissions occur during the depressurization of the unit after being purged with

$$ER = [V_1 \times \rho \times wt \% \times EPP]$$

nitrogen five times (see Section 10.1). The calculation per depressurization event is:

<u>where:</u>	ER = emission rate (lb./event)
$V_1 =$	volume of launcher/receiver vessel (ft <sup>3</sup> )
$\rho =$	density of vapor (99.99 % N <sub>2</sub> ) at actual conditions (lb/ft <sup>3</sup> )
wt % =	weight percent ROC in the nitrogen-ROC mix
EPP =	pigging events per time period (events/period)

- 4.7.2 General Solvent Cleaning/Degreasing: Solvent usage (not including thinners for surface coating) occurs on Holly as part of normal daily operations and consists of small cold solvent degreasing and wipe cleaning. Mass balance emission calculations are used assuming all the solvent used evaporates to the atmosphere. Emission estimates and compliance are based on monthly usage data. For the purposes of calculations, the daily emissions are assumed to be equal to the monthly emissions divided by the number of days per month.
- 4.7.3 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 solvents evaporate into the atmosphere. Emissions of PM<sub>10</sub>/PM from paint over-spray are not calculated due to the lack of established calculation techniques.
- 4.7.5 Abrasive Blasting: Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. 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 and PM<sub>10</sub> when needed for compliance calculations. A PM<sub>10</sub>/PM ratio of 1.0 is assumed.

#### **4.8 Vapor Recovery/Control Systems**

Vapor Recovery Systems: Holly has two electric-powered VRU compressors (C-100A, C-100B) for collecting vapors from various low-pressure systems on the platform for recycle in gas-lift operations, or delivery to the EOF for processing to sales gas. Low-pressure systems include the glycol system, compressor distance pieces, acid surge vessel, and oil surge vessels. A control efficiency of 95 percent is assigned to the vapor recovery system.

#### **4.9 BACT/NSPS/NESHAP/MACT**

None of the emission units at Holly is subject to Best Available Control Technology provisions of the APCD or a federal New Source Performance Standards or National Emissions Standards for Hazardous Air Pollutants.

Holly is subject to MACT provisions prescribed under Subpart HH but qualified for the black oil exemption.

#### **4.10 CEMS/Process Monitoring/CAM**

- 4.10.1 CEMS: There are no in-stack continuous emission monitors (CEMS) at Holly.
- 4.10.2 Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by process monitoring systems. Examples of these monitors include: engine hour meters, water injection mass flow meters, fuel usage meters, flare gas flow meters, and hydrogen

sulfide analyzers. 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 will be required to be calibrated and maintained in good working order:

- Crew boat diesel fuel meters (main and auxiliary engines)
- Supply boat diesel fuel meters (main and auxiliary/bow thruster engines)
- Hour meters (crane, emergency generator, drilling generator engines)
- Flare flow meters (high-pressure and LP flares)
- Fuel flow meters (drilling generator engines)
- Ambient H<sub>2</sub>S sensors and LEL sensors required by the SIMQAP

To implement the above calibration and maintenance requirements, Venoco updated the existing *Process Monitor Calibration and Maintenance Plan* (dated 30<sup>th</sup> May 2003) and obtained the APCD's approval on 06/05/2003. The update consists of minor revisions to the Plan as requested by the APCD in its April 30, 2003 letter to Venoco. Venoco is required to comply with the Plan and any subsequent APCD-approved update (See Condition 9.C.19).

4.10.3 CAM: A review of the equipment associated with Holly indicates that there are no emission units or activities that are subject to the rule. This rule affects emission units at the source subject to a federally-enforceable emission limit or standard that uses a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds.

#### **4.11 Source Testing/Sampling**

Source Testing/Sampling/Calibration: Source testing and sampling are 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.

Source testing of the three generator engines for NO<sub>x</sub>, ROC, and CO is required every two years by Rule 333. Source testing must be conducted using the methods specified by Rule 333. Source testing is not required by ATC 12804 for the crane engine, unless portable analyzer monitoring exceeds the thresholds listed in the source testing permit condition.

At a minimum, the process streams below are required to be sampled and analyzed. Duplicate samples are required for TRS/H<sub>2</sub>S; and for wastewater when Rule 325 applicability is to be determined :

- ☞ Produced Gas: Sample taken at production separator outlet. Analysis for: HHV, total sulfur, hydrogen sulfide, composition. Samples are to be taken on an annual basis.
- ☞ Produced Oil: Sample taken at outlet from production separator. Analysis for: API gravity; true vapor pressure (per Rule 325 methods). Samples are to be taken on an annual basis.
- ☞ Wastewater: Sample taken of liquid entering the wastewater surge tank (T-1), oil salvage tank (T-5) and surge skimmer tank (T-4). Analysis for: ROC content in units of mg/l (per Rule 325 methods). Samples to be taken upon request of the APCD, except for Tank T-1, which is to be taken annually.

- ☞ Flare Gas Stream: Sample to be taken at APCD-approved collection point per Process Stream Sampling Plan. Analysis for total sulfur. Samples to be taken on an annual basis.
- ☞ Flare Gas Stream: Sample to be taken at APCD-approved collection point at the platform per Process Stream Sampling Plan. Analysis for hydrogen sulfide. Samples to be taken on a daily/weekly/quarterly basis.
- ☞ Flare Pilot and Purge Gas Stream: Flare pilot and purge gas is EOF in-plant fuel gas. Hydrogen sulfide and total sulfur analyses of the in-plant fuel gas are taken at the EOF.
- ☞ Lube Oil Tank (T-101): Sample to be taken annually of liquid entering tank and analyzed for TVP of liquid.
- ☞ IC Engine Diesel Fuel: Sample to be taken at the fuel tank. Analysis for HHV per APCD-approved ASTM Methods. Sample to be taken annually.

NOTE 1: The true vapor pressure (TVP) at the maximum expected temperature of the crude oil in each storage tank shall be measured by using ASTM method D 323, (if API gravity is equal to or greater than 20 degrees) or the HOST Method (if API gravity is under 20 degrees), and recorded. Sampling of crude oil for the vapor pressure measurement shall be from an active flow line upstream of the tank. If ASTM D323 applies, the TVP at the maximum expected temperature shall be calculated from the Reid vapor pressure in accordance with API Bulletin 2518, or equivalent Reid/true vapor pressure correlation. The calculated true vapor pressure shall be based on the maximum expected operating temperature for each crude oil storage tank.

NOTE 2: Venoco submitted an update to the APCD of its existing Process Stream Sampling Plan on 02/03/2003. The update was approved by the APCD on 06/23/2003. Venoco is required to comply with this Plan and any subsequent APCD-approved update (see Condition 9.C.19).

#### **4.12 Part 70 Engineering Review: Hazardous Air Pollutant Emissions**

Hazardous air pollutant emissions from the different categories of emission units at Holly are based on emission factors listed in USEPA AP-42. Where no emission factors are available, the HAP fractions from the ARB VOC Speciation Manual – Second Edition (August 1991) are used in conjunction with the ROC emission factor for the equipment item in question. Potential HAP emissions from each emissions unit at Holly are listed in Section 5. The HAP emission factor basis is detailed in Table 10.1-4.

## 5.0 Emissions

### 5.1 General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by APCD Rule 202. The permitted emissions for each emissions unit are based on the equipment's potential to emit (as defined by Rule 102). Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential to emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated HAP emissions for the platform. Section 5.6 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emissions. Section 5.7 provides the net emissions increase calculation for the facility and the stationary source. In order to track the emissions from a facility accurately, the APCD uses a computer database. Attachment 10.3 contains the APCD's documentation for the information entered into that database. Consistent with the APCD and federal rules, all marine vessel emissions associated with the platform are included in the potential-to-emit calculations.

### 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<sub>x</sub>)<sup>3</sup>
- ⇒ Reactive Organic Compounds (ROC)
- ⇒ Carbon Monoxide (CO)
- ⇒ Sulfur Oxides (SO<sub>x</sub>)<sup>4</sup>
- ⇒ Particulate Matter (PM)<sup>5</sup>
- ⇒ Particulate Matter smaller than 10 microns (PM<sub>10</sub>)

Permitted emissions are calculated for both short term (daily) and long term (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. Table 5.1-3 shows the permitted short-term and permitted long-term emissions for each unit or operation. In the table, the last column indicates whether the emission limits are federally enforceable. Those emissions limits that are federally enforceable are indicated by the symbol "FE". Those emissions limits that are APCD-only enforceable are indicated by the symbol "A". Emissions data that are shown for informational purposes only are not enforceable (APCD or federal) and are indicated by the symbol "NE".

---

<sup>3</sup> Calculated and reported as nitrogen dioxide (NO<sub>2</sub>)

<sup>4</sup> Calculated and reported as sulfur dioxide (SO<sub>2</sub>)

<sup>5</sup> Calculated and reported as all particulate matter smaller than 100 μm

### 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.

#### Daily Scenario:

- Fugitive components
- Crew and supply boat main engines
- Generator engines on crew and supply boats
- Bow thruster on supply boat
- Oil emulsion, produced gas, and utility gas pig launchers
- Flaring (purge, pilot, planned continuous)
- Salvage tank
- Skimmer tank
- Oil recovery tank
- Solvent/coating usage
- Emergency DICE generator
- Drill rig generator engines
- DICE crane engine permitted under ATC 12804

#### Annual Scenario:

- Fugitive components
- Crew and supply boat main engines
- Generator engines on crew and supply boats
- Bow thruster on supply boat
- Oil emulsion and produced gas, and utility gas pig launchers
- Flaring (purge, pilot, planned continuous, unplanned other)
- Salvage tank
- Skimmer tank
- Oil recovery tank
- Solvent/coating usage
- Emergency DICE generator
- Drill rig generator engines
- DICE crane engine permitted under ATC 12804

### 5.4 **Part 70: Federal potential to emit for the Facility**

Table 5.3 lists the federal Part 70 ‘potential to emit.’ All project emissions, except fugitive emissions, are counted in the federal definition of ‘potential to emit.’ However, the fugitives are counted in the federal potential to emit if the facility is subject to any applicable NSPS or NESHAP requirement. Holly is not subject to an NSPS or NESHAP, therefore fugitive emissions are not included in the Federal potential to emit.

### **5.5 Part 70: Hazardous Air Pollutant Emissions for the Facility**

Total emissions of hazardous air pollutants (HAP) are estimated based on the factors listed in Table 5.5-1 for each emissions unit. Potential HAP emissions are shown in Table 5.5-2. These are based on a combination of the worst-case scenario listed in Section 5.3 and estimated exempt emissions shown in Table 5.4.

### **5.6 Exempt Emission Sources/Part 70 Insignificant Emissions**

Equipment/activities exempt from APCD permits pursuant to Rule 202 include:

- maintenance operations involving surface coating (painting operations)
- portable registered drilling engines
- diesel fuel tank (1500 gallons)

Insignificant emission units are defined under APCD 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. Solvent usage and surface coating operations for maintenance are exempt from APCD permit per Rule 202, but are not Part 70 insignificant emission units, since they exceed the insignificant emissions threshold.

Table 5.4 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant. This permit covers the Solvents/Surface coating operations used maintenance operations.

### **5.7 Net Emissions Increase Calculation**

This facility's net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is shown in Table 10.2-1. This emissions history is relevant for any future modifications to Holly. Table 10.2-2 shows the stationary source NEI calculations. This stationary source includes Holly, EOF, Beachfront, and Seep Collection facilities.

Table 5.1-1  
Venoco Platform Holly Part 70/APCD PTO 8234-R7  
Operating Equipment Description

Equipment Category	Description	Venoco Equip. No.	EQ No.	Device Specifications			Usage Data			Maximum Operating Schedule (in hours/time period)			References	
				Fuel	% S by volume	Size	Units	Capacity	Units	Load	hr	day		year
Combustion - Flare	Planned - Pilot (all)	H-100/101	7982/9603	PUC	0.0012	200	scfh	0.220	MMBtu/hr	—	1.0	24	8760	A
	Planned - Purge	H-100	7982	PG	0.0239	2,100	scfh	2.310	MMBtu/hr	—	1.0	24	8760	
	Planned - LP Purge	H-101	9603	PG	0.0239	300	scfh	0.330	MMBtu/hr	—	1.0	24	8760	
	Planned - Intermittent	H-100/101	7982/9603	PG	0.0239	0	scfh	0.000	MMBtu/hr	—	0	0	0	
	Unplanned	H-100/101	7982/9603	SG	1.7000	480,000	scf/yr	528,000	MMBtu/yr	—	n/a	n/a	0.44	
	Worst-Case Flare Event	—	7982/9603	SG	1.7000	18,056	scf/min	19,861	MMBtu/min	0.018	n/a	n/a		
IC Engine	<i>Crane Engine *</i>	—	111506	Diesel	0.0015	250	bhp	1.41	gal/hr	—	1.0	2.0	709.2	
	Emergency Generator		2337	Diesel	0.0015	373	bhp	21.24	gal/hr	1.0	2.0	20.0		
	Generator No. 1		9130	NG	0.008	803	bhp	7.59	MMBtu/hr	1.0	24	8760		
	Generator No. 2		9131	NG	0.008	803	bhp	7.59	MMBtu/hr	1.0	24	8760		
	Generator No. 3		9132	NG	0.008	1063	bhp	8.10	MMBtu/hr	1.0	24	8760		
Fugitive Components	Oil - controlled	3105-02	9601	—	—	6,469	comp-lp	—	—	—	1.0	24	8760	B
	Oil - unsafe	3105-03	104754	—	—	0	comp-lp	—	—	—	1.0	24	8760	
						sub-total =	6,469							
	Gas - controlled	3105-04	104755	—	—	9,477	comp-lp	—	—	—	1.0	24	8760	
	Gas - unsafe	3105-05	104756	—	—	0	comp-lp	—	—	—	1.0	24	8760	
					sub-total =	9,477								
Supply Boat	Main Engines	3105-AA	9789	D2	0.40	4,920	bhp-total	270.1	gal/hr	0.65	1.0	13	2544	C
	Generator Engines	3105-BB	9790	D2	0.40	530	bhp-total	29.1	gal/hr	0.50	1.0	13	2544	
	Bow Thruster	3105-CC	9791	D2	0.40	530	bhp-total	29.1	gal/hr	1.00	1.0	2	384	
Crew Boat	Main Engines	3105-DD	9787	D2	0.40	1,605	bhp-total	81.7	gal/hr	0.85	1.0	7.0	1792	D
	Auxiliary Engines	3105-EE	9788	D2	0.40	131	bhp-total	7.2	gal/hr	0.50	1.0	7.0	1792	
Pigging Equipment	Oil Launcher	3105-06	9792	—	—	1.40	ft3	5	psig	—	5	5	960	E
	Utility Gas Launcher	3105-07	9793	—	—	1.40	ft3	5	psig	—	10	10	120	
	Gas Launcher	3105-08	9794	—	—	1.40	ft3	5	psig	—	10	10	120	
Sumps/Tanks/Separators	Oil surge tank (T-1)	3105-09	2345	—	—	44.20	ft2	—	—	—	1.0	24	8760	F
	Overflow sump tank(T-4)	3105-11	5882	—	—	113.20	ft2	—	—	—	1.0	24	8760	
Solvent/Coatings Usage*	Cleaning/degreasing	3105-15	5884	—	—	1,500	gal/yr	125	gal/month	—	1.0	24	8760	G
Boom Boat	Oil spill boom deployment		104765	gas		85	bhp-total	0.1	gal/hp-hr	0.65	1.0	12	24	H

\*— estimated solvent usage

Note: The Crane engine is currently permitted under ATC 12804. The potential to emit of the crane engine is calculated here for information purposes only.

Table 5.1-2  
 Venoco Platform Holly Part 70/APCD PTO 8234-R7  
 Equipment Emission Factors

Equipment Category	Description	Venoco		Emission Factors							Units	References
		Equip. No	EQ No.	NOx	ROC	CO	SOx	PM	PM10			
Combustion - Flare	Planned - Pilot (all)	H-100/101	7982/9603	0.068	0.086	0.370	0.002	0.020	0.020	lb/MMBtu	A	
	Planned - Purge	H-100	7982	0.068	0.086	0.370	0.037	0.020	0.020	lb/MMBtu		
	Planned - LP Purge	H-101	9603	0.068	0.086	0.370	0.037	0.020	0.020	lb/MMBtu		
	Planned - Intermittent	H-100/101	7982/9603	0.068	0.086	0.370	0.037	0.020	0.020	lb/MMBtu		
	Unplanned	H-100/101	7982/9603	0.068	0.086	0.370	2.612	0.020	0.020	lb/MMBtu		
	Worst-Case Flare Event	-	7982/9603	0.068	0.086	0.370	2.612	0.020	0.020	lb/MMBtu		
IC Engine	<i>Crane Engine *</i>	-	111506	2.69	0.31	2.60	0.006	0.01	0.01	g/hp-hr		
	Emergency Generator		2337	14.061	1.12	3.03	0.93	0.984	0.984	g/hp-hr		
	Generator No. 1		9130	0.166	0.037	0.292	0.013	0.046	0.046	lb/MMBtu		
	Generator No. 2		9131	0.166	0.037	0.292	0.013	0.046	0.046	lb/MMBtu		
	Generator No. 3		9132	0.143	0.143	0.215	0.013	0.046	0.046	lb/MMBtu		
Fugitive Components	Oil - controlled	3105-02	9601	-	0.0009	-	-	-	-	lb/day-clp	B	
	Oil - unsafe	3105-03	104754	-	0.0044	-	-	-	-	lb/day-clp		
	Gas - controlled	3105-04	104755	-	0.0147	-	-	-	-	lb/day-clp		
	Gas - unsafe	3105-05	104756	-	0.0736	-	-	-	-	lb/day-clp		
Supply Boat	Main Engines	3105-AA	9789	561	16.80	78.30	56.34	33.00	31.68	lb/1000 gal	C	
	Generator Engines	3105-BB	9790	600	48.98	129.26	56.34	42.18	40.49	lb/1000 gal		
	Bow Thruster	3105-CC	9791	600	48.98	129.26	56.34	42.18	40.49	lb/1000 gal		
Crew Boat	Main Engines	3105-DD	9787	561	44.50	99.70	56.34	33.00	31.68	lb/1000 gal	D	
	Auxiliary Engines	3105-EE	9788	600	48.98	129.26	56.34	42.18	40.49	lb/1000 gal		
Pigging Equipment	Oil Launcher	3105-06	9792	-	0.016	-	-	-	-	lb/acf-evt	E	
	Utility Gas Launcher	3105-07	9793	-	0.000	-	-	-	-	lb/acf-evt		
	Gas Launcher	3105-08	9794	-	0.000	-	-	-	-	lb/acf-evt		
Sumps/Tanks/Separators	Oil surge tank (T-1)	3105-09	2345	-	0.0058	-	-	-	-	lb/ft2-day	F	
	Overflow sump tank (T-4)	3105-11	5882	-	0.0058	-	-	-	-	lb/ft2-day		
Solvent/Coatings Usage	Cleaning/degreasing	3105-15	5884	-	250	-	-	-	-	g/l	G	
Boom Boat	Oil spill boom deployment		104765	1.10	90	212	0.27	24.00	23.00	g/hp-hr	H	

Note: The Crane engine is currently permitted under ATC 12804. The potential to emit of the crane engine is calculated here for information purposes only.

Table 5.1-3  
Venoco Platform Holly, Part 70/APCD PTO 8234-R7  
Daily and Annual Emissions

Equipment Category	Description	Venoco		NOx		ROC		CO		SOx		PM		PM10		Federal Enforceability
		Equip. No.	EQ No.	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy	
Combustion - Flare	Planned - Pilot (all)	H-100/101	7982/9603	0.36	0.07	0.46	0.08	1.95	0.36	0.01	0.00	0.11	0.02	0.11	0.02	FE
	Planned - Purge	H-100	7982	3.77	0.69	4.79	0.87	20.51	3.74	2.04	0.37	1.11	0.20	1.11	0.20	FE
	Planned - LP Purge	H-101	9603	0.54	0.10	0.68	0.12	2.93	0.53	0.29	0.05	0.16	0.03	0.16	0.03	FE
	Planned - Intermittent	H-100/101	7982/9603	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Unplanned	H-100/101	7982/9603	n/a	0.02	n/a	0.02	n/a	0.10	n/a	0.69	n/a	0.01	n/a	0.01	FE
	Worst-Case Flare Event	-	7982/9603	1.35	1.48	1.72	1.88	7.35	8.07	51.87	56.96	0.40	0.44	0.40	0.44	FE
IC Engine	Crane Engine *	-	2336	3.00	0.63	0.35	0.06	2.90	0.51	0.01	0.00	0.01	0.00	0.01	0.00	A
	Emergency Generator		2337	23.13	0.12	1.84	0.01	4.98	0.02	1.53	0.01	1.62	0.01	1.62	0.01	A
	Generator No. 1		9130	30.26	5.52	6.74	1.23	53.22	9.71	2.37	0.43	8.38	1.53	8.38	1.53	
	Generator No. 2		9131	30.26	5.52	6.74	1.23	53.22	9.71	2.37	0.43	8.38	1.53	8.38	1.53	
	Generator No. 3		9132	27.82	5.08	27.82	5.08	41.82	7.63	2.53	0.46	8.95	1.63	8.95	1.63	
Fugitive Components	Oil - controlled	3105-02	9601	-	-	5.68	1.04	-	-	-	-	-	-	-	-	A
	Oil - unsafe	3105-03	104754	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
						sub-total =	5.68	1.04								A
	Gas - controlled	3105-04	104755	-	-	139.48	25.46	-	-	-	-	-	-	-	-	A
	Gas - unsafe	3105-05	104756	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
					sub-total =	139.48	25.46									A
Supply Boat	Main Engines	3105-AA	9789	1,305.45	125.32	39.08	3.75	182.15	17.49	131.07	12.58	76.77	7.37	73.70	7.07	A
	Emergency Generator	3105-BB	9790	115.67	11.10	9.44	0.91	24.92	2.39	10.86	1.04	8.13	0.78	7.81	0.75	A
	Bow Thruster	3105-CC	9791	34.92	3.35	2.85	0.27	7.52	0.72	3.28	0.31	2.45	0.24	2.36	0.23	A
Crew Boat	Main Engines	3105-DD	9787	272.79	34.92	21.63	2.77	48.47	6.20	27.39	3.51	16.04	2.05	15.40	1.97	A
	Auxiliary Engines	3105-EE	9788	15.10	1.93	1.23	0.16	3.25	0.42	1.42	0.18	1.06	0.14	1.02	0.13	A
Pigging Equipment	Oil Launcher	3105-06	9792	-	-	0.11	0.01	-	-	-	-	-	-	-	-	A
	Utility Gas Launcher	3105-07	9793	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
	Gas Launcher	3105-08	9794	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
Sumps/Tanks/Separators	Oil surge tank (T-1)	3105-09	2345	-	-	0.26	0.05	-	-	-	-	-	-	-	-	A
	Overflow sump tank (T-4)	3105-11	5882	-	-	0.66	0.12	-	-	-	-	-	-	-	-	A
Solvent/Coatings Usage*	Cleaning/Degreasing*	3105-15	5884	-	-	8.56	1.56	-	-	-	-	-	-	-	-	
Boom Boat	Oil spill boom deployment		104765	1.61	0.00	132.13	0.13	309.87	0.31	0.39	0.00	35.08	0.04	33.62	0.03	A

**Notes**

FE = federally enforceable

A = APCD-only enforceable

\* - These estimated emissions do not constitute any emissions limit

Note: The Crane engine is currently permitted under ATC 12804. The potential to emit of the crane engine is calculated here for information purposes only.

Table 5.2  
Venoco Platform Holly Part 70/APCD PTO 8234-R7  
Total Permitted Facility Emissions

A. DAILY (lb/day)

Equipment Category	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM	PM10
Combustion - Flare	4.67	5.93	25.40	2.34	1.37	1.37
IC Engines	111.46	43.15	153.25	8.80	27.34	27.34
Fugitive Components	–	145.16	–	–	–	–
Supply Boat	1,456.03	51.37	214.59	145.21	87.35	83.86
Crew Boat	287.90	22.87	51.72	28.81	17.10	16.42
Pigging	–	0.11	–	–	–	–
Sumps/Tanks/Separators	–	0.91	–	–	–	–
<i>Solvent/Coatings Usage*</i>	–	8.56	–	–	–	–
Boom Boat	1.61	132.13	309.87	0.39	35.08	0.03
<b>PTO 8234-R7 Total</b>	<b>1,861.66</b>	<b>410.19</b>	<b>754.82</b>	<b>185.55</b>	<b>168.24</b>	<b>129.02</b>
Crane Engine (ATC 12804)	<u>3.00</u>	<u>0.35</u>	<u>2.90</u>	<u>0.01</u>	<u>0.01</u>	<u>0.01</u>
<b>Facility Total</b>	<b>1864.66</b>	<b>410.54</b>	<b>757.72</b>	<b>185.56</b>	<b>168.26</b>	<b>129.03</b>

B. ANNUAL (tpy)

Equipment Category	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM	PM10
Combustion - Flare	0.87	1.10	4.73	1.12	0.26	0.26
IC Engines	16.24	7.55	27.08	1.33	4.70	4.70
Fugitive Components	–	26.49	–	–	–	–
Supply Boat	139.78	4.93	20.60	13.94	8.39	8.05
Crew Boat	36.85	2.93	6.62	3.69	2.19	2.10
Pigging	–	0.01	–	–	–	–
Sumps/Tanks/Separators	–	0.17	–	–	–	–
<i>Solvent/Coatings Usage*</i>	–	1.56	–	–	–	–
Boom Boat	<u>0.00</u>	<u>0.13</u>	<u>0.31</u>	<u>0.00</u>	<u>0.04</u>	<u>0.03</u>
<b>PTO 8234-R7 Total</b>	<b>193.74</b>	<b>44.87</b>	<b>59.35</b>	<b>20.08</b>	<b>15.57</b>	<b>15.14</b>
Crane Engine (ATC 12804)	<u>0.53</u>	<u>0.06</u>	<u>0.51</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<b>Facility Total</b>	<b>194.26</b>	<b>44.94</b>	<b>59.86</b>	<b>20.08</b>	<b>15.57</b>	<b>15.15</b>

\* – These estimated emissions do not constitute any emissions limit

Table 5.3  
Venoco Platform Holly Part 70/APCD PTO 8234-R7  
Federal Potential to Emit

A. DAILY (lb/day)

Equipment Category	NOx	ROG	CO	SOx	PM	PM10
Combustion - Flare	4.67	5.93	25.40	2.34	1.37	1.37
IC Engines	111.46	43.15	153.25	8.80	27.34	27.34
Fugitive Components	–	–	–	–	–	–
Supply Boat	1,456.03	51.37	214.59	145.21	87.35	83.86
Crew Boat	287.90	22.87	51.72	28.81	17.10	16.42
Pigging	–	–	–	–	–	–
Sumps/Tanks/Separators	–	–	–	–	–	–
Solvent Usage	–	–	–	–	–	–
Exempt Eqpt.	<u>1,319.30</u>	<u>250.80</u>	<u>250.80</u>	<u>116.10</u>	<u>86.60</u>	<u>86.60</u>
<b>PTO 8234-R7 Total</b>	<b>3,179.35</b>	<b>374.11</b>	<b>695.76</b>	<b>301.26</b>	<b>219.77</b>	<b>215.59</b>
Crane Engine (ATC 12804)	<u>3.00</u>	<u>0.35</u>	<u>2.90</u>	<u>0.01</u>	<u>0.01</u>	<u>0.01</u>
<b>Facility Total</b>	<b>3182.35</b>	<b>374.46</b>	<b>698.65</b>	<b>301.26</b>	<b>219.78</b>	<b>215.60</b>

B. ANNUAL (tpy)

Equipment Category	NOx	ROG	CO	SOx	PM	PM10
Combustion - Flare	0.87	1.10	4.73	1.12	0.26	0.26
IC Engines	16.24	7.55	27.08	1.33	4.70	4.70
Fugitive Components	–	–	–	–	–	–
Supply Boat	139.78	4.93	20.60	13.94	8.39	8.05
Crew Boat	36.85	2.93	6.62	3.69	2.19	2.10
Pigging	–	0.01	–	–	–	–
Sumps/Tanks/Separators	–	0.17	–	–	–	–
Solvent Usage	–	1.56	–	–	–	–
Exempt Equipment	8.92	7.32	7.99	0.25	1.63	1.63
Boom Boat	<u>0.00</u>	<u>0.13</u>	<u>0.31</u>	<u>0.00</u>	<u>0.04</u>	<u>0.03</u>
<b>PTO 8234-R7 Total</b>	<b>202.66</b>	<b>25.70</b>	<b>67.34</b>	<b>20.33</b>	<b>17.20</b>	<b>16.77</b>
Crane Engine (ATC 12804)	<u>0.53</u>	<u>0.06</u>	<u>0.51</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<b>Facility Total</b>	<b>203.18</b>	<b>25.76</b>	<b>67.85</b>	<b>20.33</b>	<b>17.20</b>	<b>16.78</b>

## 6.0 Air Quality Impact Analyses

### 6.1 Modeling

Air quality impact analyses were not performed for the issuance of this permit.

Modeling was previously performed under ATC 10128 per APCD policy No. 6100.004 which requires that an air quality impact analysis for certain planned and unplanned flaring events be performed. Only the reasonable credible worst-case flaring event of sour gas was analyzed. The planned purge and pilot operations were not analyzed because of their low daily and annual emissions rates.

The APCD used the EPA Screen3 model to assess the ambient air quality impact of the reasonable worst-case credible flaring event defined in Section 4 of this permit. The Screen3 model is an appropriate tool to evaluate air emission impacts from this flare. The analysis results are summarized in Table 6.1-1 below and show that no adverse impact or exceedance of any applicable hourly, 8-hour or 24-hour standard will be caused by the worst-case event usage of the flare (that is 20,000 SCF in 66 seconds). The table below only compares compliance with state standards because they are more stringent than analogous federal standards.

Table 6.1-1 – Analysis Results of Worst-Case Flaring at Holly

Pollutant Name	Symbol	Emission Rate (lb/min)	AQIA Impacts (micrograms/m3)		Compliance w/ Standards	Applicable State Standards (micrograms/m3)		
			1-hour	8 or 24-hour		1-hour	8-hour	24-hour
Sulfur Dioxide	SO <sub>2</sub>	51.87	132.9	53.2	Yes	655	N/A	105
Nitrogen Dioxide	NO <sub>2</sub>	1.35	3.5	N/A	Yes	470	N/A	N/A
Carbon Monoxide	CO	7.35	18.8	13.2	Yes	23,000	10,000	N/A

### 6.2 Increments

An air quality increment analysis has not been required for this stationary source

### 6.3 Monitoring

Air quality monitoring is not required for this stationary source.

### 6.4 Health Risk Assessment

The Venoco Holly facility is subject to the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB 2588). The most recent HRA for the facility was prepared by the APCD on October 28, 1993 under the Air Toxics “Hot Spots” program. The HRA was based on 1991 toxic emissions inventory data submitted to the APCD by Mobil, the previous owners of Holly.

Cancer risk and chronic and acute non-cancer Hazard Index (HI) risk values were calculated based on the 1991 inventory and compared to *significance thresholds* for cancer and chronic and acute non-cancer risk adopted by the APCD’s Board of Directors. The calculated risk values and applicable thresholds are as follows:

	Holly Max Risks	Significance Threshold
Cancer risk:	8.0 /million	>10/million
Chronic non-cancer risk:	0.04	> 1
Acute non-cancer risk:	6.0	> 1

Based on the 1991 toxic emissions inventory, a cancer risk of 8.0 per million was estimated for the Holly facility. The cancer risk is primarily due to emissions of polycyclic aromatic hydrocarbon (PAH) from internal combustion devices (e.g., cranes, crew boat activities). Approximately 2.0 pounds of PAH were emitted from Holly devices in 1991. This risk was determined to occur approximately 3,400 meters northwest of the platform (over the ocean).

A chronic non-cancer hazard risk of 0.04 and an acute hazard risk of 6.0 have been estimated by the APCD. The acute hazard risk is over the APCD's significance threshold of 1. This significant acute hazard index is due to H<sub>2</sub>S emissions from fugitive sources. Approximately 21,340 pounds of H<sub>2</sub>S were emitted from Holly devices in 1991. The peak acute hazard risk was determined to occur approximately 280 meters northwest of the platform (over the ocean).

## **7.0 CAP Consistency, Offset Requirements and ERCs**

### **7.1 General:**

The Venoco – Ellwood stationary source is located in an ozone nonattainment area. Santa Barbara County is designated nonattainment for both the federal and state one-hour ambient air quality standards for ozone. In addition, the County is designated nonattainment with the state PM<sub>10</sub> ambient air quality standard. 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 APCD regulations, any modifications at the Venoco – Ellwood source that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Increases above the 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 55 lbs/day for all non-attainment pollutants except PM<sub>10</sub> for which the level is 80 lbs/day.

### **7.2 Clean Air Plan**

Santa Barbara County's air quality has historically violated both the state and federal ozone standards. Since 1999, however, local air quality data show that every monitoring location in the County complied with the federal one-hour ambient air quality standard for ozone. The Santa Barbara County Air Pollution Control District adopted the 2001 Clean Air Plan (2001 CAP) that demonstrated attainment of the federal one-hour ozone standard and continued maintenance of that standard through 2015. Consequently, on August 8, 2003, the United States Environmental Protection Agency (USEPA) designated Santa Barbara County as an attainment area for the federal one-hour ozone standard.

On June 15, 2004, USEPA replaced the federal one-hour ozone standard with an eight-hour ozone standard for Santa Barbara County and most parts of the country. This eight-hour ozone standard, originally promulgated by USEPA on July 18, 1997, is set at 0.08 parts per million measured over eight hours and is more protective of public health and more stringent than the federal one-hour standard. For the purposes of the federal eight-hour ozone standard, Santa Barbara County has been designated attainment.

On August 16, 2007, the APCD Board adopted the 2007 Clean Air Plan to chart a course of action that will provide for ongoing maintenance of the federal eight-hour ozone standard through the year 2014 as well as the expeditious attainment of the state one-hour ozone standard. These plans have been developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

### **7.3 Offset Requirements**

Holly does not currently require emission offsets.

### **7.4 Emission Reduction Credits**

Emission reduction credits are not required for Holly.

## **8.0 Consistency with Lead Agency Permit**

The installation of Platform Holly predates the California Environmental Quality Act (CEQA) as the platform was installed in 1966 and the act was adopted in 1970. The State Lands Commission approved the construction of Holly on April 28, 1966. In 1974, an environmental impact report (EIR) was completed for Holly.

## 9.0 **Permit Conditions**

This section lists the applicable permit conditions for Holly. 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., APCD only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the APCD, the State of California, and the public. Conditions listed in Section D are enforceable only by the APCD 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. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

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.

### 9.A **Standard Administrative Conditions**

The following federally-enforceable administrative permit conditions apply to Holly:

- A.1 **Condition Acceptance.** Acceptance of this operating permit by Venoco shall be considered as acceptance of all terms, conditions, and limits of this permit. [*Re: ATC/PTO Mod 10106-01/-02*]
- A.2 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit shall constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq.* [*Re: ATC/PTO 10106-01/-02*]
- A.3 **Defense of Permit.** Venoco agrees, as a condition of the issuance and use of this PTO, to defend at its sole expense any action brought against the APCD because of the issuance of this permit. Venoco shall reimburse the APCD for any and all costs including, but not limited to, court costs and attorney's fees which the APCD may be required by a court to pay as a result of such action. The APCD may, at its sole discretion, participate in the defense of any such action, but such participation shall not relieve Venoco of its obligation under this condition. The APCD shall bear its own expenses for its participation in the action. [*Re: ATC/PTO 10106-01/-02*]
- A.4 **Reimbursement of Costs.** All reasonable expenses, as defined in APCD Rule 210, incurred by the APCD, APCD contractors, and legal counsel for all activities related to the implementation of Regulation XIII (*Part 70 Operating Permits*) that follow the issuance of this PTO permit, including but not limited to permit condition implementation, compliance verification, implementation of Abatement Order 99-6A, and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by Venoco as required by Rule 210. [*Re: ATC/PTO 10106-01/-02, APCD Rule 210*]
- A.5 **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, Venoco 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: ATC/PTO 10106-01/-02]

- A.6 **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: ATC/PTO 10106-01/-02]
- A.7 **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 APCD's project file) and the APCD's analyses under which this permit is issued. [Re: ATC/PTO 10106-01/-02]
- A.8 **Consistency with Federal, State and Local Permits.** Nothing in this permit shall relax any air pollution control requirement imposed on the Holly by the State of California or the California Coastal Commission in any consistency determination for the Project with the California Coastal Act, or by any other governmental agency. [Re: ATC/PTO 10106-01/-02]
- 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), APCD Rules 1303.D.1]
- A.10 **Emergency Provisions.** The permittee shall comply with the requirements of the APCD, Rule 505 (Upset/Breakdown rule), and/or APCD 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 APCD, in writing, a “notice of emergency” within 2 working 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), APCD Rule 1303.F ]

**A.11 Compliance Plan.**

- (a) The permittee shall comply with all federally-enforceable requirements that become applicable during the permit term in a timely manner.
  - (b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards.
- [Re: APCD 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: APCD Rule 1303.D.2]

**A.13 Severability.** The provisions of this Permit to Operate are severable and if any provision of this Permit to Operate is held invalid, the remainder of this Permit to Operate shall not be affected thereby. [Re: APCD 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 APCD. 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 APCD rules.

The permittee shall submit an application for renewal of the Part 70 permit not later than 6 months before the date of the permit expiration. 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. [Re: APCD Rule 1304.D.1]

**A.15 Payment of Fees.** The permittee shall reimburse the APCD 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 APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. [Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]

**A.16 Deviation from Permit Requirements.** The permittee shall submit a written report to the APCD documenting each and every deviation from the federally enforceable 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 APCD in accordance with Rule 505.

*Breakdown Conditions, or Rule 1303.F Emergency Provisions. [APCD 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. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) 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 September 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: APCD 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 APCD-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, 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 APCD upon request.  
[*Re: APCD Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)*]

- 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 which 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 APCD 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 APCD 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 causes to reopen exist. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [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. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), 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 APCD Rule 303. [Re: APCD Rule 301]
- B.2 **Visible Emissions (Rule 302)**: Venoco 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 which is:
  - (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann 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.

For all combustion sources listed in Section 9.C , Venoco shall be in compliance with the requirements of this Rule in accordance with the monitoring and compliance recordkeeping procedures in Condition 9.C.22. [Re: APCD Rule 302]

- B.3 **Nuisance (Rule 303)**. No pollutant emissions from any source at Venoco shall create nuisance conditions. No operations shall endanger health, safety, or comfort, nor shall they damage any property or business. [Re: APCD Rule 303]

- B.4 **PM Concentration - South Zone (Rule 305).** Venoco 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: APCD Rule 305]
- B.5 **Specific Contaminants (Rule 309).** Venoco 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: APCD Rule 309].
- B.6 **Sulfur Content of Fuels (Rule 311).** Venoco shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 239 ppmvd or 15 gr/100 scf (calculated as H<sub>2</sub>S) for gaseous fuel. Compliance with this condition shall be based on daily measurements of the fuel gas using (sulfur detection tubes, ASTM, or other APCD-approved) methods and diesel fuel billing records or other data showing the certified sulfur content for each shipment. [Re: APCD Rule 311]
- B.7 **Organic Solvents (Rule 317).** Venoco shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Venoco's compliance with the Solvent Usage condition of this permit. [Re: APCD Rule 317]
- B.8 **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 Venoco's compliance with the Solvent Usage condition of this permit and facility inspections. [Re: APCD Rule 322]
- B.9 **Architectural Coatings (Rule 323).** Venoco shall comply with the emission standards listed in Section D of Rule 323 as well as the Administrative requirements listed in Section F of Rule 323. Compliance with this condition shall be based on Venoco's compliance with the Solvent Usage condition of this permit and facility inspections. [Re: APCD Rules 323, 317, 322, 324]
- B.10 **Disposal and Evaporation of Solvents (Rule 324).** Venoco 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 Venoco's compliance with the Solvent Usage condition of this permit and facility inspections. [Re: APCD Rule 324]
- B.11 **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: APCD Rule 353]

- B.12 **Oil and Natural Gas Production MACT.** Venoco shall comply with the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage (promulgated June 17, 1999). At a minimum, Venoco shall maintain records of ‘API Gravity’ and ‘Initial GOR’ for the facility to demonstrate the ‘black oil’ exemption [*Re: 40 CFR 63.760 (e)(1) & 63.761*]. Such record keeping shall meet the requirements of 40 CFR Part 63, Subpart A, Section 63.10 (b) (1) and (3). [*Re: 40 CFR 63, Subpart HH*]
- B.13 **CARB-Registered Portable Equipment.** State registered portable equipment shall comply with State registration requirements. A copy of the State registration shall be readily available whenever the equipment is at the facility. [*Re: APCD Rule 202*]

### 9.C Equipment Specific Conditions

This section includes non-generic federally-enforceable conditions, including emissions and operations limits, monitoring, recordkeeping and reporting are included in this section for each specific equipment group. This section may also contain other non-generic conditions.

C.1 **Spark-Ignited Internal Combustion Engines.** The following equipment is included in this emissions unit category:

APCD ID No.	Venoco Equip ID No.	Name
009130	Generator No. 1	Caterpillar 803 hp G399 SITA
009131	Generator No. 2	Caterpillar 803 hp G399 SITA
009132	Generator No. 3	Caterpillar 1053 hp G3516 SITA
111856	Catalytic Converter No. 1	Miratech EQ-801 3-Way NSCR
111857	Catalytic Converter No. 2	Miratech EQ-801 3-Way NSCR
111858	Catalytic Converter No. 3	Miratech MCS-3030 3-Way NSCR

(a) Emission Limits: Mass emissions from the IC engines listed above shall not exceed the limits listed in Table 5.1-3.

(i) Emission Concentrations. Exhaust concentrations from each engine, corrected to 15% O<sub>2</sub>, shall not exceed any of the following:

Caterpillar G-399	Source Testing	Quarterly Monitoring ppmv at 15% Oxygen
	lb/MMBtu	
NO <sub>x</sub> (as NO <sub>2</sub> )	0.166	45
CO	0.292	130
ROC	0.037	n/a

Caterpillar G-3516	Source Testing	Quarterly Monitoring ppmv at 15% Oxygen
	lb/MMBtu	
NO <sub>x</sub> (as NO <sub>2</sub> )	0.143	36
CO	0.215	88
ROC	0.143	n/a

Compliance with these requirements shall be based on the source testing and the *ICE Inspection and Maintenance (I&M) Plan* monitoring requirements herein.

(b) Operational Limits: The following operational limits apply to each engine:

(i) Air/Fuel Ratio Controls: An air/fuel ratio controller shall be operated with each NSCR catalytic converter to ensure that the control equipment maintains the required removal efficiencies at all times. Venoco shall maintain the NSCR catalyst inlet oxygen content between 0.0% - 1.0% at all times when operating the generator. Compliance shall be based by maintaining the oxygen sensor signal between 750 – 950 millivolts, *except* for

Generator #2 for which the range is 737 – 950 millivolts. This is the maximum allowable millivolt range. Depending upon source testing results, the APCD may require that this range be decreased to ensure continuous compliant operations.

- (ii) Fuel Sulfur Limit – Natural Gas: The total sulfur content (calculated as H<sub>2</sub>S at standard conditions, 60 F and 14.7 psia) of the gaseous fuel burned at the facility shall not exceed 80 ppmvd (as H<sub>2</sub>S). Venoco shall measure the sulfur content of the gaseous fuel monthly using Draeger tubes, or other APCD-approved devices.
- (c) Monitoring: The following monitoring conditions apply to each engine:
- (i) Non-Resetable Hour Meter. The engines subject to this permit shall have installed a non-resetable hour meter with a minimum display capability of 9,999 hours. A log shall be maintained that records the hours of operation and the number of operating days per month for each engine.
  - (ii) Fuel Usage Metering. The volume of fuel (in scf) burned in the engine shall be measured through the use of an APCD-approved calibrated non-resetable fuel meter. A log shall be maintained that records the fuel usage of the engine.
  - (iii) ICE Inspection and Maintenance Plan. The permittee shall implement the APCD approved ICE Inspection and Maintenance (I&M) Plan as required by Rule 333, Section F.
  - (iv) Equipment Identification. Identifying tag(s) or name plate(s) shall be displayed on the equipment to show manufacturer, model number, and serial number. The tag(s) or plate(s) shall be issued by the manufacturer and shall be affixed to the equipment in a permanent and conspicuous position.
- (d) Recordkeeping: The following recordkeeping conditions apply to each engine:
- (i) Operating Hours. A log shall be maintained that details the number of operating hours and days for each month that each engine is operated and the cumulative total annual hours.
  - (ii) Fuel Use. The total amount of fuel combusted in each engine shall be recorded on a daily and annual basis in units of scf.
  - (iii) Engine Inspection and Maintenance Logs. IC engine inspection and maintenance logs shall be maintained, including quarterly inspection results, consistent with the reporting requirements incorporated in the I&M Plan.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.

C.2 **Combustion Equipment - Flare.** The following equipment is included in this emissions unit category:

APCD ID No.	Venoco Equip ID No.	Name
7982	H-100	High-pressure Flare (H-100)
9603	H-101	Low-pressure Flare (H-101)

- (a) Emission Limits: Mass emissions from the flare systems listed above shall not exceed the limits listed in Table 5.1-3.
- (b) Operational Limits:
- (i) *Flaring* - The hourly, daily and annual gas flow to the high-pressure (H-100) and low-pressure (H-101) flares shall not exceed the limits listed in Table 9.1. Mass emissions from the flares shall not exceed the limits listed in Table 5.1-3. These limits are based on the design rating of the pilots, high-pressure and low-pressure flare purge rates, and unplanned flaring activities. Planned intermittent flaring as defined under Rule 359 is not authorized under this permit.

**Table 9.1**

FLARE CATEGORY	VOLUME LIMIT
Pilot Gas: H-100 and H-101	200 SCFH of PUC gas (for both pilots)
Purge Gas: H-100 *	50,400 SCFD
Purge Gas: H-101 *	7,200 SCFD
Intermittent - Unplanned Flaring: H-100 **	18,055 SCFM
Intermittent - Unplanned Flaring: H-101 **	2,000 SCFM
Total Unplanned Flaring: H-100 and H-101 combined =	480,000 SCF per year
* The stated SCFD purge flow limits above may be exceeded only when authorized by the District to facilitate flare flow meter testing and calibration.	
** FI-170 does not record flows less than 35 scfm. It is assumed that the purge and pilot gas flow constantly at 35 scfm. For H-100, any FI-170 flare flow meter readings at or above 35 scfm as recorded by the DAS using six-minute average data are assumed to be flare events;	
FI-172 does not record flows less than 5.0 SCFM. It is assumed that the purge and pilot gas flow constantly at a total flow rate of 5.0 scfm. For H-101, any FI-172 flare flow meter readings at or above 5.0 scfm as recorded by the DAS using six-minute average data are assumed to be flare events.	
Total unplanned flaring event limits are based on total flows measured by combined readings of flare flow meters FI-170 and FI-172. Planned purge flows measured during flare meter testing and documented as required by this permit do not accrue toward this limitation.	

- (ii) *Flare Purge Gas Fuel Sulfur Limit* – Only in-plant fuel gas from EOF shall be used as flare purge gas. The total sulfur content (calculated as H<sub>2</sub>S-equivalents at standard conditions, 60° F and 14.7 psia) of the combined purge and flare gas shall not exceed 239 ppmv. Compliance with this condition shall be based on measurements of the combined purge and flare gas H<sub>2</sub>S content as described in Section C.2(c)(vi) below.
- (iii) *Flare Pilot Gas Fuel Sulfur Limit* - Only in-plant fuel gas from EOF shall be used as flare pilot gas. The total sulfur content (calculated as H<sub>2</sub>S-equivalents at standard conditions, 60° F and 14.7 psia) of the pilot gas shall not exceed 12 ppmv. Compliance with this condition shall be based on measurements of the pilot gas H<sub>2</sub>S content as described in Section C.2(c)(vii) below.
- (iv) *Unplanned Flare Event Sulfur Limit* - The total sulfur content (calculated as H<sub>2</sub>S-equivalents at standard conditions, 60° F and 14.7 psia) of any unplanned flare event gas shall not exceed 17,000 ppmv. Compliance with this condition for each flaring event shall be based on the most recent weekly measurement of the combined produced gas H<sub>2</sub>S content as described in Section C.2(c)(viii) below.
- (v) *Flare Pilot Operation* -- The permittee shall comply with the provisions of Rule 359.D.2 for flare pilots at all times. If at any time the pilot system cannot be confirmed to be operating by the permittee through instrumentation or visual means, the permittee shall:
  - a) Not commence gas and oil production; or
  - b) If in production, Venoco shall shut down production within 1-hour of failing to confirm the pilot system's operation.
- (vi) The pilot *Low Temperature Alarm (TSL-170)* shall be connected to the APCD DAS.

Venoco shall comply with their APCD-approved *Rule 359 – Flare Minimization Plan*. The plan may only be revised upon written approval of the District.

(c) Monitoring: The following monitoring conditions apply to the flare relief system:

- (i) *Purge Gas Metering (H-100)* - The permittee shall install and operate a dedicated flow rate controller, FCV-171, or other APCD-approved equivalent, to control the purge gas flow to the high-pressure flare system. The controller shall be operated consistent with Venoco's *Process Monitor Calibration and Maintenance Plan*.
- (ii) *Purge Gas Metering (H-101)* - The permittee shall install and operate a dedicated flow rate controller, FCV-173, or other APCD-approved equivalent, to control the purge gas flow to the low-pressure flare system. The controller shall be operated consistent with Venoco's *Process Monitor Calibration and Maintenance Plan*.
- (iii) *Flare Gas Metering (H-100)* - The permittee shall install and operate a dedicated, totalizing, non-resettable type meter, FI-170, or other APCD-approved equivalent, to meter total flare gas flows, including purge gases. The flare flow meter shall be calibrated to accurately meter flare gas flows when they exceed the purge gas limit of 50,400 SCFD (or 2100 SCFH). The flare flow meter shall be equipped with an Un-interruptible Power Supply (UPS). The UPS shall allow the flare flow meter to accurately meter flows whenever and for as long as utility power is lost to Holly and the flare remains operating.
- (iv) *Flare Gas Metering (H-101)* - The permittee shall install and operate a dedicated, totalizing, non-resettable type meter, FI-172, or other APCD-approved equivalent, to meter

total flare gas flows, including purge gases. The flare flow meter shall be calibrated to accurately meter flare gas flows when they exceed 5.0 SCFM and up to 2000 SCFM. The flow meter shall be equipped with an un-interruptible power supply (UPS). The UPS shall allow the flare flow meter to accurately meter flows whenever and for as long as utility power is lost to Holly and the flare remains operating.

- (v) *Total Sulfur Content* - The total sulfur and H<sub>2</sub>S content of the pilot gas, purge gas and sour produced gas sent to the EOF shall be measured on an annual basis using APCD-approved ASTM methods. The purpose of these annual analyses is to determine the non-H<sub>2</sub>S fraction of total sulfur compounds present in these gases and to use these values to correct the hydrogen sulfide values measured at the platform. Venoco shall take the results of the testing and add it to the hydrogen sulfide test results for the subsequent year to obtain an estimate of the total sulfur content of these gases. Venoco shall perform additional testing of the sulfur content, using approved test methods, as requested by the APCD. Venoco shall submit the lab analyses reports to the District.
  - (vi) *Flare Gas Hydrogen Sulfide Content* - The combined purge and flare gas shall be monitored for hydrogen sulfide on a weekly basis by taking measurements in V-127 using sulfur detection tubes or other APCD approved methods. Venoco shall add the most recent analysis results for the non-H<sub>2</sub>S fraction of total sulfur compounds to derive the total sulfur content.
  - (vii) *Flare Purge and Pilot Gas Hydrogen Sulfide Content* - The flare purge and pilot gas shall be monitored for hydrogen sulfide on a weekly basis by taking measurements of the EOF in-plant fuel gas hydrogen sulfide content as specified in the *Platform Holly Process Stream Sampling Plan*. Venoco shall add the most recent analysis results for the non-H<sub>2</sub>S fraction of total sulfur compounds to derive the total sulfur content.
  - (viii) *Flare Unplanned Event Gas Hydrogen Sulfide Content* - The produced gas sent to the Ellwood Onshore Facility shall be monitored for hydrogen sulfide on a weekly basis using sulfur detection tubes, or other APCD approved methods. The most recent measurement of the combined produced gas H<sub>2</sub>S content shall be used to establish the H<sub>2</sub>S content of unplanned flaring events, unless otherwise approved by the APCD. Venoco shall add the most recent analysis results for the non-H<sub>2</sub>S fraction of total sulfur compounds to derive the total sulfur content.
- (d) Recordkeeping: The following recordkeeping conditions apply to the flare relief system:
- (i) *Flare Event Volumes* - All flaring events shall be recorded in an APCD-approved log. The log shall include: date; the flare (H-100 or H-101); duration of each flaring event (start and stop time); quantity of gas flared per event in units of standard cubic feet; cumulative total volume flared for all events to date through the year (by category); the H<sub>2</sub>S content of the gas flared; reason/cause for the flaring event; whether there were visible emissions; and, the type of event (e.g., planned or unplanned). This log shall include all *unplanned and planned* flaring events.
  - (ii) *Purge and Pilot Volumes* - The volume (standard cubic feet) of purge and pilot gases consumed each day and each month shall be recorded in an APCD-approved log.
  - (iii) *Total Sulfur Content Analyses* - The results of the annual analyses for the total sulfur and H<sub>2</sub>S content of the pilot, purge and produced gas sent onshore along with a calculation of the non-H<sub>2</sub>S fraction of the total sulfur compounds that is used to correct the

daily/weekly/quarterly H<sub>2</sub>S readings to estimate the total sulfur of these gases for the subsequent year.

- (iv) *Sulfur Content of Flare Purge and Pilot Gas* - The records of daily sulfur detection tube sampling of the flare relief system purge flow H<sub>2</sub>S content and the pilot gas H<sub>2</sub>S content measured quarterly.
- (v) *Sulfur Content Produced Gas* - The records of weekly sulfur detection tube sampling of the produced gas H<sub>2</sub>S content to the EOF.
- (vi) *Maintenance Logs* - Maintenance logs for the pilot igniter/alarm system, purge gas flow-controllers, and flare gas flow meters.

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

(Re: APCD Rules 359 and 1303, ATC 10128, ATC 10128-01, PTO 10128, 40 CFR 70.6)

C.3 **Fugitive Hydrocarbon Emissions Components.** The following equipment is included in this emissions unit category:

APCD ID No.	Venoco Equip ID No.	Name
		<i>Oil Service Components</i>
9601	3105-02	Oil – Controlled (6,469 clp’s)
104754	3105-03	Oil – Unsafe (0 clp)
		<i>Gas/Light Liquid Service Components</i>
104755	3105-04	Gas – Controlled (9,477 clp’s)
104756	3105-05	Gas – Unsafe (0 clp)

(a) **Emission Limits:** Mass emissions from the gas/light liquid service and oil service components listed above shall not exceed the limits listed in Table 5.1-3.

(b) **Operational Limits:** Operation of the equipment listed in this section shall conform to the requirements listed in APCD Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. In addition, Venoco shall meet the following requirements:

- (i) *I&M Program* - The APCD-approved I&M Plan for Holly shall be implemented for the life of the project. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.
- (ii) *Leak-Path Count* – Component and leak-path counts shall not exceed the the APCD approved totals by more than five percent. This five percent range is to allow for minor differences due to component counting methods and does not constitute allowable emissions growth due to the addition of new equipment. {Note: ‘de minimis’ component-leak-path count is not included in Table 5.1-1.} .
- (iii) *Venting* - All routine venting of hydrocarbons shall be routed to either the VRU compressor, flare header, injection well or other APCD-approved control device.

- (iv) *VRS Use* - The vapor recovery and gas collection (VR & GC) systems at Holly shall be in operation when equipment connected to these systems are in use. These systems include piping, valves, and flanges associated with the VR & GC systems. The VR & GC systems shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches.
- (c) **Monitoring:** The equipment listed in this section are subject to all the monitoring requirements listed in APCD Rule 331.F. The test methods in Rule 331.H shall be used. In addition, Venoco shall track the 'component-leak-path' (clp) counts for all categories of components at Holly that are listed in the table above; and, log any 'clp' count changes, including de minimis changes, in a component-leak-path inventory maintained for the facility.
- (d) **Recordkeeping:** The equipment listed in this section are subject to all the recordkeeping requirements listed in APCD Rule 331.G. In addition, Venoco shall record in a table at the Holly facility showing clearly all changes in the 'clp' counts, for all categories of components including the 'de minimis' components at the facility.
- (e) **Reporting:** The equipment listed in this section is subject to all the reporting requirements listed in APCD Rule 331.G. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all data required by the Compliance Verification Reports condition of this permit.

[*Re: APCD Rules 331 and 1303, ATC 10128, PTO 10128, ATC 10106, ATC/PTO 10106-01, ATC/PTO 10106-02, 40 CFR 70.6*]

**C.4 Pigging Equipment.** The following equipment are included in this emissions category:

APCD ID No.	Venoco Equip ID No.	Name
9792	SP-132	Oil Launcher (0.67' dia., 4' long)
9793	SP-133	Utility Gas Launcher (0.67' dia., 4' long)
9794	SP-134	Gas Launcher (0.67' dia., 4' long)

- (a) **Emission Limits:** Mass emissions from the gas and oil service components listed above shall not exceed the limits listed in Table 5.1-3.
- (b) **Operational Limits:** Operation of the equipment listed in this section shall conform to the requirements listed in APCD Rule 325.E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. In addition, Venoco shall meet the following requirement:
  - (i) *Events* - The number of emulsion and gas pig operations (events) shall not exceed the maximum operating schedule listed in Table 5.1-1.
  - (ii) *Purging/Pressure* - Prior to opening the pig launchers, Venoco shall purge the oil launcher with nitrogen or sweet fuel gas (not to exceed 30 ppmv total sulfur content)

calculated as H<sub>2</sub>S at standard conditions), and shall purge the gas launchers with nitrogen. Such purging shall be done in strict accordance with the “Pig Launching Procedures – 6” Gas Pipeline” document in Section 10.8 of this permit. The pig launchers shall be purged/depressurized to the vapor recovery system or flare via the surge tank, to the maximum extent feasible. At no time shall the pig launcher chamber be bled down to atmosphere when the initial pressure inside the chamber is greater than 5 psig. Compliance with this condition shall be based on pressure indicators that monitor the internal pressure of the launcher pig chamber. Pig chamber pressure readings shall be recorded prior to the final ‘bleed down’ of the pig launcher, preceding the chamber door opening.

(iii) *Openings* - Access openings to the pig launchers shall be kept closed at all times, except when a pipeline pig is being placed into, or removed from the launcher.

(c) **Monitoring:** Venoco shall monitor the pressure inside the pig launcher chambers with an APCD-approved pressure test gauge or equivalent APCD-approved monitor installed to determine the internal pressure of the launcher prior to “bleed down” of the chamber.

(d) **Recordkeeping:** Venoco shall record in a log the date of each pigging operation and the pressure inside the receiver/launcher prior to each opening.

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

[Re: ATC/PTO 10784, APCD Rules 325 and 1303, 40 CFR 70.6]

C.5 **Wastewater /Process Water Tanks.** The following equipment is included in this emissions category:

APCD ID No.	Venoco Equip ID No.	Equipment Name	KVB Service
2345	T-1	Drain Sump (vented to atmosphere)	Deck drain water from storm water and wash down
5882	T-4	Overflow sump tank (vented to atmosphere)	Deck drain water from storm water and wash down

(a) **Emission Limits:** Mass emissions from the sump and sump tank shall not exceed the limits listed in Table 5.1-3.

(b) **Operational Limits:** All process operations from the equipment listed in this section are exempt from Sections D.1 and D.2 of Rule 325 as long as they satisfy the requirements of Section B.3; however, they shall meet the requirements of APCD Rule 325, Sections D.4 and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. In addition, Venoco shall meet the following requirements:

- (i) *ROC Content* - The reactive organic compound content of the liquid entering the wastewater tanks listed herein shall be less than 5 milligrams per liter or the ROC emissions from each tank shall be maintained at less than 0.25 tons per year. Compliance with this limit shall be verified by annual sampling of the liquid .
- (ii) *Liquid Tight* - All tanks shall be maintained in a liquid-tight condition.

Other APCD-enforceable limits for these items are listed in Section 9.D.

- (c) Monitoring: The ROC content of the liquid entering tank T-1 shall be determined *annually* using the test methods outlined in APCD Rule 325.G.3. The APCD shall be notified at least 3 days in advance of sampling. The tank T-1 data shall be used to determine Rule 325 compliance/applicability of both tanks T-1 and T-4.
- (d) Recordkeeping: The equipment listed in this section is subject to all the recordkeeping requirements listed in APCD Rule 325.F.2 and F.3.
- (e) Reporting: The equipment listed in this section are subject to all the reporting requirements listed in APCD Rule 325.I. On a semi-annual basis, a report detailing the previous six month’s activities shall be provided to the APCD. The report must list all data required by the *Compliance Verification Reports* condition of this permit.

[Re: APCD Rules 325 and 1303, 40 CFR 70.6]

C.6 **Tank T-5 – Oil Sump Tank.** Venoco shall maintain Tank T-5 as an out-of-service unit. All fluid stream lines going to Tank T-5 will be disconnected and/or sealed closed, and the tank shall not contain any ROC fluid. The tank shall not be put back in service without obtaining from the APCD an ATC for the same, prior to its operation.

C.7 **Solvent/Coating Use.** The following emission units are included in this condition:

APCD ID No.	Emission Unit Name, Category, etc.
Not provided	Solvents - Cleaning/Degreasing ( <i>as part of regular operations</i> )
5884	Surface Coating ( <i>that also includes solvents as thinners</i> )

- (a) Emission Limits: Mass emissions from solvent cleaning and surface coating operations shall not exceed the limits listed in Table 5.1-3. The solvent emission limits outlined in APCD Rule 317.B are federally enforceable for the entire stationary source.
- (b) Operational Limits: Use of solvents for cleaning/degreasing and maintenance surface coating shall conform to the requirements of APCD Rules 317, 321, 322, 323 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections.
  - (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* - Venoco may submit a Plan to the District for the disposal of any reclaimed solvent. If the Plan is approved by the District, all solvent disposed of pursuant to the Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. Venoco shall obtain District approval of the procedures used for such a disposal Plan. The Plan shall detail all procedures used for collecting, storing, and transporting the reclaimed solvent. Further, the ultimate fate of these reclaimed solvents must be stated in the Plan.
- (c) Recordkeeping: Venoco shall record in a log the following on a monthly basis for each solvent and coating 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.
- (d) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.  
 [Re: APCD Rules 317, 322, 323, 324, 1301 and 1303, 40 CFR 70.6]

C.8 **Recordkeeping.** All records and logs required by this permit and any applicable APCD, 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 APCD upon request. [Re: APCD Rule 1303, ATC 10128, ATC 10128-01, PTO 10128, ATC 10106, ATC 10106-01, ATC/PTO 10106-02, 40 CFR 70.6]

C.9 **Semi-Annual Monitoring/Compliance Verification Reports.** Twice a year, Venoco shall submit a compliance verification report to the APCD. 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 1. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1. 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 APCD. All logs and other basic source data not included in the report shall be available to the APCD upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed APCD *Annual Emissions Inventory* questionnaire shall be included in the annual report or submitted electronically via the APCD website. The report shall include the following information:

- (a) *Internal Combustion Engines.*
  - (1) All records required by the Internal Combustion Engines recordkeeping conditions.
  - (2) Summary results of all compliance emission source testing performed, if applicable.
  
- (b) *Flare Relief Systems.*
  - (1) The volumes of gas combusted and resultant mass emissions for each flare category (i.e., Purge; LP Purge; Pilot (all); Unplanned; Planned Intermittent), shall be presented as a cumulative summary for each day, quarter and year.
  - (2) The results of the annual analyses for the total sulfur and H<sub>2</sub>S content of the pilot and purge gas sent from onshore and the produced gas sent onshore along with a calculation of the non-H<sub>2</sub>S fraction of the total sulfur compounds that is used to correct the daily/weekly H<sub>2</sub>S readings to estimate the total sulfur of these gases for the subsequent year. Also, provide a copy of all lab analyses.
  - (3) The results of all hydrogen sulfide testing for the pilot and purge sent from onshore and the produced gas sent to the onshore facility (showing the H<sub>2</sub>S readings and the corrected total sulfur values).
  - (4) A copy of Flare Event Log for the reporting period *for all planned/unplanned flaring events.*
  
- (c) *Fugitive Hydrocarbons.* Rule 331/Enhanced Monitoring fugitive hydrocarbon I&M program data (on a quarterly basis):
  - (1) Inspection summary.
  - (2) Record of leaking components.
  - (3) Record of leaks from critical components.
  - (4) Record of leaks from components that incur five repair actions within a continuous 12-month period.
  - (5) Record of component repair actions including dates of component re-inspections.
  - (6) An updated FHC I&M inventory due to change in component list or diagrams.
  - (7) Listing of components installed as BACT under APCD Rule 331 and/or Regulation VIII as approved by the APCD.
  - (8) A table showing clearly all changes in the 'clp' counts from the count shown in the Section C.3 Table of this PTO, for all categories of components including the 'de minimis' components at the facility.
  
- (d) *Pigging.* A copy of the Holly Pigging Log.
  
- (e) *Wastewater Tanks.* The following records are required to be reported:
  - (1) Results of all ROC content analyses (including a copy of the lab analysis sheets), if sampling was requested by APCD.
  - (2) The type of organic liquid in each tank, and
  - (3) The results of the inspections required by Rule 325.H (if required).
  
- (f) *Solvent/coatings Usage.* The following records are required to be reported:
  - (1) Solvent Cleaning Degreasing: 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.

- (2) Surface Coating – Maintenance: On a monthly basis: the amount of solvent and coatings 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.
- (3) Information required by the Solvent Reclamation Plan, if any.

(g) *General Reporting Requirements.*

- (1) On a semi-annual and annual basis, the emissions from each permitted emission unit for each criteria pollutant. Also, include a quarterly and annual emissions summary for each criteria pollutant.
- (2) On a semi-annual and annual basis, the emissions from each exempt emission unit for each criteria pollutant. Also, include a quarterly and annual emissions summary for each criteria pollutant.
- (3) A copy of the Rule 202 De Minimis Log for the stationary source.

See also Section 9.D.1 for additional APCD required reporting requirements.

[*Re: Rule 202, Rule 317, Rule 325, Rule 331, Rule 333, ATC 10128, ATC 10128-01, PTO 10128, ATC 10106, ATC 10106-01, ATC/PTO 10106-02*]

C.10 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and District Rule 201.B. [*Re: APCD Rule 1303, ATC 10128, ATC 10128-1, PTO 10128, ATC 10106, ATC/PTO 10106-01, ATC/PTO 10106-02*]

C.11 **Diesel IC Engines - Particulate Matter Emissions.** To ensure compliance with District Rules 205.A, 302, 309 and the California Health and Safety Code Section 41701, Venoco shall implement manufacturer recommended operational and maintenance procedures to ensure that all project diesel-fired engines minimize particulate emissions. Venoco shall implement an APCD-approved *IC Engine Particulate Matter Operation and Maintenance Plan* for the life of the project. This Plan shall detail the manufacturer recommended maintenance and calibration schedules that Venoco 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: APCD Rules 205.A, 302, 305, 309*]

C.12 **Process Monitoring Systems - Operation and Maintenance.** All platform process monitoring devices listed in Section 4.10.2, and any other monitoring devices that in the District's determination are necessary to accurately demonstrate compliance with the conditions of this permit, shall be properly operated, maintained, and calibrated according to manufacturer recommended specifications. Venoco shall implement the APCD-approved *Process Monitor Calibration and Maintenance Plan* (dated 05/30/2003 and approved by the APCD on 06/05/2003) and any subsequent APCD-approved updates (see Conditions 9.C.19 and 9.D.12) for the life of the project. Venoco shall submit revisions to the plan and obtain APCD approval of the proposed revisions prior to changing a process monitoring device specified in the plan. Additionally, within 30 days of APCD request, Venoco shall provide updates to the plan and

shall obtain APCD approval of the updated plan within 90 days of receipt of the APCD’s request. [ATC 10128]

- C.13 **Abrasive Blasting Equipment.** All abrasive blasting activities performed on Holly shall comply with the requirements of the California Code of Regulations, Title 17, Sub-Chapter 6, Sections 92000 through 92530. [Re: APCD Rule 303, CCR Title 17]
- C.14 **Data Acquisition System.** Venoco shall install, connect to the APCD central data acquisition system (DAS), and maintain the process and alarm monitoring systems approved by the APCD, and identified in Table 9.2 below.

**Table 9.2**

Facility Location	Required Parameters
Venoco Holly	<ul style="list-style-type: none"> <li>▪ Flare Flow Meter (FI-170)</li> <li>▪ Flare Pilot Low Temp Alarm (TSL-170)</li> <li>▪ Holly H<sub>2</sub>S Detector Alarms</li> <li>▪ Low-pressure Flare Flow Meter (FI-172)</li> </ul>

[ATC 10128, ATC 10128-1, PTO 10128]

- C.15 **Data Acquisition System Operation and Maintenance Fee.** Venoco is required to connect certain parameters to the APCD central data acquisition system (DAS). In addition, Venoco shall reimburse the APCD for the cost of operating and maintaining the DAS. Venoco shall be assessed an annual fee, based on the APCD’s fiscal year, collected semi-annually.

Pursuant to Rule 210 III.A, Venoco shall pay fees specified in Table 9.3 below. The APCD shall use these fees to operate, maintain, and upgrade the DAS in proper running order. Fees shall be due and payable pursuant to governing provisions of Rule 210, including CPI adjustments.

All ongoing costs and anticipated future capital upgrades will be the APCD’s responsibility and will be accomplished within the above stated DAS fee. This fee is intended to cover the annual operating budget and upgrades of the DAS and is intended to gradually phase the APCD into a share of the DAS costs (as outlined in the March 27, 1998, letter – *Fixed Fee Proposal for Monitoring and DAS Costs*). In the event that the assumptions used to establish this fee substantially increase or decrease, APCD may revisit and adjust the fee based on documentation of cost of services. Adjusted fees will be implemented by transmitting a revised Table 9.3, which will become an enforceable part of this permit.

The fees prescribed in this condition shall expire if and when the Board adopts a Data Acquisition System Operation and Maintenance Fee schedule and such fee becomes effective.

**Table 9.3**

FEES for DAS OPERATION and MAINTENANCE <sup>(a) (b)</sup>

FEE DESCRIPTION	FEE
Per CEM, ambient or meteorological parameter required by permit to be transmitted real-time to the APCD Central Data Acquisition System.	\$1,307 annually

- (a) All fees shall be due and payable pursuant to the governing provisions of Rule 210, including CPI adjustments.
  - (b) The fees in this table are based on the APCD's March 27, 1998 letter (*Fixed Fee Proposal for Monitoring and DAS Costs*) and may be updated pursuant to Rule 210 and shall be effective when issued and shall not require a modification to this permit.
- [ATC 10128, ATC 10128-1, PTO 10128]

- C.16 **Tank T-101 – Lube Oil Tank.** With the exception of two (2) lube oil lines, all other incoming liquid lines to this tank shall remain permanently blinded and sealed off. This tank is restricted to lube oil use only. Also, no hydrocarbons fluids having a true vapor pressure equal to or greater than 0.5 psia shall be sent to or stored in this tank. This tank's openings shall not be connected to the flare relief system. Venoco shall maintain records of the vapor pressure of the lube oil in this tank in accordance with Rule 326.B.1. [ATC 10128, ATC 10128-1, PTO 10128]
- C.17 **Glycol Reboiler Configuration & Vapor Testing.** The Glycol Reboiler overhead vapors from V-126 shall be directed to the Vapor Recovery Unit compressor at all times. [ATC 10128, ATC 10128-1, PTO 10128]
- C.18 **Emergency Episode Plan.** As necessary, Venoco shall implement the Emergency Episode Plan for the South Ellwood stationary source and any subsequent APCD-approved updates (see Condition 9.C.19 ). [Re: APCD Rule 603 and 1303]
- C.19 **Documents Incorporated by Reference.** The documents listed below, including any APCD-approved updates thereof, are incorporated herein, and shall have the full force and effect of a permit condition for this operating permit. These documents shall be implemented for the life of Platform Holly.
- (i) *Fugitive Emissions Inspection and Maintenance (I&M) Program for South Ellwood.* (dated 05/28/2002 and approved by the APCD on 10/11/2002).
  - (ii) *IC Engine Particulate Matter Operation and Maintenance Plan* (Dated March 20, 2006).
  - (iii) *Process Monitor Calibration and Maintenance Plan* (dated 05/30/2003 and approved by the APCD on 06/05/2003) and any subsequent APCD-approved updates.
  - (iv) *Rule 359 Flare Minimization and Monitoring* (dated 04/04/2003 and approved 06/05/2003) and any subsequent APCD-approved updates.
  - (v) *Emergency Episode Plan* (dated 02/10/2002 and approved by the APCD in 8/02) and any subsequent APCD-approved updates.
  - (vi) *Platform Holly SIMQAP* (dated ----- and approved by the APCD on -----) and any subsequent APCD-approved updates [Re:AO-99-6A, APCD Rules 317, 331, 333,359, ATC 10128, PTO 10128]
  - (vii) *Platform Holly Process Stream Sampling Plan* (A plan shall be submitted to the APCD for approval within 90 days of the final Part 70 Permit 8234 R7 issuance) and any subsequent APCD-approved updates.
  - (viii) *Rule 333 Inspection and Maintenance Plan* (A plan shall be submitted to the APCD for approval within 90 days of the final Part 70 Permit 8234 R7 issuance) and any subsequent APCD-approved updates.

C.20 **Safety, Inspection, Maintenance, and Quality Assurance Plan (SIMQAP).** Venoco shall implement the APCD approved SIMQAP Plan and any subsequent APCD approved revisions for Platform Holly. This plan shall be reviewed by Venoco every two years (or more frequently if requested by the APCD), and the adequacy of the Plan shall be assessed and verified by Venoco. The written assessment and verification shall be submitted to APCD for review. If determined necessary by the APCD, Venoco shall submit a Plan update for APCD approval. Venoco shall respond to any APCD comments on the Plan within 30 days of receipt of comments by APCD, and shall implement any operational changes within the deadlines so stipulated by the Control Officer. The Control Officer may grant extensions to these deadlines for good cause. In the administration of the SIMQAP, the Control Officer may consult with third party experts, including members of the other County Departments. Venoco shall pay for all reasonable costs related to the APCD's review of the Platform Holly SIMQAP. [Re: Rule 303, Abatement Order 99-6(A)]

C.21 **Source Testing.** The following source testing provisions shall apply:

- (a) The permittee shall conduct source testing of NO<sub>x</sub>, CO, and ROC emissions from each generator engine on a biennial (every two years) schedule using the initial source test date as the anniversary date. During testing, the following parameters shall be determined: (a) pollutant concentrations in units of ppmvd corrected to 15 percent excess oxygen, (b) NSCR catalyst efficiencies (mass basis), (c) mass emission concentrations in units of lb/MMBtu and (d) the air/fuel ratio controller oxygen sensor signal operational compliance range. A duplicate fuel gas sample shall be taken and analyzed for HHV, total sulfur, and composition.
- (b) The permittee shall submit a written source test plan to the APCD for approval at least thirty (30) days prior to initiation of each source test. The source test plan shall be prepared consistent with the APCD's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). The permittee shall obtain written APCD approval of the source test plan prior to commencement of source testing. The APCD 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 APCD personnel may observe the test.
- (c) Source test results shall be submitted to the APCD 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 Table 3 and applicable permit conditions, rules and NSPS (if applicable). All APCD 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 APCD 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 APCD approval before deferring or

discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. If the test can not be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the APCD. 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 APCD. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without APCD'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 APCD by the close of the business day following the scheduled test day.

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

C.22 **Visible Emissions:** Venoco shall not discharge any visible emissions into the atmosphere from the emission sources below for a period or periods aggregating more than three minutes in any one hour.

Monitoring:

- a) Diesel-Fueled IC Engine(s). Once per calendar quarter, Venoco shall perform a visible emissions observation for a six-minute period on each permitted and exempt engine when operating. If an engine does not operate during a calendar quarter, no monitoring is required. Visible emission observations shall be documented using an APCD-approved Visible Emissions Recordkeeping Log. If no visible emissions are detected during the six-minute observation period, no further monitoring is required. If visible emissions are detected during the six-minute period, then the visible emission inspection shall continue in accordance with the "Monitoring Procedure" below. This condition shall not apply to boats.
- b) Procedures: Venoco shall conduct visible emissions observations every 15 seconds (using a stop-watch) and record the observation as either "0" (no visible emissions) or "E" (visible emissions) on a Visible Emissions Recordkeeping Log. Any time visible emissions are observed at the end of a 15-second interval, it shall be assumed that the visible emissions occurred for the entire 15 seconds preceding the reading. The start time and end time of the visible emission observations shall be recorded together with the date of the observation and name of the observer. Venoco shall conduct a visible emissions observation for the length of time necessary to document three continuous minutes of no visible emissions or the presence of visible emissions for more than the aggregation of three minutes during any hour, whichever occurs first.
- c) Compliance: Venoco shall be deemed in compliance with this condition if no visible emissions are observed during the initial six-minute period. If any visible emissions are observed during the initial six-minute period, Venoco shall continue with the visible emissions observation. Venoco shall be deemed to be in compliance with this condition if no more than 12 "E" notations occur within any one-hour period. For compliance purposes, "one hour period" shall mean a rolling hour.

## 9.D **APCD-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 APCD and the State of California. These conditions are issued pursuant to APCD 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 Holly 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 and any applicable requirement.

D.1 **Compliance Verification Reports.** Twice a year, Venoco shall submit a compliance verification report to the APCD. 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 1. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1. 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 APCD. All logs and other basic source data not included in the report shall be available to the APCD upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *APCD Annual Emissions Inventory* questionnaire shall be included in the annual report or submitted electronically via the APCD website. The report shall include the following information:

(a) *Crew and Supply Boats.*

- (1) Daily, monthly, and annual fuel use for the crew boat main engines and auxiliary engines while operating within the California coastal waters adjacent to Santa Barbara County.
- (2) Daily, monthly and annual fuel use for the supply boat and seep device maintenance vessel main engines and auxiliary engines (including the bow thruster engine) while operating within the California coastal waters adjacent to Santa Barbara County.
- (3) The sulfur content of each delivery of diesel fuel used by the crew and supply boats.
- (4) Information regarding any new project boats servicing Holly or the seep device as detailed in crew and supply boat permit condition herein.
- (5) 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.
- (6) Summary results of all compliance emission source testing performed, if applicable.

(b) *General Reporting Requirements.*

- (1) Facility throughput of oil emulsion and produced gas production per month, the number of operating days per month and the average monthly oil emulsion and produced gas production per month.
- (2) Breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.
- (3) A summary of each and every occurrence of non-compliance with the provisions of this permit, APCD rules, and any other applicable air quality requirement.

- (4) A copy of all completed APCD-10 forms (*IC Engine Timing Certification Form*).
- (5) The produced gas, produced oil, fuel gas, and produced wastewater process stream analyses as required by Section 9.C and Section 9.D of this permit. The process stream analyses per Section 4.11 of this permit.
- (6) Helicopter trips (by type and trip segments with emission calculations)

(c) *Emergency/Standby Diesel IC Engine.*

- (1) All records required by the Emergency/Standby IC Engine recordkeeping requirement.

- D.2 **Facility Throughput Limitations.** Holly production shall be limited to a monthly average of 20,000 barrels of oil emulsion and 20 million standard cubic feet of produced gas per day. Venoco shall record in a log the volumes of crude oil, produced water, and gas produced and the actual number of days in production per month. The above limits are based on actual days of operation during the month.
- D.3 **Produced Gas.** Venoco shall direct all produced gases to gas lift and/or gas injection, the EOF pipeline, vapor recovery system or other permitted control device when degassing, purging or blowing down any oil and gas well or tank, vessel or container that contains reactive organic compounds or reduced sulfur compounds due to activities that include, but are not limited to, process or equipment turnarounds, process upsets (e.g., well spikes), well blow down and governmental ordered safety tests, unless allowed otherwise pursuant to APCD Rule 325.
- D.4 **Emission Factor Revisions.** The APCD may update the emission factors for any calculation based on USEPA AP-42 or APCD P&P emission factors at the next permit modification or permit reevaluation to account for USEPA and/or APCD revisions to the underlying emission factors. Further, Venoco shall modify its permit via an ATC application if compliance data shows that an emission factor used to develop the permit's potential to emit is lower than that documented in the field. The ATC permit shall, at a minimum, adjust the emission factor to that documented by the compliance data consistent with applicable rules, regulations, and requirements.
- D.5 **Odor Abatement Agreement and Complaint Response Plan.** Venoco shall abide by the requirements of APCD-approved *Odor Abatement Agreement* and implement the requirements of the APCD-approved *Complaint Response Plan* for the life of the project. Upon written request and subsequent approval by the APCD, this Agreement and Plan may be revised.

D.6 **Crew , Supply, and Boom Boats.** The following equipment is included in this emissions category:

APCD ID No.	Venoco Equipment ID No.	Name
<i>Supply Boat</i>		
9789	3105-AA	Supply Boat Main Engines – Uncontrolled
9790	3105-BB	Supply Boat – Auxiliary Engines
9791	3105-CC	Supply Boat – Bow Thruster
<i>Crew Boat</i>		
9787	3105-DD	Crew Boat Main Engines – Uncontrolled
9788	3105-EE	Crew Boat Auxiliary Engines
<i>Boom Boat</i>		
104765		Boom boat main engine

- (a) **Emission Limits:** Mass emissions from the crew, supply, and emergency response boats listed above shall not exceed the limits listed in Table 5.1-3. Compliance with this condition shall be based on the operational, monitoring, recordkeeping, and reporting conditions in this permit. Emissions from marine vessels used for seep containment device inspection and maintenance or oil removal activities shall be counted against the supply boat limits. In addition, emission rates from each main engine on each crew and supply boat shall not exceed the “lb/1000 gallons” emission factors listed in Table 5.1-2.
- (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) *Crew Boat Main and Auxiliary Engine Limits* - The crew boat main and auxiliary engines for Holly shall not use more than: 511 gallons per day nor 130,881 gallons per year of diesel fuel.
  - (ii) *Supply Boat Main Engine Limits* - The supply boat main engines for Holly shall not use more than: 2,326 gallons per day nor 446,651 gallons per year of diesel fuel. This limit shall include fuel used by emergency response boats.
  - (iii) *Supply Boat Auxiliary Engine Limits* - The supply boat auxiliary engines (including the bow thruster) for Holly shall not use more than: 251 gallons per day nor 48,184 gallons per year of diesel fuel. This limit shall include fuel used by emergency response boats.
  - (iv) *Boom Boat Main engine* - The boom boat main engine for Holly shall not operate more than 12 hours per day and 24 hours per year.
  - (v) *Liquid Fuel Sulfur Limit* - Diesel fuel used by all IC engines shall have sulfur content no greater than 0.40 weight percent as determined by APCD-approved ASTM methods.
  - (vi) *Seep Containment Device Maintenance* - Venoco may operate marine vessels for seep containment device inspection and maintenance or oil removal activities provided that the daily potential to emit from all propulsion and auxiliary engines on all the vessels do not exceed the daily limits for supply boats listed in Table 5.1-3 and that no supply boat trips are made to Holly on days that marine vessels are used

for seep containment activities. Prior to use of any marine vessels for seep containment device activities, Venoco shall provide the vessel engine specifications and potential to emit calculations to the APCD for approval.

(c) Monitoring:

- (i) Venoco shall comply with the *Boat Monitoring and Reporting Plan*.
- (ii) *Fuel Use Monitoring* - Venoco shall equip all crew and supply boats servicing Holly and all marine vessels used for seep containment device activities with in-line, continuous, cumulative, non resettable fuel meters. Alternative monitoring methods for short-term boat activities may be used if approved in advance by the APCD .
- (iii) *New/Replacement Boats* - Venoco may utilize any new/replacement project boat without the need for a permit revision if that boat meets the following conditions:
  - (a) The main engines are of the same or less bhp rating as listed in Table 5.1-1; and
  - (b) 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
  - (c) The NO<sub>x</sub>, ROC, CO, PM and PM<sub>10</sub> emission factors are the same or less for the main and auxiliary engines.

In order to verify that a boat meets the requirements specified in (a) – (c) above, Venoco shall submit the following information to the APCD for review prior to bringing a new boat into service:

- (d) Boat description, including the type, size, name, engine make, model, year, and rating and emission control equipment.
- (e) Engine manufacturers' data on the emission levels for the various engines and applicable engine specification curves.
- (f) 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 (b) above is met.
- (g) Any other information the APCD deems necessary to ensure the new boat will operate consistent with the analyses that form the basis for this permit.
- (h) A description of the fuel metering and emissions computation procedures for the new boat.

Venoco shall obtain a permit before using a new/replacement crew or supply boat that does not meet the above requirements (a) - (c). The APCD may require manufacturer guarantees and emission source tests to confirm compliance with (c).

- (iv) Venoco shall revise the *Boat Monitoring and Reporting Plan*, obtain APCD approval of such revisions, and implement the revised Plan prior to bringing any boat into service that has not been previously approved by the APCD. In special cases, Venoco may utilize a boat prior to revising the *Boat Monitoring and Reporting Plan* if approval to do so is obtained, in writing, from the APCD prior to use of the boat.

- (v) In order to verify compliance with the mass emission limits of this permit, Venoco shall conduct a source test of any boat in service within 90 days of written request by the APCD.
- (d) **Recordkeeping:** The following records shall be maintained in legible logs and shall be made available to the APCD upon request:
  - (i) *Maintenance Logs* - For all main and auxiliary engines on crew and supply boats, maintenance log summaries that include details on injector type and timing, setting adjustments, major engine overhauls, and routine engine maintenance. These log summaries shall be made available to the APCD upon request.
  - (ii) *Crew Boat Fuel Usage* - Daily, monthly, and annual fuel use for crew boat main engines and auxiliary engines while operating within ‘California Coastal Waters’ adjacent to Santa Barbara County.
  - (iii) *Supply Boat Fuel Usage* - Daily, monthly, and annual fuel use for main engines and auxiliary engines (including fuel use on emergency response boats) for supply boats and vessels used for seep device maintenance while operating within ‘California Coastal Waters’ adjacent to Santa Barbara County.
  - (iv) *Boom Boat Use* – A daily use log shall be maintained for the boom boat, recording its hours of use whenever it is used.
- (e) **Reporting:** On a semi-annual basis, a report detailing the previous six month’s activities shall be provided to the APCD. The report must list all crew and supply boat data required by the *Compliance Verification Reports* condition of this permit.

D.7 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and APCD Rule 201.

D.8 **Documents Incorporated by Reference.** The documents listed below, including any APCD-approved updates thereof, are incorporated herein and shall have the full force and effect of a permit condition for this operating permit:

- (a) Boat Monitoring and Reporting Plan for Holly (dated 1/24/2006) and any subsequent APCD-approved updates.
- (b) Complaint Response Plan (approved May 1995) and any subsequent APCD-approved updates.

D.9 **Emergency/ Standby Diesel IC Engine (E/S-DICE).** The equipment listed below belongs to this emissions unit category.

APCD ID No.	Venoco Equipment ID No.	Name
2337	62B306	Emergency Electrical Generator (373 bhp)

- a. **Emission Limitations.** The mass emissions from the E/S-DICE (ID # 2337) shall not exceed the values listed in Table 5.1-3. Compliance shall be based on the operational, monitoring, recordkeeping, and reporting conditions of this permit.

- b. **Operational Restrictions.** The equipment E/S-DICE (ID # 2337) is subject to the following operational restrictions listed below. Emergency use operations, as defined in Section (d)(25) of the ATCM<sup>6</sup>, have no operational hours limitations.
- i. Maintenance & Testing Use Limit: The E/S-DICE (ID # 2337) shall not be operated for more than 20 hours per year for maintenance and testing<sup>7</sup> purposes.
  - ii. Impending Rotating Outage Use: The in-use E/S-DICE (ID # 2337) may be operated in response to the notification of an impending rotating outage if all the conditions cited in Section (e)(2)(B)(1) of the ATCM are met.
  - iii. Fuel and Fuel Additive Requirements: The permittee may only add fuel and/or fuel additives to the engine or any fuel tank directly attached to the engine that comply with Section (e)(1)(B) of the ATCM.
- c. **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:
- Non-Resetable Hour Meter: The E/S-DICE (ID # 2337) shall have installed a non-resetable hour meter with a minimum display capability of 9,999 hours, unless the APCD has determined (in writing) that a non-resetable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.
- d. **Recordkeeping.** The permittee shall record and maintain the information listed below. Log entries shall be retained for a minimum of 36 months from the date of entry. Log entries made within 24 months of the most recent entry shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the APCD staff upon request. Log entries made from 25 to 36 months from most recent entry shall be made available to APCD staff within 5 working days from request. APCD Form ENF-92 (*Diesel-Fired Emergency/Standby Engine Recordkeeping Form*) can be used for this requirement.
- i. emergency use hours of operation;
  - ii. maintenance and testing hours of operation;
  - iii. hours of operation for emission testing to show compliance with Section (e)(2)(B)(3) {if specifically allowed for under this permit};
  - iv. initial start-up hours {if specifically allowed for under this permit};
  - v. hours of operation to comply with the requirements of NFPA 25/100 {if applicable};
  - vi. hours of operation for all uses other than those specified in items (i) – (iv) above along with a description of what those hours were for;
  - vii. The owner or operator shall document fuel use through the retention of fuel purchase records that demonstrate that the only fuel purchased and added to an emergency standby engine or engines, or to any fuel tank directly attached to an emergency standby engine or engines, meets the requirements of the ATCM.

---

<sup>6</sup> As used in the permit, "ATCM" means Section 93115, Title 17, California Code of Regulations. Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engines

<sup>7</sup> "maintenance and testing" is defined in Section (d)(41) of the ATCM

- e. **Reporting.** On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report shall include the information required in the Recordkeeping Condition above. This reporting requirement may be satisfied by using APCD Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*).
- f. **Temporary Engine Replacements - DICE ATCM.** The E/S-DICE (ID # 9010), subject to the requirements listed in Section 9.D.13 and in the stationary diesel ATCM, may be replaced temporarily only if the requirements (i – vi) listed herein are satisfied.
  - i. The E/S-DICE (ID # 9010) is in need of routine repair or maintenance.
  - ii. The E/S-DICE (ID # 9010) undergoing routine repair or maintenance is returned to its original service within 180 days of installation of the temporary engine.
  - iii. The temporary replacement engine has the same or lower manufacturer rated horsepower and same or lower potential to emit of each pollutant as the permitted engine that is being temporarily replaced. At the written request of the permittee, the APCD may approve a replacement engine with a larger rated horsepower than the permitted engine if the proposed temporary engine has manufacturer guaranteed emissions (for a brand new engine) or source test data (for a previously used engine) less than or equal to the permitted engine.
  - iv. The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine that is undergoing routine repair or maintenance.
  - v. For the E/S-DICE (ID # 9010), to be temporarily replaced, the permittee shall submit a completed *Temporary IC Engine Replacement Notification* form (Form ENF-94) within 14 days of the temporary engine being installed. This form shall be sent electronically to: *temp-engine@sbcapcd.org*.
  - vi. Within 14 days upon return of the E/S-DICE (ID # 9010) to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form shall be sent electronically to: *temp-engine@sbcapcd.org*.

Any engine in temporary replacement service shall be immediately shut down if the APCD determines that the requirements of this condition have not been met. This condition does not apply to engines that have experienced a cracked block (unless under manufacturer's warranty), to engines for which replacement parts are no longer available, or new engine replacements {including "reconstructed" engines as defined in Section (d)(44) of the ATCM}. Such engines are subject to the provisions of New Source Review and the new engine requirements of the ATCM.

- g. **Permanent Engine Replacements.** Venoco may install a new engine in place of a permitted Emergency/Standby (E/S) IC engine, fire water pump engine or engine used for an essential public service that breaks down and can not be repaired, without first obtaining an ATC permit only if the requirements (i – v) listed herein are satisfied.
  - i. The permitted stationary diesel IC engine is an E/S engine, a fire water pump engine, or an engine used for an essential public service (as defined by the APCD).
  - ii. The engine breaks down, cannot be repaired, and needs to be replaced by a new engine.

- iii. The facility provides “good cause” (in writing) for the immediate need to install a permanent replacement engine prior to the time period before an ATC permit can be obtained for a new engine. The new engine must comply with the requirements of the ATCM for new engines. If a new engine is not immediately available, a temporary engine may be used while the new replacement engine is being procured. During this time period, the temporary replacement engine must meet the same guidelines and procedures as defined in the permit condition above (*Temporary Engine Replacements - DICE ATCM*).
- iv. An Authority to Construct application for the new permanent engine is submitted to the APCD within 15 days of the existing engine being replaced and the APCD permit for the new engine is obtained no later than 180 days from the date of engine replacement (these timelines include the use of a temporary engine).
- v. For each permitted engine to be permanently replaced pursuant to the condition, the permittee shall submit a completed *Permanent IC Engine Replacement Notification* form (Form ENF-96) within 14 days of either the permanent or temporary engine being installed. This form shall be sent electronically to: *temp-engine@sbcapcd.org*.

Any engine installed (either temporarily or permanently) pursuant to this permit condition shall be immediately shut down if the APCD determines that the requirements of this condition have not been met.

- h. **Notification of Non-Compliance.** Owners or operators who have determined that they are operating their stationary diesel-fueled engine(s) in violation of the requirements specified in Sections (e)(2) of the ATCM shall notify the APCD immediately upon detection of the violation and shall be subject to APCD enforcement action.
- i. **Notification of Loss of Exemption.** Owners or operators of in-use stationary diesel-fueled CI engines, who are subject to an exemption specified in Section (c) from all or part of the requirements of Section (e)(2), shall notify the APCD immediately after they become aware that the exemption no longer applies and pursuant to Section (e)(4)(F)(1) of the ATCM shall demonstrate compliance within 180 days after notifying the APCD.
- j. **Enrollment in a DRP/ISC - January 1, 2005.** Any stationary diesel IC engine rated over 50 bhp that enrolls for the first time in a Demand Response Program/Interruptible Service Contract (as defined in the ATCM) on or after January 1, 2005, shall first obtain an APCD Authority to Construct permit to ensure compliance with the emission control requirements and hour limitations governing ISC engines.  
[ *Re: APCD PTO 11597, issued September 2005* ]

AIR POLLUTION CONTROL OFFICER

\_\_\_\_\_

\_\_\_\_\_

Date

NOTES:

- (a) Permit Reevaluation Due Date: December, 2011
- (b) Part 70 Operating Permit Expiration Date: December, 2011

**RECOMMENDATION**

It is recommended that this PTO be issued with the conditions as specified in the permit.

\_\_\_\_\_

AQ Engineer

\_\_\_\_\_

Date

\_\_\_\_\_

Engineering Supervisor

\_\_\_\_\_

Date

## **10.0 Attachments**

**10.1 *Emission Calculation Documentation***

**10.2 *NEI Calculations***

**10.3 *Fee Calculations***

**10.4 *IDS Database Emission Tables***

**10.5 *Equipment List***

**10.6 *Exempt / Part 70 Insignificant Equipment List***

**10.7 *Comments on Draft PTO 8234-R7 and APCD Responses***

**10.8 *Pig Launching Procedure***

This page intentionally left blank.

## 10.1 EMISSION CALCULATION DOCUMENTATION

This attachment contains relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. Supporting calculation spreadsheets are attached to this Section as tables, where necessary. The letters A-H refer to Tables 5.1-1 and 5.1-2.

### Reference A - Combustion Flare

- The maximum operating schedule for the purge/pilot gas and planned continuous flaring is in units of hours.
- All flaring volumes based on Venoco's application
- HHV = 1,100 Btu/scf for all flare and purge and pilot gas (per Venoco application)
- SO<sub>x</sub> emissions are based on 12 ppm H<sub>2</sub>S for pilot gas and 239 ppm H<sub>2</sub>S for purge.
- Venoco claims no "Planned – Other" flaring events.
- Purge flow rates are greater than ½ the flow meter's minimum detection limit (MDL)
- "Unplanned flaring" volumes based on Venoco's application. SO<sub>x</sub> emissions based 17,000 ppmv S. Venoco claims no "Planned – Other" flaring events.
- Planned intermittent (other) and unplanned flaring events not calculated for short-term events per APCD policy
- Emission factors are from Table 13.5-1 of USEPA's AP-42, with the exception of PM/PM<sub>10</sub> and SO<sub>x</sub> emission factors. The PM/PM<sub>10</sub> factor is based on Table 3.1.1 of the APCD's *Flare Study Phase I Report* (7/91). SO<sub>x</sub> emissions are based on a mass balance of total flared gas sulfur content per APCD document titled "*Technical Information and References Gaseous Fuel SO<sub>x</sub> Emission Factor*" (Version 1.0, 1/31/97). The PM<sub>10</sub>/PM ratio is assumed to equal 1.0.
- ROC/THC ratio is based on EPA Table 13.5-2 (See Table 10.1-3 for the derivations of ROC/THC ratio).
- Flaring emissions are calculated consistent with the methodology described in Section 4.3.4 of this permit.
- SO<sub>x</sub> emissions based on mass balance per APCD Application Processing and Calculations Procedures, Section "SO<sub>x</sub> Emission factors for Gaseous Fuels":

Pilot:

SO<sub>x</sub> lbs/MMBtu =

$12 \text{ parts S}/10^6 \times (64 \text{ lbs SO}_x/\text{lb-mole}) \times (\text{lb-mole}/379.4 \text{ scf}) \times (\text{scf}/1100 \text{ btu}) \times (10^6 \text{ btu/MMBtu})$

= 0.00184 lbs SO<sub>x</sub>/MMBtu

Purge:

SO<sub>x</sub> lbs/MMBtu =

239 parts S/10<sup>6</sup> x (64lbs SO<sub>x</sub>/lb-mole)x(lb-mole/379.4scf)x(scf/1100btu) x (10<sup>6</sup>btu/MMBtu)

= 0.0366 lbs SO<sub>x</sub>/MMBtu

Unplanned:

SO<sub>x</sub> lbs/MMBtu =

17,000 parts S/10<sup>6</sup> x (64lbs SO<sub>x</sub>/lb-mole)x(lb-mole/379.4scf)x(scf/1100btu) x (10<sup>6</sup>btu/MMBtu)

= 2.60 lbs SO<sub>x</sub>/MMBtu

#### Reference B - Fugitive Components

- The maximum operating schedule is in units of hours
- All safe to monitor components are credited an 80 percent control efficiency. Unsafe to monitor components (as defined in Rule 331) are considered uncontrolled,
- The component leak path definition differs from the Rule 331 definition of a component. A typical leak path count for a valve would be equal to four (one valve stem, a bonnet connection and two flanges).
- Leak path counts are provided by applicant. The count was obtained from Venoco's Holly CVR data submitted on 09/01/2005; and has been acknowledged by Venoco as the most representative data for the clp counts at this time (*ref: Venoco's e-mail from Walt McCarthy to Brian Shafritz on 12/20/2005 and Venoco's meeting with APCD at EOF on this date*).
- See Section 4 for the emission factors.

#### Reference C - Supply Boat

- The maximum operating schedule is in units of hours
- Supply boat engine data based on the specifications of a boat identical to 'American Heritage' [*'Santa Cruz' emissions are accounted for since its power ratings are lower than the original 'American Heritage'*]
- Three 1,640 bhp main engines (i.e., 4,920 bhp), two 265 bhp auxiliary engines (i.e., 530 bhp) and two 265 bhp bow thruster engines (i.e., 530 bhp) are used
- Main engine load factor based on APCD *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, either with one engine at full load or both engines at half load

- Based on the boat trip distance from Port Hueneme to Holly, the APCD has computed the total time a supply boat operates (per trip) within California Coastal Waters (adjacent to Santa Barbara County) limits. This is 13.25 hours. A trip includes time to, from, and at the platform. The time is based on a typical trip consisting of: 10.75 hours cruise, 2 hours maneuver, and 0.5 hour idle. Annual supply boat usage time is 2544 hours based on 192 trips.
- Main engine emission factors are based only on cruise mode values.

- Supply boat engines achieve an uncontrolled NO<sub>x</sub> emission rate of 14 g/bhp-hr. This emission factor equates to 561 lb/1000 gallons.

$$\rightarrow EF_{NOx} = (14 \text{ g/bhp-hr}) \div (0.055 \text{ gal/bhp-hr}) \div (453.6 \text{ g/lb.}) \times (1000)$$

- 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, 1500 bhp engine}
- PM emission factor for the main engines are based on *Kelly, et. al.* (1981)
- See Table 10.1-2 for ROC and PM10 ratios

$$SO_x \text{ (as } SO_2) = (\%S) \times (7.05 \text{ lb/gal}_l) \times (64 \text{ lbs/lb-mole } SO_2 \div 32 \text{ lbs/lb-mole } S) \\ = 0.056 \text{ lbs } S / \text{ gal}$$

- 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:  
 $\rightarrow EF_{lb/1000 \text{ gal}} = EF_{lb/MMBtu} \times 19,300 \text{ Btu/lb diesel} \times 7.05 \text{ lb diesel./gal} * 1000 \text{ gal/Kgal}$
- Brake specific fuel consumption is 0.055 gal/bhp-hr [=1/(18.2 bhp-hr/gal)] for all engines.
- Main and auxiliary engine fuel use limits are determined as follows:

$$\text{Gallons/time period} = (\text{BSFC}) \times (\text{bhp}) \times (\text{hours/time period}) \times (\text{load factor})$$

Main engines:

$$Q = (0.055 \text{ gal/bhp-hr}) (4,920 \text{ bhp}) (13.25 \text{ hours/day}) (0.65) \\ = 2,326 \text{ gallons per day}$$

$$Q = (0.055 \text{ gal/bhp-hr}) (4,920 \text{ bhp}) (636 \text{ hours/qtr}) (0.65) \\ = 111,662 \text{ gallons per quarter}$$

$$Q = (0.055 \text{ gal/bhp-hr}) (4,920 \text{ bhp}) (2544 \text{ hours/yr}) (0.65) \\ = 446,651 \text{ gallons per year}$$

Auxiliary engines – Generators

$$Q = (0.055 \text{ gal/bhp-hr}) (530 \text{ bhp}) (13.25 \text{ hours/day}) (0.50) \\ = 193 \text{ gallons per day}$$

$$Q = (0.055 \text{ gal/bhp-hr}) (530 \text{ bhp}) (636 \text{ hours/qtr}) (0.50)$$

$$= 9,253 \text{ gallons per quarter}$$

$$Q = (0.055 \text{ gal/bhp-hr}) (530 \text{ bhp}) (2544 \text{ hours/yr}) (0.50)$$

$$= 37,079 \text{ gallons per year}$$

Auxiliary engines - Bow Thruster

$$Q = (0.055 \text{ gal/bhp-hr}) (530 \text{ bhp}) (2 \text{ hours/day})$$

$$= 58 \text{ gallons per day}$$

$$Q = (0.055 \text{ gal/bhp-hr}) (530 \text{ bhp}) (96 \text{ hours/qtr})$$

$$= 2,793 \text{ gallons per quarter}$$

$$Q = (0.055 \text{ gal/bhp-hr}) (530 \text{ bhp}) (384 \text{ hours/yr})$$

$$= 11,194 \text{ gallons per year.}$$

Reference D - Crew Boat

- The maximum operating schedule is in units of hours
- Crew boat engine data based on the specifications of a boat identical to the Smith Tide
- Two 510 bhp main engines (i.e., 1,020 bhp), one 40 bhp auxiliary engine
- Main engine load factor based on APCD *Crew and Supply Boat* study (6/87)
- Crew boat auxiliary engine provides half of the total rated load
- The total time a crew boat operates (per trip) is 1.0 hour, based on actual distance. Annual crew boat usage time is based on 2912 trips at 1.0 hr/trip for a total of 2,912 hours per year.
- Crew boat main engines achieve an uncontrolled NO<sub>x</sub> emission rate of 14g/bhp-hr. This emission factor equates to 561 lb/1000 gallons:
 
$$\rightarrow EF_{NO_x} = (14 \text{ g/bhp-hr}) \div (0.055 \text{ gal/bhp-hr}) \div (453.6 \text{ g/lb.}) \times (1000)$$
- 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, 500 bhp engine}
- PM emission factor for the main engines are based on *Kelly, et. al.* (1981)
- PM<sub>10</sub>:PM ratio = 0.96; ROC:TOC ratio = 1.0
- All SO<sub>x</sub> emissions based on mass balance
 
$$SO_x \text{ (as SO}_2\text{)} = (\%S) \times (7.05 \text{ lb/gal}) \times (64 \text{ lbs/lb-mole SO}_2 \div 32 \text{ lbs/lb-mole S})$$

$$= 0.056 \text{ lbs S/ gal}$$
- Auxiliary engine emission factors (uncontrolled) are based on USEPA AP-42, Table 3.3-1 (7/93). Table emission factors converted to fuel basis using:

$$EF_{\text{lb}/1000 \text{ gal}} = EF_{\text{lb}/\text{MMBtu}} \times 19,300 \text{ Btu/lb diesel} \times 7.05 \text{ lb diesel./gal} * 1000 \text{ gal/Mgal}$$

- Brake specific fuel consumption is 0.055 gal/bhp-hr (18.2 hp-hr/gal) for all engines.
- Main and auxiliary engine fuel use limits are determined as follows:  
Gallons/time period) = (BSFC) × (bhp) × (hours/time period) × (load factor)

Reference E - Pigging Equipment

- Maximum operating schedule is in units of events
  - No pigs are received at the platform.
  - The gas & oil launcher volumes, pressures, and temperatures based on file data;
  - The oil/emulsion launcher is purged with nitrogen or sweet gas and the gas launchers are purged with nitrogen, then vented to the VRS via a surge tank at 5 psig prior to opening the launchers to the atmosphere. The procedures are listed in Venoco-submitted permit modification application incorporated in Section 10.8 of this permit. The ROC content calculations shown in Section 10.8 are used to compute the emissions for the pig launchers.
  - $MW_{\text{oil}} = 50 \text{ lb/lb-mol}$  for oil;  $MW_{\text{gas}} = 23 \text{ lb/lb-mol}$  for gas;  $MW_{\text{N}_2} = 28 \text{ lb/lb-mol}$  for  $\text{N}_2$ .
  - Average TOC weight fraction in the nitrogen/ROC mix in the gas launcher is 0.0001(see calculations in Section 10.8) for gas launcher. This is due to purging with nitrogen as discussed above. In addition, the ROC/TOC ratio is 0.308 [Reference: CARB VOC Speciation Profile 757 for ROC/TOC ratio of 0.308]. Thus, the ROC fraction in the released gases to atmosphere is 0.00003.
  - Average ROC weight fraction in sweet gas to purge oil launcher is 0.1924 [Reference: 2001 Annual Report for Holly]. After five purges, the purge gas comprises 99.99% of sweet gas; this is released to the atmosphere.
  - Density  $\rho = (\text{Ppsig} * \text{MW}) / (\text{R}*T)$ , density of vapor remaining in the vessel (lbs. VOC/acf)
  - Site-specific pigging emission factor  $EF = (\rho \times \text{ROC weight } \%), (\text{lb ROC/acf-event})$
- ☞  $\rho = (19.7 * 28) / (10.73 * 520) = 0.0989 \text{ lb./cu.ft.}$ , of the nitrogen/ROC mix in the pig chamber = 0.0989 lb./cubic feet of TOC for gas launchers;
- $EF(\text{gas-mix}) = 0.0989 * 0.00003 = 0.00 \text{ lb. of ROC/acf-event}$  for gas launchers.
- ☞  $\rho = 0.8098 (= \text{sp.gr.}) * 0.0763 (= \text{density of air}) = 0.0618 \text{ lb./cu.ft}$  for sweet gas (Ref: 2001 Venoco Annual Report data for Holly). Density of sweet gas in pig chamber at 5 psig =  $0.0618 * (19.7/14.7) = 0.0828 \text{ lb./cubic feet}$ ;
- $EF(\text{sweet gas}) = 0.0828 * 0.1924 = 0.0159 \text{ lb. of ROC/acf-event}$  for oil launchers.

Reference F Sumps/Tanks/Separators –

- Maximum operating schedule is in units of hours
- There are no oil/water separators on Holly
- Emission calculation methodology based on APCD P&P 6100.060 (specifically, the CARB/KVB report *Emissions Characteristics of Crude Oil Production Operations in California* (1/83) was used).
- Calculations are based on surface area of emissions unit as supplied by the applicant.
- All non-oil/water separator emission units are classified as tertiary production and light oil service

#### Reference G - Solvents

- Solvents are used for daily operations such as wipe cleaning or cold solvent degreasing. A low VOC cleaner, D-5, is used. Solvents used to thin surface coatings are not included in this equipment category.
- To compute ROC emissions from paints and thinners under the *worst-case scenario*, the maximum allowable ROC content in such paints/thinners (250 g/l) has been used as the emission factor for the entire group of chemicals.
- Annual emission rates per prior permit. Daily number is annualized.
- Hourly emissions based on daily value divided by an average 24-hour day. Compliance with daily value based on monthly emissions divided by the number of days per month.

#### Reference H - Boom Boat

- The boom boat is a 17' Boston Whaler driven by a motor, powered by an Evinrude, 85 hp, 2-cycle, gasoline-fired, spark-ignition engine.
- Usage is limited to 24 hours per year.
- Uncontrolled NO<sub>x</sub>, ROC and CO emission factors are obtained from USEPA's Reference Report "Non-Road Engine and Vehicle Emission Study [USEPA 460/3-91-02]." Since the document was published in 1991, it addressed all marine vessel engines manufactured prior to that date, such as the one being permitted. The following emission factors (in units of gm/hp-hr) for gasoline-fired, spark-ignition, 2-cycle engines were obtained from the report: HC = 113.0; CO = 212.0; NO<sub>x</sub> = 1.08; SO<sub>x</sub> = 0.27; & PM = 24.0. A load factor of 65% is recommended. Also, a correction factor of 0.8 is required to convert the HC emission factor to an ROC emission factor. The adjusted emission factors, not accounting for the load factor, are;
 

ROC = 90.4 g/hp-hr; NO<sub>x</sub> = 1.08 g/hp-hr; CO = 212.0 g/hp-hr; SO<sub>x</sub> = 0.27 g/hp-hr; and PM = 24 g/hp-hr.
- The respective emission factors are multiplied first by the load factor of 0.65 and then by the hp (85); and finally by either 12 (daily hours) or 24 (number of hours/year) to obtain the permitted daily or annual emissions.

**Table 10.1-3**  
**Venoco Platform Holly: PTO 8234**  
**Flare ROC/TOC Weight Ratio**

**Flare ROC/THC Weight Ratio**

	<u>Vol.%</u> (moles)	<u>MW</u>	<u>lbs</u>	<u>Wt.%</u>
methane	55%	16	8.8	34%
Ethane/ethylene	8%	30.07	2.4056	9%
Acetylene	5%	26.04	1.302	5%
Propane	7%	44.09	3.0863	12%
Propylene	25%	42.08	10.52	40%
	1.00		26.1139	100%

Assume half of ethane/ethylene is ROC

ROC/THC weight ratio = 61.70%

Data per USEPA AP-42, Table 13.5-2

## **10.2 NEI CALCULATIONS**

The NEI calculations for Holly and for the Ellwood Stationary Source are presented in Tables 10.2-1 and 10.2-2.

Table 10.2-1  
 Venoco Platform Holly: Part 70/APCD PTO 8234-R7  
 Facility #3105 NEI-90

I. This Project's "I" NEI-90

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr										
ATC 12804	current	3.00	0.53	0.35	0.06	2.90	0.51	0.01	0.00	0.01	0.00	0.01	0.00
<b>Totals</b>		<b>3.00</b>	<b>0.53</b>	<b>0.35</b>	<b>0.06</b>	<b>2.90</b>	<b>0.51</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>

II. This Facility's "P1s"

Enter all facility "P1" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 10128-01	Nov '99	4.67	0.77	3.91	0.65	25.40	4.20	2.34	1.06	1.37	0.23	1.37	0.23
ATC/PTO 10106-02	Nov '02	0.00	0.00	6.67	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10134	May '99	4.13	0.13	3.46	0.11	22.47	0.69	2.05	0.18	1.21	0.04	1.21	0.04
<b>Totals</b>		<b>8.80</b>	<b>0.90</b>	<b>14.04</b>	<b>1.98</b>	<b>47.87</b>	<b>4.89</b>	<b>4.39</b>	<b>1.24</b>	<b>2.58</b>	<b>0.27</b>	<b>2.58</b>	<b>0.27</b>

Notes:  
 (1) Facility NEI from IDS.  
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.  
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

III. This Facility's "P2" NEI-90 Decreases

Enter all facility "P2" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 10134	July '99	4.13	0.13	3.46	0.11	22.47	0.69	2.05	0.18	1.21	0.04	1.21	0.04
<b>Totals</b>		<b>4.13</b>	<b>0.13</b>	<b>3.46</b>	<b>0.11</b>	<b>22.47</b>	<b>0.69</b>	<b>2.05</b>	<b>0.18</b>	<b>1.21</b>	<b>0.04</b>	<b>1.21</b>	<b>0.04</b>

Notes:  
 (1) Facility NEI from IDS.  
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.  
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

IV. This Facility's Pre-90 "D" Decreases

Enter all facility "D" decreases below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr										
ATC 12804	current	1.38	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Totals</b>		<b>1.38</b>	<b>0.19</b>	<b>0.00</b>									

Notes:  
 (1) Facility "D" from IDS.  
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.  
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

V. Calculate This Facility's NEI-90

Table below summarizes facility NEI-90 as equal to: I+ (P1-P2) -D

Term	NOx		ROC		CO		SOx		PM		PM10	
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
Project "I"	3.00	0.53	0.35	0.06	2.90	0.51	0.01	0.00	0.01	0.00	0.01	0.00
P1	8.80	0.90	14.04	1.98	47.87	4.89	4.39	1.24	2.58	0.27	2.58	0.27
P2	4.13	0.13	3.46	0.11	22.47	0.69	2.05	0.18	1.21	0.04	1.21	0.04
D	1.38	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>FNEI-90</b>	<b>6.28</b>	<b>1.11</b>	<b>10.93</b>	<b>1.93</b>	<b>28.29</b>	<b>4.71</b>	<b>2.34</b>	<b>1.06</b>	<b>1.38</b>	<b>0.23</b>	<b>1.38</b>	<b>0.23</b>

Notes:  
 (1) Resultant FNEI-90 from above Section I thru IV data.  
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.  
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

Table 10.2-2  
 Venoco Platform Holly: Part 70/APCD PTO 8234-R7  
 Ellwood Source #0028 NEI-90

Facility No.	Effective Permit	Effective Date	NOx		ROC		CO		SOx		PM		PM10	
			lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
0028	PT-70/Reeval 7904-R8	current	48.63	6.26	36.77	5.73	223.39	70.75	35.03	2.89	16.85	2.29	16.85	2.29
3105	PT-70/Reeval 8234-R7	current	6.28	1.11	10.93	1.93	28.29	4.71	2.34	1.06	1.38	0.23	1.38	0.23
1065	PT-70/Reeval 4441-R4	current	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3035	PT-70/Reeval 8103-R6	current	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Totals =</b>			<b>54.91</b>	<b>7.37</b>	<b>47.70</b>	<b>7.66</b>	<b>251.68</b>	<b>75.46</b>	<b>37.37</b>	<b>3.95</b>	<b>18.23</b>	<b>2.52</b>	<b>18.23</b>	<b>2.52</b>

Notes: (1) Facility NEI from IDS.  
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.  
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

### **10.3 FEE CALCULATIONS:**

All permit fees for the reevaluation of Holly are based on the fee schedules of Rule 210. The APCD has calculated these fees based on the CPI adjusted Rule 210 fee schedules in effect and on current equipment lists as of July 2005. The fees (based on an anticipated permit issuance date of November, 2005) are detailed in the attached spreadsheet.

All work performed with respect to implementing the requirements of the Part 70 Operating Permit program are assessed on a cost reimbursement basis pursuant to APCD Rule 210.

# FEE STATEMENT

PT-70/Reeval No. 08234 - R7

FID: 03105 Platform Holly / SSID: 01063



## Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
009669	Motor: Drain Sump Pump, T-1	A2	7.500	27.40	per rated hp	No	1	1.000	205.50	0.00	0.00	205.50
007982	High-pressure Flare	A3	1312.500	396.55	Per 1 million Btu input	Max	1	1.000	5,306.00	0.00	0.00	5,306.00
009603	Low-Pressure Flare	A3	126.000	396.55	Per 1 million Btu input	Max	1	1.000	5,306.00	0.00	0.00	5,306.00
009650	Motor: Oil Sump Pump, T-5	A2	2.000	27.40	per rated hp	No	1	1.000	54.80	0.00	0.00	54.80
009601	Fugitives: Oil - Controlled	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009643	Motor: Pipeline Shipping Pump	A2	250.000	27.40	per rated hp	Max	1	1.000	5,306.00	0.00	0.00	5,306.00
009645	Motor: Direct Contact Cooler Condensate Pumps	A2	2.000	27.40	per rated hp	No	2	1.000	109.60	0.00	0.00	109.60
009792	Pig Launcher - Oil	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009793	Pig Launcher - Utility	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009794	Pig Launcher - Gas	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
002345	Drain Sump Tank	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
005882	Overflow Sump Tank	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
002346	Oil Sump Tank	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009594	Omnipure Wastewater Treatment Skid	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009646	Motor: Test Tank Transfer Pump, T-101	A2	1.000	27.40	per rated hp	Min	1	1.000	52.52	0.00	0.00	52.52
009626	Well Heads	A1.a	1.000	52.86	Item	No	30	1.000	1,585.80	0.00	0.00	1,585.80
009595	Oil Pipeline to Shore	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009596	Gas Pipeline to Shore	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009605	Oil Filters, VRU, C-100A, C-100B	A1.a	1.000	52.86	Item	No	2	1.000	105.72	0.00	0.00	105.72
009664	Motor: Gas Lift Compressor	A2	1000.000	27.40	per rated hp	Max	1	1.000	5,306.00	0.00	0.00	5,306.00
009642	Motor: Glycol Pumps	A2	3.000	27.40	per rated hp	No	2	1.000	164.40	0.00	0.00	164.40
009666	Motor: Compressor	A2	1500.000	27.40	per rated hp	Max	1	1.000	5,306.00	0.00	0.00	5,306.00
009667	Motor: Annulus Gas Compressors	A2	10.000	27.40	per rated hp	No	3	1.000	822.00	0.00	0.00	822.00

009623	Glycol Reboiler	A3	1.640	396.55	Per 1 million Btu input	No	1	1.000	650.34	0.00	0.00	650.34
009665	Motor: Vapor Recovery Unit (VRU) Compressors	A2	50.000	27.40	per rated hp	No	2	1.000	2,740.00	0.00	0.00	2,740.00
009644	Motor: VRU Scrubber Dump Pumps, C-100A/C-100B	A2	2.000	27.40	per rated hp	No	2	1.000	109.60	0.00	0.00	109.60
009621	VRU Coalescer Filters, C-100A/C-100B	A1.a	1.000	52.86	Item	No	2	1.000	105.72	0.00	0.00	105.72
009597	VRU Inlet Trap Pump	A2	1.000	27.40	per rated hp	Min	1	1.000	52.52	0.00	0.00	52.52
009599	Stack Scrubber Pump	A2	1.000	27.40	per rated hp	Min	1	1.000	52.52	0.00	0.00	52.52
009651	Monterey 3120 Group Trap Separator	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009652	Monterey 3242 Group Trap Separator	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009654	Monterey 3242 Test Trap	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009638	3120 Crude Oil Surge Tank	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009629	3242 Crude Oil Surge tank	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009630	Annulus Separator (V-100), Well Bay Test Separator (V-101)	A6	1.000	3.03	Per 1000 gallons	Min	2	1.000	105.04	0.00	0.00	105.04
009632	Glycol Storage Reboiler	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009633	Glycol Absorber	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009608	IR Cylinder 1 & 3 Suction Bottle, CYL-1, CYL-3, C-101	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009634	Glycol Afterscrubber	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009635	Glycol Flash Drum	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009636	Cuno Filter	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009637	Peco Filter	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009609	IR Cylinder 1 & 3, C-101 Discharge Bottle	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009639	I.R. Suction Scrubber, C-101	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009640	I.R. Discharge Scrubber, C-101	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009641	1st-Stage Suction Scrubber, W-S, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009610	IR Cylinder 2 & 4 Suction Bottle, C-101	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009628	1st-Stage Discharge Scrubber, W-S, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52

009616	2nd-Stage Suction Scrubber, W-S, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009611	IR Cylinder 2 & 4 Discharge Bottle, C-101	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009620	VRU Suction Scrubbers, C-100A, C-100B	A6	1.000	3.03	Per 1000 gallons	Min	2	1.000	105.04	0.00	0.00	105.04
009617	3rd-Stage Suction Scrubber, W-S, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009618	3rd-Stage Discharge Scrubber, W-S, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009612	WS Cylinder 2 & 4 1st Stage Suction Bottle, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009624	Direct Contact Cooler	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009613	WS Cylinder 2 & 4 1st Stage Discharge Bottle, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009622	Stack Scrubber	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009631	Glycol Reflux Column	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009614	WS Cylinder 3 : 2nd Stage Suction Bottle, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009615	WS Cylinder 3: 2nd Stage Discharge Bottle, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009584	WS Cylinder 1: 3rd Stage Suction Bottle, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009598	WS Cylinder 1: 3rd Stage Discharge Bottle, C-102	A6	1.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009661	Solvent Storage Tank	A6	10.000	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009585	Chemical Injection Tank	A6	0.980	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009586	Chemical Injection Tank	A6	0.240	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009587	Chemical Injection Tank	A6	0.430	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009588	Chemical Injection Tank	A6	0.430	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009589	Chemical Injection Tank	A6	0.430	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
009590	Chemical Injection Tank	A6	0.430	3.03	Per 1000 gallons	Min	1	1.000	52.52	0.00	0.00	52.52
107274	Pipeline Shipping Pump	A2	250.000	27.40	per rated hp	Max	1	1.000	5,306.00	0.00	0.00	5,306.00
107275	Return Oil Sump Pump	A2	2.000	27.40	per rated hp	No	1	1.000	54.80	0.00	0.00	54.80

107276	Drain Sump Pump, T-1	A2	7.500	27.40	per rated hp	No	1	1.000	205.50	0.00	0.00	205.50
107277	Direct Contact Cooler Condensate Pumps	A2	2.000	27.40	per rated hp	No	2	1.000	109.60	0.00	0.00	109.60
107278	Test Tank Transfer Pump, T-101	A2	6.000	27.40	per rated hp	No	1	1.000	164.40	0.00	0.00	164.40
107279	Chemical Injection Pumps	A2	1.000	27.40	per rated hp	Min	2	1.000	105.04	0.00	0.00	105.04
009130	IC Engine: Drilling Rig Generator #1	A3	7.590	396.55	Per 1 million Btu input	No	1	1.000	3,009.81	0.00	0.00	3,009.81
009131	IC Engine: Drilling Rig Generator #2	A3	7.590	396.55	Per 1 million Btu input	No	1	1.000	3,009.81	0.00	0.00	3,009.81
009132	IC Engine: Drilling Rig Generator #3	A3	8.100	396.55	Per 1 million Btu input	No	1	1.000	3,212.06	0.00	0.00	3,212.06
	<b>Device Fee Sub-Totals =</b>								<b>\$51,252.17</b>	<b>\$0.00</b>	<b>\$0.00</b>	
	<b>Device Fee Total =</b>											<b>\$51,252.17</b>

**Permit Fee**

Fee Based on Devices

51,252.17

**Fee Statement Grand Total = \$51,252**

Notes:

- 
- (1) Fee Schedule Items are listed in APCD Rule 210, Fee Schedule "A".
  - (2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

## 10.4 IDS DATABASE EMISSION TABLES

**Table 1**  
**Permitted potential to emit (PPTE)**

	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM	PM <sub>10</sub>
<b>Part 70/PTO 8234-R7</b>						
lb/day	1,796.15	370.71	611.47	179.79	144.12	104.90
tons/year	180.47	37.56	32.90	18.94	11.07	10.65

**Table 2**  
**Facility potential to emit (FPTE)**

	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM	PM <sub>10</sub>
<b>Part 70/PTO 8234-R7</b>						
lb/day	1,796.15	370.71	611.47	179.79	144.12	104.90
tons/year	180.47	37.56	32.90	18.94	11.07	10.65

**Table 3**  
**Federal potential to emit (PT 70 FPTE)**

	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM	PM <sub>10</sub>
<b>Part 70/PTO 8234-R7</b>						
lb/day	3,113.84	334.63	552.41	295.50	195.64	191.47
tons/year	189.39	18.39	40.89	19.19	12.70	12.28

**Table 4**  
**Facility Net Emission Increase Since 1990 (FNEI-90)**

	<b>NO<sub>x</sub></b>	<b>ROC</b>	<b>CO</b>	<b>SO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>
<b>Part 70/PTO 8234-R7</b>						
lb/day	26.10	12.40	30.31	3.85	2.97	2.97
tons/year	3.04	2.09	4.81	1.25	0.43	0.43

## 10.5 Permitted Equipment List

### 1 Crew Boats

#### 1.1 Crewboat - Main Engines -Uncontrolled

<i>Device ID #</i>	<b>009787</b>	<i>Device Name</i>	<b>Crewboat - Main Engines -Uncontrolled</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1020.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID Serial Number</i>	3105-DD
<i>Location Note</i>			
<i>Device Description</i>			

#### 1.2 Crewboat - Auxiliary Engines

<i>Device ID #</i>	<b>009788</b>	<i>Device Name</i>	<b>Crewboat - Auxiliary Engines</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	40.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID Serial Number</i>	3105-EE
<i>Location Note</i>			
<i>Device Description</i>			

### 2 Diesel I.C. Engines

#### 2.1 IC Engine: Emergency Generator

<i>Device ID #</i>	002337	<i>Maximum Rated BHP</i>	373.00
<i>Device Name</i>	IC Engine: Emergency Generator	<i>Serial Number</i>	62B-306
<i>Engine Use</i>	EngineUse	<i>EPA Engine Family Name</i>	EPAEngineFamily
<i>Manufacturer</i>	Caterpillar	<i>Operator ID</i>	62B306
<i>Model Year</i>	ModelYear	<i>Fuel Type</i>	FuelType
<i>Model</i>	D-343		
<i>DRP/ISC?</i>	DRPISC	<i>Healthcare Facility?</i>	HealthCareYesNo
<i>Daily Hours</i>	DailyHours	<i>Annual Hours</i>	AnnualHours
<i>Location Note</i>			
<i>Device Description</i>	250 kW diesel stand-by generator, which is used in the event of a power outage from Southern California Edison.		

### 3 Motor: Drain Sump Pump, T-1

---

<i>Device ID #</i>	<b>009669</b>	<i>Device Name</i>	<b>Motor: Drain Sump Pump, T-1</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	7.50 Horsepower (Electric Motor)
<i>Manufacturer</i>	Moyund	<i>Operator ID</i>	P-202
<i>Model</i>	2L3SSFCAA	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Capacity = 250 gal/minute		

---

### 4 Flare Systems

#### 4.1 High-pressure Flare

---

<i>Device ID #</i>	<b>007982</b>	<i>Device Name</i>	<b>High-pressure Flare</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1312.50 MMBtu/Hour
<i>Manufacturer</i>	Indair Self-Assisted	<i>Operator ID</i>	H-100
<i>Model</i>	1-24-H-VS-WB	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	The pressurized flare has a 10-inch diameter inlet; mounted to the existing vent stack boom; design rated to flare gas flow rates of up to 30 MMSCFD		

---

#### 4.2 Low-Pressure Flare

---

<i>Device ID #</i>	<b>009603</b>	<i>Device Name</i>	<b>Low-Pressure Flare</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	126.00 MMBtu/Hour
<i>Manufacturer</i>		<i>Operator ID</i>	H101
<i>Model</i>	CAK-4	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	This low pressure flare is a combined pilot/flare tip; mounted to an existing flare stack boom with a permit limited to flare gas flow rates of up to 2000 SCFM		

---

**5 Motor: Oil Sump Pump, T-5**

<i>Device ID #</i>	<b>009650</b>	<i>Device Name</i>	<b>Motor: Oil Sump Pump, T-5</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	2.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>	Worthington D-1011	<i>Operator ID</i>	P-201
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>	Capacity = 250 gal/minute. Currently out of service.		

**6 Fugitive Hydrocarbon Components - CLP**

**6.1 Fugitives: Oil - Controlled**

<i>Device ID #</i>	<b>009601</b>	<i>Device Name</i>	<b>Fugitives: Oil - Controlled</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	6605.00 Component Leakpath
<i>Manufacturer Model</i>		<i>Operator ID</i>	3105-02
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

**6.2 Fugitives: Oil - Unsafe**

<i>Device ID #</i>	<b>104754</b>	<i>Device Name</i>	<b>Fugitives: Oil - Unsafe</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	0.00 Component Leakpath
<i>Manufacturer Model</i>		<i>Operator ID</i>	3105-03
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

### 6.3 Fugitives: Gas - Controlled

---

<i>Device ID #</i>	<b>104755</b>	<i>Device Name</i>	<b>Fugitives: Gas - Controlled</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	12085.00 Component Leakpath
<i>Manufacturer Model</i>		<i>Operator ID</i>	3105-04
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

---

### 6.4 Fugitives: Gas - Unsafe

---

<i>Device ID #</i>	<b>104756</b>	<i>Device Name</i>	<b>Fugitives: Gas - Unsafe</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	0.00 Component Leakpath
<i>Manufacturer Model</i>		<i>Operator ID</i>	3105-05
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

---

### 7 Motor: Pipeline Shipping Pump

---

<i>Device ID #</i>	<b>009643</b>	<i>Device Name</i>	<b>Motor: Pipeline Shipping Pump</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	250.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>	Reda 66CT/ES	<i>Operator ID</i>	P-200
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>	Capacity = 583 gal/hour		

---

**8 Motor: Direct Contact Cooler Condensate Pumps**

<i>Device ID #</i>	<b>009645</b>	<i>Device Name</i>	<b>Motor: Direct Contact Cooler Condensate Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Worthington	<i>Operator ID</i>	P-107 A/B
<i>Model</i>	D-512	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

**9 Pigging Equipment**

**9.1 Pig Launcher - Oil**

<i>Device ID #</i>	<b>009792</b>	<i>Device Name</i>	<b>Pig Launcher - Oil</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	Sp-132
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	One oil pig launcher with 0.67' diameter by 4' long.		

**9.2 Pig Launcher - Utility**

<i>Device ID #</i>	<b>009793</b>	<i>Device Name</i>	<b>Pig Launcher - Utility</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	Sp-133
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	One utility gas pig launcher with 0.67' diameter by 4' long.		

**9.3 Pig Launcher - Gas**

<i>Device ID #</i>	<b>009794</b>	<i>Device Name</i>	<b>Pig Launcher - Gas</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	Sp-134
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	One gas pig launcher with 0.67' diameter by 4' long.		

## 10 Sumps/Separators/Wastewater Tanks

### 10.1 Drain Sump Tank

---

<b>Device ID #</b>	<b>002345</b>	<b>Device Name</b>	<b>Drain Sump Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	44.00 Square Feet Sump Area
<i>Manufacturer</i>		<i>Operator ID</i>	T-1
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

### 10.2 Overflow Sump Tank

---

<b>Device ID #</b>	<b>005882</b>	<b>Device Name</b>	<b>Overflow Sump Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	113.00 Square Feet Sump Area
<i>Manufacturer</i>		<i>Operator ID</i>	T-4
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

### 10.3 Oil Sump Tank

---

<b>Device ID #</b>	<b>002346</b>	<b>Device Name</b>	<b>Oil Sump Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	7.00 Square Feet Sump Area
<i>Manufacturer</i>		<i>Operator ID</i>	T-5
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

#### 10.4 Omnipure Wastewater Treatment Skid

<i>Device ID #</i>	<b>009594</b>	<i>Device Name</i>	<b>Omnipure Wastewater Treatment Skid</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	X-100
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

#### 11 Motor: Test Tank Transfer Pump, T-101

<i>Device ID #</i>	<b>009646</b>	<i>Device Name</i>	<b>Motor: Test Tank Transfer Pump, T-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1.00 Horsepower (Electric Motor)
<i>Manufacturer</i>	Dean	<i>Operator ID</i>	P-108
<i>Model</i>	PH-211	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

#### 12 Solvent and Coating Use

##### 12.1 Surface Coating Operations

<i>Device ID #</i>	<b>005884</b>	<i>Device Name</i>	<b>Surface Coating Operations</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Including paints, primers, coatings solvents used for thinning and associated cleanup operations		

### 13 Supply Boat

#### 13.1 Supply Boat - Main Engines - Uncontrolled

---

<i>Device ID #</i>	<b>009789</b>	<i>Device Name</i>	<b>Supply Boat - Main Engines - Uncontrolled</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	4920.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID</i>	3105-AA
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

---

#### 13.2 Supply Boat - Generator Engines

---

<i>Device ID #</i>	<b>009790</b>	<i>Device Name</i>	<b>Supply Boat - Generator Engines</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	530.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID</i>	3105-BB
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

---

#### 13.3 Supply Boat - Bow Thruster

---

<i>Device ID #</i>	<b>009791</b>	<i>Device Name</i>	<b>Supply Boat - Bow Thruster</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	530.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID</i>	
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

---

**14 Boom Boat**

**14.1 Boom Boat - Main Engines**

---

<i>Device ID #</i>	<b>104765</b>	<i>Device Name</i>	<b>Boom Boat - Main Engines</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	112.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Fuel use rate 11.2 gal/hr at max rated hp.		

---

**15 Emergency Boat**

**15.1 Emergency Response Boat - All Engines**

---

<i>Device ID #</i>	<b>104762</b>	<i>Device Name</i>	<b>Emergency Response Boat - All Engines</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1770.00 Brake Horsepower
<i>Manufacturer Model</i>		<i>Operator ID Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

---

**16 Oil Production and Transport**

**16.1 Well Heads**

---

<i>Device ID #</i>	<b>009626</b>	<i>Device Name</i>	<b>Well Heads</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	2 gas-injection wells, 1 plugged/abandoned well.		

---

## 16.2 Oil Pipeline to Shore

---

<i>Device ID #</i>	<b>009595</b>	<i>Device Name</i>	<b>Oil Pipeline to Shore</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	Line 6-PO-454-HC-D
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 16.3 Gas Pipeline to Shore

---

<i>Device ID #</i>	<b>009596</b>	<i>Device Name</i>	<b>Gas Pipeline to Shore</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	Line 6-PO-453-HC-E
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 17 Gas Compression, Dehydration, and Disposition

### 17.1 Oil Filters, VRU, C-100A, C-100B

---

<i>Device ID #</i>	<b>009605</b>	<i>Device Name</i>	<b>Oil Filters, VRU, C-100A, C-100B</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	F-113 A/B
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	5.5' diameter x 1.66' long.		
<i>Description</i>			

---

### 17.2 Motor: Gas Lift Compressor

---

<i>Device ID #</i>	<b>009664</b>	<i>Device Name</i>	<b>Motor: Gas Lift Compressor</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1000.00 Brake Horsepower
<i>Manufacturer</i>	White Superior	<i>Operator ID</i>	C-102
<i>Model</i>	W-64	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Capacity = 8.0 MMscf/day		
<i>Description</i>			

---

### 17.3 Motor: Glycol Pumps

<i>Device ID #</i>	<b>009642</b>	<i>Device Name</i>	<b>Motor: Glycol Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	3.00 Horsepower (Electric Motor)
<i>Manufacturer</i>	Union	<i>Operator ID</i>	P-106 A/B
<i>Model</i>	Tx-10	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	888 gal/hr capacity each.		
<i>Description</i>			

### 17.4 Motor: Compressor

<i>Device ID #</i>	<b>009666</b>	<i>Device Name</i>	<b>Motor: Compressor</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1500.00 Horsepower (Electric Motor)
<i>Manufacturer</i>	Ingersoll-Rand	<i>Operator ID</i>	C-101
<i>Model</i>	4RDS-1	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Capacity = 40 MMscf/day		
<i>Description</i>			

### 17.5 Motor: Annulus Gas Compressors

<i>Device ID #</i>	<b>009667</b>	<i>Device Name</i>	<b>Motor: Annulus Gas Compressors</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	10.00 Horsepower (Electric Motor)
<i>Manufacturer</i>	Ingersoll-Rand	<i>Operator ID</i>	C-103 A/B/C
<i>Model</i>	Type 30	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Electric, 10 hp each, 40,000 scf/day capacity each.		
<i>Description</i>			

### 17.6 Glycol Reboiler

<i>Device ID #</i>	<b>009623</b>	<i>Device Name</i>	<b>Glycol Reboiler</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1.64 MMBtu/Hour
<i>Manufacturer</i>		<i>Operator ID</i>	V-125
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	5' dia, x 15' long; uses 12 electric heaters, 40 kW each = 1.64		
<i>Description</i>	MMBtu/hr heat input.		

## 18 Vapor Recovery System

### 18.1 Motor: Vapor Recovery Unit (VRU) Compressors

---

<b>Device ID #</b>	<b>009665</b>	<b>Device Name</b>	<b>Motor: Vapor Recovery Unit (VRU) Compressors</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	50.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	C-100A, C-100B
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>	Electric motors 50 hp each, 0.250 MMscf/day capacity each compressor.		

---

### 18.2 Motor: VRU Scrubber Dump Pumps, C-100A/C-100B

---

<b>Device ID #</b>	<b>009644</b>	<b>Device Name</b>	<b>Motor: VRU Scrubber Dump Pumps, C-100A/C-100B</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	2.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	P-105 A/B
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>			

---

### 18.3 VRU Coalescer Filters, C-100A/C-100B

---

<b>Device ID #</b>	<b>009621</b>	<b>Device Name</b>	<b>VRU Coalescer Filters, C-100A/C-100B</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	F-112A/F-112B
<i>Location Note</i>		<i>Serial Number</i>	
<i>Device Description</i>	1.5' diameter x 7.25' long.		

---

#### 18.4 VRU Inlet Trap Pump

---

<i>Device ID #</i>	<b>009597</b>	<i>Device Name</i>	<b>VRU Inlet Trap Pump</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	P-128
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

#### 18.5 Stack Scrubber Pump

---

<i>Device ID #</i>	<b>009599</b>	<i>Device Name</i>	<b>Stack Scrubber Pump</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	P-128A
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

### 19 Pressure Vessels

#### 19.1 Monterey 3120 Group Trap Separator

---

<i>Device ID #</i>	<b>009651</b>	<i>Device Name</i>	<b>Monterey 3120 Group Trap Separator</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Natco	<i>Operator ID</i>	V-107
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	6.5' dia. x 20' long, 250 psi, 100°F.		
<i>Description</i>			

---

### 19.2 Monterey 3242 Group Trap Separator

---

<i>Device ID #</i>	<b>009652</b>	<i>Device Name</i>	<b>Monterey 3242 Group Trap Separator</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Natco	<i>Operator ID</i>	V-108
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	6.5' dia. x 20' long, 250 psi, 100°F.		

---

### 19.3 Monterey 3242 Test Trap

---

<i>Device ID #</i>	<b>009654</b>	<i>Device Name</i>	<b>Monterey 3242 Test Trap</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Superior	<i>Operator ID</i>	V-105
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	4' dia. x 20' long, 720 psi, 100°F. Currently Idle.		

---

### 19.4 3120 Crude Oil Surge Tank

---

<i>Device ID #</i>	<b>009638</b>	<i>Device Name</i>	<b>3120 Crude Oil Surge Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Natco	<i>Operator ID</i>	Mezz V-109
<i>Model</i>		<i>Serial Number</i>	7050401-01
<i>Location Note</i>			
<i>Device Description</i>	6' dia. x 20' long, 100 psi, 100°F.		

---

### 19.5 3242 Crude Oil Surge tank

---

<i>Device ID #</i>	<b>009629</b>	<i>Device Name</i>	<b>3242 Crude Oil Surge tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Natco	<i>Operator ID</i>	Mezz.V-110
<i>Model</i>		<i>Serial Number</i>	7050401-02
<i>Location Note</i>			
<i>Device Description</i>	6' dia. x 20' long, 100 psi, 100°F.		

---

**19.6 Annulus Separator (V-100), Well Bay Test Separator (V-101)**

---

<i>Device ID #</i>	<b>009630</b>	<i>Device Name</i>	<b>Annulus Separator (V-100), Well Bay Test Separator (V-101)</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Natco	<i>Operator ID</i>	V-100/101
<i>Model</i>	878	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	3' dia x 10' long, 350 psi, 100°F. V-100 is currently idle.		

---

**19.7 Glycol Storage Reboiler**

---

<i>Device ID #</i>	<b>009632</b>	<i>Device Name</i>	<b>Glycol Storage Reboiler</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-122
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	3.5' dia. x 15' long, 2 psi, 600°F.		

---

**19.8 Glycol Absorber**

---

<i>Device ID #</i>	<b>009633</b>	<i>Device Name</i>	<b>Glycol Absorber</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Superior	<i>Operator ID</i>	V-115
<i>Model</i>	X-3963	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	5.66' dia. x 20' long, 325 psi, 200°F.		

---

**19.9 IR Cylinder 1 & 3 Suction Bottle, CYL-1, CYL-3, C-101**

<i>Device ID #</i>	<b>009608</b>	<i>Device Name</i>	<b>IR Cylinder 1 &amp; 3 Suction Bottle, CYL-1, CYL-3, C-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-137
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	1'-1" diameter by 6'5" high.		

**19.10 Glycol Afterscrubber**

<i>Device ID #</i>	<b>009634</b>	<i>Device Name</i>	<b>Glycol Afterscrubber</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Superior	<i>Operator ID</i>	V-116
<i>Model</i>	X-3980	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	4' dia x 8.3' long, 325 psi, 650°F.		

**19.11 Glycol Flash Drum**

<i>Device ID #</i>	<b>009635</b>	<i>Device Name</i>	<b>Glycol Flash Drum</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Superior	<i>Operator ID</i>	V-123
<i>Model</i>	X-3965	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	4' dia. x 7' long, 125 psi, 600°F.		

**19.12 Cuno Filter**

<i>Device ID #</i>	<b>009636</b>	<i>Device Name</i>	<b>Cuno Filter</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	F-101
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	1.33' diameter x 3.5' long.		

### 19.13 Peco Filter

---

<i>Device ID #</i>	<b>009637</b>	<i>Device Name</i>	<b>Peco Filter</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	F-102
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	2' diameter x 4.66' long		
<i>Description</i>			

---

### 19.14 IR Cylinder 1 & 3, C-101 Discharge Bottle

---

<i>Device ID #</i>	<b>009609</b>	<i>Device Name</i>	<b>IR Cylinder 1 &amp; 3, C-101 Discharge Bottle</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-138
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1'-4" diameter by 6'5" high.		
<i>Description</i>			

---

### 19.15 I.R. Suction Scrubber, C-101

---

<i>Device ID #</i>	<b>009639</b>	<i>Device Name</i>	<b>I.R. Suction Scrubber, C-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-113
<i>Model</i>	14855	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	4' dia. x 9.4' long, 150 psi, 300°F.		
<i>Description</i>			

---

### 19.16 I.R. Discharge Scrubber, C-101

---

<i>Device ID #</i>	<b>009640</b>	<i>Device Name</i>	<b>I.R. Discharge Scrubber, C-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-114
<i>Model</i>	14856	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	3.5' dia. x 8.2' long, 300 psi, 350°F.		
<i>Description</i>			

---

**19.17 1st-Stage Suction Scrubber, W-S, C-102**

---

<i>Device ID #</i>	<b>009641</b>	<i>Device Name</i>	<b>1st-Stage Suction Scrubber, W-S, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-117
<i>Model</i>	559 V-1	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	3' dia. x 9.6' long, 325 psi, 250°F.		

---

**19.18 IR Cylinder 2 &4 Suction Bottle, C-101**

---

<i>Device ID #</i>	<b>009610</b>	<i>Device Name</i>	<b>IR Cylinder 2 &amp;4 Suction Bottle, C-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-139
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	1'-6" diameter by 6'5" high.		

---

**19.19 1st-Stage Discharge Scrubber, W-S, C-102**

---

<i>Device ID #</i>	<b>009628</b>	<i>Device Name</i>	<b>1st-Stage Discharge Scrubber, W-S, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-118
<i>Model</i>	559 V-2	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	2' dia. x 9.6' long, 600 psi, 250°F.		

---

**19.20 2nd-Stage Suction Scrubber, W-S, C-102**

---

<i>Device ID #</i>	<b>009616</b>	<i>Device Name</i>	<b>2nd-Stage Suction Scrubber, W-S, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-119
<i>Model</i>	559 V-3	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	2' dia. x 9.6' long, 600 psi, 250°F.		

---

**19.21 IR Cylinder 2 & 4 Discharge Bottle, C-101**

---

<i>Device ID #</i>	<b>009611</b>	<i>Device Name</i>	<b>IR Cylinder 2 &amp; 4 Discharge Bottle, C- 101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-140
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1'-4" diameter by 6'5" high.		
<i>Description</i>			

---

**19.22 VRU Suction Scrubbers, C-100A, C-100B**

---

<i>Device ID #</i>	<b>009620</b>	<i>Device Name</i>	<b>VRU Suction Scrubbers, C-100A, C-100B</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	B.T. Corp	<i>Operator ID</i>	V-111A, V-111B
<i>Model</i>	B-756	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1.5' dia x 5.8' long, 5 oz. pr., 104°F.		
<i>Description</i>			

---

**19.23 3rd-Stage Suction Scrubber, W-S, C-102**

---

<i>Device ID #</i>	<b>009617</b>	<i>Device Name</i>	<b>3rd-Stage Suction Scrubber, W-S, C- 102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-120
<i>Model</i>	559 V-4	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	2' dia. x 8.75' long, 960 psi, 250°F.		
<i>Description</i>			

---

#### 19.24 3rd-Stage Discharge Scrubber, W-S, C-102

---

<i>Device ID #</i>	<b>009618</b>	<i>Device Name</i>	<b>3rd-Stage Discharge Scrubber, W-S, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	National BD	<i>Operator ID</i>	V-121
<i>Model</i>	559 V-5	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	2' dia. x 6.5' long, 2000 psi, 250°F.		
<i>Description</i>			

---

#### 19.25 WS Cylinder 2 & 4 1st Stage Suction Bottle, C-102

---

<i>Device ID #</i>	<b>009612</b>	<i>Device Name</i>	<b>WS Cylinder 2 &amp; 4 1st Stage Suction Bottle, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-141
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	2'0" diameter by 7'8" high.		
<i>Description</i>			

---

#### 19.26 Direct Contact Cooler

---

<i>Device ID #</i>	<b>009624</b>	<i>Device Name</i>	<b>Direct Contact Cooler</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	NALTE	<i>Operator ID</i>	V-126
<i>Model</i>	S1-77096	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1' dia. x 12' long, 15 psi, 300°F.		
<i>Description</i>			

---

#### 19.27 WS Cylinder 2 & 4 1st Stage Discharge Bottle, C-102

---

<i>Device ID #</i>	<b>009613</b>	<i>Device Name</i>	<b>WS Cylinder 2 &amp; 4 1st Stage Discharge Bottle, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-142
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1'6" diameter by 7'6" high.		
<i>Description</i>			

---

### 19.28 Stack Scrubber

---

<i>Device ID #</i>	<b>009622</b>	<i>Device Name</i>	<b>Stack Scrubber</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Downey	<i>Operator ID</i>	V-127
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	6' dia. x 6' long, 90 psi, 80°F.		
<i>Description</i>			

---

### 19.29 Glycol Reflux Column

---

<i>Device ID #</i>	<b>009631</b>	<i>Device Name</i>	<b>Glycol Reflux Column</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Trico	<i>Operator ID</i>	V-124
<i>Model</i>	V-124	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1.66' dia. x 10' long.		
<i>Description</i>			

---

### 19.30 WS Cylinder 3 : 2nd Stage Suction Bottle, C-102

---

<i>Device ID #</i>	<b>009614</b>	<i>Device Name</i>	<b>WS Cylinder 3 : 2nd Stage Suction Bottle, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-143
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1'4" diameter by 3'11" high.		
<i>Description</i>			

---

### 19.31 WS Cylinder 3: 2nd Stage Discharge Bottle, C-102

---

<i>Device ID #</i>	<b>009615</b>	<i>Device Name</i>	<b>WS Cylinder 3: 2nd Stage Discharge Bottle, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-144
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1'4" diameter by 4'5" high.		
<i>Description</i>			

---

**19.32 WS Cylinder 1: 3rd Stage Suction Bottle, C-102**

<i>Device ID #</i>	<b>009584</b>	<i>Device Name</i>	<b>WS Cylinder 1: 3rd Stage Suction Bottle, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-145
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	1' diameter by 3'7" high.		
<i>Description</i>			

**19.33 WS Cylinder 1: 3rd Stage Discharge Bottle, C-102**

<i>Device ID #</i>	<b>009598</b>	<i>Device Name</i>	<b>WS Cylinder 1: 3rd Stage Discharge Bottle, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	V-146
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	2'0" diameter by 7'8" high.		
<i>Description</i>			

**20 Fixed Roof Storage Tanks**

**20.1 Solvent Storage Tank**

<i>Device ID #</i>	<b>009661</b>	<i>Device Name</i>	<b>Solvent Storage Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>	At drilling deck		
<i>Device</i>	At drilling deck, <10,000 gallons capacity		
<i>Description</i>			

## 20.2 Chemical Injection Tank

---

<i>Device ID #</i>	<b>009585</b>	<i>Device Name</i>	<b>Chemical Injection Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	980.00 Gallons
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 20.3 Chemical Injection Tank

---

<i>Device ID #</i>	<b>009586</b>	<i>Device Name</i>	<b>Chemical Injection Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	240.00 Gallons
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 20.4 Chemical Injection Tank

---

<i>Device ID #</i>	<b>009587</b>	<i>Device Name</i>	<b>Chemical Injection Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	430.00 Gallons
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 20.5 Chemical Injection Tank

---

<i>Device ID #</i>	<b>009588</b>	<i>Device Name</i>	<b>Chemical Injection Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	430.00 Gallons
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 20.6 Chemical Injection Tank

---

<i>Device ID #</i>	<b>009589</b>	<i>Device Name</i>	<b>Chemical Injection Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	430.00 Gallons
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 20.7 Chemical Injection Tank

---

<i>Device ID #</i>	<b>009590</b>	<i>Device Name</i>	<b>Chemical Injection Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	430.00 Gallons
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 21 Pumps

### 21.1 Pipeline Shipping Pump

---

<i>Device ID #</i>	<b>107274</b>	<i>Device Name</i>	<b>Pipeline Shipping Pump</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	250.00 Horsepower (Electric Motor)
<i>Manufacturer</i>	REDA	<i>Operator ID</i>	P-200
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Oil shipping Pump, 20,000 gpm		
<i>Description</i>			

---

### 21.2 Return Oil Sump Pump

---

<i>Device ID #</i>	<b>107275</b>	<i>Device Name</i>	<b>Return Oil Sump Pump</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	2.00 Horsepower (Electric Motor)
<i>Manufacturer</i>		<i>Operator ID</i>	P-201
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	2 hp motor. OUT-OF-SERVICE		

---

### 21.3 Drain Sump Pump, T-1

---

<i>Device ID #</i>	<b>107276</b>	<i>Device Name</i>	<b>Drain Sump Pump, T-1</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	7.50 Horsepower (Electric Motor)
<i>Manufacturer</i>		<i>Operator ID</i>	P-202
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Pumps all deck drains to surge tank, 7.5 hp motor		

---

### 21.4 Direct Contact Cooler Condensate Pumps

---

<i>Device ID #</i>	<b>107277</b>	<i>Device Name</i>	<b>Direct Contact Cooler Condensate Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	2.00 Horsepower (Electric Motor)
<i>Manufacturer</i>		<i>Operator ID</i>	P-107 A/B
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Handles water vapors from glycol skid; 40 gpm rated		

---

### 21.5 Test Tank Transfer Pump, T-101

---

<i>Device ID #</i>	<b>107278</b>	<i>Device Name</i>	<b>Test Tank Transfer Pump, T-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	6.00 Horsepower (Electric Motor)
<i>Manufacturer</i>		<i>Operator ID</i>	P-108
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Located on tank T-101; pumps lube oil only to surge tank		

---

### 21.6 Chemical Injection Pumps

---

<i>Device ID #</i>	<b>107279</b>	<i>Device Name</i>	<b>Chemical Injection Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1.00 Horsepower (Electric Motor)
<i>Manufacturer</i>	Texstream	<i>Operator ID</i>	P-209/210
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	1 hp each; Pumps put in service last year, replacing earlier pumps		

---

## 22 Spark Ignited IC Engines

### 22.1 IC Engine: Drilling Rig Generator #1

---

<i>Device ID #</i>	<b>009130</b>	<i>Device Name</i>	<b>IC Engine: Drilling Rig Generator #1</b>
<i>Rated Heat Input</i>	7.590 MMBtu/Hour	<i>Physical Size</i>	803.00 Horsepower
<i>Manufacturer</i>	Caterpillar	<i>Operator ID</i>	Generator #1
<i>Model</i>	G399 SITA	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

---

## 22.2 IC Engine: Drilling Rig Generator #2

---

<i>Device ID #</i>	<b>009131</b>	<i>Device Name</i>	<b>IC Engine: Drilling Rig Generator #2</b>
<i>Rated Heat Input</i>	7.590 MMBtu/Hour	<i>Physical Size</i>	803.00 Horsepower
<i>Manufacturer</i>	Caterpillar	<i>Operator ID</i>	Generator #2
<i>Model</i>	G399 SITA	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 22.3 IC Engine: Drilling Rig Generator #3

---

<i>Device ID #</i>	<b>009132</b>	<i>Device Name</i>	<b>IC Engine: Drilling Rig Generator #3</b>
<i>Rated Heat Input</i>	8.100 MMBtu/Hour	<i>Physical Size</i>	1053.00 Horsepower
<i>Manufacturer</i>	Caterpillar	<i>Operator ID</i>	Generator #3
<i>Model</i>	G3516 SITA	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 22.4 Catalyst

---

<i>Device ID #</i>	<b>111856</b>	<i>Device Name</i>	<b>Catalyst</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Miratech	<i>Operator ID</i>	Catalytic Convertor #1
<i>Model</i>	EQ-801	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 22.5 Catalyst

---

<i>Device ID #</i>	<b>111857</b>	<i>Device Name</i>	<b>Catalyst</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Miratech	<i>Operator ID</i>	Catalytic Convertor #2
<i>Model</i>	EQ-801	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 22.6 Catalyst

---

<i>Device ID #</i>	<b>111858</b>	<i>Device Name</i>	<b>Catalyst</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>	Miratech	<i>Operator ID</i>	Catalytic Convertor #3
<i>Model</i>	EQ-3030	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

---

## 10.6 Permit-exempt Equipment List

### 1 Diesel Fuel tank

<i>Device ID #</i>	<b>009565</b>	<i>Device Name</i>	<b>Diesel Fuel tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1500.00 Gallons
<i>Manufacturer Model</i>		<i>Operator ID</i>	T-111
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	APCD Rule Exemption:		
<i>Device Description</i>			

### 2 Diesel Day tank

<i>Device ID #</i>	<b>009566</b>	<i>Device Name</i>	<b>Diesel Day tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	APCD Rule Exemption:		
<i>Device Description</i>	less than 10,000 gallons		

### 3 Lube Oil Drain Tank

<i>Device ID #</i>	<b>009567</b>	<i>Device Name</i>	<b>Lube Oil Drain Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	T-101
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	APCD Rule Exemption:		
<i>Device Description</i>	6' x 8' x 20".		

**4 Fresh Water Tanks**

---

<i>Device ID #</i>	<b>107294</b>	<i>Device Name</i>	<b>Fresh Water Tanks</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	V-130/131
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	5 ft dia by 8 ft long		

---

**5 W-S 2nd-Stage Aftercooler Exchanger for Gas Lift Comp, C-102**

---

<i>Device ID #</i>	<b>009577</b>	<i>Device Name</i>	<b>W-S 2nd-Stage Aftercooler Exchanger for Gas Lift Comp, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-104
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>			

---

**6 W-S 3rd-Stage Aftercooler Exchanger for Gas Lift Comp, C-102**

---

<i>Device ID #</i>	<b>009578</b>	<i>Device Name</i>	<b>W-S 3rd-Stage Aftercooler Exchanger for Gas Lift Comp, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-105
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>			

---

**7 VRU Oil Coolers, E-100A, -101A, -100B, -101B, C-100A, -100B**

<i>Device ID #</i>	<b>009573</b>	<i>Device Name</i>	<b>VRU Oil Coolers, E-100A, -101A, -100B, -101B, C-100A, -100B</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-100A, E-100B
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>			

**8 Rich/Lean Glycol Cooler Exchanger**

<i>Device ID #</i>	<b>009579</b>	<i>Device Name</i>	<b>Rich/Lean Glycol Cooler Exchanger</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-106A
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	1 hp motor		

**9 Glycol Overhead Condenser**

<i>Device ID #</i>	<b>009580</b>	<i>Device Name</i>	<b>Glycol Overhead Condenser</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	5.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-101
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	5 hp motor		
<i>Description</i>	Listed as VaporCooler Exchanger, V-124		

**10 VRU Aftercooler Exchangers**

<i>Device ID #</i>	<b>009574</b>	<i>Device Name</i>	<b>VRU Aftercooler Exchangers</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	2.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-101A, E-101B
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	2 hp motor each		

**11 IR Aftercooler Exchanger, C-101**

<i>Device ID #</i>	<b>009575</b>	<i>Device Name</i>	<b>IR Aftercooler Exchanger, C-101</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-102
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>			

**12 W-S 1st-Stage Aftercooler Exchanger for Gas Lift Comp, C-102**

<i>Device ID #</i>	<b>009576</b>	<i>Device Name</i>	<b>W-S 1st-Stage Aftercooler Exchanger for Gas Lift Comp, C-102</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	15.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-103
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>			

**13 Rich/Lean Glycol Aftercooler Exchanger**

<i>Device ID #</i>	<b>107270</b>	<i>Device Name</i>	<b>Rich/Lean Glycol Aftercooler Exchanger</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	E-106
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	No description		

**14 Air Dryer Pre-Filters**

<i>Device ID #</i>	<b>107291</b>	<i>Device Name</i>	<b>Air Dryer Pre-Filters</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	F-136 A/B
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	6 in dia by 24 in tall		

**15 Air Dryer After-Filters**

<i>Device ID #</i>	<b>107292</b>	<i>Device Name</i>	<b>Air Dryer After-Filters</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	F-136 C/D
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	6 in dia by 24 in tall		

**16 Platform Instrument Air Receiver**

<i>Device ID #</i>	<b>107293</b>	<i>Device Name</i>	<b>Platform Instrument Air Receiver</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	V-128
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	3 ft dia by 11 ft long		

**17 Diesel Transfer Pump**

<i>Device ID #</i>	<b>009569</b>	<i>Device Name</i>	<b>Diesel Transfer Pump</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	Electric powered pump.		

**18 Crankcase Oil Fill Pumps for C-100A**

<i>Device ID #</i>	<b>009570</b>	<i>Device Name</i>	<b>Crankcase Oil Fill Pumps for C-100A</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	0.50 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	P-117A, P-117B
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	electric, 0.5 hp each.		

**19 Firewater Pumps**

---

<i>Device ID #</i>	<b>009571</b>	<i>Device Name</i>	<b>Firewater Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	60.00 Horsepower (Electric Motor)
<i>Manufacturer Model</i>		<i>Operator ID</i>	P-150A/B
<i>Part 70 Insig?</i>	Yes	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	Two pumps, electric powered, 60 hp each.		

---

**20 Fresh Water Supply Pumps**

---

<i>Device ID #</i>	<b>107288</b>	<i>Device Name</i>	<b>Fresh Water Supply Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	P-130 A/B
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	5 hp each, electric motor		

---

**21 Well Bay SD System Hydraulic Pumps**

---

<i>Device ID #</i>	<b>107290</b>	<i>Device Name</i>	<b>Well Bay SD System Hydraulic Pumps</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	P-115 A/B
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>	<i>APCD Rule Exemption:</i>		
<i>Device Description</i>	Air powered		

---

**22 Fresh Air Blower West**

---

<i>Device ID #</i>	<b>107282</b>	<i>Device Name</i>	<b>Fresh Air Blower West</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	BL-101
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	5 hp electric motor		

---

**23 Fresh Air Blower East**

---

<i>Device ID #</i>	<b>107283</b>	<i>Device Name</i>	<b>Fresh Air Blower East</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	BL-102
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	5 hp electric motor		

---

**24 Fresh Air Blower - Maintenance Office**

---

<i>Device ID #</i>	<b>107284</b>	<i>Device Name</i>	<b>Fresh Air Blower - Maintenance Office</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	BL-103
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	5 hp electric motor		

---

**25 Platform Air Compressors**

---

<i>Device ID #</i>	<b>107285</b>	<i>Device Name</i>	<b>Platform Air Compressors</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	C-110 A/B
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	20 hp electric motor each		

---

**26 Utility Air Compressor**

---

<i>Device ID #</i>	<b>107286</b>	<i>Device Name</i>	<b>Utility Air Compressor</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	C-110 C
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	10 hp electric motor		

---

**27 Air Dryers**

---

<i>Device ID #</i>	<b>107287</b>	<i>Device Name</i>	<b>Air Dryers</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	V-136 A/B
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	1.5 ft dia by 4 ft tall		

---

**28 Breathing Air Compressor**

<i>Device ID #</i>	<b>107289</b>	<i>Device Name</i>	<b>Breathing Air Compressor</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer Model</i>		<i>Operator ID</i>	C-120
<i>Part 70 Insig?</i>	No	<i>Serial Number</i>	
<i>Location Note</i>		<i>APCD Rule Exemption:</i>	
<i>Device Description</i>	10 hp electric motor		

## **10.7 Comments on Draft PTO 8234-R6 and APCD Responses**

The permit was subject to public review and comment. The comment period started on XXXX and ended on XXXXX. The only comments received were submitted by Venoco on XXXXX.

Venoco's comments and the APCD's responses are presented in the following pages.

1.			1.	
----	--	--	----	--

Figure 1 - Inspection and Maintenance Log

Rule 333 Inspection and Maintenance Log

Engine & Permit Data		Inspection Data	
Make & Model #:	Caterpillar G399 SITA	Date:	
Serial or Tag #:	49COL107	Inspected by:	
Permit #:	Exempt	Inspector Initials:	
Permit Item No.:	N/A		

Compliance Parameter Verifications

Parameter (a)	Parameter Compliance Values		In Compliance?	Corrective Action (for out of compliance values)	Follow-up Inspection	
	Measured	Allowed			Date	Remeasured Parameter Value
Engine Operating Hours			✓ = Yes			
Exhaust NOx						
Exhaust CO						
Ignition Timing						
NSCR Catalyst Life						
NSCR Catalyst Outlet Temperature						
NSCR Catalyst Inlet Temperature						
NSCR Catalyst Bed Temperature Increase						
NSCR Catalyst Inlet Oxygen						
Oxygen Sensor Life						
Oxygen Sensor Signal						

(a) Parameters to be measured and their applicable units per Inspection Parameters & Compliance Value Table for this engine.

## 10.8 Pig Launching Procedure

### Platform Holly Pig Launching Procedure – 6” Gas Transfer Pipeline

#### Safety Requirements:

- Standard Venoco PPE – Nomex, hard hat, safety boots, safety glasses and hearing protection.
- Face shield.
- Chemical gloves.
- SCBA at the scene for emergency use.

#### **THESE PROCEDURES SHALL BE PERFORMED BY QUALIFIED OPERATORS ONLY.**

**CAUTION:** Use of unapproved tools such as snipes, pry bars, etc., on the pig receiver door is strictly prohibited.

#### Initial Set Up

1. Notify Ellwood to set-up to receive pig. Verify type of pig to be launched.
2. Set-up purge blower (bug fan) for safe ventilation of area.
3. Bypass PSHH 151 and PSL 151. (Tag, log and monitor)
4. Isolate the Gas Launcher
  - A. Close 4” Inlet ball valve
  - B. Close 6” Discharge ball valve

#### Purging and Depressurizing

1. Open 1” bleed valve to the Surge Tank.
2. Equalize launcher pressure with Surge Tank pressure.
3. Close 1” bleed valve to the Surge Tank.
4. Open Nitrogen purge gas and fill launcher to 125 psig.
5. Shut-in Nitrogen purge gas.
6. Repeat steps 1 through 5 four more times, filling the launcher with Nitrogen and blowing it down to the Surge tank.
7. Slowly open bleed nut on launcher door until launcher is completely depressurized.
8. Slowly loosen clamp and open launcher door.

#### Pig Loading & Launcher Preparation

1. Insert pig nose down.
2. Wipe down and inspect O-ring. (It must be clean to ensure a good seal) Lube if necessary.
3. Close door and align launcher flanges.
4. Tighten clamp bolt until bleed nut assembly is free to drop into place.
5. Tighten bleed nut.

#### Launching Pig

1. Notify Ellwood again that actual launch is ready.

2. Slowly open 4" Inlet ball valve to pressure up launcher to system pressure.
3. Check for leaks.
4. Slowly open the 6" Discharge ball valve.
5. Slowly close the 6" Normally Open ball valve to force gas path through the launcher.  
Listen for the pig leaving the launcher.
6. After 2 to 3 minutes, slowly open the 6" Main ball valve.
7. Close the 3" Inlet ball valve.
8. Close the 6" Discharge valve.
9. Open 1" bleed valve to the Surge Tank. Equalize launcher with Surge Tank Pressure.
10. Close 1" bleed valve to the Surge Tank.

Return to Service

1. Verify that all valves are returned to normal operating positions.
2. Remove bypasses PSHH 151 and PSL 151.
3. Turnoff and store the ventilation fan.
4. Log pig launch in Operations Pig Log Book.
5. After Ellwood receives the pig, note any condition or problems reported by the receiving operators, such as liquids, solids, etc.