Santa Barbara County
Air Pollution Control District

APR 28 2009

Mr. Gerardo Rios
USEPA – Permits Office (AIR 3)
75 Hawthorne Street
San Francisco, CA 94105

FID: 00027
Permits: 7996-R8
SSID: 00027

Re: Final Part 70/APCD PTO 7996

Dear Mr. Rios:

This letter transmits Final Part70/APCD Permit to Operate (PTO) 7996 for the Venoco-Carpinteria Stationary Source. The draft of this permit was submitted for public comments and EPA review on March 9, 2009. The EPA's 45 day review period ended on April 22, 2009. The APCD only received one comment, from Venoco, Inc. Venoco's comment and the APCD's response are contained in the permit.

If you have any questions, please contact Ben Ellenberger of my staff at (805) 961-8879.

Sincerely,

Michael Goldman, Manager
Engineering & Compliance Division

enc: Final PTO

Santa Barbara County
Air Pollution Control District

APR 28 2009

Certified Mail
Return Receipt Requested

Pat Corcoran
Venoco, Inc.
6267 Carpinteria Ave., Suite 100
Carpinteria, CA 93013-1423

FID: 00027
Permit: P7R 07996 - R8
SSID: 00027

Re: Final Part 70 Permit Renewal / Reevaluation 07996 - R8
Fee Due: $ 71,066

Dear Mr. Corcoran:

Enclosed is the final Part 70 Permit Renewal / Reevaluation (PT-70/Reeval) No. 07996 - R8 for the Carpinteria Gas Plant at 5675 Carpinteria Avenue in Carpinteria.

Please carefully review the enclosed documents to ensure that they accurately describe your facility and that the conditions are acceptable to you. Note that your permitted emission limits may, in the future, be used to determine emission fees.

You should become familiar with all APCD rules pertaining to your facility. This permit does not relieve you of any requirements to obtain authority or permits from other governmental agencies.

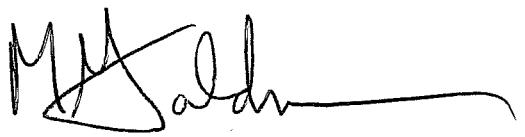
This permit requires you to:

- Pay a **fee** of $71,066, which is due immediately and is considered late after 30 calendar days from the date stamped on the permit. Pursuant to APCD Rule 210.IV.B, no appeal shall be heard unless all fees have been paid. See the attached invoice for more information.
- Follow the conditions listed on your permit. Pay careful attention to the recordkeeping and reporting requirements.
- Ensure that a copy of the enclosed permit is posted or kept readily available near the permitted equipment.
- Promptly report changes in ownership, operator, or your mailing address to the APCD.

If you are not satisfied with the conditions of this permit, **you have thirty (30) days from the date of this issuance to appeal this permit to the Air Pollution Control District Hearing Board** (ref: California Health and Safety Code, §42302.1). Any contact with APCD staff to discuss the terms of this permit will not stop or alter the 30-day appeal period.

Please include the facility identification (FID) and permit numbers as shown at the top of this letter on all correspondence regarding this permit. If you have any questions, please contact Ben Ellenberger of my staff at (805) 961-8879.

Sincerely,



Michael Goldman, Manager
Engineering & Compliance Division

enc: Final PT-70/Reeval 07996 - R8
Final Permit Evaluation
Invoice # P7R 07996 - R8
Air Toxics "Hot Spots" Fact Sheet APCD Form 12B

cc: Carpinteria Gas Plant 00027 Project File SC
ECD Chron File
Accounting (Invoice only)
Mike Broughton (Cover letter only)
Ben Ellenberger (Cover letter only)
Accounts Payable, Venoco, Inc. (Cover Letter Only)

\\sbcapcd.org\Shares\Groups\ENGR\WP\Oil&Gas\Venoco - Carpinteria\Reevals\PTO 7996 R8\PT-70-Reeval 07996 R8 - Final Letter - 4-24-2009.doc

Santa Barbara County
Air Pollution Control District
Post Office Box 6447
Santa Barbara, CA 93160-6447

Invoice: P7R 07996 - R8
Date: APR 28 2009
Terms: Net 30 Days

300500/6600

INVOICE

BILL TO:	FACILITY:
Accounts Payable Venoco, Inc. (002940) 370 17th Street, Suite 2950 Denver, CO 80202	Carpinteria Gas Plant 00027 5675 Carpinteria Avenue Carpinteria

Permit: Part 70 Permit Renewal / Reevaluation (PT-70/Reeval) No. 07996 - R8

Fee Type: Permit Evaluation Fee (see the Fee Statement in your permit for a breakdown of the fees)

Amount Due: $ 71,066

REMIT PAYMENTS TO THE ABOVE ADDRESS
Please indicate the invoice number P7R 07996 - R8
on your remittance.

IF YOU HAVE ANY QUESTIONS REGARDING YOUR INVOICE PLEASE CONTACT
OUR ADMINISTRATION DIVISION AT (805) 961-8800

The APCD charges $25 for returned checks. Other penalties/fees may be incurred as a result of returned checks and late payment (see APCD Rule 210). Failure to pay this Invoice may result in the cancellation or suspension of your permit. Please notify the APCD regarding any changes to the above information

FINAL

APCD PERMIT to OPERATE No. 7996
and
PART 70 OPERATING PERMIT No. 7996

VENOCO, CARPINTERIA
CARPINTERIA GAS PLANT

5675 CARPINTERIA AVENUE
CARPINTERIA, CA

OPERATOR

Venoco, Inc.

OWNERSHIP

Venoco, Inc.

Santa Barbara County
Air Pollution Control District

April 27, 2009

TABLE OF CONTENTS

SECTION		PAGE
1.0	**INTRODUCTION**	**1**
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	6
1.6	PART 70 OPERATING PERMIT OVERVIEW	6
2.0	**PROCESS DESCRIPTION**	**8**
2.1	PROCESS SUMMARY	8
2.2	SUPPORT SYSTEMS	8
2.3	MAINTENANCE/DEGREASING ACTIVITIES	9
2.4	PLANNED PROCESS TURNAROUNDS	9
2.5	OTHER PROCESSES	10
2.6	DETAILED PROCESS EQUIPMENT LISTING	10
3.0	**REGULATORY REVIEW**	**10**
3.1	RULE EXEMPTIONS CLAIMED	10
3.2	COMPLIANCE WITH APPLICABLE FEDERAL RULES AND REGULATIONS	11
3.3	COMPLIANCE WITH APPLICABLE STATE RULES AND REGULATIONS	13
3.4	COMPLIANCE WITH APPLICABLE LOCAL RULES AND REGULATIONS	13
3.5	COMPLIANCE HISTORY	17
4.0	**ENGINEERING ANALYSIS**	**24**
4.1	GENERAL	24
4.2	STATIONARY COMBUSTION SOURCES	24
4.3	FUGITIVE HYDROCARBON SOURCES	26
4.4	TANKS/VESSELS/SUMPS/SEPARATORS	27
4.5	GLYCOL REBOILER	27
4.6	OTHER EMISSION SOURCES	28
4.7	VAPOR RECOVERY/CONTROL SYSTEMS	28
4.8	BACT/NSPS/NESHAP/MACT	28
4.9	CEMS/PROCESS MONITORING/CAM	29
4.10	SOURCE TESTING/SAMPLING	29
4.11	PART 70 ENGINEERING REVIEW: HAZARDOUS AIR POLLUTANT EMISSIONS	30
5.0	**EMISSIONS**	**36**
5.1	GENERAL	36
5.2	PERMITTED EMISSION LIMITS - EMISSION UNITS	36
5.3	PERMITTED EMISSION LIMITS - FACILITY TOTALS	37
5.4	PART 70: FEDERAL POTENTIAL TO EMIT FOR THE FACILITY	37
5.5	PART 70: HAZARDOUS AIR POLLUTANT EMISSIONS FOR THE FACILITY	37
5.6	APCD PERMIT-EXEMPT EMISSION UNITS	37
5.7	PART 70 INSIGNIFICANT EMISSION UNITS	38
5.8	NET EMISSIONS INCREASE CALCULATION	38
6.0	**AIR QUALITY IMPACT ANALYSES**	**47**

6.1 MODELING 47
6.2 INCREMENTS 47
6.3 MONITORING 47
6.4 HEALTH RISK ASSESSMENT 47

7.0 CAP CONSISTENCY, OFFSET REQUIREMENTS AND ERCS 48

7.1 GENERAL 48
7.2 CLEAN AIR PLAN 49
7.3 OFFSET REQUIREMENTS 49
7.4 EMISSION REDUCTION CREDITS 49

8.0 LEAD AGENCY PERMIT CONSISTENCY 50

9.0 PERMIT CONDITIONS 51

9.A STANDARD ADMINISTRATIVE CONDITIONS 51
9.B. GENERIC CONDITIONS 54
9.C EQUIPMENT SPECIFIC CONDITIONS 57
9.D APCD-ONLY CONDITIONS 85

10.0 ATTACHMENTS 1

10.1 EMISSION CALCULATION DOCUMENTATION - GAS PLANT FACILITY: 2
10.2 EMISSION CALCULATION SPREADSHEETS 1
10.3 FEE CALCULATIONS 1
10.4 IDS DATABASE EMISSION TABLES 1
10.5 EQUIPMENT LIST 1
10.6 EXEMPT EQUIPMENT 1
10.7 PUBLIC COMMENTS ON THE PERMIT AND APCD RESPONSES 1

LIST OF FIGURES and TABLES

TABLE/ FIGURE **PAGE**

FIGURE 1.1 - LOCATION MAP FOR CARPINTERIA GAS PLANT 3
TABLE 3.1 - GENERIC FEDERALLY-ENFORCEABLE APCD RULES 19
TABLE 3.2 - UNIT-SPECIFIC FEDERALLY ENFORCEABLE APCD RULES 21
TABLE 3.3 - NON-FEDERALLY ENFORCEABLE APCD RULES 21
TABLE 3.4 - ADOPTION DATES OF APCD RULES APPLICABLE AT ISSUANCE OF PERMIT 22
TABLE 4.1 – SOURCE TEST REQUIREMENTS 33
TABLE 5.1-2 - EMISSION FACTORS 45
TABLE 5.5 – NET EMISSIONS INCREASE AT VENOCO CARPINTERIA 45
TABLE D.1 – SOURCE TEST REQUIREMENTS 87

ABBREVIATIONS/ACRONYMS

AP-42	USEPA's *Compilation of Emission Factors*
APCD	Santa Barbara County Air Pollution Control District
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
CAAA	Clean Air Act Amendments
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
Clp	component leak path
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H_2S	hydrogen sulfide
I&M	inspection & maintenance
k	kilo (thousand)
l	liter
lb.	pound
lbs./day	pounds per day
lbs./hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LPG	liquid petroleum gas
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NEI	net emissions increase
NG	natural gas
NSPS	New Source Performance Standards
O2	oxygen
OCS	outer continental shelf
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VOC	volatile organic compounds, also known as "ROC" throughout California
VRS	vapor recovery system

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, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the APCD's Rules and Regulations. The County is designated as an ozone nonattainment area for the state ambient air quality standards. The County is also designated a nonattainment area for the state PM_{10} ambient air quality standard.

This document is a combined permit that covers both the renewal Federal Part 70 permit as well as the State Operating Permit for the Venoco Carpinteria Pipeline Facility (Part 70/PTO 7995) and the Venoco Carpinteria Gas Plant (Part 70/PTO 7996). The two permits are being combined as part of this permit renewal and this permit Part 70/PTO 7996-R8 supersedes both Part 70/PTOs 7995-R7 and 7996-R7.The two facilities are part of the same stationary source, but were historically operated by separate divisions of Chevron and were therefore permitted separately. Venoco now owns and operates the entire facility, which is called the Carpinteria Gas Plant. In order to reflect the current operating status, and to eliminate duplication of emissions tables and permit conditions, the permits have been consolidated.

Part 70 Permitting: The *Venoco Carpinteria* stationary source (SSID 0027) is a major source for CO. This is the third renewal of the Venoco Carpinteria Gas Plant's Part 70 permits and satisfies the permit issuance requirements of the APCD's Part 70 operating permit program. As described above, one permit for the combined facility will supersede the two current Part 70 permits. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the APCD, the USEPA and the public since conditions in these sections are federally enforceable under Part 70. Conditions listed in Section 9.D are APCD-enforceable only. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of the permit, that part of the permit is federally enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all APCD and federally enforceable requirements for the facility. Next, 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 Venoco, Inc. (Venoco) is the sole owner and operator of the Carpinteria Gas Plant, located in the city of Carpinteria approximately 12 miles southeast of Santa Barbara. For APCD regulatory purposes,

the facility location is in the Southern Zone[1] of Santa Barbara County. Figure 1.1 shows the relative location of the facility within the county.

The Carpinteria Gas Plant was constructed prior to 1970 and is a part of the Venoco Carpinteria Stationary Source (SSID # 0027). The Gas Plant (FID # 0027) and Pipeline (FID # 4138) facilities are being combined into one facility, FID # 4138 will be used for the single, combined facility, which is named the Carpinteria Gas Plant. The facility consists of the following systems:

- Crude oil storage tanks and waste water tanks
- Crude oil pipeline transportation system
- Gas receiving system
- Gas compression system
- Gas sweetening system
- Dehydration (gas contactor and glycol regenerator)
- Low temperature gas separation system
- Gas shipping/metering and pipeline system
- Produced and waste water system
- Process heating system
- Facility support systems

The oil and gas is produced solely from Venoco's OCS Platforms Gail and Grace and is received via a 12" oil line from Platform Gail and a 10" gas line from Platform Grace at the Carpinteria Gas Plant.

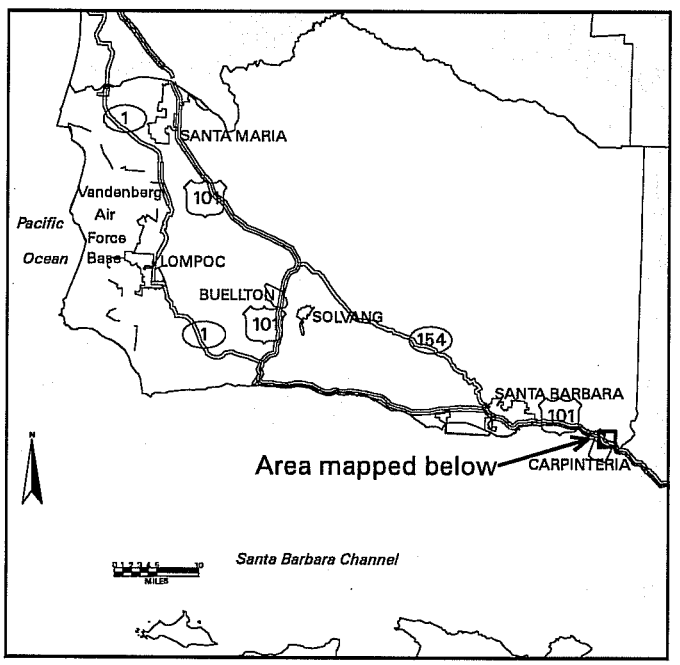
The oil is entirely processed offshore on the platforms and the gas is processed at the onshore plant. The treated oil is metered as it comes to shore at the stationary source and sent via 10-inch pipeline to the 217,000-barrel storage tank. The API gravity of the stored oil ranged between 17.5° and 17.8° during 2003 and 2004. The oil is shipped via 12-inch pipeline to Venoco's Rincon oil storage tank in Ventura County for eventual shipping to refineries in the Los Angeles basin. Pipeline throughput is limited to 18,000 barrels per day of oil.

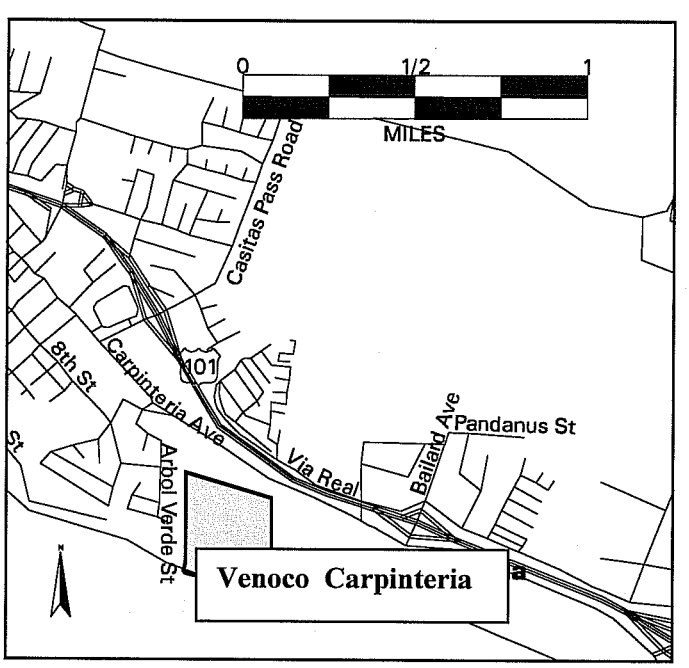
After passing through a slug catcher and scrubbers, the gas is compressed to about 500 psig through either two or three compression steps. In between these steps, the compressed gas is cooled and scrubbed. The intermediate pressure gas is then passed through the sweetening, dehydration and low temperature separation (LTS) systems. At the LTS system, the natural gas liquids (NGL) separate out. The clean, sweet, and dry gas is then compressed to about 1,000 psig and sent to the metering and sales system. The NGL collected at various points throughout the plant are held in medium pressure NGL tanks for pump level control, and then blended into pipeline oil. The gas shipping and metering unit at the plant is not in service. Most of the natural gas produced at the plant is sold to the local utility company. However, a fraction of the produced gas is used by the IC engines and by other combustion units at the plant. This fraction is processed through a main gas fuel filter prior to use. The facility is capable of processing 30 million standard cubic feet per day (MMscfd) of dry sales gas measured at the sales meter.

[1] APCD Rule 102, Definition: "Southern Zone"

Figure 1.1 Location Map for Carpinteria Gas Plant

Venoco - Carpinteria





The produced water and wastewater is collected at the plant in a series of tanks and disposed off-site. The waste water system has a nominal capacity of 25 thousand barrels per day.

Platforms Grace and Gail are serviced by crew and supply boats from Casitas Pier and Port Hueneme. A diesel engine drives the Pier crane to load and unload supplies.

1.2.2 Facility New Source Overview: The following new source review actions have occurred:

In 1979, Chevron (Venoco's predecessor) obtained an ATC permit from the APCD (ATC 3949) and a pre-construction permit from the USEPA (NSR 4-4-7/OCS 79-01) for the following activities: (a)Addition of Platform Grace; (b) modification of the Pipeline facility and the Gas Plant; (c) construction of a new oil pipeline to Rincon; and (d) cessation of marine terminal operations except for emergencies. The Gas Plant's existing glycol regenerator unit is addressed by ATC 3949. A project-wide cap on NOx, SOx, NMHC, and PM (TSP) emissions is stipulated by the ATC.

Marine terminal operations for emergency purposes are no longer permitted due to compliance issues. Specifically, the facility cannot currently comply with APCD Rule 327 (*Organic Liquid Cargo Tank Vessel Loading*) since vapor control systems do not exist. Also, emissions from marine vessels associated with marine terminal operations are not allowed by the permit. Venoco would be required to obtain an ATC if it wished to resume operations of the marine terminal for any purpose.

ATC 9323: Issued to Chevron (Venoco's predecessor) on October 17, 1994 for a tank installation and two stock tank conversions. The permit to operate for the tanks was issued on March 22, 1995.

ATC 9227: Issued to Chevron (Venoco's predecessor) in February, 1996 to de-rate the Therminol heater to below 5 MMBtu/hour. The resultant net emissions increases were zero.

ATC 10122: Issued to Venoco on April 27, 1999 to finalize the component leak path count at the pipeline facility and establish baseline emissions inventory. Since the project addressed only existing equipment and lowered the count, the net emissions increase was zero.

ATC 10123: Issued to Venoco on April 27, 1999 to finalize the component leak path count at the gas plant and establish baseline emissions inventory. Since the project addressed only existing equipment and lowered the count, the net emissions increase was zero.

ATC 10405: Issued to Venoco on May 7, 2001 to install a 250 hp Waukesha F11GSI IC engine. The engine drives a standby power generator. The IC engine emissions meet the APCD required emission limits for all pollutants. The permit to operate this equipment was rolled into the Renewal Part 70 /APCD Permit to Operate 7996-R6 (February, 2003).

Permits Issued since Last Part 70 PTO Renewal:
ATC 12214 and ATC Mod 12214 02: ATC 12214 was issued to Venoco on March 7, 2007 to replace the engine powering the Casitas Pier crane with a new Tier 3 engine served by a diesel particulate filter (DPF). ATC Mod 12214 02 was issued March 11, 2008 to replace the originally authorized DPF with a new, electrically regenerated, DPF. The installation of a new engine generated a net emissions increase (NEI). Removal of the old engine generated a "D" term, calculated based on the historical actual emissions because it was installed prior to 1990.

PTO 12229 and PTO 12230: Issued to Venoco May 29, 2007 to revise the fugitive emission calculation methodology and establish enforceable fugitive benzene emission limits for both the gas plant and pipeline facility. These permit changes were made in accordance with Venoco's *Risk Reduction Audit and Plan* (RRAP) for the AB 2588 "Hot Spots" program.

PTO 12267: Issued to Venoco July 30, 2007 to install a non-selective catalytic reduction (NSCR) control system on compressor engine IR 3 and to lengthen the exhaust stack on compressor engine IR 1. These permit changes were made in accordance with Venoco's *Risk Reduction Audit and Plan* (RRAP) for the AB 2588 "Hot Spots" program.

1.3 Emission Sources

The emissions from the Carpinteria Gas Plant come from gas-fired IC engines (ICEs), process heaters, oil/water separator tanks, a storage tank, wastewater tanks, sumps, pigging receivers and fugitive emission components, such as process-line valves and flanges. Section 4 of the permit provides the APCD's engineering analysis of these emission sources. Section 5 of the permit describes the allowable emissions from each permitted emissions unit and also lists the potential emissions from non-permitted emission units.

The emission sources include:

- Six (6) gas-fired ICEs driving compressors, the Cooper engine is currently prohibited from operating by permit condition;
- One (1) gas-fired ICE driving a generator;
- One (1) diesel-fired ICE powering a crane at the Casitas Pier;
- Three (3) process heaters;
- One (1) pig launcher/receiver serving the gas pipeline between the Carpinteria Gas Plant and Platform Grace;
- One (1) pig launcher/receiver serving the oil pipeline between the Carpinteria Gas Plant and Platform Grace;
- One (1) pig launcher/receiver serving the oil pipeline between the Carpinteria Gas Plant and Venoco's Rincon oil storage facility;
- Five (5) sumps;
- Three (3) oil/water separator tanks (free water knockout vessels);
- Four (4) waste water tanks, two (2) currently out of service and prohibited from operating by permit condition;
- One (1) glycol dehydration unit;
- One (1) External floating roof tank (217,000 barrel capacity)
- Shipping pumps
- Fugitive emission components in hydrocarbon service

A list of all permitted equipment is provided in Section 10.5.

1.4 Emission Control Overview

Air quality emission controls are utilized at the Gas Plant for a number of emission units. The emission controls employed at the facility include:

- Non-selective catalytic reduction (NSCR) emission control technologies on five IC engines;
- Pre-stratified charge (PSC) control technology on one IC engine;
- A turbocharger and special igniter on the Cooper engine, which is out of service and prevented from operating by permit condition;
- A Tier 3 diesel engine powering the crane, equipped with a diesel particulate filter (DPF);
- A Fugitive Emissions Inspection & Maintenance program for detecting and repairing leaks of hydrocarbons from piping components.
- The Therminol heater, indirect heater, and glycol reboiler are uncontrolled natural gas-fired units.
- A vapor recovery/gas collection (VRGC) system to collect reactive organic vapors from the scrubbers, compressor housings, wastewater and oil-water separator tanks, reboilers and the pig launchers/receivers (when they are de-pressurized).
- Primary and secondary seals on the external floating roof tank. In addition, Venoco is required to implement an annual inspection of the tank seals.
- Emissions controls for tank degassing that comply with the requirements of Rule 343.

1.5 Offsets/Emission Reduction Credit Overview

ATC 3949 issued by the APCD for the modifications at the Gas Plant in 1979 required Chevron to provide NOx emission offsets. These offset requirements no longer apply.

This facility now provides ROC and NO_x emission reduction credits to PXP's Point Arguello Project, and to Exxon-Mobil's Santa Ynez Project. The ROC credits come from emission reductions generated by the 1988 I&M Program and the NOx credit from the emission reductions at the following Gas Plant compressors:

- One (1) 1800 hp, gas-fired Cooper-Bessemer unit (Model GMVA-10)
- Two (2) 440 hp, gas-fired Ingersoll-Rand unit (Model 8S-VG).

These credits are verified through annual source testing or appropriate process parameter monitoring, as applicable. The emission credits remain unaffected by this permit renewal.

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 Activities. Insignificant emission levels are defined under APCD Rule 1301 as regulated air pollutants emitted from any 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 10.6 for a list of Part 70 insignificant units.)*

1.6.3 Federal Potential to Emit. The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement which was in effect as of August 7, 1980, or (2) included in the 29-

category source list specified in 40 CFR 70.2. The federal PTE does include all emissions from any insignificant emissions units. The facility is subject to NSPS Subpart KKK, but that requirement only came into effect June 24, 1985, therefore the fugitive emissions from the stationary source do not contribute to the federal PTE. *(See Section 5.4 and Table 5.3 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 made no 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 March 1st and September 1st 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 1.6.10)*.

1.6.7 Permit Reopening. Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data. This permit may be re-opened to address newly applicable rules, if so required under the rules.

1.6.8 MACT/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 applicability. MACT is not required for any units at the Carpinteria Gas Plant. *(see Section 3.2.4)*.

1.6.9 Compliance Assurance Monitoring (CAM). The CAM 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 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. All gas-fired IC engines at the facility, except the Cooper and the PSC-controlled I-R engine, are subject to the CAM Rule. *(see Sections 3.2.5 and 4.9.3)*.

1.6.10 Responsible Official. The designated responsible official and their mailing address is:

Mr. Roger Hamson, Vice-President
Venoco, Inc.
6267 Carpinteria Avenue, Suite 100
Carpinteria, CA 93013-1423

2.0 Process Description

2.1 Process Summary

2.1.1 Gas Processing and Sales: A sweetened wet gas stream from the Outer Continental Shelf (OCS) platforms Grace and Gail is received by the gas plant through a pipeline from platform Grace. It is compressed to about 500 psig, then cooled and scrubbed. From the first stage compression the gas is pre-heated then further sweetened in contact towers. The sweetened gas stream is then washed and filtered and dehydrated in a glycol dehydration tower. After dehydration, the gas stream is chilled to approximately -15°F in a low temperature separation (LTS) chamber where the NGL separates from the stream. The sweetened, dried, and separated gas stream is then pre-heated and sent to the second-stage compression system where it is compressed to about 1,000 psig for sale. Most of the dry natural gas is metered and sold to the local utility company, but some gas is instead used in the Gas Plant combustion units after a filter pass.

The NGL liquids collected are sent to a heat exchanger, which uses heat from the Therminol system. Produced NGL is stored in a butane storage tank prior to being pumped into the crude oil shipping line.

2.1.2 Crude Oil Receiving and Sales: Treated crude oil is received from platforms Grace and Gail through a pipeline from platform Gail. The oil is metered as it comes on shore, then sent to the 217,000 barrel storage tank. Two electrically driven shipping pumps transport the crude oil via a LACT unit through a 10-inch pipeline to Venoco's Rincon storage tank facility. From there it is subsequently transported via pipeline to refineries in the Los Angeles basin.

2.2 Support Systems

2.2.1 Glycol Regeneration System: Rich glycol from the contactor column goes sequentially into a flash separator, a pre-heater and a filter to be stripped of gas and solid impurities. The clean liquid is then gradually heated using a glycol/glycol and a glycol/Therminol heat exchanger, passed through a gas-fired glycol reboiler and pumped to a glycol-stripping column. In the stripping column, fuel gas flows counter-current to the glycol stream and strips the stream of its water content. After passing through the stripping column, the gas flows through the glycol reboiler and an air-cooled exchanger and into the vapor recovery header. Regenerated lean glycol from the stripping column is heated and sent to the glycol surge tank. A pump sends back the lean glycol to the contactor column for re-use.

2.2.2 Therminol Heating System: A hot oil heater heats Therminol heating fluid, which is then circulated via pumps to heat exchangers, a propane separation unit and the weathering vessel. The returning Therminol liquid is sent to an expansion tank for degassing prior to being pumped into the hot oil heater.

2.2.3 Vapor Recovery System: The vapor recovery system collects ROC emissions from the following units: (a) the oil water separator tanks;; (b) intake scrubber housings; (c) compressor seal housings; (d) the glycol reboiler; (e) the fuel gas system; and, (f) the pig receivers. These vapors are compressed, cooled and scrubbed. The vapors are then re-compressed. After the second-stage compression, the

vapors are sent to the low-pressure uptake scrubbers where they are allowed to combine with natural gas from the main gas processing system.

2.2.4 Power Supply System: A natural gas-fired 220 hp Waukesha IC engine drives a 140 kW generator to provide auxiliary power to the gas plant air compressors, fans, pumps and instrument panels.

2.2.5 Wastewater Storage System: Produced water and/or wastewater are collected in tanks, which are connected to the vapor recovery system. Collected wastewater is either injected in off-site wastewater injection wells or taken off-site by a vacuum truck.

2.2.6 Crane: A diesel fired engine powers the crane on the Casitas pier, which is used to load and unload supplies.

2.2.7 Sumps: The sumps collect any rainwater or oil spilled in the area around the pig launchers, the free water knock out tanks, pumps and cleaning areas in the facility. Any liquids collected in the sumps drain to the wastewater storage tank. Normally, the sumps are empty.

2.3 Maintenance/Degreasing Activities

2.3.1 Paints and Coatings: Intermittent surface coating operations are conducted throughout the facility 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 are in compliance with APCD Rule 323, as verified through the rule-required recordkeeping.

2.3.2 Solvent Usage: Solvents not used for surface coating thinning may be used at the facility for daily operations. Usage includes cold solvent degreasing and wipe cleaning with rags.

2.3.3 Smart Pigging: The under-sea pipelines between the platforms and the stationary source are periodically inspected for pipeline integrity using smart pigs. The pipeline inspections are usually performed during process shutdowns at the gas plant and platforms and is usually scheduled biennially.

2.3.4 Maintenance Pigging: One pig launcher/receiver serves the gas line between Grace and the Gas Plant and one pig launcher/receiver serves the oil line between Grace and the Gas Plant. Another pig launcher/receiver serves the oil line between the Gas Plant and the Rincon storage tank facility. Any of these lines may be pigged up to two times per week.

2.4 Planned Process Turnarounds

Process turnarounds on the permitted equipment are scheduled to occur when the Gas Plant or the platforms are required to shut down for maintenance. Major pieces of equipment such as the gas compressors and the chillers have maintenance schedules specified by the manufacturer, and that equipment is removed from service, inspected, and repairs are made as necessary. Maintenance of critical fugitive components is carried out according to the requirements of Rule 331 (*Fugitive Emissions Inspection and Maintenance*). Any degassing of tanks, per the APCD-approved *Tank Degassing Plan*, may also be carried out as part of the scheduled maintenance process. Venoco has not listed any emissions from planned process turnarounds that should be permitted.

2.5 Detailed Process Equipment Listing

Refer to Attachment 10.5 for a complete listing of all permitted equipment.

3.0 Regulatory Review

3.1 Rule Exemptions Claimed

🕮 APCD Rule 202 (*Exemptions to Rule 201*): Section D.6 requires Venoco to report any *de minimis* modifications at the facility. As of January 13, 2009, *de minimis* emissions increases at the stationary source total 0.65 lb ROC/day.

🕮 APCD Rule 202 (*Exemptions to Rule 201*): The following equipment is permit-exempt

- Eight indirect heat exchangers Section L.1),
- One propane cooler (Section L.1),
- Eight compressor engine heat exchangers (Section L.1);
- Three natural gas liquid storage tanks (Section V.8); and
- One 250-hp, Detroit-Diesel 6V-92, diesel-fired IC engine, which propels a vehicle, which provides a mount for the crane at the Casitas Pier (Section F.1.c).

Note 1: The process heater and the glycol reboiler are not required to be fired by PUC quality gas and the Therminol heater is derated, therefore none of these devices are permit-exempt. Rule 202 G.1 states that no combustion equipment otherwise subject to permit shall be exempt because it has been derated.

Note 2: The Casitas Pier crane is powered by two engines, one powers the hydraulic systems, one propels the chassis. The engine which powers the hydraulic systems does not propel a vehicle, as defined in Section 670 of the California vehicle Code, therefore it is not exempt from an APCD permit.

🕮 APCD Rule 325 (*Crude Oil Production and Separation*): This rule does not apply to valves, fittings, pumps, compressors, hatches, sight glasses, meters, pressure relief devices, or diaphragms subject to inspection and maintenance under Rule 331. All of the valves, fittings, pumps, compressors, hatches, sight glasses, meters, pressure relief devices, and diaphragms at the facility are exempt from Rule 325.

Wastewater tanks SH-T24637 and SA-T25380 (Device ID #s 112321 and 112322) are out of service. The control requirement and inspection provisions of this rule do not apply while the tanks are out of service.

The oil line from the Gas Plant to the Rincon facility is downstream from the point custody of the oil is transferred. Therefore the pig launcher for this oil line is not subject to Rule 325.

🕮 APCD Rule 326 (*Storage of Reactive Organic Compound Liquids*): Tanks Subject to Rule 325 are exempt from the provisions of Rule 326. The wastewater storage tanks are subject to Rule 325, therefore they are exempt from Rule 326.

🕮 APCD Rule 331 (*Fugitive Emissions Inspection and Maintenance*): The following exemptions are approved by the APCD:

- Section B.2.b for components buried below the ground.
- Section B.2.c for one-half inch and less stainless steel tubing fittings.
- Section B.4 for components that are unsafe-to-monitor, as approved by the APCD via Venoco's approved I&M Plan.

📖 APCD Rule 342 (*Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters*): The glycol reboiler and the process heater are each rated less than 5 MMBtu/hr heat input. The Therminol heater has been derated below 5 MMBtu/hr heat input. Per Section A, Rule 342 does not apply to these units.

📖 APCD Rule 344 (*Petroleum Sumps, Pits and Well Cellars*): The post primary sumps and pits are used for spill containment, and thus are exempt from Rule 344 (Petroleum Sumps, Pits and Well Cellars), based on Rule 344.B.1.

📖 APCD Rule 361 (*Small Boilers, Steam Generators, and Process Heaters*): The process heaters are existing units, per Rule 361 B.1.c. they are not subject to Rule 361 until March 15, 2016. If they are modified before March 15, 2016 they will become subject to the rule upon modification.

3.2 Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52 {*New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration)*}: The Gas Plant was constructed and permitted prior to the applicability of these regulations. In 1979, Chevron, Venoco's predecessor, received ATC NSR 4-4-7/OCS -79-01 from the USEPA for modifications to the Gas Plant. These modifications were subject to NSR and included the installation of the existing glycol regenerator, installation of a secondary seal on the external floating roof tank, the cessation of tanker operations, and the construction and dedicated use of an oil pipeline to Rincon. Compliance with APCD Regulation VIII (*New Source Review*) ensures that future modifications to the facility will comply with these regulations.

3.2.2 40 CFR Part 60 {*New Source Performance Standards*}: The crude oil storage tank and waste water tanks are located at a facility prior to custody transfer, therefore they are not subject to Subpart K. Future changes to the crude oil storage tank will be evaluated to determine whether they are considered "modifications" and subject it to Subpart Kb.

ROC fugitive emission components at the facility are subject to NSPS Subpart KKK (Equipment Leaks of VOC at Onshore Natural Gas Processing Plants), because of modifications carried out at the facility in 1986 which made it an affected facility. Venoco must comply with the leak standards, inspection, repair, recordkeeping, and reporting requirements of this subpart.

3.2.3 40 CFR Part 61 {*NESHAP*}: This facility is not subject to the provisions of this Part.

3.2.4 40 CFR Part 63 {*MACT*}: On June 17, 1999, EPA promulgated Subpart HH, a NESHAPS for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Venoco submitted for APCD review an *Initial Notification of Applicability* on 16 June 2000. In August 2001, Venoco claimed a "black oil" exemption for this facility per Section 63.761(e). The facility does not qualify

for a "black oil" exemption because it does not exclusively process, store, or transfer black oil. A "natural gas processing plant", as defined in the Subpart, is a site engaged in the extraction of natural gas liquids from field gas. Since this facility extracts natural gas liquids from field gas it processes natural gas, which means it does not exclusively process black oil.

Section 63.761(b)(1) lists each emission point that may be an affected facility. 63.761(d) states that the owner and operator of a facility that does not contain an affected source as specified in paragraph (b) is not subject to the requirements of this subpart.

(i) Each glycol dehydration unit. The control requirements of 63.765 apply to glycol dehydration unit process vents. The glycol dehydration unit does not vent to the atmosphere or to a control device, the exhaust from the glycol dehydration unit is routed back to the process gas stream. Therefore the glycol dehydration unit is not an affected facility.

(ii) Each storage vessel with the potential for flash emissions. A storage vessel with the potential for flash emissions means any storage vessel that contains hydrocarbon liquid with a gas to oil ratio equal to or greater than 0.31 cubic meters per liter and an API gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters (500 barrels) per day. The API gravity of the crude stored in the crude oil tank is less than 40 degrees; it is assumed the API gravity of the crude in the oil/water separator tanks and wastewater tanks is also less than 40 degrees. The butane storage tank with device ID 9208 has a throughput less than 500 barrels per day; the butane storage tank with device ID 9209 is currently out of service. Therefore there are no storage vessels at the facility with a potential for flash emissions.

(iii) Ancillary equipment and compressors intended to operate in volatile hazardous air pollutant (VHAP) service at natural gas processing plants. Equipment is considered to be "in VHAP service" if it contains or contacts a fluid with a total VHAP concentration greater than or equal to 10 percent by weight. Sampling conducted at the Gas Plant in 2002 demonstrated that the concentrations of VHAPs in the process streams at the facility do not exceed 3 percent by weight. Therefore no ancillary equipment or compressors at the facility are considered to be in VHAP service.

Since no emission point at the facility is subject to a standard of the subpart, Venoco is not subject to the requirements of the subpart. In order to demonstrate the continued non-applicability of the subpart Venoco will be required to keep records demonstrating that the glycol unit does not vent to atmosphere or a control device, the API gravity of the crude at the facility is less than 40 degrees, each butane storage tank has an annual average throughput of less than 500 barrels per day, and that the VHAP concentrations of the process streams at the facility are less than 10 percent by weight.

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 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. Compliance with this rule was evaluated and it was determined that all spark-ignited IC engines controlled by NSCR at the facility are subject to CAM requirements (*also see Section 4.9.3)*. This permit addresses Venoco's CAM Rule requirements.

3.2.6 40 CFR Part 70 {*Operating Permits*}: This Subpart is applicable to the Gas Plant. Table 3.1 lists the federally enforceable APCD promulgated rules that are generic and apply to the Gas Plant. Table 3.2 lists the federally enforceable APCD promulgated rules that are unit-specific and apply to the Gas Plant. These tables are based on data available from the APCD's administrative files and from Venoco's Part 70 Operating Permit Renewal applications submitted on August 14, 2001 and on August 2, 2005 for the facility.

In its Part 70 permit applications 7995 and 7996 (Forms I and J), 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 Administrative Code 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 the facility are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-enforceable only.

3.3.3 California Code of Regulations, Title 17, Section 93115: This section is 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, industrial CI engine operated in California with a rated brake horsepower greater than 50 (>50 bhp). Portable or off-road or marine vessel IC engines are exempt from this ATCM.

The crane engine is a new stationary prime diesel-fueled CI engine, as defined in the ATCM. The engine complies with the diesel PM standard of the ATCM through the use of a DPF. Since the DPF for the engine is not verified for use with the engine, Venoco source tested the engine to demonstrate compliance with the diesel PM standard of the ATCM. The ATCM allows compliance to be demonstrated either by direct testing of PM emissions, or by demonstrating 85% control of PM in conjunction with a Tier 3 certified engine. The ATCM is APCD-enforceable only.

3.3.4 California Code of Regulations, Title 17, Section 93116: This section is the airborne toxic control measure (ATCM) to reduce diesel particulate matter (PM) emissions from portable diesel-fueled engines with a rated brake horsepower 50 bhp or greater. . Any portable diesel-fueled engines brought to the facility on a temporary basis that are subject to the ATCM must comply with the provisions of the ATCM. The ATCM is APCD-enforceable only.

3.4 Compliance with Applicable Local Rules and Regulations

3.4.1 Applicability Tables: Table 3.1 lists the generic federally enforceable APCD promulgated rules that apply to the facility. Table 3.2 lists the unit-specific federally enforceable APCD promulgated rules that apply to the facility. Table 3.3 lists the non-federally enforceable APCD promulgated rules that apply to the facility. Table 3.4 lists the adoption date of all rules applicable to the facility.

3.4.2 Rules Requiring Further Discussion: The last facility inspection occurred on December 5, 2008. The inspector reported that the facility was in compliance with all APCD rules and PTO conditions. This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

- APCD Rule 210 (*Fees*): Pursuant to Rule 201.G, APCD permits are reevaluated every three years. This includes the re-issuance of the underlying permit to operate. Also included are the PTO fees. The fees for this facility are based the APCD Rule 210, Fee Schedule A. Attachment 10.3 presents the fee calculations for the reevaluated permit.

- APCD 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 the SBCAPCD rules and regulations. To the best of the District's knowledge, Venoco is operating in compliance with this rule.

- APCD 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 external combustion equipment and all piston internal combustion engines. The external combustion equipment is fired on natural gas so the potential for visible emissions is low. Improperly maintained IC engines have the potential to violate this rule. Compliance will be assured by requiring Venoco to maintain all engines according to manufacturer maintenance schedules.

- APCD Rule 303 (*Nuisance*): This rule prohibits Venoco from causing a public nuisance due to the discharge of air contaminants. Complaint logs shall be maintained on-site to record any nuisance complaint reported to the APCD that requires mitigation by Venoco.

- APCD Rule 305 (*Particulate Matter, Southern Zone*): Venoco Carpinteria 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 (*lowest allowable limit is 0.01 gr/dscf*). Sources subject to this rule include the external combustion equipment and all the IC engines. Improperly maintained diesel engines have the potential to violate this rule. Compliance will be assured by requiring all engines to be maintained according to manufacturers' maintenance schedules.

- APCD Rule 309 (*Specific Contaminants*): Under Section A, no source may discharge sulfur compounds in excess of 0.2 percent as SO_2 (by volume) and combustion contaminants in excess of 0.1 gr/scf (at 12% CO_2). Sulfur emissions due to combustion of either PUC-quality natural gas or fuel gas (less than 12 ppmv S) at Venoco will comply with the SO_2 limit. Compliance with PM_{10} emission limits is automatically met by all gas-fired devices as described above (uncontrolled PM_{10} emission factor equivalent to about 0.007 gr/dscf). The diesel-powered IC engine has the potential to exceed combustion contaminant limits if not properly maintained (*see discussion on Rule 305 above for compliance*).

- APCD Rule 310 (*Odorous Organic Compounds*): This rule prohibits the discharge of H_2S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule; however, all produced gas from OCS Platforms Grace/Gail handled at the Venoco plant contains less than 12 ppmv sulfur. Therefore compliance with this rule is expected.

- APCD Rule 311 (*Sulfur Content of Fuels)*: This rule limits the sulfur content of fuels combusted at Venoco Carpinteria to 0.5 percent (by weight) for liquid fuels and 15 gr/100 scf calculated as H_2S (equivalent to 239 ppmvd) for gaseous fuels. All combustion equipment at the plant are fired by either PUC-quality natural gas or fuel gas containing less than 12 ppmv sulfur; and the diesel-fired IC engine at the pier is expected to be in compliance with the liquid fuel limit as determined by fuel analysis documentation.

- APCD Rule 317 (*Organic Solvents*): This rule sets specific prohibitions against the usage of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used by Venoco 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 daily solvent usage records (along with the solvent's MSDS) and submit them to the APCD to ensure compliance with this rule.

- APCD Rule 321 (*Solvent Cleaning Operations*): This rule sets equipment and operational standards for degreasers using organic solvents. Venoco has stated that, except for routine maintenance involving wipe cleaning etc., it does not use solvents at the facility.

- APCD 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 all maintenance/coating operations to ensure compliance with this rule, which is verified during inspections.

- APCD Rule 323 (*Architectural Coatings*): This rule sets standards for many types of architectural coatings. The primary coating standard that will apply to Venoco is for Industrial Maintenance Coatings which has a limit of 250 gram ROC per liter of coating, as applied. Venoco will be required to comply with the Administrative requirements under Section F for each container at the plant.

- APCD 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 into the atmosphere. Venoco will be required to maintain records to ensure compliance with this rule.

- APCD Rule 325 (*Crude Oil Production and Separation*): This rule applies to equipment used in the production, gathering, storage, processing and separation of crude oil and gas prior to custody transfer. Section D requires the use of vapor recovery systems on all tanks and vessels, including waste water tanks, oil/water separators, and waste oil tanks/sumps. Section E requires that all

produced gas to be taken off-site, sold, used on-site as fuel, flared or recovered by a system with a control efficiency of 90 percent, at a minimum. The wastewater tanks are subject to the rule. The wastewater tanks are connected to the VRU and must be inspected every five years per Section H. The fugitive components at the facility are subject to Rule 331, therefore they are exempt from Rule 325. The last inspection noted Venoco to be in compliance with the rule.

📖 APCD Rule 326 *(Storage of Reactive Organic Liquids)*: This rule applies to equipment used to store reactive organic compound liquids with a vapor pressure greater than 0.5 psia. The external floating roof tank is subject to this rule and complies because it is an external floating roof tank with a double-deck type cover. The last inspection noted the tank was in compliance with this rule.

📖 APCD Rule 331 (*Fugitive Emissions Inspection and Maintenance*): This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. The piping components and pumps in hydrocarbon service are subject to an APCD-approved Inspection and Maintenance (I&M) program. Venoco must comply with the most recent approved plan and any APCD-approved updates. Ongoing compliance with the provisions of this rule is assessed by inspection by District personnel using an organic vapor analyzer meeting the requirements of USEPA Method 21 and by analysis of operator records. Components are required to be repaired between 1 to 14 days, depending on the severity of the leak.

📖 APCD Rule 333 (*Control of Emissions from Reciprocating IC Engine*): This rule applies to any engine with a rated brake horsepower of 50 or greater. The rule establishes NOx, ROC and CO emission standards for each engine. Each engine must be inspected at least quarterly in accordance with an APCD-approved inspection and maintenance plan. Each spark-ignited engine must be source tested biennially. The compression ignited crane engine must be source tested if quarterly monitoring detects exhaust concentrations of greater than 220 ppmv NO_x at 15 percent oxygen. The source test trigger for the crane engine is lower than the Rule 333 limit of 560 ppmv NO_x at 15 percent oxygen because the crane engine is also subject to New Source Review limits. Compliance with the new source review limits also ensures compliance with the Rule 333 limits.

The Cooper engine, IR 1, and IR 3 provide ERCs; in addition to Rule 333 requirements these engines are subject to additional monitoring requirements and annual source testing to ensure the required ERCs are provided. IR 3, IR 4, IR 5, and IR 6 are subject to additional compliance assurance monitoring requirements.

📖 APCD Rule 342 *(Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters)*: This rule sets emission standards for external combustion units with a rated heat input greater than 5.0 MMBtu/hr. The facility does not have any emission units subject to this rule.

📖 APCD Rule 343 (*Petroleum Storage Tank Degassing*): This rule applies to the degassing of any above ground tank, reservoir or other container of more than 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 2.6 psia or between 20,000 gallons and 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 3.9 psia. The wastewater tanks and crude oil storage tank are subject to the provisions of this Rule. Venoco's predecessor Chevron submitted a *Tank Degassing Plan*. Compliance with the plan ensures compliance with Rule 343.

- 🕮 APCD Rule 353 *(Adhesives and Sealants)*: This rule sets standards for adhesives and sealants. Venoco will be required to comply with the requirements under Section B.2, and Section O of this Rule for each adhesive or sealant used. Compliance shall be based on site inspections and records maintained by Venoco.

- 🕮 APCD Rule 360 *(Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers)*: This rule applies to any water heater, boiler, steam generator, or process heater rated from 75,000 Btu/hour to 2 MMBtu/hr. Any unit manufactured after October 17, 2003 must be certified to meet the NO_x emission limits of the rule. The glycol reboiler is an existing unit so it is not subject to this rule. If Venoco installs a new unit it must comply with this rule.

- 🕮 APCD Rule 361 *(Small Boilers, Steam Generators, and Process Heaters)*: This rule applies to any boiler, steam generator, or process heater with a heat input rating greater than 2 MMBtu/hr and less than 5 MMBtu/hr. The Therminol heater and the indirect heater are existing units, which will become subject to this rule on March 15, 2016. These units must comply with the emission limits by January 1, 2020, or upon modification if they are modified before that date. Venoco must demonstrate final compliance with this rule by January 1, 2020.

- 🕮 APCD Rule 505 *(Breakdown Conditions)*: This rule describes the procedures that Venoco must follow when a breakdown condition occurs to any emissions unit. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which 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. The Rule also provides the parameters for such failure or malfunction to be recognized as such.

- 🕮 APCD Rule 603 *(Emergency Episode Plans)*: Section A of this rule requires the submittal of *Emergency Episode Plan* for all stationary sources, as defined in Section 39043 of the CA Health and Safety Code, that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. Venoco submitted such a plan on July 23, 1994, which was approved.

3.5 Compliance History

This section contains a summary of the compliance history for this facility since the last permit reevaluation. These data were obtained from the APCD administrative files and the IDS data base maintained by the APCD.

Violations: Available APCD records indicate four (4) Notices of Violation (NOVs) have been issued since the last permit reevaluation:

NOV 8467: Issued on 9/7/2006 for violating Rule 325 because of a leak from a hatch on wastewater tank T-2 exceeding 15,000 ppmv.

NOV 8796: Issued 3/21/2007 for failing to submit a comprehensive and accurate Air Toxics Emissions Inventory Report (ATEIR). The ATEIR submitted for reporting year 1999 contained false

and misleading data in the form of grossly inadequate engine stack heights that resulted in the misrepresentation of the toxic risk created by this facility.

NOV 8799: Issued 8/13/2007 for violating Rule 303 by causing nuisance odors while cleaning wastewater tank T-1.

NOV 8802: Issued 9/25/2007 for violating Rule 325 by failing to notify the district prior to shutting down the tank vapor recovery system for tank cleaning.

Table 3.1 - Generic Federally-Enforceable APCD Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants
RULE 102: Definitions	All emission units	Emission of pollutants
RULE 103: Severability	All emission units	Emission of pollutants
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Applicable units, as listed in Attachment 10.6	Exempt activities or emissions, per size/rating/ function
RULE 203: Transfer	All emission units	Change of ownership
RULE 204: Applications	All emission units	Addition of new equipment or modifying existing equipment.
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants
RULE 206: Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
RULE 207: Denial Of Applications	All emission units	Applicability of relevant Rules
RULE 208: Action on Applications - Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modifying existing equipment.
RULE 212: Emission Statements	All emission units	Administrative (fees)
RULE 301: Circumvention	All emission units	Any pollutant emission
RULE 302: Visible Emissions	All emission units	Particulate matter emissions
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.
RULE 305: PM Concentration - South Zone	Each PM source	Emission of PM in effluent gas
RULE 309: Specific Contaminants	All emission units	Combustion contaminants emission
RULE 311: Sulfur Content of Fuels	All combustion units	Combustion of sulfur in fuel
RULE 317: Organic Solvents	Emission units using solvents	Solvent used in process operations.
RULE 321: Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 322: Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
RULE 323: Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
RULE 353: Adhesives and Sealants	Units using adhesives/sealants	Adhesives and sealants use.
RULE 505: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded / rule requirements are not complied with.
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Venoco Carpinteria is a major source.
REGULATION VIII (RULES 801-808): New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	Venoco Carpinteria is a major source.

Table 3.2 - Unit-Specific Federally-Enforceable APCD Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
RULE 325: Crude Oil Production and Separation	Wastewater tanks: APCD ID #s 8168 and 8169.	Crude has vapor pressure greater than 0.5 psia.
RULE 326: Storage of Reactive Organic Compound Liquids	Crude oil storage tank: APCD ID # 112320.	Storage tank containing liquids with a vapor pressure greater than 0.5 psia
RULE 331: Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, etc.,) used to handle oil and gas: APCD ID #'s 107468 – 107473.	Components emit fugitive ROCs.
RULE 333: Control of Emissions from Reciprocating IC Engines	Piston IC engines only; APCD ID #s 107447, 107455 – 107459, 100222, & 109278.	IC engines exceeding 50 bhp rating.
RULE 343: Petroleum Storage Tank Degassing	Storage tank: APCD ID #s 8168,8169, and 112320.	Storage tanks with capacities exceeding exemption limits
RULE 360: Emissions of Oxides of Nitrogen from Large Water Boilers and Small Boilers	Any new small boiler installed at the facility.	New units rated from 75,000 Btu/hr to 2 MMBtu/hr
RULE 361: Small Boilers, Steam Generators, and Process Heaters	Heaters: APCD ID# 191 and 195	Process heaters rated between 2 and 5 MMBtu/hr.

Table 3.3 - Non-Federally-Enforceable APCD Rules

Requirement	Affected Emission Units	Basis for Applicability
RULE 210: Fees	All emission units	Administrative
RULE 310: Odorous Sulfides	All odor emission units	Cause for nuisance/health effects
RULES 501-504: Variance Rules	All emission units	Administrative
RULE 505: Variance	All emission units	Administrative
RULES 506-519: Variance Rules	All emission units	Administrative

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

Rule No.	Rule Name	Adoption Date
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 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	November 15, 2001
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	July 19, 2001
Rule 326	Storage of Organic Reactive Compound Liquids	January 18, 2001
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating IC Engines	June 19, 2008

Rule No.	Rule Name	Adoption Date
Rule 342	Control of NOx: Boilers, Steam Generators, 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 353	Adhesives and Sealants	August 19, 1999
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 1001	National Emission Standards for Hazardous Air Pollutants	October 23, 1993
Rule 1301	General Information	June 19, 2003
Rule 1302	Permit Application	November 9,1993
Rule 1303	Permits	January 18, 2001
Rule 1304	Permit Issuances, Renewal, Modification and Reopening	January 18, 2001
Rule 1305	Enforcement	November 9,1993

4.0 Engineering Analysis

4.1 General

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

- facility process flow diagrams
- 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

4.2 Stationary Combustion Sources

The stationary combustion sources at the facility consist of: six (6) gas-fired piston internal combustion (IC) engines to compress the incoming and processed gas, one (1) gas-fired piston IC engine to provide electrical power, one (1) diesel-fired piston IC engine to power the crane, the gas-fired Therminol heater, the gas-fired glycol reboiler, and the gas-fired heater treater.

4.2.1 Cooper Engine: The 1800 bhp, Cooper Bessemer, Model GMVA 10 (S/N 46729) is operated as a lean-burn engine and is equipped with a Clean Burn Combustion NO_x Abatement System, which consists of ignition timing retard and a Cooper Bessemer ET-18 Rotating Turbocharger system. The engine is equipped with an Altronic electronic ignition, a Woodward electronic speed control, and an electronic air-fuel ratio (AFR) controller. The fuel gas sulfur content for this engine is limited to 12 ppmvd. This engine is in "out-of-service" status. This status shall continue until Venoco demonstrates compliance with its Risk Reduction Audit Plan and obtains the APCD's approval to operate the engine (see Section 9.D of this PTO). This engine is used to compress gas. This engine provides ERCs and is monitored per Rule 333. The NO_x emission limit is based on the ERC agreement.

4.2.2 IR 1: The 440 bhp, Ingersoll Rand, Model 8-SVG4 engine is a rich-burn, noncyclically-loaded, engine with pre-stratified charge (PSC) controls and exhaust gas recirculation (EGR). The load on the engine does not vary much, so the air control valve for the PSC system is set in a fixed position. The fuel gas sulfur content for this engine is limited to 12 ppmvd. This engine is used to compress gas. This engine provides ERCs. This engine is not subject to CAM, since it does not have a control device, but it is monitored per Rule 333. The NO_x emission limit is based on the ERC agreement.

4.2.3 IR 3, IR 4, IR 5, IR 6: IR 3, IR 5, and IR 6 are 440 bhp, Ingersoll Rand, Model 8-SVG4 rich-burn, noncyclically-loaded, engines, each equipped with non-selective catalytic reduction (NSCR) and AFR controllers. IR 4 is a 300 bhp, Ingersoll Rand, Model 8-XVG4 rich-burn, noncyclically-loaded, engine equipped with non-selective catalytic reduction (NSCR) and AFR controllers. The fuel gas sulfur content for IR 3 is limited to 12 ppmvd. The fuel gas sulfur content for IR 4, IR 5, and IR 6 is limited to 80 ppmvd. These engines are used to compress gas. IR 3 provides ERCs. All of these engines are subject to CAM and monitored per Rule 333. The NO_x emission limit for IR 3 was lowered from the ERC-enforced limit to match the limit of the other NSCR-controlled engines.

4.2.4 Waukesha Engine: The 220 bhp, Waukesha, Model F-11 GSI rich-burn, noncyclically-loaded, engine is equipped with a Johnson Matthey Hatchback catalytic convertor, an Altronic EPC AFR controller,

and positive crankcase ventilation (PCV). The fuel gas sulfur content for this engine is limited to 80 ppmvd. This engine powers an electrical generator. This engine is subject to CAM and monitored per Rule 333

4.2.5 Crane Engine: The 228 bhp, Volvo Penta, Model TAD750VE diesel-fired engine powering the crane is Tier 3 certified and equipped with a Cleaire Horizon electrically regenerated diesel particulate filter (DPF). This filter is not verified by CARB for use with engines which are equipped with exhaust gas recirculation (EGR). Since the Volvo Penta engine is equipped with EGR, the filter is considered to be a non-verified control strategy for this application; the operation of the DPF results in higher exhaust backpressure than the engine manufacturer recommends. Venoco monitors backpressure to determine when to regenerate the filter. This engine is not subject to CAM, but is monitored per Rule 333.

The crane operation typically does not require very long periods of engine operation, nor does it require high engine loads. Therefore exhaust temperatures at the DPF do not reach high enough temperatures to burn off the trapped particulates. The Cleaire Horizon DPF has an electric heating element. The unit can be plugged in to an electric outlet overnight and the heating element burns off the trapped particulates. Therefore the DPF does not require a specific exhaust temperature range for proper operation. The DPF is operated and maintained per a *Diesel Particulate Filter Operations Plan for Casitas Crane Engine.*

4.2.6 Emissions Calculations for IC Engines: Emissions from the IC engines are calculated as follows. See Attachment 10.1 for details.

Gas-Fired Engines

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

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 values (1105 Btu/scf)

Diesel-Fired Engine

$$ER = EF \times bhp \times hr / 453.6$$

where: ER = Emission rate (lb./period)
EF = Pollutant specific emission factor (g/hp-hr)
bhp = brake horsepower rating of the engine
hr = hours of operation per period
453.6= conversion from grams to pounds

4.2.7 External Combustion Units: The external combustion units are comprised of the 4.99 MMBtu/hr Therminol Heater (H-101), the 4.5 MMBtu/hr Indirect Heater (F-1) and the 0.81 MMBtu/hr Glycol reboiler (E- 109). The Therminol heater has been derated to 4.99 MMBtu/hr with an orifice plate and a limitation on the fuel line pressure. The indirect heater and the glycol reboiler are rated below 5 MMBtu/hr by their manufacturers. The fuel gas sulfur content for these units is limited to 12 ppmvd.

Emissions from the external combustion units are calculated as follows. See Attachment 10.1 for details.

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

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 values (1105 Btu/scf)

4.3 Fugitive Hydrocarbon Sources

Fugitive hydrocarbon emissions occur from leaks in process components such as valves, connectors, pump seals, compressor seals, flanges, open-ended lines and pressure relief devices. 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 Unit (VRU), venting of pressure relief devices to the VRU, and plugging of open-ended lines. Post-leak controls consist of regular inspection of components for leaks and repair of all components found leaking.

Throughout 2006 Venoco and their contractor, Avanti Environmental, performed a new component count using the count methods defined in the SBCAPCD's Policy and Procedure (P&P) 072, which are different from those defined in P&P 061. P&P 072 uses the Screening Value Range Factor (SVRF) correlation equation methodology to determine fugitive emissions of THC. SVRFs are component based factors that provide THC leak rate concentrations for each component type and for each service type (e.g., gas/light liquid service, and oil service) within two specific screening value concentration ranges, "greater than or equal to 10,000 ppmv" (=10K) and <10K.The I&M Plan includes the new component count, the assumed number of =10K components based on a review of historical records, and emissions calculation sheets.

Upon completion of the revised component count, Venoco proposed a new *Fugitive Emission Inspection and Maintenance Plan* (I&M Plan), which detailed how Venoco will comply with the requirements of both Rule 331 (*Fugitive Emissions Inspection and Maintenance*) and P&P 072. Some components are exempt from the monitoring requirements of Rule 331, but are used in calculating emissions using P&P 072. All of the components identified in P&P 072 must be counted, screened, and used in determining emissions, but any leaks found from components exempt from 331 do not count as leaks for the purposes of Rule 331. The quarterly monitoring satisfies both Rule 331 monitoring requirements and P&P 072 screening requirements.

To calculate actual emissions, fugitive hydrocarbon components are monitored by Venoco a minimum of once during a monitoring period, which is generally a calendar quarter. The leak rates (screening values) from the initial in-period monitoring are separated into two leak rate groups: "<10K" and "=10K". Components are then assigned the THC leak rate from P&P 072 Table SVRF-1 that is appropriate for their service type (gas/light liquid, and oil), component type (e.g., valve, flange, connector), and the leak rate group. ROC/THC factors, from P&P 061 are then assigned. The emissions limit for fugitive components is calculated in Table 5.1-0.

4.4 Tanks/Vessels/Sumps/Separators

4.4.1 Oil Storage Tank: The crude oil is stored in a single 217,000 barrel external floating roof tank (Device ID #112320). The tank is equipped with a primary metallic shoe seal and a Weather Guard rim-mounted secondary seal. The tank is welded, 180 feet in diameter by 50 feet high, with a double deck green roof with a slotted guide pole and internal guide pole float. Both shipping pumps that serve the tank are electrically driven. Emissions from this tank are calculated using USEPA's Tanks 4.09d program. Attachment 10.2 contains an emission spreadsheet showing the detailed calculations for this tank. Venoco is implementing an annual APCD-approved *Tank Seal Program* to ensure that the floating roof tank is effective in controlling hydrocarbon emissions.

4.4.2 Waste Water Tanks: The facility has four (4) vertical, fixed roof wastewater tanks. Two are out of service. Two (2) 1,000 barrel tanks are in service and connected to the VRU. The wastewater tanks are subject to the inspection requirements of Rule 325. Emissions from these tanks are calculated the same as for sumps and are based on APCD's P&P 6100.060 (*Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method - Modified for the Revised ROC Definition*). Attachment 10.2 contains an emission spreadsheet showing the detailed calculations for all four tanks.

4.4.3 Sumps and Wastewater Pan: Seven (7) sumps and one wastewater pan are used for collecting oil spills from various locations around the facility. Under normal operating conditions, the sumps remain dry. If any liquids are spilled into a sump they are drained to the wastewater storage tank. Fugitive emissions from the sumps are uncontrolled. These emissions are estimated based APCD P&P 6100.060 (*Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method - Modified for the Revised ROC Definition*). One sump and the wastewater pan are classified as being in secondary production. Six sumps are classified as being in tertiary production. Emissions are calculated as follows:

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

where:

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

Attachment 10.2 contains an emission spreadsheet showing the detailed calculations for all six sumps.

4.5 Glycol Reboiler

The glycol reboiler regenerates rich glycol into lean glycol by driving off the water that was picked up during the dehydration of the natural gas. The heat source for this process is the 0.81 MMBtu/hr gas-fired Glycol Regenerator. Along with water, hydrocarbons are also driven off from the rich glycol. This vapor stream is collected and then directed to the vapor recovery unit compressor. Emissions from the glycol regenerator are accounted for by the fugitive component count for the facility.

4.6 Other Emission Sources

4.6.1 Pigging Equipment: Gas and oil pipeline pigging operations occur at the facility. These consist of one pig launcher/receiver for the gas pipeline connected to the OCS Platform Grace and one for the oil pipeline connected to Platform Grace. There is also one pig launcher/receiver for the oil pipeline connected to the Rincon facility. Each line is pigged up to 104 times per year, based on Venoco Part 70 permit application data. Each launcher/receiver is depressurized to the plant's vapor recovery system until pressure in the launcher/receiver is less than 1 psig. The small amount of gas remaining after depressurization is vented to the atmosphere. The calculation per time period is:

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

where:		
	ER =	emission rate (lb./period)
	V_1 =	volume of vessel (ft^3)
	ρ =	density of vapor at actual conditions ($lb./ft^3$)
	wt % =	weight percent ROC/TOC
	EPP =	pigging events per time period (events/period)

4.6.2 General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) may occur at the facility as part of normal daily operations. The usage includes cold solvent degreasing. Mass balance emission calculations are used assuming all the solvent used evaporates to the atmosphere.

4.6.3 Surface Coating: Surface coating operations typically include normal touch up activities. Entire facility painting programs are also performed. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emissions of PM/PM_{10} from paint over spray are not calculated due to the lack of established calculation techniques.

4.6.4 Abrasive Blasting: Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. The engines used to power the compressor may be electric or diesel fired. If diesel fired, permits will be required unless the engine is registered with CARB. 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_{10}. A PM/PM_{10} ratio of 1.0 is assumed.

4.7 Vapor Recovery/Control Systems

The vapor recovery system collects ROC emissions from tanks, storage vessels, intake scrubber housings, compressor seal housings, the glycol reboiler and other vessels. These vapors are scrubbed, compressed, cooled and re-compressed. After the second-stage compression, the vapors are allowed to combine with liquid gases from the main gas processing system. Overall ROC control efficiency for the system is greater than 95 percent.

4.8 BACT/NSPS/NESHAP/MACT

Since the Gas Plant was installed prior to July, 1979, none of the emission units at the Gas Plant is subject to best available control technology (BACT) provisions of the APCD. However, in 1986 and again in 1988, Chevron modified the Gas Plant. The 1988 modifications resulted in increases in ROC emissions due to construction and installation of the gas sweetening system, slug catcher, centrifugal

separator, and natural gas liquid loading system. Because of these modifications, the Gas Plant is subject to the control requirements of New Source Performance Standards, 40 CFR Part 60, Subpart KKK (Equipment Leaks of VOC from Onshore Gas Processing Plant) promulgated in June, 1985.

No NESHAP apply to the facility.

4.9 CEMS/Process Monitoring/CAM

4.9.1 CEMS: There are no CEMS at this facility.

4.9.2 Process Monitoring: At a minimum, the following process monitors are required to be calibrated and maintained in good working order:

- Meters recording volume of gas processed at the plant outlet;
- Meters recording fuel use by each gas-fired combustion device;
- Meter recording diesel fuel use by the crane engine;
- Display units for IC engine process parameters (including A/F ratio controller);
- Meters recording hours of operation of each IC engine;

To implement the above calibration and maintenance requirements, a *Process Monitor Calibration and Maintenance Plan* is required of Venoco. This Plan takes into consideration any manufacturer recommended maintenance and calibration schedules. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment are utilized.

4.9.3 CAM: Venoco Carpinteria is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit at this facility with an uncontrolled potential to emit exceeding major source emission thresholds for any pollutant that uses a control device to meet federally enforceable permitted emission limits is subject to CAM provisions. All of the IC engines equipped with NSCR are subject to CAM requirements. The Cooper engine and IR 1 are not subject to CAM because they do not use control devices to meet permitted emission limits. The diesel-fired IC engine is not subject to CAM because it does not have an uncontrolled potential to emit exceeding major source thresholds of 100 tons per year. CAM requirements are listed in Table 4.3.

4.10 Source Testing/Sampling

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 for issuing operating permits.

All operational IC engines listed in this permit must be source tested to verify compliance with applicable emission standards. Source testing requirements are listed in Tables 4.1 and 4.2.

At a minimum, the streams below must be sampled and analyzed, on a periodic basis:

- Produced Gas: Analysis for fuel gas composition annually.
- Fuel Gas: Analysis for high heating value (HHV) quarterly and fuel sulfur content, monthly.

☞ Produced Oil/Wastewater: Annual analysis for true vapor pressure.

All sampling and analyses must be performed according to APCD approved procedures and methodologies. The appropriate tested methods are listed in the relevant permit conditions. All samples must be traceable by chain of custody procedures.

4.11 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

4.11.1 Gas-fired, lean-burn, 2-stroke IC engine: The Cooper is currently prohibited from operating until it is source tested to assess its HAPs emissions. Prior to returning the Cooper to service Venoco must determine appropriate HAPs emission factors and perform a health risk assessment.

4.11.2 Gas-fired, PSC-controlled, 4-stroke IC engine: The HAP emission factors listed below are for the rich-burn Ingersoll-Rand engine with PSC controls (IR 1). Benzene, Formaldehyde, Acetaldehyde and Acrolein factors were determined by source testing conducted August 11 and 12, 2004. Toluene, Xylene, and Methanol factors are taken from AP-42.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	8.5000 E-04
Toluene	108883	4.08 E-04
Xylene	1330207	1.84 E-04
Formaldehyde	50000	8.6319 E-03
Acetaldehyde	75070	9.5672 E-04
Acrolein	107028	1.7217 E-04
Methanol	67561	2.50 E-03

4.11.3 Gas-fired, NSCR-controlled, 4-stroke IC engine (IR 3): The HAP emission factors listed below are for the Ingersoll-Rand engine (IR 3). Benzene, Formaldehyde, Acetaldehyde and Acrolein factors are based on the August 11 and 12, 2004 source tests of IR 6, which is the same make and model engine and controlled by the same make and model catalyst. The emission factors measured during the source test have been multiplied by 10 to provide a margin of error. Toluene and Xylene emission factors are from AP-42 for uncontrolled 4-stroke rich burn engines and are unadjusted.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	1.7000 E-04
Toluene	108883	5.58 E-04
Xylene	1330207	1.95 E-04
Formaldehyde	50000	3.2755 E-04
Acetaldehyde	75070	9.0653 E-05
Acrolein	107028	6.6568 E-07

4.11.4 Gas-fired, NSCR-controlled, 4-stroke IC engine (IR 4): The HAP emission factors listed below are for the Ingersoll-Rand engine (IR 4). Benzene, Formaldehyde, Acetaldehyde and Acrolein factors are based on the November 2, 2004 source test. Toluene and Xylene emission factors are from AP-42 for uncontrolled 4-stroke rich burn engines.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	7.0000 E-06
Toluene	108883	5.58 E-04
Xylene	1330207	1.95 E-04
Formaldehyde	50000	6.4029 E-05
Acetaldehyde	75070	2.3031 E-04
Acrolein	107028	1.2312 E-06

4.11.5 Gas-fired, NSCR-controlled, 4-stroke IC engines (IR 5 and 6): The HAP emission factors listed below are for the Ingersoll-Rand engines (IR 5 and 6). Benzene, Formaldehyde, Acetaldehyde and Acrolein factors are based on the August 11 and 12, 2004 source tests of IR 6. Toluene and Xylene emission factors are from AP-42 for uncontrolled 4-stroke rich burn engines.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	1.7000 E-05
Toluene	108883	5.58 E-04
Xylene	1330207	1.95 E-04
Formaldehyde	50000	3.2755 E-05
Acetaldehyde	75070	9.0653 E-06
Acrolein	107028	6.6568 E-08

4.11.6 Gas-fired, NSCR-controlled, 4-stroke IC engine (Waukesha): The HAP emission factors listed below are for the Waukesha engine. Benzene, Formaldehyde, Acetaldehyde and Acrolein factors are based on the August 11 and 12, 2004 source tests of IR 4. Toluene and Xylene emission factors are from AP-42 for uncontrolled 4-stroke rich burn engines.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	7.0000 E-06
Toluene	108883	5.58 E-04
Xylene	1330207	1.95 E-04
Formaldehyde	50000	6.4029 E-05
Acetaldehyde	75070	2.3031 E-04
Acrolein	107028	1.2312 E-06

4.11.7 Diesel-fired, 4-stroke (lean-burn) IC engines: The HAP emission factors listed below are for the crane engine. These factors are from the VCAPCD *Diesel Combustion Factors* document dated May 17, 2001.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	1.360 E-04
Toluene	108883	7.693 E-04

Xylene	1330207	3.095 E-04
Formaldehyde	50000	1.260 E-02
Acrolein	107028	2.474 E-04

4.11.8 Gas-fired, external combustion, indirect heaters & reboilers: The HAP emission factors listed below are for the indirect heaters and glycol Reboiler. These factors are from the VCAPCD *Natural Gas Fired External Combustion Equipment* document dated May 17, 2001.

HAP	CAS #	HAP Emission Factor (lb./MMBtu)
Benzene	71432	7.240 E-06
Toluene	108883	3.312 E-05
Formaldehyde	50000	1.538 E-05
Hexane	110543	5.701 E-06

4.11.9 Fugitive VOC Emissions: Fugitive HAP emissions occur from components in light liquid/gas service. HAP emission factors are based on the HAP weight fraction of the gas in each area of the facility as documented by Venoco's August 11, 2004 *Fugitive Sampling Plan and Report.*

4.11.10 Emissions from Waste Water Separators: Fugitive HAP emissions also occur from waste water separators, sumps and cellars. HAP emission factors are from CARB's *Speciation Manual Second Edition* dated August, 1991.

HAP	CAS #	HAP weight fraction in ROC (WF)	Total fugitive HAP Emission (lb./hr)
Benzene	71-43-2	0.0160	WF * ROC from unit (lb./hr)
Hexane	110-54-3	0.0670	WF * ROC from unit (lb./hr)
Toluene	108-88-3	0.0100	WF * ROC from unit (lb./hr)
Iso-octane	540-84-1	0.0030	WF * ROC from unit (lb./hr)

TABLE 4.1 - Source Test Requirements for All IC engines except the Waukesha F-11 IC engine

TABLE for IC ENGINES SOURCE TEST REQUIREMENTS [a][b][e][f]				
IC Engine Venoco ID #	**Pollutant/ Parameter**	**Exhaust Concentration Limit [c]** (ppmv @ 15%O_2)	**Max. Exhaust Emission Rate** (lb./hr)	**Comments**
Cooper, IR #1, IR #3	NO_x	48 (Cooper), 90% control or 50 (IR #1, IR #3)	See Table 5.1-3	lb/MMBtu Limit: Cooper, IR #1, IR #3 -- See Table 5.1-2
	ROC	381 (Cooper), 250 (IR #1, IR #3)	See Table 5.1-3	lb/MMBtu Limit: Cooper -- See Table 5.1-2
	CO	345 (Cooper), 4500 (IR #1, IR #3)	See Table 5.1-3	lb/MMBtu Limit: Cooper -- See Table 5.1-2
IR #4, IR #5 and IR #6	NO_x	No more than 10% of NSCR inlet ppmv, or 50 ppmv at outlet	See Table 5.1-3	Measure
	ROC	250	See Table 5.1-3	Measure
	CO	4500	See Table 5.1-3	Measure
All Gas-Fired Engines	Ignition Timing	Document settings used in source test		
	AFRC Set-points	Document settings used in source test		
Cooper	Air Manifold Pressure and Igniter Pressure	Measure		
IR #1	Air Manifold Pressure	Measure		
	PSC Valve Position	Document		
Diesel Crane Engine	PM	0.01 g/bhp-hr or 85% control	See Table 5.1-3	EPA Method 5
	NO_x	220	See Table 5.1-3	EPA Method 7E, ARB 1-100
	ROC	45	See Table 5.1-3	EPA Method 18
	CO	336	See Table 5.1-3	EPA Method 10, ARB 1-100
	DPF Temperature and Pressure	Measure		
All Engines	Exhaust Oxygen	Dry, Mol. Weight, EPA Method 3		
	Fuel Flow	scf/hr for gas engines, gal/hr for diesel engine		
	Fuel Analysis	Measure		

Notes:

(a) All source test values shall be reported at standard conditions (60°F and 1 atm.) unless otherwise specified.

(b) Emission source test shall be performed at maximum achievable IC engine output (bhp)[*See Section 9.C.1.c*]

TABLE 4.2 - SOURCE TEST REQUIREMENTS FOR THE WAUKESHA F-11 IC ENGINE

Emission Points	Pollutants/ Parameters	Test Methods	Emission Limits (ppmvd; lb/hr)
- Waukesha #1 Generator Engine	NO_x (ppmv, lb/hr)	CARB 1-100 or USEPA 7E	11 ppm @ 15% O_2 and 0.073 lb/hr
	CO (ppmv, lb/hr)	CARB 1-100 or USEPA 10	73 ppm @ 15% O_2 and 0.291 lb/hr
	ROC (lb/MMBtu, lb/hr)	USEPA 18	0.041 lb/MMBtu and 0.073 lb/hr
	Fuel Flow Rate	Fuel flow meter	
	Fuel High Heating Value	ASTM	
	Total Sulfur Content	ASTM	

Site Specific Requirements

a. Engine to be tested on a biennial basis, at maximum achievable output (bhp).
b. USEPA methods 1-4 to be used to determine O_2, dry MW, moisture content, CO_2, and stack flow rate. Alternatively, USEPA 19 may be used to determine stack flow rate.
c. SO_x emissions to be determined by mass balance calculation.
d. Source test to be performed at 'as found' A/F ratio operating set point. (*set point can be re-adjusted after a source test, only with prior APCD approval and only after demonstrating compliance at new set point settings)*
e. Fuel flow meter shall be calibrated within 60 days of the test.

All heating values based on HHV.
Source test load conditions to be listed in terms of MMBtu/hr heat input rate during the test.

Table 4.3 Compliance Assurance Monitoring Requirements

IC Engines	APCD ID #	INDICATOR(S) SELECTED[1]	RANGE OF VALUES[2]
I-R Unit # 3 Model 8SVG-4	107456	1. AFRC Millivolt Set Points 2. NSCR Catalyst temperature 3. Ignition timing	845 – 905 mV 700 – 1350 °F 5 - 15° BTDC
I-R Unit # 4 Model 8XVG-4	107457	1. AFRC Millivolt Set Points 2. NSCR Catalyst temperature 3. Ignition timing	790 –910 mV 700 – 1350 °F 12 - 15° BTDC
I-R Unit # 5 Model 8SVG-4	107458	1. AFRC Millivolt Set Points 2. NSCR Catalyst temperature 3. Ignition timing	860 – 900 mV 700 – 1350 °F 12 - 15° BTDC
I-R Unit # 6 Model 8SVG-4	107459	1. AFRC Millivolt Set Points 2. NSCR Catalyst temperature 3. Ignition timing	800 – 860 mV 700 – 1350 °F 12 - 15° BTDC
Waukesha G-01 F-11 GSI	100222	1. AFRC Millivolt Set Points 2. NSCR Exhaust Temperature 3. Ignition timing	700 -760 mV 700- 1350° F 12 - 15° BTDC

NOTE:

All indicators listed in the table are to be monitored on a daily basis.

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 from the facility. Section 5.6 provides the estimated emissions from permit exempt equipment. Section 5.7 lists the Part 70 insignificant emission units. Section 5.8 provides the net emissions increase calculation for the facility and the stationary source. In order to accurately track the emissions from a facility, the APCD uses a computer database. Attachment 10.4 contains the APCD's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

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

- ⇒ Nitrogen Oxides (NO_x) [2]
- ⇒ Reactive Organic Compounds (ROC)
- ⇒ Carbon Monoxide (CO)
- ⇒ Sulfur Oxides (SO_x) [3]
- ⇒ Particulate Matter (PM) [4]
- ⇒ Particulate Matter smaller than 10 microns (PM_{10})

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, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachments 10.1 and 10.2 respectively. 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".

---

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

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

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

5.3 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:

- Eight (8) IC engines: APCD ID #s 107447, 107455 through 107459, 100222 and 109278;
- Three (3) indirect heaters, including the glycol reboiler: APCD ID #s 191, 195 and 200;
- One (1) crude oil storage tank: APCD ID # 112320;
- Four (4) wastewater tanks: APCD ID #s 8168, 8169, 112322, and 112321;
- Eight (8) pits/sumps: APCD ID #s 242 through 247, 112327, and 112323
- Three (3) pig receiver/launchers: APCD ID #s 9275, 112341, and 112342
- Fugitive emission components: APCD ID #s 107468, 109694 through 109705.

Annual Scenario:

- Eight (8) IC engines: APCD ID #s 107447, 107455 through 107459, 100222 and 109278;
- Three (3) indirect heaters, including the glycol reboiler: APCD ID #s 191, 195 and 200;
- One (1) crude oil storage tank: APCD ID # 112320;
- Four (4) wastewater tanks: APCD ID #s 8168, 8169, 112322, and 112321;
- Eight (8) pits/sumps: APCD ID #s 242 through 247, 112327, and 112323
- Three (3) pig receiver/launchers: APCD ID #s 9275, 112341, and 112342
- Fugitive emission components: APCD ID #s 107468, 109694 through 109705.

5.4 Part 70: Federal Potential to Emit for the Facility

Table 5.3 lists the federal Part 70 potential to emit. Fugitive emissions are excluded from the federal definition of potential to emit unless the source belongs to one of the categories listed in 40 CFR 70.2. Petroleum storage and transfer facilities with a total storage capacity exceeding 300,000 barrels are listed in 40 CFR 70.2. This facility has a total petroleum storage capacity of 217,000 barrels. Stationary sources which were being regulated as of August 7, 1980 under section 111 or 112 are also listed in 40 CFR 70.2. Subpart KKK came into effect June 24, 1985. 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 computed based on the factors listed in Section 4.10 for each emissions unit. Potential HAP emissions, based on the worst-case scenario listed in Section 5.3 above, are in the administrative file for this permit.

5.6 APCD Permit-Exempt Emission Units

Equipment/activities exempt pursuant to Rule 202 include maintenance operations involving surface coating. This facility includes the following permit-exempt equipment with emissions:

- Two (2) butane storage tanks (SH-V20/21), 15,500 gallons capacity each;
- One refrigerant grade, propane storage tank, 500 gallons capacity;
- Seventeen (17) heat exchangers, as listed in Section 10.6; and,
- The 250-hp IC engine (DD Model 6V-92) driving the cab that provides a mount for the Casitas Pier Crane (the crane itself is powered separately by a non-exempt diesel engine).

5.7 Part 70 Insignificant Emission Units

Insignificant emission units are defined under APCD Rule 1301. Insignificant activities such as maintenance operations using paints and coatings contribute to the facility emissions.

5.8 Net Emissions Increase Calculation

This facility's net emissions increases since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) based on the permitting actions summarized below:

NSR Permit Type	Number	Date	Permitting Reason
ATC	9323	10/17/94	Addition of w/w tanks, stock tank conversion
ATC	9227	2/25/96	De-rating of Therminol heater (NEI = zero)
ATC/PTO	10123	4/27/99	Finalization of clps and emission inventory
ATC	10405	5/7/01	Installation of an ICE to drive a generator
ATC	12214	3/7/07	Installation of a diesel-fired IC engine

The net emissions increases (NEI) for all pollutants resulting from these permitting actions are shown in Table 5.5

This emissions history is relevant for any future modifications to the stationary source.

Table 5.1.0
Venoco Carpinteria Part 70/PTO 7996 R8
Fugitive ROC Emissions Information [a, b]

Service Type / Component Type	Accessibility Group	Number of Components Screened [c]			SVRFs [d] for THC lb/comp/day		THC Emissions by SVRF Range, and Total, lb/day			ROC/THC Ratio	Total ROC Emissions [e]			SVRFs for ROC lb/comp/day	
		<10K	≥ 10K	Total	<10K	≥ 10K	<10K	≥ 10K	Total		lb/day	tpq	tpy	<10K	≥ 10K
Gas/Light Liquid Service															
Valves	Accessible	2,245	12	2,257	1.85E-03	7.33E+00	4.153	87.960	92.113	0.31	28.56	1.30	5.21	5.74E-04	2.27E+00
	Inaccessible	0	0	0	1.85E-03	7.33E+00	0.000	0.000	0.000	0.31	0.00	0.00	0.00	5.74E-04	2.27E+00
Others	Accessible	407	7	414	1.27E-02	9.76E+00	5.169	68.320	73.489	0.31	22.78	1.04	4.16	3.94E-03	3.03E+00
	Inaccessible	1	0	1	1.27E-02	9.76E+00	0.013	0.000	0.013	0.31	0.00	0.00	0.00	3.94E-03	3.03E+00
Connectors	Accessible	14,787	32	14,819	6.35E-04	1.37E+00	9.390	43.840	53.230	0.31	16.50	0.75	3.01	1.97E-04	4.25E-01
	Inaccessible	0	0	0	6.35E-04	1.37E+00	0.000	0.000	0.000	0.31	0.00	0.00	0.00	1.97E-04	4.25E-01
Flanges	Accessible	2,413	14	2,427	1.48E-03	3.23E+00	3.571	45.220	48.791	0.31	15.13	0.69	2.76	4.59E-04	1.00E+00
	Inaccessible	0	0	0	1.48E-03	3.23E+00	0.000	0.000	0.000	0.31	0.00	0.00	0.00	4.59E-04	1.00E+00
Open-ended Lines	Accessible	0	0	0	1.27E-03	2.90E+00	0.000	0.000	0.000	0.31	0.00	0.00	0.00	3.94E-04	8.99E-01
	Inaccessible	0	0	0	1.27E-03	2.90E+00	0.000	0.000	0.000	0.31	0.00	0.00	0.00	3.94E-04	8.99E-01
Pump Seals/ Compressor Seals	Accessible	31	5	36	3.07E-02	3.80E+00	0.952	19.000	19.952	0.31	6.19	0.28	1.13	9.52E-03	1.18E+00
	Inaccessible	0	0	0	3.07E-02	3.80E+00	0.000	0.000	0.000	0.31	0.00	0.00	0.00	9.52E-03	1.18E+00
Subtotal: Gas/LL		**19,884**	**70**	**19,954**							**89.15**	**4.07**	**16.27**		
Oil Service															
Valves	Accessible	314	4	318	1.01E-03	3.74E+00	0.317	14.960	15.277	0.56	8.56	0.39	1.56	5.66E-04	2.09E+00
	Inaccessible	0	0	0	1.01E-03	3.74E+00	0.000	0.000	0.000	0.56	0.00	0.00	0.00	5.66E-04	2.09E+00
Others	Accessible	122	4	126	8.50E-03	5.03E-01	1.037	2.012	3.049	0.56	1.71	0.08	0.31	4.76E-03	2.82E-01
	Inaccessible	0	0	0	8.50E-03	5.03E-01	0.000	0.000	0.000	0.56	0.00	0.00	0.00	4.76E-03	2.82E-01
Connectors	Accessible	1,266	3	1,269	5.29E-04	1.24E+00	0.670	3.720	4.390	0.56	2.46	0.11	0.45	2.96E-04	6.94E-01
	Inaccessible	0	0	0	5.29E-04	1.24E+00	0.000	0.000	0.000	0.56	0.00	0.00	0.00	2.96E-04	6.94E-01
Flanges	Accessible	322	3	325	1.27E-03	1.38E+01	0.409	41.400	41.809	0.56	23.41	1.07	4.27	7.11E-04	7.73E+00
	Inaccessible	0	0	0	1.27E-03	1.38E+01	0.000	0.000	0.000	0.56	0.00	0.00	0.00	7.11E-04	7.73E+00
Open-ended Lines	Accessible	0	0	0	9.52E-04	1.17E+00	0.000	0.000	0.000	0.56	0.00	0.00	0.00	5.33E-04	6.55E-01
	Inaccessible	0	0	0	9.52E-04	1.17E+00	0.000	0.000	0.000	0.56	0.00	0.00	0.00	5.33E-04	6.55E-01
Pump Seals/ Compressor Seals	Accessible	1	2	3	7.40E-03	3.80E+00	0.007	7.600	7.607	0.56	4.26	0.19	0.78	4.14E-03	2.13E+00
	Inaccessible	0	0	0	7.40E-03	3.80E+00	0.000	0.000	0.000	0.56	0.00	0.00	0.00	4.14E-03	2.13E+00
Subtotal: Oil		**2,025**	**16**	**2,041**							**40.39**	**1.84**	**7.37**		
Total: Gas/LL + Oil		**21,909**	**86**	**21,995**							**129.55**	**5.91**	**23.64**		

Notes:

[a] This table, based on Venoco's Table 2 (7996) of the March 8, 2007 Additional Information for Application, is for informational purposes only.

[b] See APCD Policy and Procedure 6100.072.1998 for an explanation of the terms and calculation process used in this table.

[c] The distribution of components in the "<10K" and "≥10K" columns may vary; the values shown are not limits.

[d] SVRF = screening value range factor

[e] Permitted ROC emissions limits are detailed by service type in Tables 5.1-3, 5.1-4, 5.2 and 5.3.

Table 5.1-1
Venoco Carpinteria Part 70/PTO 7996 R8
Operating Equipment Description

Facility ID #: 00027

Equipment Category	Venoco ID/ Emissions Unit	APCD ID #	Device Specifications: Feed	Parameter	Size	Units	Usage Data: Capacity	Units	Load	Maximum Load Schedule: hr	day	qtr	year	References
				% S										
Internal Comb.Engines	Cooper/GMVA-10:#46729	107447	NG	0.0012	1800	hp	12.240	MMBtu/hr	1.000	1	24	2190	8760	A
	IR-1/8SVG-4:# 8CS1369	107455	NG	0.0012	440	hp	3.740	MMBtu/hr	1.000	1	24	2190	8760	A
	IR-3/8SVG-4:# 8CS1085	107456	NG	0.0012	440	hp	4.884	MMBtu/hr	1.000	1	24	2190	8760	A
	IR-4/8SVG-4: # Unit 4	107457	NG	0.0080	300	hp	3.330	MMBtu/hr	1.000	1	24	2190	8760	A
	IR-5/8SVG-4:#Unit 5	107458	NG	0.0080	440	hp	4.884	MMBtu/hr	1.000	1	24	2190	8760	A
	IR-6/8SVG-4:#Unit 6	107459	NG	0.0080	440	hp	4.884	MMBtu/hr	1.000	1	24	2190	8760	A
	G-01/ Waukesha F-11 GSI	100222	NG	0.0080	220	hp	1.785	MMBtu/hr	1.000	1	24	2190	8760	A
Crane DICE *	Volvo TAD 750VE	109278	D	0.0015	228	hp	1.619	MMBtu/hr	1.000	1	2	49.6	211.6	C
				%S										
Combustion - External	Thermnl Htr:H-101	191	FG	0.0012	4.990	MMBtu/hr	4.990	MMBtu/hr	1.000	1	24	2190	8760	D
	Glycol R-blr:#E-109	200	FG	0.0012	0.810	MMBtu/hr	0.810	MMBtu/hr	1.000	1	24	2190	8760	D
	Indirect Htr.: F-1	195	FG	0.0012	4.500	MMBtu/hr	4.500	MMBtu/hr	1.000	1	24	2190	8760	D
Crude Oil Tank	T-861	4161			217000.00	bbl			1.000	1	24	2190	8760	
Wastewater Tanks	Wastewater WW-T1	8168	WW	scndry	1000	bbl	697.47	sq.ft	1.000	1	24	2190	8760	E
	Wastewater WW-T2	8169	WW	scndry	1000	bbl	697.47	sq.ft	1.000	1	24	2190	8760	E
	Wastewater SH-T24637	9561	WW	scndry	5000	bbl	1110.37	sq.ft	1.000	1	24	2190	8760	E
	Wastewater SA-T25380	9563	WW	scndry	5000	bbl	1110.37	sq.ft	1.000	1	24	2190	8760	E
	Blowdown tank SA-V16	8170	WW	scndry	250	bbl	63.62	sq.ft	1.000	1	24	2190	8760	E
				psig										
Pigging Receivers/	Gas Receiver	9275	FG	1.0	0.83'd, 14.0'l*		7.57	acf-event	1.000	1	1	26	104	
Launchers	Oil Receiver	9555	FG	1.0	0.83'd, 12'l*		6.49	acf-event	1.000	1	1	26	104	
	Rincon Oil Launcher	108891	FG	1.0	0.83'd x 14'l*		7.57	acf-event	1.000	1	1	26	104	
					*-- not incl.pipe									
				Service										
Sumps	Grce/Gail Pig	242	O/W	terty.,open	4'x12'		48.00	sq. ft.	1.000	1	24	2190	8760	E
	SA V-3 FWKO	243	O/W	terty.,open	4'x5'		20.00	sq. ft.	1.000	1	24	2190	8760	E
	SA V-4 FWKO	244	O/W	terty.,open	3'dia.		7.07	sq.ft.	1.000	1	24	2190	8760	E
	SA V-13 FWKO	245	O/W	terty.,open	3'dia.		7.07	sq.ft.	1.000	1	24	2190	8760	E
	Cleaning Area	246	O/W	terty.,open	3'x3'		9.00	sq. ft.	1.000	1	24	2190	8760	E
	GASO Pump	247	O/W	terty.,open	2'diam.		3.14	sq. ft.	1.000	1	24	2190	8760	E
	Wastewater Pan	8145	O/W	terty.,open	4' x 4'		16.00	sq.ft	1.000	1	24	2190	8760	E
	Shipping Pump Sump	9560	O/W	terty.,open	4.5'x3.5'		15.95	sq.ft	1.000	1	24	2190	8760	E
Solvent/Coatings	Solvents	N/A			Rule Limits				1.00	1	24	2190	8760	F
	Surface Coating	N/A			Rule Limits				1.00	1	24	2190	8760	

* Note: The hours per day and hours per year listed for the crane engine are not operational limits, the engine's operation is limited by fuel use: 25 gal/day and 2500 gal/year.

Table 5.1-2
Venoco Carpinteria Part 70/PTO 7996 R8
Equipment Emission Factors

Equipment Category	Emissions Unit	APCD ID #	SCC Code	Emission Factors NOx	ROC	CO	SOx	PM	PM10	Units	References
Internal Comb.Engines	Cooper/GMVA-10:#46729	107447	2-02-002-52	0.176	0.490	0.776	0.002	0.009	0.009	lb/MMBtu	A
	IR-1/8SVG-4:# 8CS1369	107455	2-02-002-53	0.380	0.320	10.100	0.002	0.019	0.019	lb/MMBtu	A
	IR-3/8SVG-4:# 8CS1085	107456	2-02-002-53	0.494	0.320	10.100	0.002	0.019	0.019	lb/MMBtu	A
	IR-4/8SVG-4: # Unit 4	107457	2-02-002-53	0.494	0.320	10.100	0.012	0.019	0.019	lb/MMBtu	A
	IR-5/8SVG-4:#Unit 5	107458	2-02-002-53	0.494	0.320	10.100	0.012	0.019	0.019	lb/MMBtu	A
	IR-6/8SVG-4:#Unit 6	107459	2-02-002-53	0.494	0.320	10.100	0.012	0.019	0.019	lb/MMBtu	A
	G-01/ Waukesha F-11 GSI	100222	2-02-002-53	0.041	0.041	0.163	0.012	0.010	0.010	lb/MMBtu	A
Crane DICE	Volvo TAD 750VE	109278	2-03-001-01	2.8	0.2	2.6	0.006	0.01	0.01	g/bhp-hr	C
Combustion - External	Thermnl Htr:H-101	191	1-03-006-03	0.090	0.005	0.076	0.002	0.007	0.007	lb/MMBtu	D
	Glycol R-blr:#E-109	200	1-03-006-03	0.090	0.005	0.076	0.002	0.007	0.007	lb/MMBtu	D
	Indirect Htr.: F-1	195	1-03-006-03	0.090	0.005	0.076	0.002	0.007	0.007	lb/MMBtu	D
Crude Oil Tank	T-861	112320		-	-	-	-	-	-	-	
Wastewater Tanks	Wastewater WW-T1	8168	3-06-005-06	-	0.000630	-	-	-	-	lb/ft²-day	E
	Wastewater WW-T2	8169	3-06-005-06	-	0.000630	-	-	-	-	lb/ft²-day	E
	Wastewater SH-T24637	112322		-	0.000630	-	-	-	-	lb/ft²-day	E
	Wastewater SA-T25380	112321		-	0.000630	-	-	-	-	lb/ft²-day	E
	Blowdown tank SA-V16	8170	3-06-005-06	-	0.000630	-	-	-	-	lb/ft²-day	E
Pigging Receivers/ Launchers	Gas Receiver	9275	3-10-002-99	-	0.0162	-	-	-	-	lb ROC/acf-ev.	G
	Oil Receiver	112341		-	0.064	-	-	-	-	lb ROC/acf-ev.	G
	Rincon Oil Launcher	112342		-	0.064	-	-	-	-	lb ROC/acf-ev.	
Sumps	Grace Pig	242	3-10-001-04	-	0.0058	-	-	-	-	lb/ft²-day	E
	SA V-3 FWKO	243	3-10-001-04	-	0.0058	-	-	-	-	lb/ft²-day	E
	SA V-4 FWKO	244	3-10-001-04	-	0.0058	-	-	-	-	lb/ft²-day	E
	SA V-13 FWKO	245	3-10-001-04	-	0.0058	-	-	-	-	lb/ft²-day	E
	Cleaning Area	246	3-10-001-04	-	0.0058	-	-	-	-	lb/ft²-day	E
	GASO Pump	247	3-10-001-04	-	0.0058	-	-	-	-	lb/ft²-day	E
	Wastewater Pan	112323		-	0.0058	-	-	-	-	lb/ft²-day	E
	Shipping Pump Sump	112327		-	0.0058	-	-	-	-	lb/ft²-day	E
Solvent/Coatings	Solvents	N/A			Rule Limits					lbs ROC/gal	F
	Surface Coating	N/A			Rule Limits					lbs ROC/gal	

** — source test data is used as em.fac. for these engines, based on the APCD permits ATC 5704/5651/6408/PTO 7482 applicable to the ICE's

Table 5.1-3
Venoco Carpinteria Part 70/PTO 7996 R8
Hourly and Daily Emissions

Equipment Category	Emissions Unit	APCD ID #	NOx lbs/hr	NOx lbs/day	ROC lbs/hr	ROC lbs/day	CO lbs/hr	CO lbs/day	SOx lbs/hr	SOx lbs/day	PM lbs/hr	PM lbs/day	PM10 lbs/hr	PM10 lbs/day	LIMIT*** Enforceability
Internal Comb.Engines	Cooper/GMVA-10:#46729	107447	2.15	51.70	6.00	143.94	9.50	227.96	0.02	0.54	0.11	2.64	0.11	2.64	FE
	IR-1/8SVG-4:# 8CS1369	107455	1.42	34.11	1.20	28.72	37.77	906.58	0.01	0.16	0.07	1.71	0.07	1.71	FE
	IR-3/8SVG-4:# 8CS1085	107456	2.41	57.90	1.56	37.51	49.33	1183.88	0.01	0.22	0.09	2.23	0.09	2.23	FE
	IR-4/8SVG-4: # Unit 4	107457	1.65	39.48	1.07	25.57	33.63	807.19	0.04	0.98	0.06	1.52	0.06	1.52	FE
	IR-5/8SVG-4:#Unit 5	107458	2.41	57.90	1.56	37.51	49.33	1183.88	0.06	1.43	0.09	2.23	0.09	2.23	FE
	IR-6/8SVG-4:#Unit 6	107459	2.41	57.90	1.56	37.51	49.33	1183.88	0.06	1.43	0.09	2.23	0.09	2.23	FE
	G-01/ Waukesha F-11 GSI	109222	0.07	1.76	0.07	1.76	0.29	6.98	0.02	0.52	0.02	0.43	0.02	0.43	FE
Crane DICE	Volvo TAD 750VE	109278	1.41	2.98	0.10	0.21	1.31	2.77	0.00	0.01	0.01	0.01	0.01	0.01	FE
			13.94	**303.74**	**13.12**	**312.74**	**230.49**	**5503.12**	**0.22**	**5.30**	**0.55**	**12.99**	**0.55**	**12.99**	
Combustion - External	Thermnl Htr:H-101	191	0.45	10.84	0.02	0.60	0.38	9.10	0.01	0.24	0.03	0.82	0.03	0.82	FE
	Glycol R-blr:#E-109	200	0.07	1.76	0.00	0.10	0.06	1.48	0.00	0.04	0.01	0.13	0.01	0.13	FE
	Indirect Htr.: F-1	195	0.41	9.77	0.02	0.54	0.34	8.21	0.01	0.22	0.03	0.74	0.03	0.74	FE
			0.93	**22.37**	**0.05**	**1.23**	**0.78**	**18.79**	**0.02**	**0.49**	**0.07**	**1.70**	**0.07**	**1.70**	
Crude Oil Tank	T-861	112320	-	-	**0.41**	**9.86**	-	-	-	-	-	-	-	-	
Oil-Water Storage Tank	Wastewater WW-T1	8168	-	-	0.02	0.44	-	-	-	-	-	-	-	-	FE
	Wastewater WW-T2	8169	-	-	0.02	0.44	-	-	-	-	-	-	-	-	FE
	Wastewater SH-T24637	112322	-	-	0.03	0.70	-	-	-	-	-	-	-	-	
	Wastewater SA-T25380	112321	-	-	0.03	0.70	-	-	-	-	-	-	-	-	
	Blowdown tank SA-V16	8170	-	-	0.00	0.04	-	-	-	-	-	-	-	-	A
					0.10	**2.32**									
Pigging Receivers/	Gas Receiver	9275	-	-	0.12	0.12	-	-	-	-	-	-	-	-	A
Launchers	Oil Receiver	112341	-	-	0.42	0.42	-	-	-	-	-	-	-	-	
	Rincon Oil Launcher	112342	-	-	0.48	0.48	-	-	-	-	-	-	-	-	
					1.02	**1.02**									
Sumps	Grce/Gail Pig	242	-	-	0.01	0.28	-	-	-	-	-	-	-	-	A
	SA V-3 FWKO	243	-	-	0.00	0.12	-	-	-	-	-	-	-	-	A
	SA V-4 FWKO	244	-	-	0.00	0.04	-	-	-	-	-	-	-	-	A
	SA V-13 FWKO	245	-	-	0.00	0.04	-	-	-	-	-	-	-	-	A
	Cleaning Area	246	-	-	0.00	0.05	-	-	-	-	-	-	-	-	A
	GASO Pump	247	-	-	0.00	0.02	-	-	-	-	-	-	-	-	
	Wastewater Pan	112323	-	-	0.00	0.09	-	-	-	-	-	-	-	-	
	Shipping Pump Sump	112327	-	-	0.00	0.09	-	-	-	-	-	-	-	-	
					0.03	**0.73**									
Solvent/Coatings	Solvents	N/A	-	-	Rule Limits	Rule Limits	-	-	-	-	-	-	-	-	
	Surface Coating	N/A	-	-	Rule Limits	Rule Limits	-	-	-	-	-	-	-	-	
															A

*** 'FE' means 'federally enforceable'
*** 'A' means APCD enforceable only

Table 5.1-4
Venoco Carpinteria Part 70/PTO 7996 R8
Quarterly and Annual Emissions

Equipment Category	Emissions Unit	APCD ID #	NOx TPQ	NOx TPY	ROC TPQ	ROC TPY	CO TPQ	CO TPY	SOx TPQ	SOx TPY	PM TPQ	PM TPY	PM10 TPQ	PM10 TPY	LIMIT*** Enforceability
Internal Comb.Engines	Cooper/GMVA-10:#46729	107447	2.36	9.44	6.57	26.27	10.40	41.60	0.02	0.10	0.12	0.48	0.12	0.48	FE
	IR-1/8SVG-4:# 8CS1369	107455	1.56	6.22	1.31	5.24	41.36	165.45	0.01	0.03	0.08	0.31	0.08	0.31	FE
	IR-3/8SVG-4:# 8CS1085	107456	2.64	10.57	1.71	6.85	54.01	216.06	0.01	0.04	0.10	0.41	0.10	0.41	FE
	IR-4/8SVG-4: # Unit 4	107457	1.80	7.21	1.17	4.67	36.83	147.31	0.04	0.18	0.07	0.28	0.07	0.28	FE
	IR-5/8SVG-4:#Unit 5	107458	2.64	10.57	1.71	6.85	54.01	216.06	0.07	0.26	0.10	0.41	0.10	0.41	FE
	IR-6/8SVG-4:#Unit 6	107459	2.64	10.57	1.71	6.85	54.01	216.06	0.07	0.26	0.10	0.41	0.10	0.41	FE
	G-01/ Waukesha F-11 GSI	100222	0.08	0.32	0.08	0.32	0.32	1.27	0.02	0.10	0.02	0.08	0.02	0.08	FE
Crane DICE	Volvo TAD 750VE	109278	0.03	0.15	0.00	0.01	0.03	0.14	0.00	0.00	0.00	0.00	0.00	0.00	FE
			13.76	**55.04**	**14.26**	**57.05**	**250.99**	**1003.95**	**0.24**	**0.97**	**0.59**	**2.37**	**0.59**	**2.37**	
Combustion - External	Thermnl Htr:H-101	191	0.49	1.98	0.03	0.11	0.42	1.66	0.01	0.04	0.04	0.15	0.04	0.15	FE
	Glycol R-blr:#E-109	200	0.08	0.32	0.00	0.02	0.07	0.27	0.00	0.01	0.01	0.02	0.01	0.02	FE
	Indirect Htr.: F-1	195	0.45	1.78	0.02	0.10	0.37	1.50	0.01	0.04	0.03	0.14	0.03	0.14	FE
			1.02	**4.08**	**0.06**	**0.22**	**0.86**	**3.43**	**0.02**	**0.09**	**0.08**	**0.31**	**0.08**	**0.31**	
Crude Oil Tank	T-861	112320			**0.45**	**1.80**									
Oil-Water Storage Tank	Wastewater WW-T1	8168	-	-	0.02	0.08	-	-	-	-	-	-	-	-	FE
	Wastewater WW-T2	8169	-	-	0.02	0.08	-	-	-	-	-	-	-	-	FE
	Wastewater SH-T24637	112322	-	-	0.03	0.13	-	-	-	-	-	-	-	-	
	Wastewater SA-T25380	112321	-	-	0.03	0.13	-	-	-	-	-	-	-	-	
	Blowdown tank SA-V16	8170	-	-	0.00	0.01	-	-	-	-	-	-	-	-	A
					0.11	**0.42**									
Pigging Receivers/ Launchers	Gas Receiver	9275	-	-	0.00	0.01	-	-	-	-	-	-	-	-	A
	Oil Receiver	112341	-	-	0.01	0.02	-	-	-	-	-	-	-	-	A
	Rincon Oil Launcher	112342	-	-	0.01	0.03	-	-	-	-	-	-	-	-	A
					0.01	**0.05**									A
Sumps	Grce/Gail Pig	242	-	-	0.01	0.05	-	-	-	-	-	-	-	-	A
	SA V-3 FWKO	243	-	-	0.01	0.02	-	-	-	-	-	-	-	-	A
	SA V-4 FWKO	244	-	-	0.00	0.01	-	-	-	-	-	-	-	-	A
	SA V-13 FWKO	245	-	-	0.00	0.01	-	-	-	-	-	-	-	-	A
	Cleaning Area	246	-	-	0.00	0.01	-	-	-	-	-	-	-	-	A
	GASO Pump	247	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
	Wastewater Pan	112323	-	-	0.00	0.02	-	-	-	-	-	-	-	-	A
	Shipping Pump Sump	112327	-	-	0.00	0.02	-	-	-	-	-	-	-	-	A
					0.03	**0.13**									
Solvent/Coatings	Solvents	N/A	-	-	Rule Limits	Rule Limits	-	-	-	-	-	-	-	-	
	Surface Coating	N/A	-	-	Rule Limits	Rule Limits	-	-	-	-	-	-	-	-	

*** 'FE' means 'federally enforceable'
*** 'A' means APCD enforceable only

Table 5.2
Venoco Carpinteria Part 70/PTO 7996 R8
Total Permitted Facility Emissions

A. Peak Hourly (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Comb. Engines (incl. Crane)	13.94	13.12	230.49	0.22	0.55	0.55
Combustion - External	0.93	0.05	0.78	0.02	0.07	0.07
Crude Oil Tank	-	0.41	-	-	-	-
Wastewater Tanks	-	0.10	-	-	-	-
Pigging Receivers/Launchers	-	1.02	-	-	-	-
Sumps	-	0.03	-	-	-	-
Fug.Comp. - Gas/LightLiquid Service	-	3.71	-	-	-	-
Fug.Comp. - Oil Service	-	1.68	-	-	-	-
TOTALS (lb/hr)	**14.87**	**20.13**	**231.27**	**0.24**	**0.62**	**0.62**

B. Peak Daily (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Comb. Engines (incl. Crane)	303.74	312.74	5503.12	5.30	12.99	12.99
Combustion - External	22.37	1.23	18.79	0.49	1.70	1.70
Crude Oil Tank	-	9.86	-	-	-	-
Wastewater Tanks	-	2.32	-	-	-	-
Pigging Receivers/Launchers	-	1.02	-	-	-	-
Sumps	-	0.73	-	-	-	-
Fug.Comp. - Gas/LightLiquid Service	-	89.15	-	-	-	-
Fug.Comp. - Oil Service	-	40.39	-	-	-	-
TOTALS (lb/day)	**326.11**	**457.45**	**5,521.91**	**5.79**	**14.69**	**14.69**

C. Peak Quarterly (Tons/Qtr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Comb. Engines (incl. Crane)	13.76	14.26	250.99	0.24	0.59	0.59
Combustion - External	1.02	0.06	0.86	0.02	0.08	0.08
Crude Oil Tank	-	0.45	-	-	-	-
Wastewater Tanks	-	0.11	-	-	-	-
Pigging Receiver	-	0.01	-	-	-	-
Sumps	-	0.03	-	-	-	-
Fug.Comp. - Gas/LightLiquid Service	-	4.07	-	-	-	-
Fug.Comp. - Oil Service	-	1.84	-	-	-	-
TOTALS (ton/qtr)	**14.78**	**20.83**	**251.84**	**0.26**	**0.67**	**0.67**

D. Peak Annual (Ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Comb. Engines (incl. Crane)	55.04	57.05	1003.95	0.97	2.37	2.37
Combustion - External	4.08	0.22	3.43	0.09	0.31	0.31
Crude Oil Tank	-	1.80	-	-	-	-
Wastewater Tanks	-	0.42	-	-	-	-
Pigging Receiver	-	0.05	-	-	-	-
Sumps	-	0.13	-	-	-	-
Fug.Comp. - Gas/LightLiquid Service	-	16.27	-	-	-	-
Fug.Comp. - Oil Service	-	7.37	-	-	-	-
TOTALS (ton/yr)	**59.12**	**83.32**	**1007.38**	**1.06**	**2.68**	**2.68**

Table 5.3
Venoco Carpinteria Part 70/PTO 7996 R8
Federal Potential to Emit

A. Peak Hourly (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Comb. Engines (incl.crane)	13.94	13.12	230.49	0.22	0.55	0.55
Combustion - External	0.93	0.05	0.78	0.02	0.07	0.07
Crude Oil Tank	-	0.41	-	-	-	-
Wastewater Tanks	-	0.04	-	-	-	-
Pigging Receivers/Launchers	-	-	-	-	-	-
Sumps	-	-	-	-	-	-
Fug.Comp. - Gas/LightLiquid Service	-	-	-	-	-	-
Fug.Comp. - Oil Service	-	-	-	-	-	-
TOTALS (lb/hr)	**14.87**	**13.62**	**231.27**	**0.24**	**0.62**	**0.62**

D. Peak Annual (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Comb. Engines (incl.crane)	55.04	57.05	1003.95	0.97	2.37	2.37
Combustion - External	4.08	0.22	3.43	0.09	0.31	0.31
Crude Oil Tank	-	1.80	-	-	-	-
Wastewater Tanks	-	0.16	-	-	-	-
Pigging Receivers/Launchers	-	-	-	-	-	-
Sumps	-	-	-	-	-	-
Fug.Comp. - Gas/LightLiquid Service	-	-	-	-	-	-
Fug.Comp. - Oil Service	-	-	-	-	-	-
TOTALS (ton/yr)	**59.12**	**59.23**	**1007.38**	**1.06**	**2.68**	**2.68**

TABLE 5.5 - Net Emissions Increase
Venoco Carpinteria Part 70/PTO 7996 R8
Venoco Carpinteria

I. This Projects "I" NEI-90

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
		0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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 9227	Feb-96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 9323	Oct-94	0.00	0.00	1.14	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10123	Apr-99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10405	May-01	1.76	0.32	5.33	0.97	6.98	1.27	0.55	0.10	0.43	0.08	0.43	0.08
ATC 12214	2007	2.98	0.15	0.21	0.01	2.77	0.14	0.01	0.00	0.01	0.00	0.01	0.00
Totals		**4.74**	**0.47**	**6.68**	**1.19**	**9.75**	**1.41**	**0.56**	**0.10**	**0.44**	**0.08**	**0.44**	**0.08**

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
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
Totals		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

V. Calculated 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"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P1	4.74	0.47	6.68	1.19	9.75	1.41	0.56	0.10	0.44	0.08	0.44	0.08
P2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FNEI-90	**4.74**	**0.47**	**6.68**	**1.19**	**9.75**	**1.41**	**0.56**	**0.10**	**0.44**	**0.08**	**0.44**	**0.08**

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.

6.0 Air Quality Impact Analyses

6.1 Modeling

Air quality modeling has not been required for this stationary source.

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

Venoco Carpinteria is subject to the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("AB 2588"). In October 2006, the APCD conducted a final HRA for the Venoco Carpinteria Gas Plant and Oil Pipeline, using the Hotspots Analysis and Reporting Program ("HARP") software, Version 1.1 (Build 23.02.10). Cancer risk and chronic and acute non-cancer hazard index risk values were calculated and compared to significance thresholds for cancer and chronic and acute non-cancer risk adopted by the APCD's Board of Directors.

Based on the final HRA with the 1999 toxic emissions inventory, Venoco Carpinteria exceeded the APCD's significance thresholds for cancer and acute non-cancer risk. The cancer risk was primarily due to benzene emissions from leaking fugitive components. The acute non-cancer risk driver was acrolein from the internal combustion engines. The HRA Report documents the results and the inputs to the model and is found in the AB 2588 Project File.

Venoco formally requested installing NSCR on IR#3 and increasing the stack height of IR#1 to reduce the acute non-cancer risk in their December 19, 2006 *Risk Reduction and Audit Plan* (RRAP). The APCD commented on the RRAP on January 12, 2007. Venoco responded to the APCD comments on February 13, 2007. Based on Venoco's response, the APCD conditionally approved the RRAP on April 4, 2007. The implementation of the RRAP reduced the cancer and acute non-cancer risk to the following levels:

	Venoco Carpinteria Max Risks	Significance Threshold
Cancer risk:	8.1 /million	>10/million
Chronic non-cancer risk:	0.08	> 1
Acute non-cancer risk:	0.58	> 1

In addition to the acute non-cancer risk reduction measure, the RRAP included the three other risk reduction measures listed below, which are enforced under this permit :

- Fugitive benzene emission limits and implementation of the correlation equation methodology following the guidelines of APCD's Policy and Procedure 6100.072.1998, *Use of Correlation Equation Methodology to Estimate Mass ROC emission at Oil and Gas Facilities* (see ATC 12230 and ATC 12229). The fugitive benzene limits listed in this permit apply to all components at the facility, including fugitive components installed under the Rule 202 de minimis exemption.
- The Cooper engine is currently out of service (see PT 70/PTO 7996-R7). The engine will not be brought back into service until it has been source tested and the HRA is updated with source test results to ensure the operation of the engine will not exceed APCD's significant risk thresholds.
- Wastewater Tank T-380 is currently out of service (see PT 70/PTO 7995-R7). The tank will not be brought back into service until an updated HRA is performed ensure the operation of the tank will not exceed APCD's significant risk thresholds.

The RRAP measures on IR#1 and IR#3, and on fugitive benzene emissions, have been implemented via ATC No. 12267 (IR#1 & IR#3), and ATC Nos. 12229 & 12230 (fugitive benzene), as enforced by this permit. The Cooper engine and wastewater tank T-380 remain out of service. Thus, the APCD considers this facility to be below significance levels for both cancer and non-cancer risks.

7.0 CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has been classified as non attainment for the state eight-hour ozone standard as well as the state 24-hour and annual PM_{10} ambient air quality standards. The County is either in attainment of or unclassified with respect to all other state ambient air quality standards.

Santa Barbara County's air quality has historically violated 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. This eight-hour ozone standard, originally promulgated by USEPA on July 18, 1997, was 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. In March 2008, USEPA lowered that standard to 0.075 parts per million. While USEPA has yet to formally designate Santa Barbara County with respect to the 0.075 parts per million standard, the state has recommended to USEPA that Santa Barbara County be designated as attainment.

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 towards attainment or maintenance of federal and state ambient air quality

standards. Under APCD regulations, any modifications at the Gas Plant (or the Venoco Carpinteria source) that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs./day must apply BACT (NAR). Additional increases may 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_{10} for which the level is 80 lbs/day. These thresholds apply to net emissions increases since November 15, 1990 as defined in District Rule 801.

7.2 Clean Air Plan

On August 16, 2007, the APCD Board adopted the 2007 Clean Air Plan to chart a course of action that provided 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 were developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments. Santa Barbara County has now attained the state one-hour ozone standard but does not attain the state eight-hour ozone standard.

In 2010 the APCD will update those provisions of the 2007 Clean Air Plan which demonstrate expeditious attainment of the state eight-hour ozone standard. No changes will be made 2007 Clean Air Plan sections which demonstrate continued maintenance of the federal eight-hour ozone standard.

7.3 Offset Requirements

The Venoco Carpinteria stationary source does not currently require emission offsets.

Minor modifications occurred at the Gas Plant in 1980 to accommodate the throughput from OCS Platform Grace. These modifications required 75 lb/hour NOx emissions reductions as offsets. The required reduction was provided by Chevron's Oxnard-West Montalvo facility which surrendered four (4) of its permits to operate five (5) IC engines (with a total 3,440 hp rating) to the Ventura APCD. This transaction also netted Chevron a continuous NOx reduction credit of 9 lb/hour from the Santa Barbara APCD to apply to any project occurring in the APCD, but only prior to June 30, 1982. This credit is not associated with any current Venoco projects.

7.4 Emission Reduction Credits

This facility provides ROC and NOx emission reduction credits to Chevron USA's Point Arguello Project under the APCD ATC 5704, Exxon USA's Santa Ynez Project under the APCD ATC 5651, and to Gaviota Terminal Co.'s GIMT Project under the APCD ATC 6408. The NO_x emission reduction credits come from the 249.8 tons/yr. emission reductions effected at three large gas compressors at the Gas Plant. The ROC emission reduction credits of 119.91 tons/yr. are based on a fugitive hydrocarbon inspection and maintenance program implemented at the Gas Plant.

From the document supporting Pt. Arguello ATC 5704, it is noted that the emission reduction credits were based on available Gas Plant P&I Ds showing miscellaneous fugitive components in place; no field surveys were made to verify the actual count of these components against the P&I D count until late 1990. In short, the component count at Gas Plant was deemed large enough to provide the required offsets even with a significant margin of error. The Gas Plant component field survey in 1990-91 established a higher number of components, as reflected by the APCD inspection reports. However, this did not change the ERC granted to Chevron; nor does Venoco now qualify to receive

any additional ERCs based on the discovered discrepancy. The emission reduction credits or ERCs (created in 1987) were based on the following activities to be performed by Venoco at this facility:

ROC: The ROC credits are based on the *Fugitive Components Inspection and Maintenance (I&M) Plan* submitted by Chevron in December 1987 and approved by the APCD. This plan is basically modeled after the NSPS, Subpart KKK. Based on APCD data, implementation of this plan provided 80 percent fugitive ROC emissions reduction from the components. All the project ROC emissions were computed based on the APCD-recommended *Tecolote Report, April, 1986*, so were the ERCs from the Chevron's I&M measures. The I&M Plan was implemented via an APCD PTO 7482 that was not based on any ATC. The component counts for the ERCs were based on the existing data in the APCD files. The emission reduction measures, pursuant to the plan, provides emission credits to offset ROC emissions at Exxon's Santa Ynez Project (49.8 tons/yr.) and Chevron's Pt. Arguello Project (13.5 tons/yr.). Gaviota Terminal Co.'s GIMT Project (59.38 tons/yr.) has released the ERCs it previously needed. The efficacy of the I&M measures are checked during annual inspections at Venoco Gas Plant.

NOx: The NOx credits are based on the IC engine modifications carried out at the Venoco Gas Plant and the consequent NOx emissions reduction. The Cooper engine was modified to perform as a "clean burn" i.e., very lean burn engine and two Ingersoll-Rand engines were modified for pre-stratified charge operations. All three engines were source tested in 1986 to provide the pre-modification NOx and ROC emissions factor to be used to compute baseline emissions from these engines. Venoco provided IC engine maintenance plans for all the three engines to the APCD for approval and then implemented the plan. The plans specified the significant performance parameters of the emission control elements, which were to be maintained during the project lifetime. This ensured that any subsequent performance degradation of these engines did not exacerbate the emission reductions originally achieved in 1986. All subsequent annual source tests at Venoco must demonstrate complete compliance with Venoco's engine maintenance plan and the established performance parameters for the three engines. The emission reduction measures, pursuant to the plan, provide emission credits to offset NO_x emissions at Exxon's Santa Ynez Project (166 tons/yr.) and Chevron's Pt. Arguello Project (87 tons/yr.). The GIMT Project (25.6 tons/yr.) has released the ERCs it previously needed.

8.0 Lead Agency Permit Consistency

Except as discussed below, to the best of the APCD's knowledge, no other governmental agency's permit requires air quality mitigation. In September, 1979, the USEPA issued Chevron an Authority to Construct permit (NSR 4-4-7/OCS-79-1) for the Santa Rosa Project. The issuance of this permit is consistent with the requirements of the USEPA's 1979 permit.

9.0 Permit Conditions

This section lists the applicable permit conditions for the Carpinteria Gas Plant. 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, and 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(s) shall prevail.

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 the Gas Plant:

A.1 **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)(iii), APCD Rules 102, 1303.D.1.j, 1303.D.1.n, 1303.D.1.l, 1303.D.1.k, 1303.D.1.o*]

A.2 **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: APCD Rule 1303.F*]

A.3 **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.4 **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*]

A.5 **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, 1303.D.1.i*]

A.6 **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 apply for renewal of the Part 70 permit no 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 Rules 1304.D.1.*]

A.7 **Payment of Fees.** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance monitoring 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.p, 1304.D.11 and 40 CFR 70.6(a)(7)*]

A.8 **Deviation from Permit Requirements.** The permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable federal requirements within 7 days after discovery of the violation, but not later than 180 days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505. *Breakdown Conditions,* or Rule 1303.F *Emergency Provisions.* [*Re: APCD Rule 1303.D.1.g, 40 CFR 70.6(a)(3)(iii)(B)*]

A.9 **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.10 **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.11 **Recordkeeping Requirements**. Records of all monitoring and support information shall include the following:

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

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

A.12 **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 and revise/revoke/reissue a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening.
[*Re: 40 CFR 70.7(f)(1)-(3), 40 CFR 70.6(a)(2)*]]

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.

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.

Venoco shall determine compliance with this Rule per Condition 9.C.12, as specified later. [*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 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/scf (calculated as H_2S) for gaseous fuel. Compliance with the requirements for gaseous fuels shall be based on measurements of the fuel gas using Draeger tubes, ASTM, or other APCD-approved methods; and for diesel fuels shall be based on 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/ Coating Use Condition of this permit. [*Re: APCD Rule 317*]

B.8 **Solvent Cleaning Operations (Rule 321).** This rule stipulates equipment and operational standards for process activities using solvents. Venoco shall comply with its Part 70 permit application 7996 statement that, except for routine maintenance involving wipe cleaning etc., it does not use solvents at the facility. [*Re: APCD Rule 321*]

B.9 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Venoco's compliance with the Solvent/Coating Use Condition of this permit and facility inspections. [*Re: APCD Rule 322*]

B.10 **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/Coating Use Condition of this permit and facility inspections. [*Re: APCD Rules 323*]

B.11 **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/Coating Use Condition of this permit and facility inspections. [*Re: APCD Rule 324*]

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

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

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

[Re: APCD Rule 353]

B.13 **Emergency Episode Plan.** As necessary, Venoco shall implement the Emergency Episode Plan for the Gas Plant. Upon written request by the APCD, Venoco shall provide the APCD with an updated plan . [*Re: APCD Rule 603 and 1303*]

B.14 **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), including any applicable recordkeeping and reporting requirements.

9.C *Equipment Specific Conditions*

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

C.1 **IC Engines Providing Emission Reduction Credits (ERCs).** The following equipment is included in this emission category:

Table C.1-1 (Three IC Engines, Subject to Emissions Control and Providing ERCs)

APCD ID No.	Venoco ID No.	Name
107447	Cooper	Cooper-Bessemer, GMVA-10, 1800 bhp 1.Equipped with turbocharger to maintain lean air fuel ratio 2.Equipped with special 'igniter' to assist full combustion
107455	IR #1	Ingersoll-Rand, 8SVG-4, 440 hp Equipped with pre-stratified charge (PSC) control technology
107456	IR #3	Ingersoll-Rand, 8SVG-4, 440 hp Equipped with NSCR-control, assisted by an AFRC unit

(a) **Emission Limits.** Mass emissions from the engines listed above shall not exceed the limits specified for these engines in Tables 5.1-3 and 5.1-4. Compliance with this condition will be based on the monitoring, recordkeeping, and reporting conditions listed below.

(i) The exhaust from the IC engines listed in Table C.1-1 shall not exceed the following pollutant concentrations:

Table C.1-2 (Emission Limits for the IC Engines Providing ERCs)

Engine	**APCD Applicable Requirements (based on Rule 333 and ERC Agreement with Permittee)**			
	NO_x ppmvd @ 15% O_2	**% Control**	**ROC ppmvd @ 15% O_2**	**CO ppmvd @ 15% O_2**
Cooper	48	N/A[a]	381	345
IR #1	50	90	250	4500
IR #3	50	90	250	4500

a. The 90% control option is not applicable to the Cooper Bessemer engine, therefore the Cooper must meet the ppmv requirement.

(ii) Formaldehyde, Acetaldehyde, Acrolein, and Benzene emissions from IR#3 shall not exceed the limits listed below:

Table C.1-3 (Hazardous Air Pollutant Limits for IR#3)

Formaldehyde	**Acetaldehyde**	**Acrolein**	**Benzene**
lb/hr	**lb/hr**	**lb/hr**	**lb/hr**
1.61E-03	4.44E-04	3.27E-06	8.30E-04

(b) **Operational Limits.** Operational requirements (ii), (iv), and (vii) below are suspended for the Cooper IC engine, until the engine is approved by the APCD to return to regular service. Otherwise, the following operational limits apply to all three IC engines listed in Table C.1-1:

(i) Heat Input Limits. The daily and annual heat input to IR #3 shall not exceed the limits listed below.

Device		Heat Input Limit (MMBtu)	
Device ID No.	Owner ID	(per day)	(per yr)
107456	IR 3	117.22	42,784

(ii) Gaseous Fuel Sulfur Limit. The gaseous fuels combusted by the IC engines shall have a fuel sulfur content (calculated as H_2S at standard conditions, 60°F and 14.7 psia) not exceeding 0.75 grains per 100 cubic feet (12 ppmvd).
(Reference: APCD Rule 311, APCD ATC 5704/5651/6408/PTO7482)

(iii) Engine Identification. Each IC engine shall be identified with a permanently-affixed plate, tag or marking, referencing either: (i) the ICE's make, model, serial number, rated BHP and corresponding RPM; or (ii) the operator's unique tag number. The tag shall be made accessible and legible to facilitate APCD inspection of the ICE.
(Reference: APCD Rule 333.F.1)

(iv) Inspection and Maintenance Plan. The IC engines shall be operated at all times in accordance with the *Inspection and Maintenance Plan for Compressor IC Engines* and any subsequent APCD-approved updates.

(v) Air Fuel Ratio Controller (AFRC) Set Points. The AFRC set points for IR #3 shall be maintained throughout the year within the range demonstrated during the source test in order to be in compliance with the applicable emission limits. This range shall be documented in the CAM Plan and updated if necessary based on each successive source test.

(vi) Catalyst Replacement. The permittee may replace the IR #3 catalyst bed with an identical catalyst bed as needed to maintain the effectiveness of the control equipment. After each such replacement, the permittee shall check the NOx level in the exhaust with a portable analyzer and submit the results to the APCD within the next 7 days.

(vii) Daily Engine Operating Parameters. The following engine operating parameters for the Cooper engine shall not exceed the limits specified below at any time during engine operation:

1. Air Manifold Pressure: 18.8 - 23.0 in. Hg
2. Igniter pressure: 20 - 40 psig (per the latest *Compliance Plan*)
3. Ignition timing: Between 1.8° - 2.5° BTDC.

A daily log shall be maintained, recording the above engine operating parameters for the Cooper- engine. A daily log shall also be maintained for the Ingersoll Rand engines recording the following parameters: air manifold pressure, fuel pressure, engine speed, and air manifold temperature. These logs shall be made available to APCD personnel upon request. The APCD may require additional parameters to be logged upon showing reasonable need. Each engine shall be operated within the source tested parameters, per APCD's letter to source.
(Reference: APCD ATC 5704/5651/6408/PTO7482)

(viii) Emission Reduction Credits Requirements: Real, Surplus, Quantifiable and Enforceable. The emission reductions created by this permit are for the use as offsets by: the Point Arguello Companies to meet the requirements under ATC-5704 for the Point Arguello Project and by Exxon to meet the requirements under ATC-5651 for the Santa Ynez Project, and any PTO issued for facilities constructed under those ATCs. Emission reduction measures implemented to create the required emission reductions shall be in place and maintained for the life of each project. This permit does not authorize the dedication of these emission reductions to any other project without prior approval of the APCD. The APCD will assess any such proposal in accordance with Rules and Regulations in effect at the time an application is deemed complete or later date if provided by APCD Rules.

To assure that offsets are real, quantifiable, surplus and enforceable, Venoco shall not utilize a shift in load from the controlled engines subject to this permit to other uncontrolled point sources at the stationary source as a means of generating additional emission reduction credits (ERCs). For the purposes of this condition, shift in load is defined as a redirecting of fuel from a controlled source to an uncontrolled source for the sole purpose of increasing the uncontrolled source baseline fuel usage resulting in the generation of false surplus ERCs. If such shift in load does occur, the increased emissions at the uncontrolled point source shall not be considered in any baseline calculation for possible ERC for that uncontrolled point source.
(Reference: APCD ATC 5704/5651/6408,12267/PTO7482)

(ix) IR #1 Stack Height. The top of the exhaust stack for compressor engine IR#1 shall be at least as high as the top of the engine building.

(c) **Monitoring.** With the exception of item (vii), the source testing and periodic monitoring conditions listed below apply to all three IC engines listed in Table C.1-1. Requirements (i) and (ii) below for the Cooper IC engine are suspended, until the engine is approved by the APCD to return to service. However, the in-line fuel use meter and the hour meter shall remain in place on the Cooper IC engine.

(i) Source Testing. Source testing shall be performed annually for these three IC engines, with an anniversary date of January, and adhere to the requirements of Condition C.13 below.

(ii) Toxic Source Testing. Source testing of hazardous air pollutant emissions from IR #3 shall be conducted if requested in writing by the APCD.

(iii) Fuel Use Metering. Venoco shall use continuously recording in-line fuel meter with seven day chart recorders, or APCD-approved equivalent, measuring gaseous fuel to monitor the fuel consumed by each individual gas-fired ICE. Venoco shall follow most current version of the *Process Monitor Calibration and Maintenance Plan* approved by the APCD. These Plans may only be revised upon written APCD approval.

(iv) Fuel Data Monitoring. The permittee shall measure the total sulfur content of gaseous fuel monthly in accordance with current ASTM-D1072 or an APCD-approved equivalent method. The gross heating value of the gaseous fuel (Btu/scf) shall be measured quarterly per ARB or APCD-approved test method.

(v) Non-Resettable Hour Meter. The engines subject to this permit shall each be equipped with a non-resettable hour meter. The permittee shall keep a written log of the hours of operation and the number of operating days per month.

(vi) Equipment Maintenance. Each engine shall be maintained in conformance with the manufacturer's (or Venoco's, if equivalent) operation and maintenance procedures. A copy of these procedures is to be made accessible during APCD inspections of the engines. For each engine, records shall be kept to document the maintenance activities along with any adjustment to the operations or maintenance procedures that may change the emissions, pursuant to Rule 333 requirements. Engine operational and maintenance records shall be submitted to the APCD upon request.

(vii) Compliance Assurance Monitoring (CAM). Venoco shall implement the following CAM requirements for IR #3 in accordance with USEPA Compliance Assurance Monitoring (CAM) Regulation 40-CFR, Part 64.

1. Monitoring. Venoco shall monitor all performance indicators in the approved CAM Plan. Venoco shall revise the CAM plan if source testing shows the indicator ranges are not adequate to ensure compliance.
2. Deviations. Venoco shall log any deviation of any indicator from the limits set forth in the CAM Plan.

(Reference: APCD Rule 333.E and F, APCD ATC 5704/5651/6408/PTO7482, ATC 12267, 40 CFR 70.6.a.(i))

(d) **Recordkeeping.** All recordkeeping requirements for the Cooper IC engine listed are suspended, until the engine returns to regular service. Otherwise, the following record keeping requirements shall apply to the Cooper, IR #1 and IR #3:

The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 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.

(i) Operating Hours. Total hours per day, days per month, and total hours per year the engine is operated.

(ii) Gaseous Fuel Use. The quantity (MSCF) of the gaseous fuel used each month and the analysis of the heating value (Btu/scf) performed quarterly.

(iii) Total Gaseous Fuel Sulfur Content. The total gaseous fuel sulfur content measured monthly.

(iv) Operation Logs. All written operation logs, including quarterly inspection results and any maintenance performed on each engine, shall be kept consistent with the requirements of APCD Rule 333.

(v) CAM Indicators. All compliance indicator data per the APCD approved CAM plan summarized monthly.

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

(e) **Reporting.** On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/ Compliance Verification Reports condition listed below.
(Reference: APCD ATC 5704/5651/6408/PTO7482, 40 CFR 70.6.a.3.(iii))

C.2 **IC Engines NOT Providing Emission Reduction Credits (ERCs).** The equipment items listed in Table C.2-1 below are included in this emissions unit category. Each of the IC engines is equipped with emission controls, as described in the table.

Table C.2-1 (Four IC Engines, Subject to Emissions Control)

APCD ID No.	Venoco ID No.	Name
107457	IR # 4	Ingersoll-Rand, 8XVG-4, Unit #4; 300 hp: Equipped with NSCR-control, assisted by an AFRC unit
107458	IR # 5	Ingersoll-Rand, 8SVG-4, Unit # 5; 440 hp: Equipped with NSCR-control, assisted by an AFRC unit
107459	IR #6	Ingersoll-Rand, 8SVG-4, Unit # 6; 440 hp: Equipped with NSCR-control, assisted by an AFRC unit
100222	G-01	Waukesha F-11 GSI, 220 hp: Equipped with NSCR-control, assisted by an AFRC unit

(a) **Emission Limits.** Mass emissions from the engines listed above shall not exceed the limits specified for these engines in Tables 5.1-3 and 5.1-4. Compliance with this condition will be based on the monitoring, recordkeeping, and reporting conditions listed below.
(Reference: APCD Rule 333, APCD ATC/PTO 7482)

(i) Emissions from the Waukesha engine (G-01) shall not exceed any of the following: 11 ppmvd NO_x at 15 percent oxygen (0.15 g/bhp-hr), 0.041 lb ROC /MMBtu (0.15 g/bhp-hr) and 73 ppmvd CO at 15% O_2 (0.60 g/bhp-hr).
(Reference: ATC 10405)

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

(i) Heat Input Limits. The heat input to G-01 shall not exceed 42.83 MMBtu/day and 15633.45 MMBtu/yr. G-01 shall not operate at any load higher than the load it was source tested last.

(ii) Gaseous Fuel Sulfur Limit. Only PUC quality natural gas with a total sulfur content (calculated as H_2S at standard conditions, 60° F and 14.7 psia) not to exceed 80 ppmvd shall be used as fuel. *(Reference: APCD ATC 5651, 6408)*

(iii) Inspection and Maintenance Plan (I&M Plan). The IC engines shall be operated at all times in accordance with the *Inspection and Maintenance Plan for Compressor IC Engines* and the *IC Engine Inspection and Maintenance Plan for Waukesha IC Engine* and any subsequent APCD-approved updates. *(Reference: APCD Rule 333)*

(iv) Engine Identification. Each IC engine shall be identified with a permanently-affixed plate, tag or marking, referencing either: (i) the ICE's make, model, serial number, rated BHP and

corresponding RPM; or (ii) the operator's unique tag number. The tag shall be made accessible and legible to facilitate APCD inspection of the ICE. (*Reference: APCD Rule 333)*

(v) Replacement Reporting. Venoco shall inform the APCD verbally within 24 hours whenever control equipment for these engines has been replaced. This notification shall be followed up with a written report submitted to the APCD within five days. Such replacement is only allowed in accordance with APCD Rules and Regulations. Any modification to an engine or control equipment requires an Authority to Construct permit from the APCD.

If a control system is replaced, source testing shall be initiated in accordance with the Source Test Program as contained in this permit source test conditions within 90 days to determine the actual emission reduction associated with the new equipment. This source test shall be in addition to, and not a replacement of, the annual source test as required in this permit. However, if the source test for replacement equipment is conducted within 30 days of the anniversary date for normal source testing, then it will be considered the annual source test.

If the catalyst bed on an engine is replaced with an identical catalyst bed a source test is not required. After each such replacement, Venoco shall check the NO_x level in the exhaust with a portable analyzer and submit the results to the APCD within the next 7 days. (*Reference: APCD ATC 5651, 6408, 7482, 10405*)

(c) **Monitoring.** The following equipment-specific source testing and periodic monitoring conditions apply to the IC engines listed in Table C.2-1:

(i) Source Testing Venoco shall conduct biennial source tests with an anniversary date of January, and adhere to the requirements of Condition C.13 below.

(ii) Fuel Use Metering. Venoco shall use continuously recording in-line fuel meter with seven day chart recorders, or APCD-approved equivalent, measuring gaseous fuel to monitor the fuel consumed by each individual gas-fired ICE. Venoco shall follow most current version of the *Process Monitor Calibration and Maintenance Plan* approved by the APCD. These Plans may only be revised upon written APCD approval.

(iii) Fuel Data Monitoring. The permittee shall measure the total sulfur content of gaseous fuel monthly in accordance with current ASTM-D1072 or an APCD-approved equivalent method. The gross heating value of the gaseous fuel (Btu/scf) shall be measured quarterly per ARB or APCD-approved test method.

(iv) Non-Resettable Hour Meter. The engines subject to this permit shall each be equipped with a non-resettable hour meter. The permittee shall keep a written log of the hours of operation and the number of operating days per month. The permittee shall keep a written log of the daily hours of operation of G-01.

(v) Equipment Maintenance. Each engine shall be maintained in conformance with the manufacturer's (or Venoco's, if equivalent) operation and maintenance procedures. A copy of these procedures is to be made accessible during APCD inspections of the engines. For each engine, records shall be kept to document the maintenance activities along with any

adjustment to the operations or maintenance procedures that may change the emissions, pursuant to Rule 333 requirements. Engine operational and maintenance records shall be submitted to the APCD upon request.

(vi) Compliance Assurance Monitoring (CAM). Venoco shall implement the following CAM requirements in accordance with USEPA Compliance Assurance Monitoring (CAM) Regulation 40-CFR, Part 64.

1. Monitoring. Venoco shall monitor all performance indicators in the approved CAM Plan. Venoco shall revise the CAM plan if source testing shows the indicator ranges are not adequate to ensure compliance.
2. Deviations. Venoco shall log any deviation of any indicator from the limits set forth in the CAM Plan.

(Reference: APCD Rule 333.E and F, APCD ATC 5704/5651/6408/10405, PTO7482, 40 CFR 70.6.a.(i))

(d) **Record Keeping.** The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 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.

(i) Operating Hours. Total hours per month, and total hours per year the engine is operated. For G-01 the log shall also include total hours per day the engine is operated.

(ii) Gaseous Fuel Use. The quantity (MSCF) of the gaseous fuel used each month and the analysis of the heating value (Btu/scf) performed quarterly.

(iii) Total Gaseous Fuel Sulfur Content. The total gaseous fuel sulfur content measured monthly.

(iv) Operation Logs. All written operation logs, including quarterly inspection results and any maintenance performed on each engine, shall be kept consistent with the requirements of APCD Rule 333.

(v) CAM Indicators. All compliance indicator data per the APCD approved CAM plan summarized monthly.

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

(e) **Reporting.** On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/ Compliance Verification Reports condition listed below.

(Reference: APCD ATC 5651/6408, 40 CFR 70.6.a.3.(iii))

C.3 **Diesel Fired Crane Engine.** The following equipment is included in this emission category:

Table C.3-1

APCD ID No.	Venoco ID No.	Name
109278	Crane Engine	TAD750VE Volvo Penta 228 bhp Tier 3 engine
110900	---	Cleaire Horizon Diesel Particulate Filter

(a) **Emission Limitations.** The mass emissions from the equipment permitted herein shall not exceed the values listed in Tables 5.1-3 and 5.1-4 and the diesel PM standards listed below. Compliance shall be based on the operational, monitoring, source testing, recordkeeping and reporting conditions of this permit.

(i) Diesel PM Standard. The stationary prime diesel fueled CI engine subject to this permit shall comply with the 0.01 grams diesel PM per brake-horsepower-hour (g/bhp-hr) emission standard in California Code of Regulations Title 17, Section 93115.7. Compliance with the PM emission limit shall be based on the source testing requirements of this permit.

(ii) Emission concentrations. Exhaust concentrations from the engine, corrected to 15% O_2, shall not exceed any of the following: NO_x (as NO_2) – 220 ppmv, ROC – 45 ppmv, or CO – 336 ppmv. (Note: these limits are based on the permitted g/bhp-emission factors. Compliance with these limits ensures compliance with the Rule 333 limits of 700 ppmv NO_x, 750 ppmv ROC, and 4,500 ppmv CO, all corrected to 15% O_2.) Compliance with the emission concentration limits shall be based on source testing and the APCD approved *Internal Combustion Engine Inspection and Maintenance Plan for Casitas Crane Engine.* .

(b) **Operational Restrictions.** The equipment permitted herein is subject to the following operational restrictions listed below.

(i) Fuel/Hour Input Limits. The daily and annual fuel input limits to the stationary prime diesel fuel CI engine shall not exceed the values listed below. Compliance with the daily value will be based on monthly data divided by the number of actual days of operation per month.

Table C.3-2

Device	Fuel Use (Gal)	
Device ID#	(per day)	(per yr)
109278	25	2,500

(ii) 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 complies with the Stationary Diesel Engine ATCM.

(iii) Diesel Fuel Sulfur Limit. The total sulfur content of the diesel fuel used shall not exceed 15 ppmw in accordance with the requirements of the Stationary Diesel Engine ATCM for CARB diesel.

(iv) Diesel Particulate Filter (DPF) Operations: The DPF shall be in place at all times the engine is operational. The DPF regeneration back pressure trigger level shall be set at 60 inches water column.

(v) Backpressure Monitor Alarm Response Actions. The response actions defined in the approved *Diesel Particulate Filter Operations Plan for Casitas Crane Engine* shall be taken in the event of an alarm condition.

(c) **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

(i) Non-Resettable Hour Meter. The diesel engine subject to this permit shall have installed a non-resettable 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 the engine.

(ii) Fuel Usage Metering. The volume of diesel fuel (in gallons) burned in the engine shall be measured through the use of an APCD-approved calibrated non-resettable fuel meter. A log shall be maintained that records the fuel usage of the engine.

(iii) Back Pressure Monitoring. The back pressure from the engine shall be monitored using the Backpressure Monitor installed with the diesel particulate filter.

(iv) Diesel Fuel Sulfur Content. Compliance with the Diesel Fuel Sulfur Limit condition shall be based upon documentation for each fuel shipment that the fuel meets California Code of Regulations, Title 13, Section 2281 standards (i.e., ARB "Clean Diesel"), or information provided for the diesel fuel by fuel vendor analysis. Alternately, the permittee shall annually sample and perform a fuel total sulfur analysis consistent with appropriate ASTM procedures.

(v) ICE Inspection and Maintenance Plan. The permittee shall implement the APCD approved *Internal Combustion Engine Inspection and Maintenance Plan for Casitas Crane Engine* as required by Rule 333, Section F.

(vi) Visual Leak Check. The permittee shall perform a visual check of the exhaust system every 200 hours of operation checking for signs of exhaust leaks such as evidence of soot. The components to be checked include the piping, fittings, clamps, and gaskets. Corrective action shall be taken within 24 hours when leaks are found.

(vii) Pressure Transmitter Check. The permittee shall check the pressure transmitter every 200 hours of operation. The pressure transmitter shall be removed and pressure applied to the line in order to check the function of the DPF transmitter and the line for leaks.

(viii) 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.

(ix) PM Source Testing. The permittee shall conduct source testing of PM emissions and process parameters listed in Table 4.1 of this permit on a biennial (every two years) schedule using August as the anniversary date. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the APCD, occur. The alternative compliance demonstration provisions of the ATCM 93115.13 (f)(2) may be used to demonstrate compliance with the emission limits of this permit.

(x) NO_x, ROC, CO Source Testing. Source testing shall be required for NO_x, CO, and ROC if the result of a portable analyzer reading exceeds a threshold of 220 ppmvd NO_x @ 15% O_2, unless compliance with this threshold is demonstrated by a retest within 15 days of the initial reading. A source test shall be conducted within 60 days of the initial reading if triggered by this criteria. If the engine demonstrates compliance with the NO_x, CO, and ROC emission limits of this permit in a source test, the engine shall not be subject to another source test for two years from the date of the initial compliant source test. After two years, source testing may again be triggered based on the result of a portable analyzer reading, unless compliance is demonstrated by a retest within 15 days of the initial reading. If the engine does not demonstrate compliance with the NO_x, CO, and ROC emission limits of this permit in any source test, it shall be source tested every two years thereafter.

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 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.

(i) Operating Hours. A log shall be maintained that details the number of operating hours and days for each month that the engine is operated and the cumulative total annual hours.

(ii) Fuel Use. The total amount of diesel fuel combusted in the engine shall be recorded on a monthly and annual basis in units of gallons.

(iii) Diesel Particulate Filter. A log shall be maintained that records all required checks, maintenance activities, and corrective actions for the DPF per the *Diesel Particulate Filter Operations Plan for Casitas Crane Engine*. The log shall also document the dates the DPF was regenerated.

(iv) Diesel Fuel Purchase. The owner or operator shall retain fuel purchase records that demonstrate the fuel added to the engine, or to any fuel tank directly attached to the engine, meets the requirements of the ATCM.

(v) Engine Inspection and Maintenance Logs. IC engine inspection and maintenance logs shall be maintained consistent with the reporting requirements incorporated in the *Internal Combustion Engine Inspection and Maintenance Plan for Casitas Crane Engine*.

(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 list all the data required by the Semi-Annual Monitoring/ Compliance Verification Reports condition listed below.

(f) **Temporary Engine Replacements - DICE ATCM.** Any reciprocating internal combustion engine subject to this permit and the stationary diesel ATCM may be replaced temporarily only if the requirements listed herein are satisfied.

(i) The permitted engine is in need of routine repair or maintenance.

(ii) The permitted engine that is 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 each permitted engine 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 may be sent hardcopy to the APCD (Attn: Engineering Supervisor), or can be sent electronically to: *temp-engine@sbcapcd.org*.

(vi) Within 14 days upon return of the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form may be sent hardcopy to the APCD (Attn: Engineering Supervisor), or can 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) **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) (1) and (e)(2) of the ATCM shall notify the APCD immediately upon detection of the violation and shall be subject to APCD enforcement action.

{*Reference: ATC 12214*}

C.4 **External Combustion Equipment.** The following equipment is included in this emissions unit category:

Table C.4-1

APCD ID #	Venoco ID #	Name, and Rating
000195	H-101	Therminol Heater; 4.99 MMBtu/hr, gas-fired
000200	E-109	Glycol Reboiler; 0.81 MMBtu/hr, gas-fired
000191	F-1	Indirect Heater; 4.50 MMBtu/hr, gas-fired

(a) **Emission Limits.** The mass emissions from the equipment permitted herein shall not exceed the values listed in Tables 5.1-3 and 5.1-4. Compliance shall be based on the operational, monitoring, source testing, recordkeeping and reporting conditions of this permit.
(Reference: APCD ATC 9227 (Therminol heater) and 3949 (reboiler/indirect heater))

(b) **Operation Limits.** Operation of the equipment listed above shall be conducted in compliance with all data, specifications and assumptions as documented in the attached APCD engineering evaluation (Section 4.0) under which this permit is issued. The following additional operational limits apply to the external combustion devices:

(i) Heat Input Limits. The hourly and annual heat input to the following combustion equipment shall not exceed those values listed below. These limits are based on the design rating of the equipment and the annual heat input values as listed in the ATC and the engineering analysis. Compliance with this condition shall be based on fuel usage and/or fuel testing. Unless otherwise designated by the APCO, a fuel high heating value of 1105 Btu/scf shall be used for determining compliance:

Table C.4-2

Equipment	Fuel	Hourly Heat Input (MMBtu/hr)	Annual Heat Input (MMBtu/yr.)
Therminol Heater	Field Gas	4.99	43,791.24

(ii) Gaseous Fuel Sulfur Limit. Sulfur content (calculated as H_2S at standard conditions, 60°F and 14.7 psia) of gaseous fuel shall not exceed 0.75 grains per 100 cubic feet (12 ppmv).

(iii) For Therminol Heater (H-101) Only: Fuel Usage Meter. The permittee shall operate a dedicated Barton 202A circular chart recorder or equivalent for the heater.
(Reference: APCD ATC 9227 (Therminol heater) and 3949 (reboiler/indirect heater))

(c) **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

(i) Periodic Monitoring. The permittee shall measure the total sulfur content of gaseous fuel monthly in accordance with current ASTM-D1072 or a District approved equivalent method. The high heating value of the fuel (Btu/scf) shall be measured each calendar quarter.

(ii) For Therminol Heater (H-101) Only: Orifice Plate Inspection. The Therminol heater has been de-rated through the use of a 0.625 inch orifice plate in the fuel line with a maximum fuel pressure of 100 psig. During routine heater boiler maintenance, the permittee shall inspect any orifice plate used to de-rate equipment listed in this permit. If it is found that corrosion and/or degradation has enlarged the orifice diameter, operation of the equipment shall cease until a properly sized orifice is installed.
(Reference: APCD ATC 9227)

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 months of the most recent entry shall be retained on-site, either at a central location or at the equipment's location, and made immediately available to the APCD staff upon request.

(i) The volume (standard cubic feet) of natural gas consumed each month by the Therminol heater;
(ii) The results of the sulfur content and the high heating value analyses.
(iii) The monthly peak hourly heat input (MMBtu/hour) into the Therminol heater, along with the date and time that the peak value was reached.
(iv) Maintenance logs for the Therminol heater and fuel flow meter, including records of each orifice plate inspection.

(Reference: APCD ATC 9227, 40 CFR 70.6.a.(ii))

(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 list all the data required by the Semi-Annual Monitoring and Compliance Verification Reports condition listed below. (*Reference: 40 CFR 70.6.a.3.(iii)*)

C.5 **Crude Oil Storage Tank/Wastewater Tanks.** The following equipment items are included in this emissions category:

Table C.5-1

APCD ID No.	Venoco ID No.	Name
112320	T-861	External Floating Roof Oil Storage Tank, 217000 bbl
112322	SH-T24637	Wastewater tank, 5000 bbl – Out of Service
112321	SA-T25380	Wastewater tank, 5000 bbl – Out of Service
008168	WW-T1	Wastewater tank, 1000 bbl
008169	WW-T2	Wastewater tank, 1000 bbl
008170	SA-V16	Blow Down Tank, 250 bbl

(a) **Emission Limits.** Emissions from the equipment listed in this section shall not exceed the emission limits set forth in Table 5.1-3. Compliance shall be based on the operational, monitoring, source testing, recordkeeping and reporting conditions of this permit. (*Reference: APCD ATC 9323*)

(b) **Operational Limits.** Operation of tank T-861 shall meet the requirements of APCD Rule 326 and Rule 343. Tanks SH-T24637 and SA-T25380 are out of service and may not receive or store ROC liquids without prior written approval from the APCD. All operations of tanks SH-T24637, SA-T25380, WW-T1, WW-T2, and SA-V16 shall meet the requirements of APCD Rules 325 and 343. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit.
(Reference: APCD Rule 325.D, E and Rule 343.D, ATC 9323)

(c) **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements: The wastewater tanks and blow down tank listed in this section are subject to all the monitoring requirements of APCD Rule 325, as applicable. The crude oil storage tank is subject to all the monitoring requirements of APCD Rule 326, as applicable. The test methods outlined in APCD Rules 325 and 326 shall be used, when applicable. In addition, Venoco shall perform the following compliance monitoring:

(i) For all degassing events subject to the requirements of Rule 343, monitor the volume purged, characteristics of the vapor purged, and control device/method used.

(ii) On an annual basis the API gravity and true vapor pressure (TVP) of the liquid in all storage tanks shall be measured and recorded at the maximum expected temperature per Rule 325.G.2.b and c, as applicable, using ASTM D 323-5B and API Bulletin 2519 (or an equivalent APCD-approved method).

Note: All monitoring requirements for any out of service waste water tank are suspended until the tank returns to regular service.
[*Reference: 40 CFR 70.6(a)(3)(i), APCD Rules 325, 326, 343 and 1303.D.1.e, ATC 9323]*

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 months of the most recent entry shall be retained on-site, either at a central location or at the equipment's location, and made immediately available to the APCD staff upon request.

The equipment listed in this section is subject to all the recordkeeping requirements listed in APCD Rules 325 and 326, as applicable, including keeping a log of any tank inspection during a period when the tank is emptied for a non-operational purpose and keeping the reports from any such inspection.

(i) The type of liquid in each tank; and
(ii) The API gravity of the liquid and the maximum vapor pressure of the tank content under normal conditions, in each tank.
(iii) A log of all degassing events and record all the parameters listed in Section 9.C.5(c)(i) above;
(iv) A record of all API gravity and TVP measurements of the storage tank liquids, as listed in Section 9.C.5(c)(ii) above.

Note: All monitoring requirements for any out of service waste water tank are suspended until the tank returns to regular service.

[*Reference: 40 CFR 70.6(a)(3)(ii), APCD Rules 325, 326, 343 and 1303.D.1.f, ATC 9323*]

(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 list all the data required by the Semi-Annual Monitoring and Compliance Verification Reports condition listed below.
[*Re: 40 CFR 70.6(a)(3)(ii), APCD Rules 325,326 and 1303.D.1.f, PTO 7995-03 (11/95), ATC's 3949 (7/79) and 9323*]

C.6 **Pigging Equipment.** The following equipment is included in this emissions category:

Table C.6-1

APCD ID No.	Venoco ID No.	Name
009275	SHSS	Gas Pig Receiver/Launcher (pipeline from Platform Grace)
112341	None	Oil Pig Receiver/Launcher (pipeline from Platform Grace)
112342	None	Oil Pig Launcher (to Rincon)

(a) **Emission Limits.** Emissions from the equipment listed in this section shall not exceed the emission limits set forth in Table 5.1-3. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit.

(b) **Operational Limits.** The equipment permitted herein is subject to the following operational restrictions listed below.

(i) Pressure. The pig receivers/launchers shall be depressurized to the VRU prior to each hatch opening to the maximum extent feasible, but at no time shall the pig launcher hatch be opened when the pressure in the launcher is greater than 1 psig. Compliance shall be based on a test gauge or equivalent APCD-approved monitor installed to monitor the internal pressure of the receiver/launcher.

(ii) Openings. Access openings to the pig receiver/launcher shall be kept closed at all times, except when a pig is being placed into or removed from the launcher, or during active maintenance operations.

(iii) Events. The number of pigging events shall not exceed the maximum listed in Table 5.1-1.

(c) **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

(i) Pressure. Pressure readings shall be recorded prior to each opening of the receiver/ launcher.

(ii) Events. Venoco shall record the date and time of each pigging event.
(*Reference: 40 CFR 70.6.a.3.(iii)*)

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 months of the most recent entry shall be retained on-site, either at a central location or at the equipment's location, and made immediately available to the APCD staff upon request.

(i) The pressure in the launcher before each hatch opening.

(ii) The date and time of each pigging event.

(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 list all the data required by the Semi-Annual Monitoring and Compliance Verification Reports condition listed below.
(*Reference: 40 CFR 70.6.a.3.(iii)*)

C.7 **Fugitive Hydrocarbon Emissions Components.** The following equipment is included in this emissions unit category:

Table C.7-1

APCD Device ID #	Venoco ID #	Service Type, Equipment Type (Number of Components)
		Gas/Light Liquid Service Components
107468	none	Valves (2257)
109704	none	Pump Seals/Compressor Seals (36)
109695	none	Others (415)
109696	none	Connectors (14819)
109694	none	Flanges (2427)
109705	none	Open-ended lines (0)
		Oil Service Components
109698	none	Valves (318)
109703	none	Pump Seals/Compressor Seals (3)
109701	none	Others (126)
109699	none	Connectors (1269)
109700	none	Flanges (325)
109702	none	Open-ended lines (0)

(a) **Emission Limits.** Venoco shall comply with the fugitive component ROC limits for each service type in Tables 5.1-3 (*Hourly and Daily Emissions*) and 5.1-4 (*Quarterly and Annual Emissions*), as shown below in Table 2. Compliance with these limits will be based on monitoring, recordkeeping and reporting provisions of New Source Performance Standards (NSPS) Subpart KKK, Rule 331, and this permit.

(b) **Operational Limits.** Operation of the equipment listed in this section shall conform to the requirements listed in APCD Rule 331.D and E, and NSPS Subpart KKK. In addition, Venoco shall meet the following requirement:

(i) VRGC/VRU Use: The vapor recovery/gas collection (VRGC) system shall be in operation when the equipment connected to the VRGC system at the facility is in use. The VRGC system includes piping, valves, and flanges associated with the VRGC system. The VRGC system and the vapor recovery unit (VRU) shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches.

(ii) Leak-free systems: Any gauging or sampling device on the tanks must be equipped with a gas-tight cover which shall be closed and leak free at all times except during gauging or sampling. All piping, valves, and fittings shall be vapor tight. Venoco shall implement the requirements of APCD Rule 331.

(iii) I&M Program: Venoco shall carry out an inspection and maintenance program in accordance with the APCD-approved *Fugitive Emissions Inspection and Maintenance Plan* (I&M Plan) prepared May 25, 2007, and subsequent APCD-approved updates.

(iv) Component Count: The component counts listed in Venoco's most recent I&M component inventory shall not exceed 21,995 components (total listed in Table 5.1-1., *Operating Equipment Description*) 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.

(c) **Monitoring.** The equipment units listed in this section are subject to all applicable monitoring requirements listed in NSPS Subpart KKK, particularly for valves and compressor seals, and in APCD Rule 331.F. The test methods in NSPS Subpart KKK and Rule 331.H shall be used, when applicable. In addition, Venoco shall track the component counts for all categories of components at the facility, and log any count changes, including de minimis changes, in a component count inventory maintained for the facility.

Monitoring of fugitive hydrocarbon components shall be carried out in accordance with the requirements of APCD Rule 331 and per the guidelines of APCD issued Policy & Procedure 6100.072.1998 (*Use of Correlation Equation Methodology to Estimate Mass ROC Emission at Oil and Gas Facilities*, "P&P 072"). The default monitoring period shall be quarterly for accessible components. Venoco may change the monitoring period to a monthly basis for any area provided that monthly monitoring is selected before the start of the calendar quarter and, that once begun in any area, monthly monitoring continues for that area for the remainder of the quarter. Venoco shall provide written notification to the APCD (Attn: *Venoco Carpinteria Project Manager*) before the start of the calendar quarter for any change of the monitoring period (i.e., from quarterly to monthly, or from monthly to quarterly).

Venoco's initial in-period screening (ppmv) value for each component shall be used to assign the emission factor to each component based on the component type, service type and two screening value groups (i.e., less than 10,000 ppmv, and greater than or equal to 10,000 ppmv). The emission factors shall be used in calculating emissions for the applicable period.

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below and all records required by NSPS Subpart KKK and Rule 331. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 months of the most recent entry shall be retained on-site, either at a central location or at the equipment's location, and made immediately available to the APCD staff upon request.

I&M Log:

(i) for each applicable monitoring period a record of each screening value of each component (including tag number, area, sub-area, component type, component grouping, size, service type, inaccessibility group, critical status and for those components with screening values ≥10K, date of leak detection, the ppmv or drop-per-minute reading, date of repair attempts, method of repair, days to repair, method of detection, date of re-inspection and ppmv or drop-per-minute reading following repair). For components screened successively in the same process area with nearly identical ppmv values, in lieu of recording each component ppmv value, Venoco may identify the ppmv values with a note or indicator line between the first and last recorded similar value;

(ii) a record of the total components inspected and the total number and percentage found leaking by component type;

(iii) a record of components found to be leaking greater than 1,000 ppmv (including date of leak detection, the ppmv or drop-per-minute reading, date of repair attempts, method of repair, days to repair, method of detection, date of re-inspection and ppmv or drop-per-minute reading following repair);

(iv) a record of leaks from critical components;

(v) a current record identifying all components awaiting repair;

(vi) a record of leaks from components that incur five repair actions within a continuous 12-month period; and,

(vii) a table showing clearly all changes in the component counts from the counts shown in Table 5.1-0, for all categories of components including the de minimis components at the facility.

(e) **Reporting.** The equipment listed in this section are subject to all the reporting requirements listed in NSPS Subpart KKK, APCD Rule 331.G, and the APCD-approved I&M Plan. On a semi-annual basis, a report detailing the previous six-month's activities and emissions shall be provided to the APCD. The report shall list all the data required by the recordkeeping requirement above. The report shall also include quarterly totals (including monthly totals for components in areas monitored monthly) and calendar year-to-date summaries of fugitive ROC emissions (tons) calculated in accordance with item (c) above. This information shall be included in the Semi-Annual Monitoring and Compliance Verification Report.

Venoco shall notify the APCD via fax (805-961-8801, Attn: *South County Compliance Supervisor*) within 24 hours of discovery of being out of compliance with the ROC emission limits of this permit.

[Re: 40 CFR 60 Subpart KKK; 40 CFR 70.6(a)(3); APCD Rule 331, ATC 12230 and APCD P&P 6100.072.1998]

C.8 **Benzene Emissions from Fugitive Components.**

(a) Venoco shall comply with the area-specific benzene emission limits for fugitive components specified in Table C.8-1 below. Compliance with the annual benzene emissions limits, on a calendar year basis, shall be based on emissions quantified in accordance with Exhibit 10 of the approved I&M Plan (including the Inventory.xls workbook and the related Leakers.xls workbook). Benzene emissions from de minimis components shall be quantified and included in total emissions when determining compliance with permitted benzene emissions limits.

Table C.8-1- Permitted Benzene Emissions from Fugitive Components

Area	Emissions Limit (lb/yr)
1	45
2	20
3	25
4	11
5	15
6	20
7	20
8	8
9	10
10	10
11	10

(b) Venoco shall notify the APCD via fax (805-961-8801, Attn: *South County Compliance Supervisor)* within 24 hours of discovery of being out of compliance with the annual benzene emission limits of this permit. If the area-specific annual benzene emission limit is exceeded in an area, Venoco shall replace all components in that area with Best Available Control Technology (BACT) components. Within two weeks after discovery of an exceedance of a benzene emission limit, Venoco shall submit a *BACT Compliance Plan and Schedule* for APCD approval. The plan shall detail the BACT installation schedule, with dates of permit application submittal, ordering equipment, and installation. In no event shall the time to install the BACT components exceed one year from date of discovery of the exceedance.

(c) The components are assigned a benzene weight fraction sample point as shown in Table A1 of the *Fugitive Sampling Plan and Report.* These component/sample point assignments listed in the workbooks detailed in Condition C.8.(a) above shall be used to calculate the fugitive benzene emissions to determine compliance with the limits listed in Table C.8-1 of this permit. Venoco shall submit an Authority to Construct application for any component/sample point reassignment, with all necessary information to document that the proposed component/sample point assignments are correct (e.g., highlighted process and instrumentation diagrams, showing sample locations and the respective component locations). The component/sample point assignments shall not be changed under this permit with the following exceptions: 1) if the APCD determines that a component's sample point was incorrectly assigned, the APCD may reassign a more conservative (higher weight fraction) sample point; or 2) the APCD determines that additional benzene sampling and sampling locations are required. The components shall be assigned to the new sample locations prior to sampling via an APCD-approved *Sampling Plan.*

(d) On a semi-annual basis, a report detailing the previous six-month's activities and emissions shall be provided to the APCD. The report shall also include quarterly totals (including monthly totals for components in areas monitored monthly) and calendar year-to-date summaries of fugitive benzene emissions. This information shall be included in the Semi-Annual Monitoring and Compliance Verification Report.

{ATCs 12229 and 12330}

C.9 **Periodic Sampling for Toxic Air Contaminants.** The APCD may require periodic sampling to determine the content of Toxic Air Contaminants (TAC) or candidate TACs in the facility process streams. Reasons for such testing may include but are not limited to changes in process stream, and addition of new or removal of existing equipment. Venoco shall submit a *Sampling Plan* for APCD review and approval within 45 days of APCD's request. The *Sampling Plan* shall include pollutants to be sampled for, sampling method and lab analytical methods, and locations of sample points. If there is a change in sampling locations from the August 2004 testing (as detailed in the *Fugitive Sampling Plan and Report*), the *Sampling Plan* must assign components to the sample locations. Upon APCD approval of the *Sampling Plan* and the *Sampling Report*, Venoco shall revise the I&M Plan (i.e., Exhibit 10) for APCD review and approval. {ATCs 12229 and 12230}

C.10 **Glycol Dehydration Unit.** The following equipment are included in this emissions unit category:

Table C.10-1

APCD ID No.	Venoco ID No.	Name
000200, (a) 009272, (b) 009254, (c) 009237-238, (d) 009239, (e) 009240-241, (f) 009248	None	Glycol Dehydration Unit (includes the Glycol Regenerator Unit): consisting of (a) Surge Tank, (b) Flash Separator, (c) Filters, (d) Stripping Column, (e) Pumps, and (f) Vent Tank
(a) 107467, (b) 009218-9222	None	Vapor recovery system, including (a) 75-hp electric IR Compressor (XRB), and (b) the ancillary units (includes all fugitive emission components)

(a) Emission Limits: There shall be no emissions from the glycol dehydration unit.

(b) Operational Limits: The glycol dehydration unit shall only vent to the vapor recovery unit. All vapors recovered from the glycol dehydration unit shall be returned to the process gas stream.

(c) Recordkeeping: Venoco shall maintain records demonstrating the continued non-applicability of 40 CFR Subpart HH. All records shall be available to the District upon request. Venoco shall keep all such records for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 months of the most recent entry shall be retained on-site, either at a central location or at the equipment's location, and made immediately available to the APCD staff upon request.

(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 Rule 1303, 40 CFR 70.6, 40 CFR 63, Subpart HH*]

C.11 **Solvent/Coating Use.** The following equipment is included in this emissions unit category:

Table C.11-1

APCD ID #	Equipment Item Name, Category, etc.
None	Solvents - Cleaning/Degreasing
None	Surface Coating (*including solvents used as thinners)*

(a) **Emission Limits.** The solvent emission limits outlined in APCD Rule 317.B are federally enforceable for the entire stationary source.

(b) **Operational Limits.**

(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.

(ii) *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) *Recovery Plan* – Venoco may submit a Plan to the APCD for the disposal of any reclaimed solvent. If the Plan is approved by the APCD, 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 APCD 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. Also, the ultimate fate of the reclaimed solvents must be stated in the Plan.

(c) **Recordkeeping.** The permittee shall record and maintain the information listed below. All logs shall be available to the District upon request. Venoco shall keep all such logs for a minimum of five (5) years from the date of information collection and log entry. Log entries made within 36 months of the most recent entry shall be retained on-site, either at a central location or at the equipment's location, and made immediately available to the APCD staff upon request.

(i) amount used;
(ii) the percentage of ROC by weight (as applied);
(iii) the solvent density; the amount of solvent reclaimed for District-approved disposal;
(iv) whether the solvent is photochemically reactive; and,
(v) the resulting emissions to the atmosphere in units of pounds per month and pounds per day (based on the number of days in that month).
(vi) Product sheets (MSDS or equivalent) detailing the constituents of each solvent shall be maintained in a readily accessible location at the Gas Plant.

(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: 40 CFR 70.6(a)(3), APCD Rules 317, 321, 322, 323 and 324*]

C.12 **Produced Gas.** Venoco shall direct all produced gases to the vapor recovery compressors or other permitted control devices at all times, including when de-gassing, purging or pigging any oil and gas tank, vessel or container that contains reactive organic compounds. Venoco shall sample and analyze the produced gas annually. All produced gas samples shall be taken according to APCD approved ASTM methods or equivalent and shall follow traceable chain of custody procedures. [*Re: APCD Rules 325, 331*]

C.13 **Source Testing.** The following source testing provisions shall apply:

(i) Venoco shall conduct source testing of air emissions and process parameters listed in Section 4.9 and Tables 4.1 and 4.2 of this Permit. The testing frequencies are listed in Sections 9.C.1 (c), 9.C.2 (c) and 9.C.3 (c) of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the APCO, occur.

(ii) Venoco shall submit a written source test plan to the APCD for approval at least thirty (30) calendar 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). Venoco shall obtain written APCD approval of the source test plan prior to commencement of source testing. For IC engines Cooper through IR #3, the previous year's approved source test plan may be used if the same source test firm is utilized and there are no changes to the plan. The APCD shall be notified at least fourteen (14) 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.

(iii) 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. 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. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by 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 prior authorization, except in the case of an emergency, 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.

(iv) 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 demonstrate compliance with emission rates in Section 5 and applicable permit conditions. Any APCD-certified IC Engine source test result that indicates the applicable Rule 333, or PTO emission limitations have been exceeded shall constitute a violation of Rule 333 and this PTO. All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by Venoco as provided for by District Rule 210. The APCD may, at its discretion, extend the deadlines noted above.

C.14 **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 reporting period). These reports shall be in a format approved by the APCD. The permittee may, with prior approval from the APCD, submit the report on a computer disk instead of a hard copy medium. The APCD will specify the format for such disk reporting. 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 summarizing the activities for the calendar year. Pursuant to Rule 212, a completed *APCD Annual Emissions Inventory* questionnaire shall be included in the annual report or submitted electronically via the APCD web site. The report shall include the following information:

(a) *Gas-Fired Internal Combustion Engines.*

(i) For each engine, monthly fuel use along with the number of hours of operation per month; also, the maximum daily fuel use for IR 3 and the Waukesha engine for each month (in units of MMBtu).

(ii) All compliance indicator data monitored pursuant to Venoco's APCD-approved CAM Plan, summarized monthly.

(iii) The volume of gas processed each month (in units of MSCF) and the number of days that gas was processed.

(iii) The monthly gaseous fuel sulfur content and the quarterly gaseous fuel HHV.

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

(v) Results of the Rule 333 required portable analyzer inspections.

(vi) Summary of all maintenance activities performed for each gas-fired IC engine, including engine and control system maintenance (if any), engine timing setting for the Cooper Bessemer when operating, and any replacement activities for the NSCR catalysts/AFRC and PCV elements.

(vii) Summary results of any compliance emission source testing performed during the reporting period.

(b) *Diesel-Fired Internal Combustion Engine*

(i) The hours of operation and days of operation each month and the cumulative annual hours.

(ii) The amount of fuel combusted in the engine each month.

(iii) Records of each regeneration and each check of the DPF taken per the *DPF Operations Plan.*

(iv) Records of each engine inspection per the *IC Engine Inspection and Maintenance Plan for Casitas Crane Engine.*

(v) Summary results of any compliance emission source testing performed during the reporting period.

(c) *External Combustion Equipment.*

(i) Volume (in units of scf) of natural gas consumed each month by the Therminol heater;

(ii) The results of the sulfur content and the high heating value analyses.

(iii) The monthly peak hourly heat input (in MMBtu/hour unit) into the Therminol heater, along with the date and time the peak value was reached.

(iv) Summary of the maintenance activities for the Therminol heater and the fuel flow meter, including records of each orifice plate inspection.

(d) *Crude Oil and Wastewater Tanks.*

(i) Results of all ROC content analyses (including a copy of the lab analysis sheets).

(ii) The type of organic liquid in each tank.

(iii) The maximum vapor pressure of the liquid.

(iv) The results of the inspections required by APCD Rule 325 or 326.

(v) The American Petroleum Institute gravity of the liquid in the tanks.

(e) *Pigging.* A summary of the Pigging Log, including the date and number of times each pig receiver/launcher was used, the pressure inside the receiver/launcher before de-pressurization and the pressure inside the pig chamber immediately prior to each opening.

(f) *Fugitive Emissions Components.*

(i) A record of the total components inspected during each inspection and the total number and percentage found leaking by component type;

(ii) A record of components found to be leaking greater than 1,000 ppmv (including date of leak detection, the ppmv or drop-per-minute reading, date of repair attempts, method of repair, days to repair, method of detection, date of re-inspection and ppmv or drop-per-minute reading following repair);

(iii) A record of leaks from critical components;

(iv) A current record identifying all components awaiting repair;

(v) A record of leaks from components that incur five repair actions within a continuous 12-month period; and,

(vi) A table showing clearly all changes in the component counts from the counts shown in Table 5.1-0, for all categories of components including the de minimis components at the facility.

(vii) The calculated benzene emissions for the previous four quarters.

(viii) All records required to be reported per Subpart KKK.

(g) *Glycol Dehydration Unit.* A record demonstrating the continued non-applicability of 40 CFR Subpart HH.

(h) *Solvent/Coating Usage.*

(i) 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 emissions of ROC and photochemically reactive solvents to the atmosphere in units of pounds per month.

(ii) Surface Coating /Maintenance: On a monthly basis: the amount of coatings and solvents used; the percentage of ROC by weight in the coatings (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.

(i) *General Reporting (Semi-annual and Annual) Requirements.*

(i) On a daily average (and annual, when applicable) basis, provide the emissions from each permitted emission unit for each criteria pollutant. Also include a daily average (and annual, when applicable) emissions summary for each criteria pollutant. Calculations for the daily averaging shall cover the previous 6-month period. For the IC engines, all NOx and ROC emissions data and fuel parameters (fuel use, fuel S content and gross fuel heating value) and, where relevant, actual emission factors for NOx and ROC as observed during the source

testing. Also, all NOx and ROC emissions data and fuel parameters (fuel use, Fuel S content and gross fuel heating value) for the external combustion devices.

(ii) On a quarterly (and annual, when applicable) basis, the emissions from each exempt emission unit for each criteria pollutant. Also include a quarterly (and annual, when applicable) emissions summary for each criteria pollutant.

(iii) A copy of the Rule 202 De Minimis Log for the stationary source.

[*Re: Rule 202, Rule 316, Rule 317, Rule 325, Rule 331, Rule 333, Rule 342, 40 CFR 70.6.(a)(3)*]

C.15 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and APCD Rule 201.B. Venoco shall not operate any equipment identified as "Out-of-Service" in Attachment 10.6, without first obtaining appropriate APCD permits for the same. [Re: APCD Rule 1303]

C.16 **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 the Gas Plant facility.

(i) *Fugitive Emissions Inspection and Maintenance (I&M) Plan*, (Rule 331) dated 2/7/2008.
(ii) *Venoco, Inc. Carpinteria Gas Plant Inspection and Maintenance Plan for Compressor IC Engines,* (Rule 333) dated 5/29/2008, APCD-approved 9/5/2008.
(iii) *IC Engine Inspection and Maintenance Plan for Waukesha IC Engine* (to be submitted within 45 days of permit issuance).
(iv) *IC Engine Inspection and Maintenance Plan and Diesel Particulate Filter Operations Plan for Casitas Crane Engine,* (Rule 333 and ATCM) dated 5/8/2008, APCD-approved 5/8/2008.
(v) *Vessel De-gassing Compliance Plan,* (Rule 343) APCD-approved 1/15/1998.
(vi) *Emergency Episode Plan,* (Rule 603) APCD-approved 7/94.
(vii) *Process Monitor Calibration and Maintenance Plan,* APCD-approved 8/2001.
(viii) *Continuous Assurance Monitoring (CAM) Plan,* dated 5/2008, APCD-approved 9/5/2008.
(ix) *Risk Reduction Audit and Plan* dated 12/19/2006, APCD-approved 4/4/ 2007.
(x) *Fugitive Sampling Plan and Report* dated 8/11/2004, APCD-approved 10/20/ 2006.
(xi) *Pipeline Integrity Inspection Plan* dated March 31, 2003.
[*Re: APCD Rules 331, 333, 343,603 and 1303*]

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. The permit conditions have been determined as being necessary for this permit to ensure that operation of the Gas Plant complies with all applicable local, state and federal 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 federal requirement.

D.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: APCD Rule 206*]

D.2 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit shall constitute grounds for revocation pursuant to California H& S Code Section 42307 *et seq*.

D.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.

D.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 and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by Venoco as required by Rule 210.

D.5 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rule, regulation, ambient air quality standard or air quality increment.

D.6 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the APCD's project file) and the APCD's analyses under which this permit is issued.

D.7 **Consistency with Federal, State and Local Permits.** Nothing in this permit shall relax any air pollution control requirement imposed on any other Venoco permit by any other governmental agency.

D.8 **Abrasive Blasting Equipment.** All abrasive blasting activities performed at the Gas Plant shall comply with the requirements of the California Code of Regulations, Title 17, Sub-Chapter 6, Sections 92000 through 92530. [*Re: APCD Rules 303*]

D.9 **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*]

D.10 **Cooper IC Engine: Return of Engine to Service.** The currently 'not-in-service' Cooper IC engine shall not operate until Venoco requests and receives written permission from the APCD. Venoco may operate the engine for a 24-hr period solely to complete source testing of toxics pollutants in accordance with Condition 9.D.11. Return of the engine to regular service is contingent on Venoco completing all the following:

(a) Source testing of the engine to assess toxic pollutant emissions (see Condition 9.D.11 below)
(b) Obtaining APCD approval of the source test report.
(c) Performing a health risk assessment with the Cooper source test toxics emissions data in accordance with: (i) the Office of Environmental Health and Hazard Assessment's AB 2588 risk assessment guidelines, and (ii) the requirements in the APCD-approved Risk Reduction Audit and Plan (RRAP) for the stationary source.
(d) Obtaining APCD approval of the risk assessment results demonstrating the cumulative risks from the stationary source are below APCD's significant risk thresholds.
(e) Obtaining written authorization from the APCD to return the engine to service.
(Reference: PTO Mod 7996-02)

D.11 **Cooper IC Engine: Source Testing for Toxic Pollutants.** As a prerequisite to returning the Cooper engine to service, Venoco shall conduct a source testing on the Cooper engine for toxic air contaminant emissions and process parameters listed in the table below.

(a) Venoco shall submit a written source test plan to the APCD for approval at least sixty (60) calendar days prior to initiation of the 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), AB 2588 testing guidelines, and the APCD-approved RRAP. Venoco shall obtain written APCD approval of the source test plan prior to commencement of source testing. The APCD shall be notified at least fourteen (14) 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.

(b) 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. All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by Venoco as provided for by District Rule 210. The APCD may, at its discretion, extend the deadlines noted above.

TABLE D.11-1 Source Testing To Assess Toxic Emission Factors for the Cooper IC Engine

TABLE for TOXICS EMISSION FACTOR ASSESSMENTS			
IC Engine Venoco ID #	**Pollutant/ Parameter**	**Source Test Method**	**Results**
Cooper	Acrolein	CARB: Method 430 and Modified Method 430 (with toluene added to impingers)	All emissions data obtained are to be stated in terms of: (a) lb/hr (b) ppmvd (c) lb/MMBtu
	Acetaldehyde		
	Formaldehyde		
	Benzene	EPA 18/ EPATO-15 (GC-MS)	
	Fuel Analysis	Measure	Speciation, HHV
	Fuel Flow, scf/hr	Measure	
	Exhaust Oxygen	Measure	

D.12 **Tank SA-T 25380 Operational Restrictions:** The waste water Tank SA-T 25380 (APCD ID # 112321) shall be maintained 'out-of-service'; and, remain physically disconnected from any hydrocarbon source at the facility. Venoco shall not resume operation of this tank until it completes the following items:

a. Obtain APCD approval of a revised AB 2588 risk assessment demonstrating the cumulative risks from the stationary source are below APCD's significant risk thresholds.

b. Obtain written authorization from the APCD to return the tank to service.

D.14 **Sump/Oil-water Separators.** Emissions from the sumps and the oil-water separator tanks shall not exceed the limits set forth in Table 5.1-3.

D.14 **Mass Emission Limitations.** Emissions for the entire facility shall not exceed the total limits listed in Table 5.2.

D.15 **Operation/Throughput Limitations.** The following throughput limitations shall not be exceeded by the Gas Plant:

Gas Production 30,000,000 scf/day [a]

a -- Calculated as the monthly volume measured at the sales meter, divided by the number of processing days.

D.16 **Pipeline Integrity Inspections:** All pipeline integrity inspections shall follow the procedures outlined in an APCD-approved *Pipeline Integrity Inspection Plan*. Venoco shall strictly adhere to the approved Plan and any subsequently approved Plan updates during any subsequent pipeline integrity inspections. The Plan shall include the following elements, at a minimum:

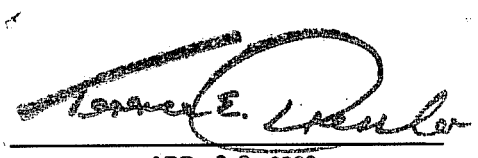
(1) A detailed description of the typical operations under (a) 'pipeline integrity inspections,' and (b) pigging using 'smart pigs' if such pigging is for pipeline testing;

(2) Procedures to measure the temperature and pressure of the high pressure gases in the pipeline during such pipeline inspections, at least once prior to the pig receiver (or launcher) de-pressurization; to the best knowledge of Venoco, identification of probable accidental events that may lead to the high pressure gases (or fluids) in the pipeline escaping to the atmosphere either at the Venoco Carpinteria stationary source premises or at adjacent properties;

(3) Precautionary steps planned and/or implemented by Venoco to prevent such accidental releases of gases (or fluids) to the atmosphere.

Venoco shall notify the Venoco Project Manager at the APCD, via telephone or fax or e-mail, at least 48 hours before any such inspections occur.

AIR POLLUTION CONTROL OFFICER



APR 28 2009

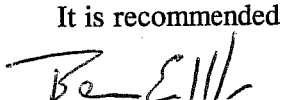
Date

NOTES:

(a) This permit supersedes all previous APCD Permits to Operate issued for the facility.
(b) Permit Reevaluation Due Date: April 2012
(c) Part 70 Operating Permit Expiration date : April 2012

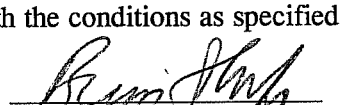
RECOMMENDATION:

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



AQ Engineer

4/24/09



Engineering Supervisor

4/24/2009

10.0 Attachments

10.1 Emission Calculation Documentation

10.2 Emission Calculation Spreadsheets

10.3 Fee Calculations

10.4 IDS Database Emission Tables

10.5 Equipment List

10.6 Exempt Equipment List

10.7 Public Comments on the Permit and APCD Responses

10.1 EMISSION CALCULATION DOCUMENTATION

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. Detailed calculation spreadsheets are attached as Attachment 10.2. The letters A-E refer to Tables 5.1-1 and 5.1-2.

Reference A - Internal Combustion Engines Driving Compressors

- The gaseous fuel default characteristics are:
  - ⇒ HHV = 1105 Btu/scf
  - ⇒ Fuel S = 80 ppmvd for IR-4, IR-5, IR-6, 12 ppmvd for Cooper, IR-1 and IR-3.

- BSFC [1](Cooper) = 6,800 Btu/hp-hr (based on HHV)
  BSFC (IR 1) = 8,500 Btu/hp-hr (based on HHV)
  BSFC (IR 3, IR 4, IR 5, IR 6) = 11,100 Btu/hp-hr (based on HHV)

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

NO_x, ROC, and CO emission factors are based on APCD Rule 333 limits for rich burn, non-cyclically loaded engines or ERC limits.

NO_x for the Cooper is based on the 1987 ERC Agreement Source Test-based limits of 0.176 lb/MMBtu. NO_x for IR 1 is based on the 1987 ERC Agreement Source Test-based limits of 0.380 lb/MMBtu. NO_x for IR 3, 4, 5, and 6 is based on the 90% control requirement for Rule 333, since the engines may emit more than 50 ppmv NO_x and remain in compliance with the rule. The 0.494 lb/MMBtu emission factor was established by PTO 7996. The 0.494 lb/MMBtu emission factor for IR 3 was established by ATC 12267 based on the installation of an NSCR system and is lower than the 1987 ERC Agreement Source Test-based limit of 0.776 lb/MMBtu.

ROC for the Cooper is based on the 1987 ERC Agreement Source Test-based limits of 0.490 lb/MMBtu. ROC for the other compressor engines is based on the Rule 333 limit of 250 ppmv at 15 percent O_2.

---

[1] *The BSFC for the gas-fired NSCR-controlled ICEs has been changed from that shown in the original PTO 8020. The BSFC in this permit is empirically derived from the April 1994 source test data at maximum ICE load. The listed BSFC in the original PTO 8020 was erroneous, since it was an assumed value in the absence of engine manufacturer's fuel efficiency data. As such, the increase in rated heat input of these ICEs from PTO 8020 to PTO 9122 was not considered a Net Emissions Increase subject to NSR.*

$$\frac{250\ scf\ ROC}{1{,}000{,}000\ scf\ exhaust} \times \frac{8608\ dscf\ exhaust}{MMBtu_{IN}} \times \frac{lb\text{-}mol}{379.6\ scf\ ROC} \times \frac{16\ lb\ ROC\ (as\ CH_4)}{1\ lb\text{-}mol} \times \frac{20.9\ \%\ O_2}{20.9 - 15\ \%\ O_2}$$

= 0.32 lb ROC/MMBtu

CO for the Cooper is based on the 1987 ERC Agreement Source Test-based limits of 0.776 lb/MMBtu. CO for the other compressor engines is based on the Rule 333 limit of 4,500 ppmv. CO emission factors are calculated in the same manner as ROC based on the Rule 333 limit of 4,500 ppmv at 15 percent O_2 and using a molecular mass of 28 lb/lb-mol.

SO_2 emission factors are based on mass balance equation and the permitted fuel sulfur content

⇒ SO_2 (lb/MMBtu) = 0.169 lb. SO_2/scf of H_2S * 1/HHV * (ppmvd S in fuel)

⇒ SO_2 (lb/MMBtu) = 0.169 lb. SO_2/scf of H_2S * 1/1105 Btu/scf * (12 ppmvd)
= 0.0018 lb/MMBtu (rounded to 0.002)

PM emission factors are based on USEPA, AP-42 Table 3.2.3 (gas-fired ICE)

⇒ PM (lb/MMBtu) = 0.0194 lb/MMBtu (gas-fired) filterable plus condensable

⇒ PM10: PM ratio = 1.00 (gas-fired)

HAP Emissions Computations:

The HAP emissions are computed based on the rated capacity of the ICE unit (in MMBtu/hr or yr) multiplied by the appropriate emission factor for the unit (in lb/MMBtu) based on source test results or USEPA's *AP-42, Sections 3.2 and 3.3, Tables 3.2-1(7/00), 3.2-3(7/00), 3.2-5(1/95) and 3.3-3(10/96).*

Reference B –Waukesha IC Engine

☞ The gaseous fuel default characteristics are:

⇒ HHV = 1105 Btu/scf

⇒ Fuel S = 80 ppmvd

☞ BSFC = 8,112 Btu/hp-hr (based on HHV)

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

NO_x, CO, and ROC emission factors are based on manufacturer-provided emission factors

NO_x = 0.15 g/bhp-hr, ROC = 0.15 g/bhp-hr, CO = 0.60 g/bhp-hr

SO_2 emission factors are based on mass balance equation and the permitted fuel sulfur content

⇒ SO_2 (lb/MMBtu) = 0.169 lb. SO_2/scf of H_2S * 1/HHV * (ppmvd S in fuel)

⇒ SO_2 (lb/MMBtu) = 0.169 lb. SO_2/scf of H_2S * 1/1105 Btu/scf * (12 ppmvd) = 0.0018 lb/MMBtu (rounded to 0.002)

PM emission factors are based on USEPA, AP-42 Table 3.2.3 (gas-fired ICE)

⇒ PM (lb/MMBtu) = 0.0194 lb/MMBtu (gas-fired) filterable plus condensable

⇒ PM10: PM ratio = 1.00 (gas-fired)

Reference C – Crane Engine

The emission factors for the crane engine were chosen based on the engine's rating and model year. The emission factors used are documented on the APCD's webpage at http://www.sbcapcd.org/eng/atcm/dice/dice_efs.htm.

The SOx emissions are based on the State's ATCM, which sets restrictions on the sulfur content of the diesel fuel, at 15 parts per million by weight (.0015%).

The PM emission factor is limited by the State's ATCM limit of 0.01 g/bhp-hr.

Reference D – External Combustion Devices

☞ The maximum operating schedule is in units of hours

☞ The gaseous fuel default characteristics are:

⇒ HHV = 1,105 Btu/scf

⇒ Fuel S = 12 ppmvd for all equipment

☞ NOx and CO, ROC and PM_{10} emission factors are based on USEPA AP-42, Tables 1.4-1 & 1.4-2, respectively (7/98). These are: NOx = 100 lb/MMscf, ROC = 5.5 lb/MMscf, CO = 84 lb/MMscf, and PM_{10} = 7.6 lb/MMscf.

☞ SO_2 emission limits (factors) are based on mass balance equation, based on fuel S. Thus:

⇒ SO_2 (lb./MMBtu) = 0.169 lb. SO_2/scf of H_2S * 1/HHV * (ppmvd S in fuel)

(vii) Note: The NO_x, ROC, CO, and PM emission factors listed in PT70/Reeval 7996 R7 were not the ones listed in AP-42. The emission factors in Table 5.1-2 were also incorrect. The emission factors listed here and in Table 5.1-2 have been corrected.

HAP Emissions Computations:

The HAP emissions are computed based on the rated capacity of the combustion unit (in MMBtu/hr or yr) multiplied by the appropriate emission factor for the unit (in lbs./MMBtu) listed in USEPA's *Air Emission VOC Species Profile, SCC 1-03-006-03.*

Reference E -- Wastewater Tanks and Sumps

- Emission calculation methodology based on the CARB/KVB report *Emission Characteristics of Crude Oil Production Operations in California (1/83)* and P&P 6100.060;
- Calculations are based on the surface area of each unit;
- All wastewater tanks are classified as secondary production and heavy oil service, all sumps are classified as tertiary production and heavy oil service;
- A control efficiency of 95% is assumed for each wastewater tank because each tank is connected to the vapor recovery unit, no control is assumed for any sump;
- The THC Speciation is based on CARB profiles # 532; the ROC/TOC ratio is based on the APCD's guideline *"VOC/ROC Emission Factors and Reactivities for Common Source Types"* Table dated 4/2/97 (version 1.0).

HAP Emissions Computations:

The HAP emissions are computed based on the total ROC emitted by the unit (in lbs./day or year) multiplied by the HAP fraction present in the ROC as listed in the CARB's *Speciation Manual: VOC Species Profiles, Profile 532, p. II-45, (August, 1991)*

Reference F – Crude Oil Storage Tank

- The hourly/daily/annual emissions scenario is based on the following assumptions:

  1. Maximum True vapor pressure: 3.6 psia, *as provided by Venoco in September 2005 Compliance Verification Report*
  2. Crude oil is stored in an unheated tank.
  3. Emissions occur 24 hours/day and 365 days/year.
  4. The oil throughput rate for the 217,000 bbl tank is 18,000 bbl/day

- Emissions are calculated using the USEPA's Tanks 4.09d program.

Reference G -- Pigging Equipment

- Maximum operating schedule is in units of events (e.g., twice per week);
- The gas & oil launcher volumes, pressures, and temperatures based on file data;
- All vapor in the launcher is blown to the VRS prior to opening the vessel to the atmosphere; The remaining vessel pressure is assumed to be no greater than 1 psig. The temperature of the remaining vapor in the vessel is based on the Venoco-reported value of 180 °F.
- The MW_{gas} = 23 lb/lb-mol for the gas launcher, 50 lb/lb-mol for the oil launcher;
- Average ROC weight percent is 30.8 % for the gas launcher, 56.0 % for the oil launcher; (Reference: CARB VOC Speciation Profile 757, p. II-73)
- Density ρ = (pressure x MW) / (R x T), density of vapor remaining in the vessel (lbs. ROC/acf)
- Site-specific pigging emission factor EF = (ρ x ROC weight %) , (lb ROC/acf-event)
- ρ = ((14.7 psi + 1 psig) *23 lb/lb-mol) / (10.73 psi-acf/deg R-lb-mol*(180 degF + 460 degF)) = 0.0526 lb/acf,
  density of THC vapor remaining in vessel = 0.0526 lb/cubic feet of TOC for gas launchers;
- EF(gas) = 0.0526 lb/acf * 0.308 = 0.0162 lb of ROC/acf-event for gas launchers.
- ρ = ((14.7 psi + 1 psig) *50 lb/lb-mol) / (10.73 psi-acf/deg R-lb-mol*(180 degF + 460 degF)) = 0.114 lb/acf,
  density of THC vapor remaining in vessel = 0.114 lb/cubic feet of TOC for gas launchers;
- EF(gas) = 0.114 lb/acf * 0.560 = 0.064 lb of ROC/acf-event for gas launchers.

HAP Emissions Computations:

The HAP emissions are computed based on the total ROC emitted by the unit (in lbs./day or year) multiplied by the HAP fraction present in the ROC as listed in the CARB's *Speciation Manual: VOC Species Profiles, Profile 757, p. II-74, (August, 1991)*

Reference H - Fugitive Components Emitting ROCs

- The maximum operating schedule is in units of hours.
- Component counts are provided by the applicant. The count has been verified to be accurate within 5 percent of the APCD's count based on site checks and process/instrumentation diagram review.
- The component counts used in the calculation of fugitive ROC emissions are based on the APCD 6100.072.1998 guidelines (*Using Correlation Equation Methodology to Estimate*

Mass ROC Emissions at O&G Facilities, "P&P 072"). Venoco is required to comply with the requirements of APCD Rule 331 (*Fugitive Emissions Inspection and Maintenance*) and to follow the guidelines provided in P&P 072. Note that P&P 072 is based on the Correlation Equation Method and does not consider control efficiency factors for implementation of I&M programs in calculating fugitive ROC emissions.

- Emission factors are based on the P&P 072 guidelines; ROC/THC ratios are based on the APCD P&P 6100.061.1998 guidelines (*Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts – Modified for Revised ROC Definition*).

HAP Emissions Computations:

The HAP emissions are computed based on the total ROC emitted by the unit (in lbs./day or year) multiplied by the HAP fraction present in the ROC based on sampling conducted throughout the facility or as listed in the CARB's *Speciation Manual: VOC Species Profiles, Profile 757, p. II-74, (August, 1991)*

Reference I – Solvents/Coatings

- Any solvents not used to thin surface coatings are included in "solvent-cleaning/ degreasing" emissions unit category
- Daily and annual estimated emission rates are not computed.

Table 5.5 lists actual and permit-exempt emissions to explain the federal "Part 70 FPTE" data.

10.2 Emission Calculation Spreadsheets

TABLE 1 - EMISSION FACTOR DERIVATION FROM PPMV DATA

DATA:

Parameter	*Symbol*	*Value*	*Units*	*Reference*
Rich or Lean Burn?	EXO2	1	"r" or "l"	Permit application
4 Stroke or 2 Stroke?	STROKE	4	"4" or "2"	Permit application
Engine Rating	BHP	1,800	(Bhp)	Permit application
BSFC {HHV basis}	BSFCH	6,800	(Btu/bhp-hr)	APCD ICE TRD, Table 6
F-Factor (F_D)	FD	8,608	(dscf/MMBtu)	Attach. 2-3 USEPA Combustion Manual
Sulfur Content	SULF	12	(ppmv as S)	Permit application
Heat Content	HEAT	1,105	Btu/scf	Permit application
Molar Volume of Gasses	mv	379.6	(scf/lb-mole)	Attach. 5-5 USEPA Combustion Manual
Stack NOx (as NO2)	ppmvN	48	(ppmvd @ 15% O2)	Rule 333 ppmV limit
Stack ROC (as CH4)	ppmvR	381	(ppmvd @ 15% O2)	Rule 333 ppmV limit
Stack CO	ppmvC	345	(ppmvd @ 15% O2)	Rule 333 ppmV limit
Molec Weight NOx	MWN	46	lb/lbmole	NOx as NO2
Molec Weight ROC	MWR	16	lb/lbmole	ROC as methane
Molec Weight CO	MWC	28	lb/lbmole	
Molec Weight SOx	MWS	64	lb/lbmole	as SO2

CALCULATIONS:

Parameter	*Symbol*	*Value*	*Units*	*Calculation*
Hourly Heat Input	QH	12.240	MMBtu/hr	QH = (BHP*BSFCH)/10^6
Stack Flow (0% O2)	S1	105,362	dscf/hr	S1 = FD * QH
Stack Flow (15% O2):	S2	373,231	dscf/hr	S2 = S1 * {(20.9-0)/(20.9-15)}
NOx Mass Emissions	EN	2.171	lb/hr	EN = {(ppmvN/10^6)*S2*MWN/mv}
ROC Mass Emissions	ER	5.994	lb/hr	ER = {(ppmvR/10^6)*S2*MWR/mv}
CO Mass Emissions	EC	9.498	lb/hr	EC = {(ppmvC/10^6)*S2*MWC/mv}
SOx Mass Emissions	ES	0.022	lb/hr	ES = {(QH/1050)*SULF*MWS/mv}
PM10 Mass Emissions	EP	0.122	lb/hr	EP = {QH*EFPM}
NOx Emission Factor	EFNOX	0.177	lb/MMBtu	EFNOX = EN/QH
ROC Emission Factor	EFROC	0.490	lb/MMBtu	EFROC = ER/QH
CO Emission Factor	EFCO	0.776	lb/MMBtu	EFCO = EC/QH
SOx Emission Factor	EFSOX	0.001831	lb/MMBtu	EFSOX = SULF/HEAT/mv*MWS

TABLE 2 - EMISSION FACTOR DERIVATION FROM G/BHP-HR DATA

DATA:

Parameter	*Symbol*	*Value*	*Units*	*Reference*
Rich or Lean Burn?	EXO2	r	"r" or "l"	Permit application
4 Stroke or 2 Stroke?	STROKE	4	"4" or "2"	Permit application
Engine Rating	BHP	220	(Bhp)	Permit application
BSFC {HHV based}	BSFCH	8,112	(Btu/bhp-hr)	APCD ICE TRD, Table 6
F-Factor (F_D)	FD	8,608	(dscf/MMBtu)	Attach. 2-3 USEPA Combustion Manual
Sulfur Content	SULF	12	(ppmv as S)	Permit application
Heat Content	HEAT	1,105	Btu/scf	Permit application
Molar Volume of Gasses	mv	379.6	(scf/lb-mole)	Attach. 5-5 USEPA Combustion Manual
Stack NOx (as NO2)	gbhpN	0.15	g/bhp-hr	BACT
Stack ROC (as CH4)	gbhpR	0.15	g/bhp-hr	BACT
Stack CO	gbhpC	0.60	g/bhp-hr	BACT
Molec Weight NOx	MWN	46	lb/lbmole	NOx as NO2
Molec Weight ROC	MWR	16	lb/lbmole	ROC as methane
Molec Weight CO	MWC	28	lb/lbmole	
Molec Weight SOx	MWS	64	lb/lbmole	as SO2

CALCULATIONS:

Parameter	*Symbol*	*Value*	*Units*	*Calculation*
Hourly Heat Input	QH	1.785	MMBtu/hr	QH = (BHP*BSFCH)/10^6
Stack Flow (0% O2)	S1	15,362	dscf/hr	S1 = FD * QH
Stack Flow (15% O2):	S2	54,419	dscf/hr	S2 = S1 * {(20.9-0)/(20.9-15)}
NOx Mass Emissions	EN	0.073	lb/hr	EN = {(ppmvN/10^6)*S2*MWN/mv}
ROC Mass Emissions	ER	0.073	lb/hr	ER = {(ppmvR/10^6)*S2*MWR/mv}
CO Mass Emissions	EC	0.291	lb/hr	EC = {(ppmvC/10^6)*S2*MWC/mv}
SOx Mass Emissions	ES	0.003	lb/hr	ES = {(QH/1050)*SULF*MWS/mv}
PM10 Mass Emissions	EP	0.035	lb/hr	EP = {QH*EFPM}
NOx Emission Factor	EFNOX	0.041	lb/MMBtu	EFNOX = EN/QH
ROC Emission Factor	EFROC	0.041	lb/MMBtu	EFROC = ER/QH
CO Emission Factor	EFCO	0.163	lb/MMBtu	EFCO = EC/QH
SOx Emission Factor	EFSOX	0.001831	lb/MMBtu	EFSOX = SULF/HEAT/mv*MWS
Stack NOx (as NO2)	ppmvN	11	(ppmvd @ 15% O2)	
Stack ROC (as CH4)	ppmvR	32	(ppmvd @ 15% O2)	
Stack CO	ppmvC	72	(ppmvd @ 15% O2)	

TABLE A.1 - EMISSION FACTOR DERIVATION FROM US EPA Non-Road Tier Standards
ATC No. 12214
Venoco Carpinteria

DATA:

Parameter	*Symbol*	*Value*	*Units*	*Reference*
Engine Rating	BHP	228	(Bhp)	Permit application
BSFC {LHV based}	BSFCL	6,455	(Btu/bhp-hr)	APCD ICE TRD, Table 6
Fuel Correction Factor	FCF	1.1	dimensionaless	APCD ICE TRD, Table 5
BSFC {HHV based}	BSFCH	7,100	(Btu/bhp-hr)	APCD ICE TRD, Table 6
F-Factor (F_D)	FD	9,190	(dscf/MMBtu)	40 CFR 60 Appendix A, Method 19
Molar Volume of Gasses	mv	379	(scf/lb-mole)	Attach. 5-5 USEPA Combustion Manual
Stack NOx (as NO2)	gbhpN	2.80	g/bhp-hr	BACT
Stack ROC (as CH4)	gbhpR	0.20	g/bhp-hr	US EPA Tier Standard
Stack CO	gbhpC	2.60	g/bhp-hr	US EPA Tier Standard
Molec Weight NOx	MWN	46	lb/lbmole	NOx as NO2
Molec Weight ROC	MWR	16	lb/lbmole	ROC as methane
Molec Weight CO	MWC	28	lb/lbmole	
Percent O2	PO2	15	% O2	
Grams to Pound	ConF1	453.6	g/lb	

CALCULATIONS:

Parameter	*Symbol*	*Value*	*Units*	*Calculation*
Hourly Heat Input	QH	1.619	MMBtu/hr	QH = (BHP*BSFCH)/10^6
Stack Flow (0% O2)	S1	14,877	dscf/hr	S1 = FD * QH
Stack Flow (15% O2):	S2	52,699	dscf/hr	S2 = S1 * {(20.9-0)/(20.9-PO2)}
NOx Mass Emissions	EN	1.41	lb/hr	EN = {EFNOX * QH}
ROC Mass Emissions	ER	0.10	lb/hr	ER = {EFROC * QH}
CO Mass Emissions	EC	1.31	lb/hr	EC = {EFCO* QH}
NOx Emission Factor	EFNOX	0.869	lb/MMBtu	EFNOX = {gbhpN*(1/ConF1)*(1/BSFCH)*10^6}
ROC Emission Factor	EFROC	0.062	lb/MMBtu	EFROC = {gbhpR*(1/ConF1)*(1/BSFCH)*10^6}
CO Emission Factor	EFCO	0.807	lb/MMBtu	EFCO = {gbhpC*(1/ConF1)*(1/BSFCH)*10^6}
Stack NOx (as NO2)	ppmvN	220	(ppmvd @ 15% O2)	ppmvN = {EFNOX*10^6*(mv/MWN)*((20.9-PO2)/20.9)/FD
Stack ROC (as CH4)	ppmvR	45	(ppmvd @ 15% O2)	ppmvR = {EFROC*10^6*(mv/MWR)*((20.9-PO2)/20.9)/FD
Stack CO	ppmvC	336	(ppmvd @ 15% O2)	ppmvC = {EFCO*10^6*(mv/MWC)*((20.9-PO2)/20.9)/FD

FUGITIVE HYDROCARBON CALCULATIONS - CARB/KVB METHOD

ADMINISTRATIVE INFORMATION
Attachment:
Company:
Facility:
Processed by: CBE
February 11, 2009
Path & File Name:
\\sbcapcd.org\shares\Groups\ENGR\WP\Oil&Gas\Venoco - Carpinteria\Reevals\PTO 7995 R8\[PTO 7995-R8 Emission Calcs 1-15-2009.xls]Fug ROC Tbl 5.1-0

Version: fhc-kvb5.xls
Date: 24-Oct-00

Reference: CARB speciation profiles #s 529, 530, 531, 532

Data	Value	Units
Number of Active Wells at Facility	1	wells
Facility Gas Production		scf/day
Facility Dry Oil Production		bbls/day
Facility Gas to Oil Ratio (if > 500 then default to 501)	501	scf/bbl
API Gravity	40	degrees API
Facility Model Number	4	dimensionless
No. of Steam Drive Wells with Control Vents	0	wells
No. of Steam Drive Wells with Uncontrolled Vents	0	wells
No. of Cyclic Steam Drive Wells with Control Vents	0	wells
No. of Cyclic Steam Drive Wells with Uncontrolled Vents	0	wells
Composite Valve and Fitting Emission Factor	6.6409	lb/day-well

Lease Model	Valve ROG Emission Factor Without Ethane	Fitting ROG Emission Factor Without Ethane	Composite ROG Emission Factor Without Ethane	
1	1.4921	0.9947	2.4868	lbs/day-well
2	0.6999	0.6092	1.3091	lbs/day-well
3	0.0217	0.0673	0.0890	lbs/day-well
4	4.5090	2.1319	6.6409	lbs/day-well
5	0.8628	1.9424	2.8053	lbs/day-well
6	1.7079	2.5006	4.2085	lbs/day-well

Model #1: Number of wells on lease is less than 10 and the GOR is less than 500.
Model #2: Number of wells on lease is between 10 and 50 and the GOR is less than 500.
Model #3: Number of wells on lease is greater than 50 and the GOR is less than 500.
Model #4: Number of wells on lease is less than 10 and the GOR is greater than 500.
Model #5: Number of wells on lease is between 10 and 50 and the GOR is greater than 500.
Model #6: Number of wells on lease is greater than 50 and the GOR is greater than 500.

ROC Emission Calculation Summary Results Table
Reactive Organic Compounds[c]

	lbs/hr	lbs/day	tons/year
Valves and Fittings[a]	0.06	1.33	0.24
Sumps, Wastewater Tanks and Well Cellars[b]	2.81	67.33	12.29
Oil/Water Separators [b]	0.00	0.00	0.00
Pumps/Compressors/Well Heads[a]	0.00	0.02	0.00
Enhanced Oil Recovery Fields	0.00	0.00	0.00
Total Facility FHC Emissions (ROC)	2.86	68.67	12.53

a: Emissions amount reflect an 80% reduction due to Rule 331 implementation.
b: Emissions reflect control efficiencies where applicable.
c: Due to rounding, the totals may not appear correct

Emission Calculation by Emission Unit

Pumps, Compressors, and Well Heads Uncontrolled Emission Calculations

Number of Wells	1	wells
Wellhead emissions	0.0097	ROC (lb/day)
FHC from Pumps	0.0039	ROC (lb/day)
FHC from Compressors	0.0679	ROC (lb/day)
Total:	0.0815	ROC (lb/day)

Sumps, Uncovered Wastewater Tanks, and Well Cellars

Efficiency Factor: (70% for well cellars, 0% for uncovered WW tanks, sumps and pits)

Unit Type/Emissions Factor

	Heavy Oil Service	Light Oil Service	
Primary	0.0941	0.138	(lb ROC/ft^2-day)
Secondary	0.0126	0.018	(lb ROC/ft^2-day)
Tertiary	0.0058	0.0087	(lb ROC/ft^2-day)

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft^2)	Primary	Secondary	Tertiary
			0.00		
Wastewater Tanks	5	3,679		66.23	
Sumps	8	126			1.10
			0.00	66.23	1.10

Covered Wastewater Tanks

Efficiency Factor: 85%

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft^2)	Primary	Secondary	Tertiary
			0.00		
				0.00	
					0.00
			0.00	0.00	0.00

Covered Wastewater Tanks Equipped with Vapor Recovery

Efficiency Factor: 95%

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft^2)	Primary	Secondary	Tertiary
			0.00		
				0.00	
					0.00
			0.00	0.00	0.00

Oil/Water Separators

Efficiency Factor: varies (85% for cover, 95% for VRS, 0% for open top)

Emissions Factor: 560 (lb ROC/MM Gal)

Type (emissions in lbs/day)

Description/Name	TP-MM Gal	Equipped with Cover	Equipped with VRS	Open Top	Total lb/day
		0.0			
			0.0		
				0.0	
		0.0	0.0	0.0	0.0

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-861
City:	Carpinteria
State:	California
Company:	Venoco
Type of Tank:	External Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	180.00
Volume (gallons):	9,114,000.00
Turnovers:	30.30

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Double Deck
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Drain (3-in. Diameter)/Open	3
Roof Leg (3-in. Diameter)/Adjustable, Double-Deck Roofs	74
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Santa Barbara, California (Avg Atmospheric Pressure = 14.65 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

T-861 - External Floating Roof Tank
Carpinteria, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude oil (RVP 5)	All	61.28	55.71	66.86	64.13	2.5611	N/A	N/A	50.0000			207.00	Option 4: RVP=5

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-861 - External Floating Roof Tank
Carpinteria, California

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude oil (RVP 5)	612.33	1,467.41	1,520.76	0.00	3,600.50

10.3 Fee Calculations

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. The APCD triennial reevaluation fees are based on the Rule 210 Fee Schedule. Total fees for this permit are shown at the end of the Fee Breakdown Table attached to this Section.

FEE STATEMENT

PT-70/Reeval No. 07996 - R8
FID: 00027 Carpinteria Gas Plant / SSID: 00027

Santa Barbara County
Air Pollution Control District

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
000195	Indirect Heater	A3	4.500	440.07	Per 1 million Btu input	No	1	1.000	1,980.32	0.00	0.00	1,980.32
009232	Pump (P-42)	A2	10.000	30.41	Per total rated hp	No	1	1.000	304.10	0.00	0.00	304.10
009233	Tank bottom transfer pump	A2	7.500	30.41	Per total rated hp	No	1	1.000	228.08	0.00	0.00	228.08
009234	Bottoms pump	A2	2.000	30.41	Per total rated hp	No	1	1.000	60.82	0.00	0.00	60.82
112322	Wastewater Tank	A6	210.000	3.36	Per 1000 gallons	No	1	1.000	705.60	0.00	0.00	705.60
008168	Waste Water Tank: (WW-T1)	A6	42.000	3.36	Per 1000 gallons	No	1	1.000	141.12	0.00	0.00	141.12
112321	Wastewater Tank	A6	210.000	3.36	Per 1000 gallons	No	1	1.000	705.60	0.00	0.00	705.60
008169	Waste Water Tank: (WW-T2)	A6	42.000	3.36	Per 1000 gallons	No	1	1.000	141.12	0.00	0.00	141.12
009275	Gas Pig Receiver from Grace	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009277	Liquid Slug Catcher (SA V-400)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
112341	Oil Pig Receiver from Grace	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
000242	Sump: Grace Pig Receiver (O&G)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
000244	Sump: SA V-4 Free Water Knock Out	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
112323	Wastewater Pan	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
000243	Sump: SA V-3 Free Water Knock Out	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
000245	Sump: SA V-13 Free Water Knock Out	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28

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
112327	Sump	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
000246	Sump: Pig Cleaning Area	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
000247	Sump: GASO Pump	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009276	Intake scrubber (SA-V2)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009227	Flow splitter (SA-V3)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009228	Flow splitter (SA-V4)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009253	Flow splitter (SH-V13)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009279	Low pressure intake scrubber (SH-V4)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009280	Low pressure intake scrubber (SH-V12)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009229	Transfer pump	A2	30.000	30.41	Per total rated hp	No	1	1.000	912.30	0.00	0.00	912.30
009255	Tank bottom pump	A2	3.000	30.41	Per total rated hp	No	1	1.000	91.23	0.00	0.00	91.23
008170	Blow Down Tank: (SA-V16)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
112320	Crude Storage Tank	A6	9114.000	3.36	Per 1000 gallons	Max	1	1.000	2,943.48	0.00	0.00	2,943.48
107480	White Compressor Unit #1	A2	600.000	30.41	Per total rated hp	Max	1	1.000	5,888.34	0.00	0.00	5,888.34
009282	Intake scrubber for White Compressor Unit #1	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
107438	White Compressor #1 Second Stage Scrubber	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107439	White Compressor #1 Third Stage Scrubber	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107440	White Compressor Unit #2	A2	600.000	30.41	Per total rated hp	Max	1	1.000	5,888.34	0.00	0.00	5,888.34
107444	Compressor Intake Scrubber for Unit 2	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107445	White Compressor #2 Second Stage Scrubber	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107446	White Compressor #2 Third Stage Scrubber	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107467	Ingersoll Rand Compressor Unit # 2	A2	75.000	30.41	Per total rated hp	No	1	1.000	2,280.75	0.00	0.00	2,280.75
112332	Pipeline Shipping Pumps	A2	450.000	30.41	Per total rated hp	Max	2	1.000	11,776.68	0.00	0.00	11,776.68
112344	LACT Unit	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
112342	Oil Pig Launcher (to Rincon)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009314	Hydrogen sulfide contactor vessel (SA V-40)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009317	Hydrogen Sulfide contactor vessels, (2), (SA-V41 and SA-V42)	A6	1.000	3.36	Per 1000 gallons	Min	2	1.000	116.56	0.00	0.00	116.56

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
009315	Ferri-cat chemical mixing vat w/stirrer	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009316	LTS intake scrubber (SH-V6)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009273	Water wash tower (V-43)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009256	Filter separator (V-45)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009257	Water tank (SA-V44)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
112343	Motor: Sump Pump	A2	3.000	30.41	Per total rated hp	No	1	1.000	91.23	0.00	0.00	91.23
000200	Glycol regenerator	A3	0.810	440.07	Per 1 million Btu input	No	1	1.000	356.46	0.00	0.00	356.46
009272	Glycol surge tank (1)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009254	Glycol flash separator	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009237	Wet glycol sock filters (2)	A1.a	1.000	58.66	Per equipment	No	2	1.000	117.32	0.00	0.00	117.32
009238	Charcoal filter	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009239	Glycol stripping column	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009240	Glycol circulation pumps (2)	A2	2.000	30.41	Per total rated hp	No	2	1.000	121.64	0.00	0.00	121.64
009241	Glycol stripping pumps (2)	A2	1.000	30.41	Per total rated hp	Min	2	1.000	116.56	0.00	0.00	116.56
009242	Drip pot V-61	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009243	Mini-LTS unit	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009244	Glycol filter bag	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009261	Glycol contactor (SH-C103)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009263	Low temperature separator (SH-V101)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009264	Glycol separator (SH-V105)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009265	Propane refrigerant receiver (R101D)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009266	Propane suction accumulator (R101E)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009267	Rotary screw compressors (2)	A2	200.000	30.41	Per total rated hp	Max	2	1.000	11,776.68	0.00	0.00	11,776.68
009268	Propane/mixed liquids exchanger	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009269	Propane refrigerant coolers (2)	A2	20.000	30.41	Per total rated hp	No	2	1.000	1,216.40	0.00	0.00	1,216.40
009258	De-propanizing System Reboiler	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
009224	Main Fuel Gas Filter	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66

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
109278	IC Engine: Diesel Crane	A3	1.620	440.07	Per 1 million Btu input	No	1	1.000	712.91	0.00	0.00	712.91
100222	Waukesha ICE Auxiliary power generator system	A3	1.780	440.07	Per 1 million Btu input	No	1	1.000	783.32	0.00	0.00	783.32
107447	Cooper Compressor	A3	12.240	440.07	Per 1 million Btu input	No	1	1.000	5,386.46	0.00	0.00	5,386.46
107448	Cooper Intake Scrubber (SA-V31)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107449	Cooper Second Stage Intake Scrubber (SA-V32)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107452	Cooper Pulsation Damper (SA-50)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107453	Cooper Fuel Gas Filter (F-10)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107455	Ingersoll Rand Unit # 1	A3	3.740	440.07	Per 1 million Btu input	No	1	1.000	1,645.86	0.00	0.00	1,645.86
107456	Ingersoll Rand Unit # 3	A3	3.740	440.07	Per 1 million Btu input	No	1	1.000	1,645.86	0.00	0.00	1,645.86
107457	Ingersoll Rand Unit # 4	A3	3.360	440.07	Per 1 million Btu input	No	1	1.000	1,478.64	0.00	0.00	1,478.64
107458	Ingersoll Rand Unit # 5	A3	4.884	440.07	Per 1 million Btu input	No	1	1.000	2,149.30	0.00	0.00	2,149.30
107459	Ingersoll Rand Unit # 6	A3	4.484	440.07	Per 1 million Btu input	No	1	1.000	1,973.27	0.00	0.00	1,973.27
107461	IR High Pressure Intake Scrubber (SH-V7)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107460	IR High Vapor pressure Intake Scrubber (SH-V3)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107463	IR Propane Intake Scrubber (SH-V8)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107464	IR Low Pressure Discharge Scrubber (SH-V5)	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
107465	IR Low Pressure Field Gas Discharge Coolers (F 16-F19)	A1.a	1.000	58.66	Per equipment	No	4	1.000	234.64	0.00	0.00	234.64
107466	IR Sales Gas Discharge Coolers (F14/15)	A1.a	1.000	58.66	Per equipment	No	2	1.000	117.32	0.00	0.00	117.32
000191	Therminol Heater H-101	A3	4.990	440.07	Per 1 million Btu input	No	1	1.000	2,195.95	0.00	0.00	2,195.95
009246	Transfer pumps, 2 (P-103 A/B)	A2	15.000	30.41	Per total rated hp	No	2	1.000	912.30	0.00	0.00	912.30
009247	Expansion tank (T-103)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009248	Vent tank	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009250	Shipping pumps, 2 (P-9/10)	A2	5.000	30.41	Per total rated hp	No	2	1.000	304.10	0.00	0.00	304.10
009218	Low pressure vapor accumulator (SH-V2)	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009219	Condensate accumulator (SH-V9).	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
009221	Refrigerant weathering drum	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28

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
009222	Blow pot trap	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
	Device Fee Sub-Totals =								**$71,066.76**	**$0.00**	**$0.00**	
	Device Fee Total =											**$71,066.76**

Permit Fee

Fee Based on Devices **71,066.76**

Fee Statement Grand Total = $71,066

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_X	ROC	CO	SO_X	TSP	PM_{10}
Part 70/APCD PTO 7996 – R8						
Lb/day	323.47	457.45	5521.91	5.79	14.69	14.69
Tons/year	58.64	83.32	1007.38	1.06	2.68	2.68

Table 2
Facility Potential to Emit (FPTE)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
Part 70/APCD PTO 7996 – R8						
Lb/day	326.11	457.45	5521.91	5.79	14.69	14.69
Tons/year	59.12	83.32	1007.38	1.06	2.68	2.68

Table 3
Federal PT-70 Potential to Emit (PT 70 FPTE)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
Part 70/APCD PTO 7996 – R8						
Lb/hr	14.87	13.62	231.27	0.24	0.62	0.62
Tons/year	59.12	59.23	1007.38	1.06	2.68	2.68

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

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
Part 70/APCD PTO 7996 – R8 8						
Lb/day	4.74	6.68	9.75	0.56	0.44	0.44
Tons/year	0.47	1.19	1.41	0.10	0.08	0.08

10.5 Equipment List

1 Indirect Heater

Device ID #	**000195**	*Device Name*	**Indirect Heater**
Rated Heat Input	4.500 MMBtu/Hour	*Physical Size*	
Manufacturer	NATIONAL	*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	horizontal (F-1), rated at 4.5 MMBTU/hour, gas fired		

2 Incoming System

2.1 Gas Pig Receiver from Grace

Device ID #	**009275**	*Device Name*	**Gas Pig Receiver from Grace**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	1 foot in diameter		

2.2 Liquid Slug Catcher (SA V-400)

Device ID #	**009277**	*Device Name*	**Liquid Slug Catcher (SA V-400)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V400
Model		*Serial Number*	
Location Note			
Device Description	Welded construction, horizontal, 6 feet in diameter by 15 feet long, seam to seam (s/s). The vessel is connected with a manual blow down line to vapor recovery.		

2.3 Oil Pig Receiver from Grace

Device ID #	**112341**	*Device Name*	**Oil Pig Receiver from Grace**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	10 inches by 14 feet, including attached piping.		

2.4 Pits and sumps

2.4.1 Sump: Grace Pig Receiver (O&G)

Device ID #	**000242**	*Device Name*	**Sump: Grace Pig Receiver (O&G)**
Rated Heat Input		*Physical Size*	48.00 Square Feet
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	4 ft wide by 12 feet long		

2.4.2 Sump: SA V-4 Free Water Knock Out

Device ID #	**000244**	*Device Name*	**Sump: SA V-4 Free Water Knock Out**
Rated Heat Input		*Physical Size*	7.07 Square Feet
Manufacturer		*Operator ID*	SA V-4 FWKO
Model		*Serial Number*	
Location Note			
Device Description	3 feet in diameter		

2.4.3 Wastewater Pan

Device ID #	**112323**	*Device Name*	**Wastewater Pan**
Rated Heat Input		*Physical Size*	15.75 Square Feet Area
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	4.5 feet long by 3.5 feet wide, total surface area of 15.75 ft2.		

2.4.4 Sump: SA V-3 Free Water Knock Out

Device ID #	**000243**	*Device Name*	**Sump: SA V-3 Free Water Knock Out**
Rated Heat Input		*Physical Size*	20.00 Square Feet
Manufacturer		*Operator ID*	SA-V3
Model		*Serial Number*	
Location Note			
Device Description	4 ft wide by 5 feet long		

2.4.5 Sump: SA V-13 Free Water Knock Out

Device ID #	**000245**	*Device Name*	**Sump: SA V-13 Free Water Knock Out**
Rated Heat Input		*Physical Size*	7.07 Square Feet
Manufacturer		*Operator ID*	SA-V13
Model		*Serial Number*	
Location Note			
Device Description	3 feet in diameter		

2.4.6 Sump

Device ID #	**112327**	*Device Name*	**Sump**
Rated Heat Input		*Physical Size*	16.00 Square Feet Sump Area
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	4' square		

2.4.7 Sump: Pig Cleaning Area

Device ID #	**000246**	*Device Name*	**Sump: Pig Cleaning Area**
Rated Heat Input		*Physical Size*	9.00 Square Feet
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	3 ft wide by 3 feet long		

2.4.8 Sump: GASO Pump

Device ID #	**000247**	*Device Name*	**Sump: GASO Pump**
Rated Heat Input		*Physical Size*	3.14 Square Feet
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2 feet in diameter		

2.5 Incoming Flow Process

2.5.1 Intake scrubber (SA-V2)

Device ID #	**009276**	*Device Name*	**Intake scrubber (SA-V2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V2
Model		*Serial Number*	
Location Note			
Device Description	3 feet in diameter by 8 feet long		

2.5.2 Flow splitter (SA-V3)

Device ID #	**009227**	*Device Name*	**Flow splitter (SA-V3)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V3
Model		*Serial Number*	
Location Note			
Device Description	10 feet in diameter by 60 feet long		

2.5.3 Flow splitter (SA-V4)

Device ID #	**009228**	*Device Name*	**Flow splitter (SA-V4)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V4
Model		*Serial Number*	
Location Note			
Device Description	10 feet in diameter by 52 feet long		

2.5.4 Flow splitter (SH-V13)

Device ID #	**009253**	*Device Name*	**Flow splitter (SH-V13)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V13
Model		*Serial Number*	
Location Note			
Device Description	8 feet in diameter by 35 feet long		

2.5.5 Low pressure intake scrubber (SH-V4)

Device ID #	**009279**	*Device Name*	**Low pressure intake scrubber (SH-V4)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V4
Model		*Serial Number*	
Location Note			
Device Description	3 feet in diameter by 10 feet long		

2.5.6 Low pressure intake scrubber (SH-V12)

Device ID #	**009280**	*Device Name*	**Low pressure intake scrubber (SH-V12)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V12
Model		*Serial Number*	
Location Note			
Device Description	4 feet in diameter by 7.5 feet long		

2.5.7 Transfer pump

Device ID #	**009229**	*Device Name*	**Transfer pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	driven by a 30 hp electric motor		

2.5.8 Tank bottom pump

Device ID #	**009255**	*Device Name*	**Tank bottom pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	driven by a 3 hp electric motor		

2.5.9 Blow Down Tank: (SA-V16)

Device ID #	**008170**	*Device Name*	**Blow Down Tank: (SA-V16)**
Rated Heat Input		*Physical Size*	63.62 Square Feet
Manufacturer		*Operator ID*	SA-V16
Model		*Serial Number*	
Location Note			
Device Description	250 bbl. capacity, 9 feet diameter by 21 feet long		

3 De-propanizer reboiler

Device ID #	**009259**	*Device Name*	**De-propanizer reboiler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Therminol heated, 2 feet in diameter by 12 feet long		

4 Low pressure discharge scrubber (SH-V5),

Device ID #	**009312**	*Device Name*	**Low pressure discharge scrubber (SH-V5),**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	4.67 feet in diameter by 12 feet high		

5 Wastewater system

5.1 Pump (P-42)

Device ID #	**009232**	*Device Name*	**Pump (P-42)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-42
Model		*Serial Number*	
Location Note			
Device Description	driven by 10 hp electric motors		

5.2 Tank bottom transfer pump

Device ID #	**009233**	*Device Name*	**Tank bottom transfer pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Gaso, driven by a 7.5 hp electric motor		

5.3 Bottoms pump

Device ID #	**009234**	*Device Name*	**Bottoms pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	connected to 217,000 bbl tank, driven by a 2 hp electric motor		

5.4 Wastewater Tank

Device ID #	**112322**	*Device Name*	**Wastewater Tank**
Rated Heat Input		*Physical Size*	5000.00 BBL
Manufacturer		*Operator ID*	T-637
Model	SH-T24637	*Serial Number*	
Location Note	This device belongs to the pipeline facility operationally, but is located at the Gas Plant site.		
Device Description	37.5' diam. x 24' high; 1110.37 sq. ft. area		

5.5 Waste Water Tank: (WW-T1)

Device ID #	**008168**	*Device Name*	**Waste Water Tank: (WW-T1)**
Rated Heat Input		*Physical Size*	695.00 Square Feet
Manufacturer		*Operator ID*	WW-T1
Model		*Serial Number*	
Location Note			
Device Description	1,000 barrel capacity, connected to the vapor recovery system.		

5.6 Wastewater Tank

Device ID #	**112321**	*Device Name*	**Wastewater Tank**
Rated Heat Input		*Physical Size*	5000.00 BBL
Manufacturer		*Operator ID*	T-380
Model	SA-T25380	*Serial Number*	
Location Note	This device belongs to the pipeline facility operationally, but is located at the Gas Plant site		
Device Description	5000 bbl, 37.5' diam. x 24' high; 1110.37 sq. ft. area. Currently "not-in-service"		

5.7 Waste Water Tank: (WW-T2)

Device ID #	**008169**	*Device Name*	**Waste Water Tank: (WW-T2)**
Rated Heat Input		*Physical Size*	695.00 Square Feet
Manufacturer		*Operator ID*	WW-T2
Model		*Serial Number*	
Location Note			
Device Description	1,000 barrel capacity, connected to the vapor recovery system.		

6 Crude Storage Tank

Device ID #	**112320**	*Device Name*	**Crude Storage Tank**
Rated Heat Input		*Physical Size*	217000.00 BBL
Manufacturer	Graver	*Operator ID*	T-861
Model	861	*Serial Number*	
Location Note			
Device Description	Welded design with a diameter of 180 feet and a height of 50 feet, equipped with a double deck floating roof with a metallic shoe type primary seal and a "Weather Guard" secondary seal. Receives crude oil from OCS platforms Gina/Gilda.		

7 Compressor/Blower

7.1 Gas compression skid #1

7.1.1 White Compressor Unit #1

Device ID #	**107480**	*Device Name*	**White Compressor Unit #1**
Rated Heat Input		*Physical Size*	600.00 Horsepower (Electric Motor)
Manufacturer	White	*Operator ID*	None
Model	W-64	*Serial Number*	
Location Note			
Device Description	Unit driven by 600 hp motor; belongs to Gas Compression Skid #1		

7.1.2 Intake scrubber for White Compressor Unit #1

Device ID #	**009282**	*Device Name*	**Intake scrubber for White Compressor Unit #1**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V11
Model		*Serial Number*	
Location Note			
Device Description	2 feet in diameter by 5 feet long; belongs to Gas Compression Skid #1		

7.1.3 White Compressor #1 Second Stage Scrubber

Device ID #	**107438**	*Device Name*	**White Compressor #1 Second Stage Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V12
Model		*Serial Number*	
Location Note			
Device Description	1.5 feet diameter by 6 feet long		

7.1.4 White Compressor #1 Third Stage Scrubber

Device ID #	**107439**	*Device Name*	**White Compressor #1 Third Stage Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V13
Model		*Serial Number*	
Location Note			
Device Description	1.5 feet diameter by 5 feet long		

7.2 Gas compression skid #2

7.2.1 White Compressor Unit #2

Device ID #	**107440**	*Device Name*	**White Compressor Unit #2**
Rated Heat Input		*Physical Size*	600.00 Horsepower (Electric Motor)
Manufacturer	White	*Operator ID*	
Model	W-64	*Serial Number*	
Location Note			
Device Description	Unit driven by 600 hp motor; belongs to Gas Compression Skid #2		

7.2.2 Compressor Intake Scrubber for Unit 2

Device ID #	**107444**	*Device Name*	**Compressor Intake Scrubber for Unit 2**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V21
Model		*Serial Number*	
Location Note			
Device Description	2.5 feeet diameter by 5.5 feet long; belongs to Gas Compression Skid #2		

7.2.3 White Compressor #2 Second Stage Scrubber

Device ID #	**107445**	*Device Name*	**White Compressor #2 Second Stage Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V22
Model		*Serial Number*	
Location Note			
Device Description	2 feet diameter by 5.5 feet long; belongs to Gas Compression Skid #2		

7.2.4 White Compressor #2 Third Stage Scrubber

Device ID #	**107446**	*Device Name*	**White Compressor #2 Third Stage Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V23
Model		*Serial Number*	
Location Note			
Device Description	2 feet diameter by 5.5 feet long; belongs to Gas Compression Skid #2		

7.3 Ingersoll Rand non-IC gas compression unit

7.3.1 Ingersoll Rand Compressor Unit # 2

Device ID #	**107467**	*Device Name*	**Ingersoll Rand Compressor Unit # 2**
Rated Heat Input		*Physical Size*	75.00 Horsepower (Electric Motor)
Manufacturer	Ingersoll Rand	*Operator ID*	IR # 2
Model	XRB	*Serial Number*	
Location Note			
Device Description	Driven by a 75 HP electric motor. A replacement Unit for old IR ICE Unit # 2.		

8 Pumps and Transporter Devices

8.1 Pipeline Shipping Pumps

Device ID #	**112332**	*Device Name*	**Pipeline Shipping Pumps**
Rated Heat Input		*Physical Size*	450.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Two centrifugal, electrically driven, having the following ratings: a. 450 horsepower b. 450 horsepower		

8.2 LACT Unit

Device ID #	**112344**	*Device Name*	**LACT Unit**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

8.3 Oil Pig Launcher (to Rincon)

Device ID #	**112342**	*Device Name*	**Oil Pig Launcher (to Rincon)**
Rated Heat Input		*Physical Size*	7.85 Cubic Feet
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	vapor space volume = 7.85 cubic feet/event MW of oil = 50 g/mol Density = (Pressure * MW)/(R*T) = 0.1434 lb TOG/ cubic foot Pressure = 5 psig Temp = 640 °R Emissions = Density*Volume		

9 Gas sweetening system

9.1 Hydrogen sulfide contactor vessel (SA V-40)

Device ID #	**009314**	*Device Name*	**Hydrogen sulfide contactor vessel (SA V-40)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V40
Model		*Serial Number*	
Location Note			
Device Description	welded construction, vertical, 8 feet in diameter by 19.5 feet high seam to seam (s/s), containing 'Ferri-cat' or equivalent solution as a scrubbing medium. The vessel is connected with a manual blow down line to vapor recovery.		

9.2 Hydrogen Sulfide contactor vessels, (2), (SA-V41 and SA-V42)

Device ID #	**009317**	*Device Name*	**Hydrogen Sulfide contactor vessels, (2), (SA-V41 and SA-V42)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V41/SA-V42
Model		*Serial Number*	
Location Note			
Device Description	each 8 feet in diameter and 20 feet high, using 'Ferri-cat' or equivalent solution.		

9.3 Ferri-cat chemical mixing vat w/stirrer

Device ID #	**009315**	*Device Name*	**Ferri-cat chemical mixing vat w/stirrer**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	4' diameter by 3.5' high, covered		

9.4 LTS intake scrubber (SH-V6)

Device ID #	**009316**	*Device Name*	**LTS intake scrubber (SH-V6)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V6
Model		*Serial Number*	
Location Note			
Device Description	4 feet in diameter by 14.5 feet long		

9.5 Water wash tower (V-43)

Device ID #	**009273**	*Device Name*	**Water wash tower (V-43)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-43
Model		*Serial Number*	
Location Note			
Device Description	3 feet in diameter by 20 feet high		

9.6 Filter separator (V-45)

Device ID #	**009256**	*Device Name*	**Filter separator (V-45)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-45
Model		*Serial Number*	
Location Note			
Device Description	10 inches in diameter by 7.5 feet high		

9.7 Water tank (SA-V44)

Device ID #	**009257**	*Device Name*	**Water tank (SA-V44)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V44
Model		*Serial Number*	
Location Note			
Device Description	4 feet in diameter by 10 feet high		

10 Motor: Sump Pump

Device ID #	**112343**	*Device Name*	**Motor: Sump Pump**
Rated Heat Input		*Physical Size*	3.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 3 horsepower electric motor		

11 Glycol dehydration system

11.1 Glycol regenerator

Device ID #	**000200**	*Device Name*	**Glycol regenerator**
Rated Heat Input		*Physical Size*	0.81 MMBtu/Hour
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Glycol Reboiler (C-82), with a maximum rating of 0.81 MMBTU/hour, gas fired		

11.2 Glycol surge tank (1)

Device ID #	**009272**	*Device Name*	**Glycol surge tank (1)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

11.3 Glycol flash separator

Device ID #	**009254**	*Device Name*	**Glycol flash separator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2 feet in diameter by 10 feet long (V-530)		

11.4 Wet glycol sock filters (2)

Device ID #	**009237**	*Device Name*	**Wet glycol sock filters (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

11.5 Charcoal filter

Device ID #	**009238**	*Device Name*	**Charcoal filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

11.6 Glycol stripping column

Device ID #	**009239**	*Device Name*	**Glycol stripping column**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

11.7 Glycol circulation pumps (2)

Device ID #	**009240**	*Device Name*	**Glycol circulation pumps (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	each driven by a 2 hp electric motor		

11.8 Glycol stripping pumps (2)

Device ID #	**009241**	*Device Name*	**Glycol stripping pumps (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	each driven by a 1 hp electric motor		

11.9 Drip pot V-61

Device ID #	**009242**	*Device Name*	**Drip pot V-61**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-61
Model		*Serial Number*	
Location Note			
Device Description			

11.10 Mini-LTS unit

Device ID #	**009243**	*Device Name*	**Mini-LTS unit**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	vessel (V-150) and heat exchanger (E-151)		

11.11 Glycol filter bag

Device ID #	**009244**	*Device Name*	**Glycol filter bag**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

12 Surface Coating/Solvent Cleaning

12.1 Surface Coating

Device ID #	**112325**	*Device Name*	**Surface Coating**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Operation involves surface coating of all devices at the facility		

12.2 Solvent Cleaning - Degreasing

Device ID #	**112328**	*Device Name*	**Solvent Cleaning - Degreasing**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Equipment involves degreasing of operating devices.		

13 Low temperature gas separation system

13.1 Glycol contactor (SH-C103)

Device ID #	**009261**	*Device Name*	**Glycol contactor (SH-C103)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-C103
Model		*Serial Number*	
Location Note			
Device Description	4 feet in diameter by 28.5 feet high		

13.2 Low temperature separator (SH-V101)

Device ID #	**009263**	*Device Name*	**Low temperature separator (SH-V101)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V101
Model		*Serial Number*	
Location Note			
Device Description	horizontal, 2.5 feet in diameter by 18.75 feet long.		

13.3 Glycol separator (SH-V105)

Device ID #	**009264**	*Device Name*	**Glycol separator (SH-V105)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V105
Model		*Serial Number*	
Location Note			
Device Description	1.67 feet in diameter by 5.5 feet long.		

13.4 Propane refrigerant receiver (R101D)

Device ID #	**009265**	*Device Name*	**Propane refrigerant receiver (R101D)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	R-101D
Model		*Serial Number*	
Location Note			
Device Description			

13.5 Propane suction accumulator (R101E)

Device ID #	**009266**	*Device Name*	**Propane suction accumulator (R101E)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	R-101E
Model		*Serial Number*	
Location Note			
Device Description	3 feet in diameter by 11 feet high		

13.6 Rotary screw compressors (2)

Device ID #	**009267**	*Device Name*	**Rotary screw compressors (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	each driven by a 200 hp electric motor		

13.7 Propane/mixed liquids exchanger

Device ID #	**009268**	*Device Name*	**Propane/mixed liquids exchanger**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

13.8 Propane refrigerant coolers (2)

Device ID #	**009269**	*Device Name*	**Propane refrigerant coolers (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	each driven by a 20 hp electric motor		

13.9 Transfer pumps (2)

Device ID #	**009270**	*Device Name*	**Transfer pumps (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	(P-18 A/B), each driven by a 40 hp electric motor		

13.10 De-propanizing System Reboiler

Device ID #	**009258**	*Device Name*	**De-propanizing System Reboiler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Therminol-heated Reboiler; 2 feet diameter by 12 feet long.		

13.11 De-Propanizer

Device ID #	**107490**	*Device Name*	**De-Propanizer**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-C101
Model		*Serial Number*	
Location Note			
Device Description	3' diameter by 58.75' long		

13.12 De-propanizer Receiver

Device ID #	**107491**	*Device Name*	**De-propanizer Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V102
Model		*Serial Number*	
Location Note			
Device Description	3.5' diameter by 10.5' long		

13.13 Cooler Fan

Device ID #	**107493**	*Device Name*	**Cooler Fan**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-103
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 15 hp electric motor		

13.14 Mix Tank

Device ID #	**107495**	*Device Name*	**Mix Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-T101
Model		*Serial Number*	
Location Note			
Device Description	4' diameter by 20' high		

13.15 Economizers

Device ID #	**107503**	*Device Name*	**Economizers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

13.16 Refrigerant Pump

Device ID #	**107504**	*Device Name*	**Refrigerant Pump**
Rated Heat Input		*Physical Size*	1.50 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 1.5 hp electric motor		

14 Piston IC Engine

14.1 Main Fuel Gas Filter

Device ID #	**009224**	*Device Name*	**Main Fuel Gas Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

14.2 IC Engine: Diesel Crane

Device ID #	**109278**	*Device Name*	**IC Engine: Diesel Crane**
Rated Heat Input	1.620 MMBtu/Hour	*Physical Size*	228.00 Brake Horsepower
Manufacturer	Deutz AG	*Operator ID*	
Model	TAD750VE, Volvo Penta 750 Series	*Serial Number*	5310231156
Location Note	Casitas Pier		
Device Description	Diesel Crane Engine, Tier 3, controlled by DCL International DPF direct drive. Integral non-resettable hour meter.		

14.3 Diesel Particulate Filter

Device ID #	**109279**	*Device Name*	**Diesel Particulate Filter**
Rated Heat Input		*Physical Size*	
Manufacturer	DCL International	*Operator ID*	
Model	DCF 6	*Serial Number*	tbd
Location Note	On the crane engine at Casitas Pier		
Device Description	Mine-X-Sootfilter DPF for the crane engine used to control PM.		

14.4 Waukesha ICE Auxiliary power generator system

Device ID #	**100222**	*Device Name*	**Waukesha ICE Auxiliary power generator system**
Rated Heat Input	1.780 MMBtu/Hour	*Physical Size*	220.00 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	F-11GSI	*Serial Number*	
Location Note			
Device Description	consisting of a Waukesha, 220 hp, Model F-11GSI driving a 120 kW electrical generator; the generator supplies electrical power to air compressors, electrical panels, etc.		

14.5 Fuel Meter

Device ID #	**109280**	*Device Name*	**Fuel Meter**
Rated Heat Input		*Physical Size*	
Manufacturer	Floscan	*Operator ID*	
Model	7500	*Serial Number*	tbd
Location Note			
Device Description	Sensitivity 0.1 gallon. Serves the diesel crane engine.		

14.6 Cooper gas compression system

14.6.1 Cooper Compressor

Device ID #	**107447**	*Device Name*	**Cooper Compressor**
Rated Heat Input	12.240 MMBtu/Hour	*Physical Size*	1800.00 Brake Horsepower
Manufacturer	Cooper-Bessemer	*Operator ID*	None
Model	GMVA-10	*Serial Number*	46279
Location Note			
Device Description	1800 bhp piston IC engine; currently on a forced 'out-of-service' mode of operation.		

14.6.2 Cooper Intake Scrubber (SA-V31)

Device ID #	**107448**	*Device Name*	**Cooper Intake Scrubber (SA-V31)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V31
Model		*Serial Number*	
Location Note			
Device Description	4 feet diameter by 10 feet long; belongs to Cooper Compression Unit		

14.6.3 Cooper Second Stage Intake Scrubber (SA-V32)

Device ID #	**107449**	*Device Name*	**Cooper Second Stage Intake Scrubber (SA-V32)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-V32
Model		*Serial Number*	
Location Note			
Device Description	3 feet diameter by 10 feet long; belongs to Cooper Compression Unit		

14.6.4 Cooper Pulsation Damper (SA-50)

Device ID #	**107452**	*Device Name*	**Cooper Pulsation Damper (SA-50)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-50
Model		*Serial Number*	
Location Note			
Device Description	24" diameter by 20' long; belongs to Cooper Compression Unit		

14.6.5 Cooper Fuel Gas Filter (F-10)

Device ID #	**107453**	*Device Name*	**Cooper Fuel Gas Filter (F-10)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-10
Model		*Serial Number*	
Location Note			
Device Description	Belongs to Cooper Compression Unit		

14.7 Ingersoll Rand Gas Compression System

14.7.1 Ingersoll Rand Unit # 1

Device ID #	**107455**	*Device Name*	**Ingersoll Rand Unit # 1**
Rated Heat Input	3.740 MMBtu/Hour	*Physical Size*	440.00 Brake Horsepower
Manufacturer	Ingersoll Rand	*Operator ID*	IR #1
Model	8-SVG 4	*Serial Number*	8CS1369
Location Note			
Device Description	Equipped with PSC Control Technology		

14.7.2 Ingersoll Rand Unit # 3

Device ID #	**107456**	*Device Name*	**Ingersoll Rand Unit # 3**
Rated Heat Input	3.740 MMBtu/Hour	*Physical Size*	440.00 Brake Horsepower
Manufacturer	Ingersoll Rand	*Operator ID*	IR #3
Model	8-SVG4	*Serial Number*	8CS1085
Location Note			
Device Description	Equipped with PSC Control Technology		

14.7.3 Ingersoll Rand Unit # 4

Device ID #	**107457**	*Device Name*	**Ingersoll Rand Unit # 4**
Rated Heat Input	3.360 MMBtu/Hour	*Physical Size*	300.00 Brake Horsepower
Manufacturer	Ingersoll Rand	*Operator ID*	IR # 4
Model	8-XVG4	*Serial Number*	
Location Note			
Device Description	Equipped with NSCR Control Technology, assisted by an AFRC Unit. Subject to CAM Rule		

14.7.4 Ingersoll Rand Unit # 5

Device ID #	**107458**	*Device Name*	**Ingersoll Rand Unit # 5**
Rated Heat Input	4.880 MMBtu/Hour	*Physical Size*	440.00 Brake Horsepower
Manufacturer		*Operator ID*	Ingersoll Rand
Model		*Serial Number*	
Location Note			
Device Description	Equipped with NSCR Control Technology, assisted by an AFRC Unit. Subject to CAM Rule		

14.7.5 Ingersoll Rand Unit # 6

Device ID #	**107459**	*Device Name*	**Ingersoll Rand Unit # 6**
Rated Heat Input	4.480 MMBtu/Hour	*Physical Size*	440.00 Brake Horsepower
Manufacturer		*Operator ID*	IR # 6
Model	8-SVG4	*Serial Number*	
Location Note			
Device Description	Equipped with NSCR Control Technology, assisted by an AFRC unit. Subject to CAM Rule		

14.7.6 IR High Pressure Intake Scrubber (SH-V7)

Device ID #	**107461**	*Device Name*	**IR High Pressure Intake Scrubber (SH-V7)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V7
Model		*Serial Number*	
Location Note			
Device Description	3 feet diameter by 10 feet long		

14.7.7 IR High Vapor pressure Intake Scrubber (SH-V3)

Device ID #	**107460**	*Device Name*	**IR High Vapor pressure Intake Scrubber (SH-V3)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V3
Model		*Serial Number*	
Location Note			
Device Description	4 feet diameter by 12 feet long		

14.7.8 IR Propane Intake Scrubber (SH-V8)

Device ID #	**107463**	*Device Name*	**IR Propane Intake Scrubber (SH-V8)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V8
Model		*Serial Number*	
Location Note			
Device Description	2 feet diameter by 7.5 feet long		

14.7.9 IR Low Pressure Discharge Scrubber (SH-V5)

Device ID #	**107464**	*Device Name*	**IR Low Pressure Discharge Scrubber (SH-V5)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V5
Model		*Serial Number*	
Location Note			
Device Description	4.67 feet diameter by 12 feet high		

14.7.10 IR Low Pressure Field Gas Discharge Coolers (F 16-F19)

Device ID #	**107465**	*Device Name*	**IR Low Pressure Field Gas Discharge Coolers (F 16-F19)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-16, F-17, F-18 & F-19
Model		*Serial Number*	
Location Note			
Device Description	Each cooler rated at 550 psig		

14.7.11 IR Sales Gas Discharge Coolers (F14/15)

Device ID #	**107466**	*Device Name*	**IR Sales Gas Discharge Coolers (F14/15)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-14, F-15
Model		*Serial Number*	
Location Note			
Device Description	Each cooler rated at 1000 psig		

15 Therminol heating system

15.1 Therminol Heater H-101

Device ID #	**000191**	*Device Name*	**Therminol Heater H-101**
Rated Heat Input	4.990 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	H-101 (C-81)
Model	THERMINOL	*Serial Number*	
Location Note			
Device Description	gas fired, with a maximum rating of 4.99 MMBtu/hour.		

15.2 Transfer pumps, 2 (P-103 A/B)

Device ID #	**009246**	*Device Name*	**Transfer pumps, 2 (P-103 A/B)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-103 A, P-103B
Model		*Serial Number*	
Location Note			
Device Description	each driven by 15 hp electric motors		

15.3 Expansion tank (T-103)

Device ID #	**009247**	*Device Name*	**Expansion tank (T-103)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-103
Model		*Serial Number*	
Location Note			
Device Description			

15.4 Vent tank

Device ID #	**009248**	*Device Name*	**Vent tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

16 Natural Gas Liquid LACT system

16.1 Shipping pumps, 2 (P-9/10)

Device ID #	**009250**	*Device Name*	**Shipping pumps, 2 (P-9/10)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-9, P-10
Model		*Serial Number*	
Location Note			
Device Description	each driven by a 5 hp electric motor		

16.2 NGL Pump

Device ID #	**107488**	*Device Name*	**NGL Pump**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-7
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 10 hp motor		

17 Vapor Recovery Unit

17.1 Low pressure vapor accumulator (SH-V2)

Device ID #	**009218**	*Device Name*	**Low pressure vapor accumulator (SH-V2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V2
Model		*Serial Number*	
Location Note			
Device Description	2 feet in diameter by 8 feet high		

17.2 Condensate accumulator (SH-V9).

Device ID #	**009219**	*Device Name*	**Condensate accumulator (SH-V9).**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V9
Model		*Serial Number*	
Location Note			
Device Description			

17.3 Surge vessel

Device ID #	**009220**	*Device Name*	**Surge vessel**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	3.5 feet in diameter by 12 feet long		

17.4 Refrigerant weathering drum

Device ID #	**009221**	*Device Name*	**Refrigerant weathering drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	(SH-V14), 2 feet in diameter by 10 feet high		

17.5 Blow pot trap

Device ID #	**009222**	*Device Name*	**Blow pot trap**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2 feet in diameter by 3 feet long		

18 Fugitive Hydrocarbon Components

18.1 Gas/Light Liquid Service Components

18.1.1 Gas/Light Liquid Service Components: Valves

Device ID #	**107468**	*Device Name*	**Gas/Light Liquid Service Components: Valves**
Rated Heat Input		*Physical Size*	2257.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.1.2 Gas/Light Liquid Service Components: Flanges

Device ID #	**109694**	*Device Name*	**Gas/Light Liquid Service Components: Flanges**
Rated Heat Input		*Physical Size*	2427.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.1.3 Gas/Light Liquid Service Components: Other

Device ID #	**109695**	*Device Name*	**Gas/Light Liquid Service Components: Other**
Rated Heat Input		*Physical Size*	415.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.1.4 Gas/Light Liquid Service Components: Connectors

Device ID #	**109696**	*Device Name*	**Gas/Light Liquid Service Components: Connectors**
Rated Heat Input		*Physical Size*	14819.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.1.5 Gas/Light Liquid Service Components: Open-ended lines

Device ID #	**109705**	*Device Name*	**Gas/Light Liquid Service Components: Open-ended lines**
Rated Heat Input		*Physical Size*	0.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	no open-ended lines		

18.1.6 Gas/Light Liquid Service Components: Pump/Compressor Seals

Device ID #	**109704**	*Device Name*	**Gas/Light Liquid Service Components: Pump/Compressor Seals**
Rated Heat Input		*Physical Size*	36.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2 pump seals in light liquid 34 compressor seals in gas		

18.2 Oil Service Components

18.2.1 Oil Service Components: Valves

Device ID #	**109698**	*Device Name*	**Oil Service Components: Valves**
Rated Heat Input		*Physical Size*	318.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.2.2 Oil Service Components: Connectors

Device ID #	**109699**	*Device Name*	**Oil Service Components: Connectors**
Rated Heat Input		*Physical Size*	1269.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.2.3 Oil Service Components: Flanges

Device ID #	**109700**	*Device Name*	**Oil Service Components: Flanges**
Rated Heat Input		*Physical Size*	325.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.2.4 Oil Service Components: Other

Device ID #	**109701**	*Device Name*	**Oil Service Components: Other**
Rated Heat Input		*Physical Size*	126.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

18.2.5 Oil Service Components: Open-ended lines

Device ID #	**109702**	*Device Name*	**Oil Service Components: Open-ended lines**
Rated Heat Input		*Physical Size*	0.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	no open-ended lines		

18.2.6 Oil Service Components: Pump Seals/Compressor Seals

Device ID #	**109703**	*Device Name*	**Oil Service Components: Pump Seals/Compressor Seals**
Rated Heat Input		*Physical Size*	3.00 Components Screened
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	no pump seals or compressor seals		

10.6 EXEMPT EQUIPMENT

1 Propane Cooler (E-3)

Device ID #	**009206**	*Device Name*	**Propane Cooler (E-3)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-3
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:*	
		202.L.1 Heat Exchangers	
Location Note			
Device Description			

2 White Compressor #2 First Stage Cooler

Device ID #	**107441**	*Device Name*	**White Compressor #2 First Stage Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-E6
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:*	
		202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Gas Compression Skid #2		

3 Heat exchanger (HE-40)

Device ID #	**009210**	*Device Name*	**Heat exchanger (HE-40)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	HE-40
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:*	
		202.L.1 Heat Exchangers	
Location Note			
Device Description	gas/Therminol		

4 White Compressor #2 Second Stage Cooler

Device ID #	**107442**	*Device Name*	**White Compressor #2 Second Stage Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-E7
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Gas Compression Skid #2		

5 Heat Exchanger (E-102)

Device ID #	**009211**	*Device Name*	**Heat Exchanger (E-102)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-102
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description			

6 White Compressor #2 Third Stage Cooler

Device ID #	**107443**	*Device Name*	**White Compressor #2 Third Stage Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-E8
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Gas Compression Skid #2		

7 **Heat Exchanger (E-111)**

Device ID #	**009212**	*Device Name*	**Heat Exchanger (E-111)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-111
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	gas/gas		

8 **Heat Exchanger (E-115)**

Device ID #	**009213**	*Device Name*	**Heat Exchanger (E-115)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-115
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	gas/gas		

9 **Heat Exchanger (E-116)**

Device ID #	**009214**	*Device Name*	**Heat Exchanger (E-116)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-116
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	glycol/gas		

10 Heat Exchanger (E-117)

Device ID #	**009215**	*Device Name*	**Heat Exchanger (E-117)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-117
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description			

11 Heat Exchanger (E-560)

Device ID #	**009216**	*Device Name*	**Heat Exchanger (E-560)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-560
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	glycol/glycol		

12 Chiller (E-113)

Device ID #	**009262**	*Device Name*	**Chiller (E-113)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-113
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	2.5 feet in diameter by 19 feet long		

13 Refrigerant Grade Propane Storage Tank

Device ID #	**009225**	*Device Name*	**Refrigerant Grade Propane Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:*	202.V.8 Storage Of Liquefied/Compressed Gases
Location Note			
Device Description	500 gallons		

14 Butane storage tank (SH-V20)

Device ID #	**009208**	*Device Name*	**Butane storage tank (SH-V20)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V20
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:*	202.V.8 Storage Of Liquefied/Compressed Gases
Location Note			
Device Description	15,500 gallon capacity, 8 feet in diameter by 40 feet long.		

15 Butane storage tank (SH-V21)

Device ID #	**009209**	*Device Name*	**Butane storage tank (SH-V21)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V21
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:*	202.V.8 Storage Of Liquefied/Compressed Gases
Location Note			
Device Description	15,500 gallon capacity, 8 feet in diameter by 40 feet long.		

16 **White Compressor #1 Ist Stage Cooler**

Device ID #	**107435**	*Device Name*	**White Compressor #1 Ist Stage Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-E3
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Gas Compression Skid #1		

17 **White Compressor #1 2nd Stage Cooler**

Device ID #	**107436**	*Device Name*	**White Compressor #1 2nd Stage Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-E4
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Gas Compressor Skid #1		

18 **White Compressor #1 3rd Stage Cooler**

Device ID #	**107437**	*Device Name*	**White Compressor #1 3rd Stage Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SA-E5
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Gas Compression Skid #1		

19 Cooper First Stage Cooler (E-31)

Device ID #	**107450**	*Device Name*	**Cooper First Stage Cooler (E-31)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-31
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Cooper Compression Unit		

20 Cooper Second Stage Cooler (E-32)

Device ID #	**107451**	*Device Name*	**Cooper Second Stage Cooler (E-32)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-32
Model		*Serial Number*	
Part 70 Insig?	No	*APCD Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	Belongs to Cooper Compression Unit		

OFF PERMIT EQUIPMENT

1 NGL Pump

Device ID #	**107488**	*Device Name*	**NGL Pump**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-7
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 10 hp motor		

2 Transfer pumps (2)

Device ID #	**009270**	*Device Name*	**Transfer pumps (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	(P-18 A/B), each driven by a 40 hp electric motor		

3 De-Propanizer

Device ID #	**107490**	*Device Name*	**De-Propanizer**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-C101
Model		*Serial Number*	
Location Note			
Device Description	3' diameter by 58.75' long		

4 De-propanizer Receiver

Device ID #	**107491**	*Device Name*	**De-propanizer Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-V102
Model		*Serial Number*	
Location Note			
Device Description	3.5' diameter by 10.5' long		

5 Cooler Fan

Device ID #	**107493**	*Device Name*	**Cooler Fan**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-103
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 15 hp electric motor		

6 **Mix Tank**

Device ID #	**107495**	*Device Name*	**Mix Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SH-T101
Model		*Serial Number*	
Location Note			
Device Description	4' diameter by 20' high		

7 **Economizers**

Device ID #	**107503**	*Device Name*	**Economizers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

8 **Refrigerant Pump**

Device ID #	**107504**	*Device Name*	**Refrigerant Pump**
Rated Heat Input		*Physical Size*	1.50 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Driven by a 1.5 hp electric motor		

10.7 Public Comments on the Permit and APCD Responses

One comment was received during the public review period.

1. Venoco noted that Table 5.1.0 showed 413 accessible gas/light liquid "other" components and 2 inaccessible "other" components. Venoco records 414 accessible "other components and 1 inaccessible "other" component.

   Table 5.1.0 was revised to match Venoco's records. This change does not change the total fugitive component count for the facility, nor does it change the potential to emit of the facility.