Santa Barbara County
Air Pollution Control District

AUG 1 1 2008

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

FID: 00028
Permit: ATC/PTO 12839
SSID: 01063

Re: Proposed Minor Permit Modifications to Venoco Inc.'s Ellwood Onshore Facility Part 70/APCD PTO 7904-R7

Dear Mr. Rios:

This letter transmits Proposed Authority to Construct/Permit to Operate (PTO) 12839 for modifications to Part 70/APCD PTO 7904-R7. Included with the proposed permit is a copy of the application submitted by the applicant for this modification. We plan to issue this minor permit modification as final after August 18, 2008 provided your office has not objected to such issuance during this time interval.

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

Sincerely,

Michael Goldman, Manager
Engineering & Compliance Division

enc: Proposed ATC/PTO 12839
Application forms for Minor Modifications to Venoco's Ellwood Onshore Facility

cc: Ellwood Onshore Facility 00028 Project File SC
ECD Chron File
Brian Shafritz (Cover letter only)

Santa Barbara County
Air Pollution Control District

Authority to Construct/Permit to Operate 12839

EQUIPMENT OWNER:

Venoco, Inc. 300500

EQUIPMENT OPERATOR:

Venoco, Inc.

EQUIPMENT LOCATION:

7979 Hollister Avenue, Goleta

STATIONARY SOURCE/FACILITY:

Venoco - Ellwood SSID: 01063
Ellwood Onshore Facility FID: 00028

AUTHORIZED MODIFICATION:

This ATC/PTO lowers the permitted NOx emission factor for thermal oxidizer H-205. The permitted emissions are being reduced concurrently with the installation of a new crane engine on Platform Holly (see ATC 12804) to keep the stationary source NEI below the offset thresholds

EQUIPMENT DESCRIPTION:

The equipment subject to this permit is listed in the table at the end of this permit.

PROJECT/PROCESS DESCRIPTION:

H-205 is used to combust high-CO_2 content permeate gas from the Grace unit and to incinerate LO-Cat oxidation air as part of the modified odor abatement system at the Ellwood Onshore Facility. The thermal oxidizer uses the permeate gas and in-plant fuel gas to maintain combustion temperatures sufficient to maintain the required destruction efficiencies.

Plant Process Description: A complete process description of the EOF operations may be found in the Part 70/APCD Permit to Operate 7904-R7 (December 2005), and the APCD permit ATC 11579 (July 2005) as well as in the APCD's administrative files.

CONDITIONS:

9.A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to the EOF:

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), APCD Rules 1303.D.1]*

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.9 [*Re: 40 CFR 70.6(g), 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.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 and 1303.D.1*]

A.6 **Payment of Fees.** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses, including expenses associated with implementation of permit conditions incorporated pursuant to Abatement Order 99-6A, for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. [*Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)*, AO 99-6A]

A.7 **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, 40 CFR 70.6(a) (3)*]

A.8 **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.9 **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.10 **Recordkeeping Requirements**. The permittee shall maintain records of required monitoring information that include the following:

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

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

A.11 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.
(b) Inaccurate Permit Provisions: If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
(c) Applicable Requirement: If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally-enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which causes to reopen exist. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

9.B Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

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

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

(a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2.(a) above.

For those sources listed in Condition 9.C.24, Venoco shall be in compliance with the requirements of this Rule in accordance with the monitoring and compliance recordkeeping procedures in Condition 9.C.26. [*Re: APCD Rule 302].* .

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

B.4 **PM Concentration - South Zone (Rule 305).** Venoco shall not discharge into the atmosphere, from any source, particulate matter in excess of the concentrations listed in Table 305(a) of Rule 305. [*Re: APCD Rule 305*]

B.5 **Specific Contaminants (Rule 309).** Venoco shall not discharge into the atmosphere from any single source sulfur compounds, carbon monoxide and combustion contaminants in excess of the applicable standards listed in Sections A, E and G of Rule 309. [*Re: APCD Rule 309*].

B.6 **Sulfur Content of Fuels (Rule 311).** Venoco shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 239 ppmvd or 15 gr/100 scf (calculated as H_2S) for gaseous fuel (most gaseous fuel burning equipment at EOF is subject to more stringent sulfur content limits). Compliance with the requirements pertaining to gaseous fuels shall be based on measurements of the in-plant fuel gas using continuous analyzers, sulfur detection tubes, ASTM, or other APCD-approved methods; and, compliance with the requirements pertaining to liquid

fuels shall be based on diesel fuel billing records or other data showing the certified sulfur content for each shipment. [*Re: APCD Rule 311*]

9.C Equipment-Specific Conditions

NOTE: The condition below replaces the existing permit condition C.2 and tables 5.1-5.3, 10.2-4 and 10.2-5 in Part 70/APCD PTO 7904-R7 for EOF (issued December 2005), PTO 11579 (dated May 27, 2008), and PTO Mod 7904 02 (dated June 26, 2008). All conditions and tables in the Part 70/APCD PTO 7904-R7 for EOF not addressed by PTO 11579, PTO Mod 7904 02,or this ATC/PTO 12839 remain intact and in full force.

C.2 **Combustion: Thermal Oxidizers.** The following equipment is included in this emission category:

APCD ID No.	Venoco Equipment ID No.	Name
000288	H-205	Thermal Oxidizer, H-205 (140 MMBtu/hr)
000287	H-206	Thermal Oxidizer, H-206 (220 MMBtu/hr)
000286	H-207	Thermal Oxidizer, H-207 (9.5 MMBtu/hr)

(a) Emission Limits: The following equipment-specific emission limits apply to the thermal oxidizer units listed above:

(i) *Mass Emission Rate Limits* - Mass emission rates resulting from the operation the equipment listed above shall not exceed the corresponding values listed in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on gas flow rates and gas analyses, as specified in conditions 9.C.2(c)(ii), (iii), (iv), (v), and (vi).

(ii) *Oxides of Nitrogen (NO_x) Mass Emission Rate Limit* - Emissions of NO_x (as NO_2) from the H-205 thermal oxidizer (at any load or in any operating condition) shall not exceed 0.068 lb/MMBtu. Compliance with this condition shall be based on source testing and on monthly analyzer monitoring as specified in condition 9.C.2(c)(x) .

(iii) Reactive Organic Compound *(ROC) Mass Emission Rate Limit* - Emissions of ROC from the H-205 thermal oxidizer (at any load or in any operating condition) shall not exceed 0.0030 lb/MMBtu. Compliance with this condition shall be based on source testing.

(b) Operation Limits: Operation of the equipment listed above shall be conducted in compliance with all data, specifications and assumptions included with the applications (and supplements thereof) as documented in the APCD project files and in the APCD's engineering analyses under which this permit is issued. As it relates to emissions, the equipment listed above shall be properly maintained in accordance with the equipment manufacturer's maintenance manual.

The following specific operational limits also apply to Units H-205, H-206 and H-207:

(i) *Hourly Heat Input Limits* – The maximum permitted hourly heat input to each thermal oxidizer, including heat input from the pilot gas, is listed below:

Thermal Oxidizer	Pilot heat input limit (MMBtu/hr)	Flare gas heat input limit (MMBtu/hr)
H-205	0.06	34.00
H-206	0.34	20.32
H-207	1.00	8.50

Compliance with these limits shall be based on the manufacturer's rating of each flare, and the volume and HHV of gas combusted.

(ii) *Annual Heat Input Limit* – The annual heat input to all three flares combined, including heat input from the pilot gas, shall not exceed 221,749 MMBtu. Compliance with this limit shall be based on the volume and HHV of gas combusted.

(iii) *Flare Gas Volume Limits* – Planned continuous flaring in H-206 and H-207 shall not exceed 120,000 scf/day each. Planned flaring (continuous plus intermittent) from all flares at the facility combined shall not exceed 16,410,000 scf/month.

The CO_2 portion of the flare gas and the volume of LO-Cat exhaust air burned in H-205 is not counted against these limits.

(iv) *Planned/Unplanned Operations* - The definition of the words planned, unplanned, and emergency in this permit condition are based upon the definitions in Rule 359. The following operating limits shall apply to the equipment and operations described by this permit:

a. Except for operations under condition 9.C.2.(b).(iv).c. below, the LO-Cat sulfur removal process shall not process sour gas feedstock unless the H-205 thermal oxidizer and the LO-Cat VRU (*referred to as MOAS in Section 1.4*) are operating to fully incinerate all LO-Cat Oxidizer exhaust.

b. No more than 4,950 SCFM (basis: 10 percent more than the 4,500 SCFM nominal anticipated flow) of MOAS exhaust air may be delivered to the H-205 thermal oxidizer for incineration.

c. During any sour gas processing by the LO-Cat sulfur removal process, if the H-205 thermal oxidizer or the Lo Cat VRU (*referred to as MOAS in Section 1.4*) shut down or are not operating properly for any reason, the LO-Cat sulfur removal process shall also be shut down (i.e., cease sour gas processing) simultaneously. Further, Venoco shall at no time vent LO-Cat exhaust air (or other LO-Cat emission streams) directly to the atmosphere.

d. With the exception of pilot-gas heat duties as described in Table 5.1-1 of this permit, the H-206 and H-207 thermal oxidizers shall not be operated in any other "*Planned*" continuous operating mode, unless: 1) the H-205 unit is out-of-service or fired on pilot gas only; and, 2) the LO-Cat sulfur removal process is also simultaneously not operating.

e. Only in-plant fuel gas and gas from V-221 that does not exceed 205 ppmv total sulfur content (calculated as H_2S at standard conditions) may be incinerated in the H-205,

H-206, and H-207 units for any "*Planned*" operating modes. Examples of fuel from V-221 may include, Grace Unit permeate gases, LO-Cat Vacuum Flash gases, Seep Collection gases, VRU gas from the iron sponge, and any blend thereof.

f. Unplanned flaring is not allowed in any thermal oxidizer.

(v) *BACT Operations* - The permittee shall apply emission control and design measures that represent Best Available Control Technology (BACT) for ROC emissions to the operation of the modified odor abatement system (MOAS) utilizing the H-205 unit. BACT measures to control ROC emissions from this unit must be in place and operational at all times for the life of the project. BACT for this project is defined as:

a. The incineration of LO-Cat unit Oxidizer exhaust by the H-205 unit thermal oxidizer, whenever the LO-Cat unit is operating. This shall be verified through operational parameters monitoring and process parameter monitoring alarms specified in Section 9.C.2.(c) of this permit.

b. Thermal oxidation shall destroy the ROC and benzene contents of all entering air and fuel streams by a minimum 98.5 percent minimum mass destruction efficiency across the thermal oxidizer. This performance specification shall be verified through ROC and benzene emissions source testing as specified in the source testing condition listed below for the H-205 unit, and incineration at the minimum specified temperature of 1400°F using a temperature set point control.

c. The H-205 thermal oxidizer, when incinerating LO-Cat oxidation air, shall be operated at a temperature no less than the controlled temperature demonstrated to comply with the ROC and benzene destruction efficiency source tests specified in the paragraph above. In no event shall the H-205 set-point temperature be less than 1400 °F. The actual temperature in the thermal oxidizer shall not be less than 5 percent of the applicable set-point temperature for a continuous period exceeding ten (10) minutes duration. The residence time of the combustion gas mixture inside the H-205 unit shall be a minimum of 0.62 seconds any time LO-Cat oxidation air is processed. These performance specifications shall be verified pursuant to process parameter monitoring requirements listed in Section 9.C.2.(c) and during the ROC/benzene emissions source testing required under the same section.

(vi) *Flare Gas Sulfur Limit* - The total sulfur content (calculated as H_2S at standard conditions, 60° F and 14.7 psia) of any gas combusted in each of the thermal oxidizers shall not exceed 205 ppmv.

(c) Monitoring: The following monitoring conditions shall apply to this permit:

(i) *Source Testing* - The permittee shall conduct stack emissions compliance source testing of the air emissions and process parameters listed in Table 9-4 below annually, or upon written request from APCD. The permittee shall submit a written source test plan for to the APCD 30 days prior to the source test date. The anniversary source test date shall be January 1st or other date approved by the APCD. The source test plan shall be prepared consistent with the APCD's *"Source Test Procedures Manual"* (revised May 24, 1990 and updates thereof). The permittee shall obtain written APCD approval of the source test plan

prior to source testing. The APCD shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when APCD personnel may observe the test.

Table 9-4 H-205 Source Test Requirements

Device & Test Point	Pollutant or Parameter	Emission Limits or Parameter Units	Test Method [f]
H-205 Thermal Oxidizer Stack	ROC	Raw ppmvd; lb/hr; ROC DRE [a]	EPA: M-18 [d], M-2 or M-19
	Benzene	Raw ppmvd; lb/hr; Benzene DRE [b]	EPA: M-18 [d], M-2
	NOx, raw O_2	0.070 lb/MMBtu @ higher heating value; lb/hr	CARB: M-100
	CO, raw O_2	Verify Table 5.1-2, H-205 *planned* use emission factor	CARB: M-100
	Oxidizer Fuel, CO_2	Flow Rate (SCFH); ROC Content; Benzene Content	Calibrated Fuel Meter; EPA: M-25, M-18
	Stack Flow Rate	SCFH	EPA: M-2 or M-19
H-205 Thermal Oxidizer Inlet Air	ROC	Raw ppmvd, lb/hr	EPA: M-18 [d], plant flowmeter
	Benzene	Raw ppmvd, lb/hr	EPA: M-18 [d], plant flowmeter

Table Notes:

(a) ROC DRE = (lb/hr ROC $_{in}$ - lb/hr ROC $_{out}$)/(lb/hr ROC $_{in}$) * 100%
(b) Benzene DRE = (lb/hr Benzene $_{in}$ - lb/hr Benzene $_{out}$)/(lb/hr Benzene $_{in}$) * 100%
(c) M-*** refers to applicable EPA or CARB reference test method number (refer to APCD *Source Test Procedures Manual*).
(d) The M-18 analysis shall consist of three sequential bag samples, each drawn over a twenty-minute period simultaneously on the inlet and outlet of H-205. For ROC, analysis of the C_1 to C_6+, and benzene shall be done by gas chromatography. CO_2 analysis shall be based on the updated 'Process Stream Sampling Plan' (see Condition 9.C.17) and any subsequent APCD-approved updates.
(e) TRS DRE = (lb/hr TRS $_{in}$ - lb/hr TRS $_{out}$)/(lb/hr TRS $_{in}$) * 100%
(f) Alternate test methods may be accepted by the APCD on a case-by-case basis.
(g) If M-19 (F-factor) is used to derive stack flow rate, then higher heating value and flow rate of each gas stream) into H-205 shall be measured.

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.

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 APCD costs associated with the review and approval of all plans and reports and the witnessing of tests shall be recovered in accordance with the provisions of Rule 210. The APCD may extend any of the timelines listed above for good cause upon written request from Venoco at least three days prior to the due date.

(ii) *Flare Gas Flow Metering* - Each thermal oxidizer shall be equipped with flare gas flow meters (see detailed diagram in Section 2.1) to measure hourly flow volumes of (a) Flare gases (Reference: # FR-080) and (b) in-plant fuel gas (Reference: # FR-081). Venoco shall record any and all flare events in accordance with APCD Rule 359.G requirements. The flare gas flow metering system shall be designed such that Venoco can measure the hourly and daily flow rate of 'flare gas' to each oxidizer, and in-plant fuel gas to H-205. Venoco shall categorize each 'flow to the oxidizer' event into one of the following categories: "Planned" (includes "Planned – Pilot Gas" and "Planned – Continuous" and "Planned – Intermittent") and "Unplanned".

All meters shall be calibrated for fuel specific gravity (sp. gravity of air = 1.0), delivery pressure and temperature, as well as in accordance with the manufacturer's specifications every six calendar months, not to exceed seven months between calibrations. All meters shall be capable of measuring instantaneous fuel consumption in units of MSCF/day, and be installed and maintained in accordance with ANSI/API 2530 and provide and overall accuracy of ±5 percent. The clock speed for any circular-chart fuel measurement hardcopy recording device shall be set to no more than 24 hours for one chart cycle. The H-205 unit's flow metering system shall be able to measure, during its continuous operations between the equivalent of 5.0 and 40.0 MMBtu/hr, a gas flow rate that is within 10 to 90 percent of the meter's full scale reading.

The volumetric flow of LO-Cat Oxidizer exhaust airflow delivered to the H-205 unit, traceable to any hour of operation of the LO-Cat Oxidizer, shall be metered separately. Venoco shall comply with the APCD-approved *Flare Volume Minimization and Monitoring Plan* (see Condition 9.C.17) and any subsequent APCD-approved updates.

(iii) *Flare Gas Sampling* - The higher heating values (HHVs) and F-factors of the first stage permeate (Reference: FR-567), second stage permeate (Reference: FR-563), and the in-plant fuel gas (Reference: FR- 081) delivered to the H-205, H-206 and H-207 flare system

(i.e., pilot gas, planned flare events, and unplanned flare events) shall be analyzed and recorded separately on a calendar weekly basis. The combined permeate higher heating value shall be calculated as described in Table 5 of the *Flare Gas Monitoring Plan.* The weekly analyses requirement may be waived for any calendar week during which all three thermal oxidizers, including pilots, are completely shutdown and not operating. Also, the weekly analyses requirement may be reduced to a monthly requirement, solely at the discretion of the APCD, if Venoco can demonstrate that the weekly HHV values obtained do not vary by: (a) more than 5 percent from each other during each month, and (b) by 10 percent from each other, at a maximum, during the last six months. The heating value obtained shall also be computationally adjusted to reflect a heating value (Btu/scf) minus the CO_2 content as described in the *Flare Gas Monitoring Plan.*

(iv) *Planned Continuous Flare Gas Sulfur Content* – LO-Cat exhaust shall be monitored for hydrogen sulfide on a semi-annual basis by taking measurements using sulfur detection tubes. Venoco shall add the most recent analysis results for the non-H_2S fraction of total sulfur compounds to derive the total sulfur content.

(v) *Intermittent Flare Event Sulfur Content* - The sulfur content of flare gas during all intermittent flaring events (either planned or emergency events) shall be continuously monitored for hydrogen sulfide at V-221 with an H_2S monitor and permanent recording device, per its "Continuous Flare Gas H_2S Monitoring Plan" (see Condition 9.C.17) and any subsequent APCD-approved updates. Venoco shall add the most recent analysis results for the non-H_2S fraction of total sulfur compounds to derive the total sulfur content.

(vi) *Total Sulfur Content* - The total sulfur content of gas combusted during flaring events and for pilot and LO-Cat Oxidizer Exhaust gas, shall be measured on a semi-annual basis using APCD-approved ASTM methods. The purpose of these semi-annual analyses is to determine the non-H_2S fraction of total sulfur compounds present these gases and to use these values to correct the hydrogen sulfide values measured using sulfur detection tubes. Venoco shall take the results of the testing and add it to the hydrogen sulfide test results for the subsequent 6-months to obtain an estimate of the total sulfur content of these gases. Venoco shall submit the lab analyses reports to the APCD with the Compliance Verification Reports.

(vii) *Process Parameter Monitoring and Alarm System Operations* - The permittee shall operate and properly maintain all the process monitors and alarms listed in Table 9-5 below, and for the VRU low pressure monitor and alarm listed in the Table in Section D.23.

Table 9-5 Thermal Oxidizer Process Parameter Monitoring/Alarm Requirements

Equipment Item & Parameter	Monitored Units	Monitoring Method	Recording Method
THERMAL OXIDIZERS			
A. H-205 Combustion Chamber			
1. Temperature Controller Set point	°F	PLC/LED	Log Daily
2. Actual Temp.	°F	TC	Circular Chart [(a)]
3. Low Temp. Alarm	1400 °F	TC/Audible Alarm to alert aberrant condition	See "Actual Temp" Circular Chart specified above.
B. H-205/206/207			
1. Fuel Flows (205/206)	SCFD	Calibrated Flow Meter	Circular Chart [(a)]
2. Fuel Flow (207)	SCFD	Calibrated Flow Meter [(b)]	Circular Chart [(a)]
3. H_2S Concentration	H2S ppmv	Continuous	Circular Chart[(a)]
LO-CAT OXIDIZER EXHAUST TO H-205 (DELIVERY LINE & SPENCER BLOWER)			
A. Blower Inlet (Suction) Pressure	Alarm Low @ -1.0 psig	PT/Audible Alarm	Circular Chart [(a)]
B. LO-Cat Exhaust Flow	SCFD	Calibrated Flow Meter	Circular Chart [(a)]
LO-CAT SULFUR REMOVAL UNIT			
A. Regeneration Air Blower Flows (Tanks 1902 & 1903)	Relative Flow Indicator	Annubar "Delta P" Indicators	Circular Chart [(a)]

Table Notes:
- TC = Thermocouple
- PLC = Programmable Logic Controller/Light emitting diode display panel value (or equivalent)
- PT = Pressure Transducer
- N/A = Not Applicable
- (a) = Or, equivalent APCD approved permanent recording method.
- (b) = New flow meter requirement for this device per ATC 9473-03.

(viii) *Flare Gas CO_2 Content* - The CO_2 content of gas combusted during flaring events shall be measured on a weekly basis using APCD-approved methods. Venoco shall implement the APCD-approved *Process Stream Sampling Plan* (See also Section 4.11 and Permit Condition 9.C.17) and any subsequent APCD-approved updates. The Plan, addresses the sampling locations, the sampling mechanism, and the collection and analysis methods for the CO_2 content and the HHV of the process stream to the thermal oxidizers. The weekly analyses are required to determine the CO_2 fraction present in these gases and to use these values to correct (a) the volume flow to the thermal oxidizers on a non-CO_2 basis, and (b) to assess the heating value of these gases on a non-CO_2 basis. Venoco shall use the results of the analysis to report (a) the non- CO_2 volume flow to the thermal oxidizers on hourly, daily and annual basis, and (b) the actual heat input to the thermal oxidizers on hourly, daily and annual basis. Venoco shall submit the lab analyses reports to the APCD with the Compliance Verification Reports.

The APCD may, at its discretion, require Venoco to install automated CO_2 samplers or require more frequent sampling, if the CO_2 levels in any three of the samples obtained during any 6-month period fluctuate by more than 10 percent from the average value during that period. Also, any sample obtained during source testing and showing a significant (i.e., beyond 20 percent) deviation in the CO_2 level from the average during this period shall trigger a detailed review and more frequent sampling, if necessary (See also Section 4.3.3). If required, Venoco shall submit an 'automated sampler' Sampling Plan update for APCD approval within 30 days of written notification from the APCD. Such automated sampling shall be implemented no later than six (6) months after APCD notification. Note that the *Process Monitor Calibration and Maintenance Plan* shall also need a separate update to include any automated CO_2 sampler and their operations, if such a sampler is required by the APCD (see also Section 4.10.3). Such an update shall be provided to the APCD no later than six (6) months after the APCD notification for the sampler.

(ix) *Inlet Gas CO_2 Content* - The CO_2 content of gas incoming to the EOF from Platform Holly and the Seep Device shall be measured on a monthly basis using an APCD-approved method. (see also Permit Condition 9.C.11) This method is based on the APCD-approved *Process Stream Sampling Plan* (see Condition 9.C.17). The Plan (see also Section 4.11) includes listing of the sampling locations, the sampling mechanism, and the collection and analysis methods for the CO_2 content of the incoming streams to the EOF. The purpose of the monthly analyses is (a) to determine the CO_2 fraction present in these gases, and (b) to ensure the CO_2 content of the incoming streams does not exceed 17% on a monthly basis.

(x) *H-205 NO_x and CO Emissions* – The exhaust concentration (ppmv) of NO_x, CO, and O_2 from H-205 shall be measured with a District-approved portable analyzer once every month. The analyzer shall be calibrated per ASTM Test Method D-6522-00 (reapproved 2005) prior to each use. Analyzer readings shall be taken pursuant to ASTM Test Method D-6522-00 (reapproved 2005). The hourly flow rate of flare gas and in-plant fuel gas shall be recorded during monitoring in accordance with the approved *Flare Gas Monitoring Plan*. The NO_x and CO emission factor (lb/MMBtu) shall be calculated per Attachment B of this permit. Any NOx emission factor exceeding the 0.068 lb/MMBtu limit constitutes a violation of this permit unless compliance is demonstrated within 15 days of the initial reading.

(d) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the APCD personnel upon request:

(i) *Flare Event Volumes* - All flaring events shall be recorded in an APCD-approved flare log. The log shall include: date; the thermal oxidizer used (H-205, H-206, H-207); duration of flaring events (start and stop times); quantity of gas flared in units of standard cubic feet; cumulative total volume flared for all events to date through the year (by category); the H_2S content of the gas flared; reason/cause for the flaring event; whether there were visible emissions; and, the type of event (e.g., planned continuous, planned intermittent or unplanned intermittent). This log shall include all unplanned and planned flaring events.

(i) *Pilot Volume* - The volume (standard cubic feet) of pilot gas consumed each day and month by each thermal oxidizer shall be recorded in an APCD-approved log.

(ii) *Flare Event Heat Input.* The heat input (Btu/hr, Btu/day, Btu/year) to each thermal oxidizer based on the flow volume and higher heating value of the flare gas shall be recorded in an APCD-approved log.

(iii) *LO-Cat Oxidizer Exhaust Gas Volumes* - The volume (standard cubic feet) of LO-Cat Oxidizer Exhaust gases consumed each day and each month shall be recorded in an APCD-approved log.

(iv) *Flare Gas Heating Values* – The weekly heating value lab analysis results for the gases combusted in the thermal oxidizers shall be recorded. Include copies of the lab's analysis sheets, as obtained separately for the streams at FR-081, FR-563, and FR-567; and the computed higher heating value of the gas at FR-080. Venoco shall record (a) the HHV of the samples obtained and (b) the HHV of the non-CO_2 constituents of the samples (Refer to the *Flare Gas Monitoring Plan* for methodology details).

(v) *Sulfur Content of Continuous Flare Gas Streams* - The daily H_2S sulfur detection tube readings from continuous streams (e.g., pilot, Grace Permeate gas), and semi-annually measured sulfur content data for the LO-Cat exhaust stream shall be recorded in an APCD-approved log.

(vi) *Sulfur Content of Intermittent Flaring Events* - The data (ppmv H_2S) from the continuous H_2S monitoring system at V-221 unit shall be recorded in an APCD-approved log.

(vii) *Total Sulfur Content Analyses* - The results of the semi-annual analyses for the H_2S and total sulfur content gas combusted during flaring events and pilot and LO-Cat Oxidizer Exhaust gas, along with a calculation of the non-H_2S fraction of the total sulfur compounds that is used to correct the sulfur detection tube and continuous H_2S monitor readings to estimate the total sulfur of these gases for the subsequent year shall be recorded. Include copies of the lab's analysis sheets.

(viii) *CO_2 Content of Flare Gases* – (a) All monthly-obtained CO_2 content data for gases incoming to the EOF from Platform Holly and the Seep device and (b) all weekly-obtained data for CO_2 and HHV of the flare gases to the thermal oxidizers, shall be logged by Venoco for the purpose of demonstrating compliance with (a) MMscf/year limit in Table 9-3, and (b) the heat input limits specified in Section 9.C.2.(b).

(ix) A log of all Breakdown Reports and Deviation Reports filed with the APCD for any equipment described by this permit. This log shall document the information required by APCD Rule 505.

(x) Results of all source testing for the thermal oxidizers for the reporting period shall be recorded.

(xi) Maintenance and calibration records of all flow metering, process controllers and process alarms required by this permit.

(xii) Results of the monthly H-205 NO_x and CO monitoring, calibration records for each monitoring event, the heat input rate of flare gas and in-plant fuel gas, and calculated NO_x and CO emission factors for each monitoring 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 must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.
[*Reference: APCD Rules 359 and 1303, ATC 9473-05, ATC 9473-06, ATC/PTO's 10941 and 11169, and 40 CFR 70.6.(c)*]

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*

D.1 **Permit Activation.** All aspects of this permit are enforceable by the APCD and the State of California upon the issuance date stamped below. The Part 70 aspects of this permit are not final until:

(a) The USEPA has provided written comments to the APCD and these comments require no modification to this permit. The APCD will issue a letter stating that this permit is a final Part 70 permit. The effective date that this permit will be considered a final Part 70 permit will be the date stamped on the APCD's letter.

(b) After the USEPA has provided the APCD written comments that require a modification to this permit, the APCD will modify this permit to address the USEPA's comments and issue the Part 70 permit as final. The re-issued permit will supersede this permit in its entirety.

D.2. **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments.

D.3 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 et seq.

AIR POLLUTION CONTROL OFFICER

AUG 11 2008

DATE

Attachments:

- Permit Equipment List(s)
- F-factor determination protocol
- Permit Evaluation for Authority to Construct/Permit to Operate 12839

Notes:

- Reevaluation Due Date: December 22, 2008
- Stationary sources are subject to an annual emission fee (see Fee Schedule B-3 of Rule 210).
- Annual reports are due by March 1st of each year.

PERMIT EQUIPMENT LIST - ATTACHMENT A

ATC/PTO 12839 / FID: 00028 Ellwood Onshore Facility / SSID: 01063

A PERMITTED EQUIPMENT

1 Thermal Oxidizer

Device ID #	**000288**	***Device Name***	**Thermal Oxidizer**
Rated Heat Input	140.000 MMBtu/Hour	*Physical Size*	
Manufacturer	Hirt	*Operator ID*	H-205
Model		*Serial Number*	
Location Note			
Device Description	Use: continuous service, main unit. Rated at 140 MMBtu/hr, restricted to 34.06 MMBtu/hr planned continuous op.		

ATTACHMENT B

Example HHV and F-Factor Calculations

Table 1

In Plant Fuel Gas Flow measured daily, HHV and F-Factor per weekly samples		
Measured flow from FR-081=	69 MSCFD	ref 1
HHV from weekly sample=	970 Btu/scf	ref 2
F-Factor from weekly sample=	8658 dscf/MMBtu	ref 3

Table 3

1st Stage Permeate Gas Flow measured daily, HHV and F-Factor per weekly samples		
Measured flow from FR-567=	363 MSCFD	ref 4
HHV from weekly sample=	612 Btu/scf	ref 5
F-Factor from weekly sample=	9021 dscf/MMBtu	ref 6

Table 4

2nd Stage Permeate gas flow measured daily, HHV and F-Factor per weekly samples		
Measured flow from FR-563=	172 MSCFD	ref 7
HHV from weekly sample=	638 Btu/scf	ref 8
F-Factor from weekly sample=	8963 dscf/MMBtu	ref 9

Table 5

Combined Permeate HHV and F-Factor		
Flare gas flow measured by FR-080=	559 MSCFD	ref 14
Combined Permeate Flow = ref 4 + ref 7=	535 MSCFD	ref 15
HHV = (ref 4*ref 5 + ref 7*ref 8)/ref 15=	620 Btu/scf	ref 16
F-Factor = (ref 4*ref 6 + ref 7*ref 9)/ref 15=	9002 dscf/MMBtu	ref 17

Table 5

Combined HHV and F-Factor		
Combined Flow to H-205 = ref 1 + ref 14=	628 MSCFD	ref 18
HHV = (ref 1*ref 2 + ref 14*ref 16)/ref 18=	658 Btu/scf	ref 16
F-Factor = (ref 1*ref 3 + ref 14*ref 17)/ref 18=	8964 dscf/MMBtu	ref 17

$$NO_x\ ppmv \times \frac{1\ lb-mol}{379.5\ scf} \times \frac{46\ lb\ NOx}{1\ lb-mol} \times F-Factor\ \frac{dscf}{MMBtu} \times \frac{20.9}{20.9-O_2\%} \div 1{,}000{,}000 = NO_x\ lb/MMBtu$$

Note: The F-factor should be reported at 60 degrees Fahrenheit and 14.7 psia.

Santa Barbara County
Air Pollution Control District

PERMIT EVALUATION FOR AUTHORITY TO CONSTRUCT/PERMIT TO OPERATE 12839

1.0 BACKGROUND

1.1 General: This ATC/PTO reduces the permitted emission factor for H-205 from 0.070 lb NO_x/MMBtu to 0.068 lb NO_x/MMBtu. The reduction in daily and emissions was proposed by Venoco in conjunction with the installation of a new crane engine (see ATC 12804) at Platform Holly to keep the stationary source NEI below the offset thresholds.

1.2 Permit History:

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
PT-70/Reeval 07904 R7	12/22/2005	Combined APCD Reevaluation and PT-70 Renewal. Pt 70 application received May 10, 2005
PTO 11579	05/27/2008	This application requests Grace Unit modification, via adding four permeate tubes to Stage I and two tubes to Stage 2 of the Unit. Emission increases occur for ROC only from fugitive emission components.
PTO Mod 07904 02	06/26/2008	Decrease permitted flare volumes to esnure complaince with Rule 359. See PT-70 R 12772.

1.3 Compliance History:

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
MIN	8561	06/14/2006	Exceeding the permitted ROC lb/hr and lb/mmBtu emissions limit for H-205 as determined through source testing.
NOV	8562	06/14/2006	Exceeding the permitted emissions limits for NOx, ROC, CO, SOx, PM, PM10 at H-205, H-206 and H-207 due to the operator improperly depressuring compressor K-201.
MIN	8894	05/31/2007	Found an open container containing approximately 1/3 gallon of hardened Carbothane two-part epoxy coating. VOC content 247 g/l as applied.
NTC	8798	07/19/2007	Failure to perform weekly analyses for flare gas HHV and CO2 content, and for implant fuel gas HHV during the 4th week of August and 1st week of Sept., 2006.

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	8805	11/07/2007	Fenceline monitor #23 indicated >.3 ppmv H2S for 13 sec starting at 11:54 am, 10/29/07. Indications are that this was the result of a release.
NOV	8806	11/07/2007	Venting of LPG vessel V-219 at 11:54 am, on 10/29/07. Documented in Deviation Report EOF-10-29-07-1. This is a failure to control emissions of produced gas per Rule 325.E.
NOV	8915	11/27/2007	Violations of Rules 303 and 325 by venting through the PVRV hatches of EOF tanks 201 and 202. The violation lasted 3 minutes 15 seconds and also resulted in the release of 0.25 pounds of H2S emissions. The APCD received 4 odor complaints and the SB Co. Fire Department received 2 additional odor complaints attributable to the facility and the release. Following the release, the EOF was immediately shut down in accordance with the conditions of APCD Abatement order 99-06A.

2.0 ENGINEERING ANALYSIS

2.1 Equipment/Processes: H-205 is used to combust high-CO_2 content permeate gas from the Grace unit and to incinerate LO-Cat oxidation air as part of the odor abatement system at the Ellwood Onshore Facility. The thermal oxidizer uses the permeate gas and in-plant fuel gas to maintain combustion temperatures sufficient to maintain the required destruction efficiencies.

Plant Process Description: A complete process description of the EOF operations may be found in the Part 70/APCD Permit to Operate 7904-R7 (December 2005), and the APCD permit ATC 11579 (July 2005) as well as in the APCD's administrative files.

2.2 Emission Controls: A detailed review of emission controls for all emission units at EOF is provided at the Part 70/APCD PTO 7904-R7 (December 2005).

2.3 Emission Factors: Emission factors for H-205 are documented in Table 5.1-2. The specific documents referenced may be found in the administrative file for this permit.

2.4 Reasonable Worst Case Emission Scenario: Table 5.1-1 of the permit defines the operational characteristics that comprise the reasonable worst case-operating scenario for this permit.

2.5 Emission Calculations: Detailed emission calculation spreadsheets may be found in Emission Calculations Attachment. These emissions define the Potential to Emit for the permitted equipment.

2.6 Special Calculations: There are no special calculations.

2.7 BACT Analyses: Best Available Control Technology was not required for this project.

2.8 Enforceable Operational Limits: The permit has enforceable operating conditions that ensure the equipment is operated properly.

2.9 Monitoring Requirements: Monitoring of the equipment's operational limits are required to ensure that these are enforceable. Previous source tests demonstrated compliance with the proposed 0.068 lb NO_x/MMBtu emission factor. Venoco will be required to monitor H-205 monthly to ensure continued compliance with the lowered emission factor.

2.10 Recordkeeping and Reporting Requirements: The permit requires that the data which is monitored be recorded and reported to the APCD.

3.0 REEVALUATION REVIEW (not applicable)

4.0 REGULATORY REVIEW

4.1 Partial List of Applicable Rules: This project is anticipated to operate in compliance with the following rules:

Rule 101. Compliance of Existing Facilities
Rule 201. Permits Required
Rule 202. Exemptions to Rule 201
Rule 205. Standards for Granting Permits
Rule 302. Visible Emissions
Rule 303. Nuisance
Rule 311. Sulfur Content of Fuels
Rule 359. Flares and Thermal Oxidizers
Rule 505. Breakdown Procedures
Rule 801. New Source Review
Rule 802. Nonattainment Review
Rule 803. Prevention of Significant Deterioration

4.2 Rules Requiring Review: None.

4.3 NEI Calculations: The net emission increase calculation is used to determine whether certain requirements must be applied to a project (e.g., offsets, AQIA, PSD BACT). This ATC/PTO generates a "P2" term concurrently with an increase in NEI generated by ATC 12804. The NEI for the stationary source will remain below the offset thresholds. The "P2" term is calculated as follows:

Pre-project emissions:
PE (lb/day) = 0.070 lb NO_x/MMBtu * 34.06 MMBtu/hr * 24 hr/day = 57.22 lb NO_x/day
PE (tpy) = 0.070 lb NO_x/MMBtu * 210010 MMBtu/year ÷ 2,000 = 7.35 tpy NO_x
(note that the annual heat input to H-205 is equal to the annual heat input limit of 221749 MMBtu/year minus the pilot gas heat input to H-206 and H-207)

Post-project emissions:
PE (lb/day) = 0.068 lb NO_x/MMBtu * 34.06 MMBtu/hr * 24 hr/day = 55.59 lb NO_x/day
PE (tpy) = 0.068 lb NO_x/MMBtu * 210010 MMBtu/year ÷ 2,000 = 7.14 tpy NO_x

P2 = Pre-project – Post-project = 57.22 lb NO_x/day – 55.59 lb NO_x/day = 1.63 lb NO_x/day
P2 = Pre-project – Post-project = 7.35 tpy NO_x – 7.14 tpy NO_x = 0.21 tpy NO_x

5.0 AQIA

The project is not subject to the Air Quality Impact Analysis requirements of Regulation VIII.

6.0 OFFSETS/ERCs

6.1 Offsets: The emission offset thresholds of Regulation VIII are not exceeded.

6.2 ERCs: This source does not generate emission reduction credits.

7.0 AIR TOXICS

An air toxics health risk assessment was not performed for this permitting action.

8.0 CEQA / LEAD AGENCY

The APCD is the lead agency under CEQA for this project. This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County APCD (revised November 16, 2000). Appendix A (*APCD Projects Exempt from CEQA* and *Equipment or Operations Exempt from CEQA*} provides an exemption specifically for modifications of existing sources which do not involve any increases in emissions or physical modifications. No further action is necessary.

9.0 SCHOOL NOTIFICATION

A school notice pursuant to the requirements of H&SC §42301.6 was not required.

10.0 PUBLIC and AGENCY NOTFICATION PROCESS/COMMENTS ON DRAFT PERMIT

10.1 This project was not subject to public notice.

10.2 The permittee requested that a monthly NO_x reading over permitted limits not be considered a violation if the problem is fixed and re-monitored within 15 days. This request was granted with the condition that the APCD may require additional source tests. Additional source tests may be required if monthly NO_x readings show that emissions may be over permitted limits.

The permittee also requested that the molar volume used in Attachment B to correct ppmv readings to lb/MMBtu emission factors be corrected to 68 degrees Fahrenheit and a note be made that F-Factors be reported at 68 degrees Fahrenheit. The District defines standard conditions to be 60 degrees Fahrenheit ant 14.7 psia and requires analysis results to be reported at standard conditions. Venoco reports gas analyses at 60 deg F and 14.7 psia, so the molar volume used in the equation will remain based on 60 deg F and a note was added to remind the operator that the F-Factor should also be reported at 60 deg F.

11.0 FEE DETERMINATION

Fees for the APCD's work effects are assessed on a fee basis. The Project Code is *390850* (*Oil and Gas Plant*). See the *Fee Statement* Attachment for the fee calculations.

12.0 RECOMMENDATION

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

AQ Engineer/Technician — Date: 8/8/8

Supervisor — Date: 8/8/08

13.0 ATTACHMENT(S)

- Emission Calculations
- Fee Statement

Table 5.1-1
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Operating Equipment Description
Page 2 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No	Device Specifications Fuel	Parameter	Size	Units	Usage Data Capacity	Units	Load	Maximum Load Schedule hr	day	qtr	year*	Reference
Combustion - Flare/TO			Gas	ppmv										
H-205	Planned - Pilot Gas	***	PUC	205	0.060	MMBtu/hr	0.060	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	34.000	MMBtu/hr	34.000	MMBtu/hr	--	1	24	1540	6161	
	Unplanned	***	Various	15,000	140.000	MMBtu/hr	140.000	MMBtu/hr	--	0	0	0	0	
H-206[1]	Planned - Pilot Gas	***	PUC	205	0.340	MMBtu/hr	0.340	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	20.320	MMBtu/hr	20.320	MMBtu/hr	--	1	24	2190	8760	
	Unplanned	***	Various	15,000	220.000	MMBtu/hr	220.000	MMBtu/hr	--	0	0	0	0	
H-207[1]	Planned - Pilot Gas	***	PUC	205	1.000	MMBtu/hr	1.000	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	8.500	MMBtu/hr	8.500	MMBtu/hr	--	1	24	2190	8760	
	Unplanned	***	Various	15,000	9.500	MMBtu/hr	9.500	MMBtu/hr	--	0	0	0	0	
Combined Units:	Planned - Pilot Gas	***	PUC	205	1.400	MMBtu/hr	1.400	MMBtu/hr	--	1	24	2190	8760	B
H-205/206/207	Planned	***	Various	205	34.000	MMBtu/hr	34.000	MMBtu/hr	--	1	24	1540	6161	
	Unplanned	***	Various	15,000	369.500	MMBtu/hr	369.500	MMBtu/hr	--	0	0	0	0	

1. These thermal oxidizers are not permitted to incinerate Lo-Cat System exhaust.
* -- The annual hours listed do not constitute any 'hourly'operational limits: the numbers are merely used to compute annual emissions
-- Annual hours of operation for H-205 are based on a total heat input of 215,354 MMBtu/year for all planned flaring.
-- Annual hours of operation for the combined units is based on a total heat input of 227,092 MMBtu/year for all planned flaring.

Table 5.1-2
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Equipment Emission Factors

Equipment Category	Emissions Unit	APCD IDS Equipment No	Emission Factors NOx	ROC	CO	SOx	PM	PM10	Units	Reference
Combustion - Flare/TO										
H-205	Planned - Pilot Gas	***	0.0680	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	B
	Planned	***	0.0680	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	
	Unplanned	***							lb/MMBtu	
H-206	Planned - Pilot Gas	***	0.0700	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	B
	Planned	***	0.0980	0.0054	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	
	Unplanned	***							lb/MMBtu	
H-207	Planned - Pilot Gas	***	0.0700	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	B
	Planned	***	0.0980	0.0054	0.4530	0.0307	0.0075	0.0075	lb/MMBtu	
	Unplanned	***							lb/MMBtu	
Combined Units:	Planned - Pilot Gas	***							lb/MMBtu	B
	Planned	***							lb/MMBtu	
	Unplanned	***							lb/MMBtu	

Table 5.1-3
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Hourly and Daily Emissions

Equipment Category	Emissions Unit	APCD IDS Equipment No.	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	Federal Enforceability
Combustion - Flare/TO															
H-205	Planned - Pilot Gas	***	0.00	0.10	0.00	0.00	0.03	0.65	0.00	0.04	0.00	0.02	0.00	0.02	FE
	Planned	***	2.31	55.49	0.10	2.45	15.40	369.65	1.04	25.05	0.48	11.42	0.48	11.42	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-206	Planned - Pilot Gas	***	0.02	0.57	0.00	0.02	0.15	3.70	0.01	0.25	0.00	0.11	0.00	0.11	FE
	Planned	***	1.99	47.81	0.11	2.63	9.20	220.92	0.62	14.97	0.28	6.83	0.28	6.83	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-207	Planned - Pilot Gas	***	0.07	1.68	0.00	0.07	0.45	10.87	0.03	0.74	0.01	0.34	0.01	0.34	FE
	Planned	***	0.83	20.00	0.05	1.10	3.85	92.41	0.26	6.26	0.06	1.52	0.06	1.52	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
Combined Units:	Planned - Pilot Gas	***	0.10	2.28	0.00	0.10	0.63	15.22	0.04	1.03	0.02	0.47	0.02	0.47	FE
H-205/206/207	Planned	***	2.31	55.49	0.10	2.45	15.40	369.65	1.04	25.05	0.48	11.42	0.48	11.42	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Worst-Case Flaring Scenario		2.41	57.77	0.11	2.55	16.04	384.87	1.09	26.08	0.50	11.89	0.50	11.89	FE

Notes:
- FE means federally enforceable
- A means APCD enforceable only
- NE means not enforcebale

Table 5.1-4
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Annual Emissions

Equipment Category	Emissions Unit	APCD IDS Equipment No	NOx tpy	ROC tpy	CO tpy	SOx tpy	PM tpy	PM10 tpy	Federal Enforceability
Combustion - Flare/TO									
H-205	Planned - Pilot Gas	***	0.02	0.00	0.12	0.01	0.00	0.00	FE
	Planned	***	7.12	0.31	47.45	3.22	1.47	1.47	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-206	Planned - Pilot Gas	***	0.10	0.00	0.67	0.05	0.02	0.02	FE
	Planned	***	8.73	0.48	40.32	2.73	1.25	1.25	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-207	Planned - Pilot Gas	***	0.31	0.01	1.98	0.13	0.06	0.06	FE
	Planned	***	3.65	0.20	16.87	1.14	0.28	0.28	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
Combined Units:	Planned - Pilot Gas	***	0.42	0.02	2.78	0.19	0.09	0.09	FE
H-205/206/207	Planned	***	7.12	0.31	47.45	3.22	1.47	1.47	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Worst-Case Flaring Scenario	***	7.54	0.33	50.23	3.40	1.55	1.55	FE

Notes:
- FE means federally enforceable
- A means APCD enforceable only

Table 5.2
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Total Permitted Facility Emissions

A. HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	2.00	0.20	8.35	1.06	0.27	0.25
Combustion - Flare/TO	2.41	0.11	16.04	1.09	0.50	0.50
Oil Storage Tank	-	0.68	-	-	-	-
Pigging Equipment	-	1.52	-	-	-	-
Sumps/W-W Tanks	-	0.06	-	-	-	-
Loading Rack	-	7.73	-	-	-	-
Fug.Comp. - - Gas Service	-	17.59	-	-	-	-
Fug. Comp. -- Oil Service	-	1.03	-	-	-	-
solvent/coating	-	1.09	-	-	-	-
Totals =	4.41	28.91	24.39	2.15	0.77	0.75

B. DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	48.10	4.69	200.46	25.44	6.48	6.48
Combustion - Flare/TO	57.77	2.55	384.87	26.08	11.89	11.89
Oil Storage Tank	-	16.51	-	-	-	-
Pigging Equipment	-	1.52	-	-	-	-
Sumps/W-W Tanks	-	0.37	-	-	-	-
Loading Rack	-	24.63	-	-	-	-
Fug.Comp. - - Gas Service	-	422.11	-	-	-	-
Fug. Comp. -- Oil Service	-	24.74	-	-	-	-
solvent/coating	-	8.68	-	-	-	-
Totals =	105.87	497.12	585.33	51.53	18.38	18.38

C. ANNUAL (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	8.78	0.86	36.58	4.64	1.18	1.11
Combustion - Flare/TO	7.54	0.33	50.23	3.40	1.55	1.55
Oil Storage Tank	-	3.03	-	-	-	-
Pigging Equipment	-	0.05	-	-	-	-
Sumps/W-W Tanks	-	0.25	-	-	-	-
Loading Rack	-	0.29	-	-	-	-
Fug.Comp. - - Gas Service	-	77.03	-	-	-	-
Fug. Comp. -- Oil Service	-	4.52	-	-	-	-
solvent/coating	-	1.56	-	-	-	-
Totals =	16.32	87.92	86.81	8.05	2.74	2.66

Table 5.3
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Federal Potential to Emit Information

A. HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	2.00	0.20	8.35	1.06	0.27	0.25
Combustion - Flare/TO	2.41	0.11	16.04	1.09	0.50	0.50
Oil Storage Tank	-	0.68	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-
Loading Rack	-	7.73	-	-	-	-
Fug.Comp. - - Gas Service	-	17.59	-	-	-	-
Fug. Comp. -- Oil Service	-	0.00	-	-	-	-
solvent/coating	-	0.00	-	-	-	-
Totals =	4.41	26.30	24.39	2.15	0.77	0.75

B. DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	48.10	4.69	200.46	25.44	6.48	6.48
Combustion - Flare/TO	57.77	2.55	384.87	26.08	11.89	11.89
Combustion - Prev.exempt	402.24	27.36	86.65	4.56	27.36	27.36
Oil Storage Tank	-	16.51	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-
Loading Rack	-	24.63	-	-	-	-
Fug.Comp. - - Gas Service	-	422.11	-	-	-	-
Fug. Comp. -- Oil Service	-	0.00	-	-	-	-
solvent/coating	-	0.00	-	-	-	-
Totals =	508.11	497.85	671.98	56.09	45.74	45.74

C. ANNUAL (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	8.78	0.86	36.58	4.64	1.18	1.11
Combustion - Flare/TO	7.54	0.33	50.23	3.40	1.55	1.55
Combustion - Prev.exempt	1.68	0.11	0.36	0.02	0.11	0.11
Oil Storage Tank	-	3.03	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-
Loading Rack	-	0.29	-	-	-	-
Fug.Comp. - - Gas Service	-	77.03	-	-	-	-
Fug. Comp. -- Oil Service	-	0.00	-	-	-	-
solvent/coating	-	0.00	-	-	-	-
Totals =	18.00	81.65	87.17	8.07	2.85	2.77

Table 10.2-4
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Facility #0028 NEI-90

I. This PTO's "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
ATC/PTO 12839	July '08	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 8262	Dec '91	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 9217-01	Sept '94	0.00	0.00	0.00	0.00	158.40	28.90	0.00	0.00	5.30	1.00	5.30	1.00
ATC 9218	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 9473-06	Apr '99	57.99	4.40	2.50	0.20	214.90	39.30	38.50	3.40	13.10	1.20	13.10	1.20
ATC 10022	Dec '98	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/PTO 10537	May '99	0.00	0.00	4.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10749	Nov. '02	0.00	0.00	3.54	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10941	Jan '03	48.72	4.82	4.18	0.69	215.39	31.17	21.85	2.16	9.74	0.96	9.74	0.96
ATC 11106	Sep '04	0.00	0.00	1.31	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 11169	Sep '04	0.00	1.84	0.00	0.08	0.00	11.89	0.00	0.81	0.00	0.37	0.00	0.37
ATC 11579	July '05	0.00	0.00	15.97	2.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		**106.71**	**11.06**	**31.70**	**4.57**	**588.69**	**111.26**	**60.35**	**6.37**	**28.14**	**3.53**	**28.14**	**3.53**

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

III. This Facility's "P2" NEI-90 Decreases [based on (29 + 4.6) MMBtu/hr of emissions and on "P1" based limits]
Enter all facility "P2" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 10941	Jan '03	56.45	4.40	2.42	0.20	365.30	39.30	25.32	3.40	11.29	1.20	11.29	1.20
PTO Mod 7904 02	Jun '08	0.00	0.19	0.00	0.01	0.00	1.21	0.00	0.08	0.00	0.04	0.00	0.04
ATC/PTO 12839	July '08	1.63	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		**58.08**	**4.80**	**2.42**	**0.21**	**365.30**	**40.51**	**25.32**	**3.48**	**11.29**	**1.24**	**11.29**	**1.24**

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

IV. This Facility's Pre-90 "D" Decreases
Enter all facility "D" decreases below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
None		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**

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

V. Calculate This Facility's NEI-90
Table below summarizes facility NEI-90 as equal to: I+ (P1-P2) -D

Term	NOx		ROC		CO		SOx		PM		PM10	
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
PTO "I" (see P1)	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	106.71	11.06	31.70	4.57	588.69	111.26	60.35	6.37	28.14	3.53	28.14	3.53
P2	58.08	4.80	2.42	0.21	365.30	40.51	25.32	3.48	11.29	1.24	11.29	1.24
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	**48.63**	**6.26**	**29.28**	**4.36**	**223.39**	**70.75**	**35.03**	**2.89**	**16.85**	**2.29**	**16.85**	**2.29**

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

Table 10.2-5
Venoco Ellwood Oil&Gas Facility: ATC/PTO 12839
Ellwood Source #0028 NEI-90

Facility No.	Effective Permit	Effective Date	NOx		ROC		CO		SOx		PM		PM10	
			lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
0028	ATC-PTO 12839	current	**48.63**	**6.26**	**29.28**	**4.36**	**223.39**	**70.75**	**35.03**	**2.89**	**16.85**	**2.29**	**16.85**	**2.29**
3105	ATC 12804	current	6.28	1.11	10.93	1.93	28.29	4.71	2.34	1.06	1.38	0.23	1.38	0.23
1065	PT-70/Reeval 4441-R2	current	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3035	PT-70/Reeval 8103-R4	May '98	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 =	**54.91**	**7.37**	**40.21**	**6.29**	**251.68**	**75.46**	**37.37**	**3.95**	**18.23**	**2.52**	**18.23**	**2.52**

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

FEE STATEMENT

ATC/PTO No. 12839

FID: 00028 Ellwood Onshore Facility / SSID: 01063

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
000288	Thermal Oxidizer	A3	140.000	440.07	Per 1 million Btu input	Max	1	1.000	5,888.34	0.00	5,888.00	0.34
	Device Fee Sub-Totals =								**$5,888.34**	**$0.00**	**$5,888.00**	
	Device Fee Total =											**$0.34**

Permit Fee

Admin Change **365.00**

Fee Statement Grand Total = $365

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.