



VENOCO, INC.

**Ellwood Facilities
DOT Gas Pipeline-O&M
Procedures (PSOM)**

2016

VENOCO, INC
Ellwood DOT Gas Pipelines
Pipeline Specific O&M (PSOM)

Ref: 49 CFR 191 &192

Updated: Nov 2016

Sec #17

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17.01 PURPOSE, SCOPE, AND ANNUAL REVIEW

17.01.1 References

49 CFR, sections 192.605(a) and 192.605(b)(8).

17.01.2 Purpose

The purpose of this section is to define the information requirements specific to the Ellwood facilities jurisdictional pipelines. This section of the O&M manual is referred to as the Pipeline Specific Operations and Maintenance Manual (PSOM). Each pipeline facility supervisor shall review these minimum requirements and write procedures and requirements specific to the facility. The PSOM table of contents contains all the procedures that shall be developed or reviewed for facility specific requirements. In addition, section 3.06 of the O&M Manual shall be used as a guide when developing the PSOM.

17.01.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

17.01.4 Scope and Policy

The Operating & Maintenance Plan for the Ellwood Sales Gas Pipeline and Platform Holly Produced Gas Pipeline has been prepared by its operator, Venoco Inc., in compliance with the regulatory requirements of the Research and Special Programs Administration (RSPA), Department of Transportation (DOT), 49 CFR Part 192 for the Ellwood Sales Gas Pipeline, and California State Lands Commission, Minerals Resources Division, Article 3.3 for the Holly Produced Gas Pipeline. This manual reflects practices which follow the federal safety standards as set forth by the Natural Gas Pipeline Safety Act of 1968 and the Hazardous Materials Transportation Act of 1974.

It is the policy of Venoco to strive for the safety of life, protection of the environment, and protection of property. This PSOM provides a comprehensive operating guide for the Ellwood Sales Gas Pipeline and Holly Produced Gas Pipeline. The plan defines the roles and responsibilities and lines of authority of operations personnel. Procedures for the safe operation and maintenance of the pipelines during both normal and abnormal operating conditions are also provided. Emergency response plan, Emergency Action Plan South Ellwood Field, establishes written procedures to minimize the hazard resulting from an emergency (e.g., gas release, fire, explosion, natural disaster).

17.01.5 ANNUAL REVIEW of PSOM

This PSOM section of the O&M Manual shall be reviewed annually, not to exceed 15 months, for completeness and accuracy by the HES Manager and the Operations Supervisor. The plan shall be revised as necessary, and personnel shall be made aware of these changes, as required. All approved revisions/updates shall be distributed to holders of the Operating & Maintenance Plan via the notice provided in section 17.02. All revisions shall be documented in tab #2 of this O&M Manual and/or with a record to the DOT files. Use form #17.01A in the PSOM appendix to document the annual review.

17.01.6 PERIODIC REVIEW OF WORK PERFORMED BY OPERATORS [192.605(b)(8)]

It is the primary responsibility of the Operations Supervisor to periodically review the work performed by operators. The intent of this review is to determine the effectiveness of the procedures used in normal operations and maintenance and modifying the procedures when deficiencies are found. Use form #17.01B in the PSOM appendix to document this review.

17.01.07 Training

Training **shall** be conducted for following personnel performing pipeline activities covered by this O&M Manual:

- New employees
- Change in job assignment or transfer
- Reasonable cause (see company OQ plan)
- Management of change (see company OQ plan)

Use form #17.01C in the PSOM appendix to document this training.

UPDATE NOTICE

This update notice is for all holders of the Operating & Maintenance Plan for the Ellwood Sales Gas Pipeline and Platform Holly Produced Gas Pipeline.

Date Jan 2016

Attached are revised pages of the Operating & Maintenance Plan which have been assigned to you. Please remove pages in your book and replace with these revisions. When this is done, record the revision in the "Revision History" (tab #2) of your O&M manual.

**Remove Old Pages
(page numbers)**

Ellwood Gas PSOM All Sections

**Replace with Revised Pages
(new page number and date)**

Ellwood Gas PSOM All Sections

**Signature & Date of Person Who
Conducted Annual Review of
O & M Manual:**



Signature - Facilities Operations Supervisor

1/25/16

Date



Signature - Pipeline Coordinator

1.22.2016

Date

DISTRIBUTION LOG

<u>Set #</u>	<u>Name</u>	<u>Comments</u>
--------------	-------------	-----------------

Venoco:

- | | | |
|----|---------------------------------|--|
| 1. | Ellwood Operations Supervisor | |
| 2. | Platform Holly Control Room | |
| 3. | EOF Control Room | |
| 4. | Pipeline Compliance Coordinator | |

Outside Agencies:

- | | | |
|----|--|--|
| 5. | SBC Energy Division | |
| 6. | SBC Building and Safety | |
| 7. | SBC Fire Department – Protection Services Division - PSD | |
| 8. | SBC Office of Emergency Management - OEM | |
| 9. | SBC Air Pollution Control District | |

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Date

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4. Pipeline Compliance Coordinator

Outside Agencies:

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7. SBC Fire Department – Protection Services Division - PSD
8. SBC Office of Emergency Management - OEM
9. SBC Air Pollution Control District

17.03 PIPELINE FACT SHEET

17.03.1 ELLWOOD SALES GAS PIPELINE

Name of Facility	Ellwood Sales Gas Pipeline
Business Address	7979 Hollister Avenue Goleta, CA 93117
Business Telephone	(805) 961-2339
Fax No.	(805) 961-2349
Name and Address of Owner/Operator	Venoco Inc. 6267 Carpinteria Ave. Carpinteria, Ca. 93013
24-Hour Owner/Operator Contact	Ellwood Onshore Facility (805) 961-2375
24-Hour Emergency Notification Number	1-(805)-961-2375
Dig Alert	Underground Service Alert (800) 422-4133 or (800) 227-2600
Person to Contact In Regard to Plan	Keith Wenal (805) 745-2259
Location of Facility	Starts at Ellwood Onshore Facility (7979 Hollister Avenue). The facility is West of Goleta on the South side of the Southern Pacific Railroad tracks and 1,600 feet South West of the intersection of Highway 101 and Hollister Avenue. The property is about 900 feet inland from the shore. The pipeline crosses Bell and Tecolote Creeks. The pipeline heads in a westerly direction for 3,600 feet where a change of custody to The Southern California Gas Company occurs.

17.03.1 ELLWOOD SALES GAS PIPELINE (cont.)

	Original	Repaired or Relocated
Completion Date	1966	1997
Type of Facility	Natural gas pipeline.	
Class Location	3	3
Pipeline Length	3,900 feet	
Pipeline Size	6.625 inches (outer diameter)	
Throughput	4 – 5 mmscfd avg.	
Maximum Allowable Operating Pressure	1,000 psig.	
Normal Operating Pressure	950 psig.	
Line Test Pressure	1310 psig.	1500 psig (N2 Test)
Wall Thickness	0.188 inches	.280 inches
Grade & Type of Pipe	Gr. X46 ERW	SA 106 Gr.B
Specified Minimum Yield Strength (SMYS)	46,000 psig	35,000psig
% SMYS	38.3	33.8
Pipe Weight	12.74 lb. per foot	18.97 lb. per foot
External Protective Coating	20 mil X-Tru Coat	
Cathodic Protection	Impressed current	
Valves	There are manual and automatic mainline valves at either ends of the line.	

17.03.2 PLATFORM HOLLY PRODUCED GAS PIPELINE

Name of Facility Platform Holly Produced Gas Pipeline

Business Address Platform Holly
C/o 7979 Hollister Avenue
Goleta, CA 93117

Business Telephone (805) 961-2360

Fax No. (805) 961-2349

Name and Address of Owner/Operator Venoco Inc.
6267 Carpinteria Ave.
Carpinteria, Ca. 93013

24-Hour Emergency Number 1-805-961-2375 (Ellwood Onshore)

Dig Alert Underground Service Alert
(800) 422-4133 or (800) 227-2600

Person to Contact In Regard to Plan Keith Wenal
(805) 745-2259

Location of Facility Platform Holly is located approximately five miles southwest of Santa Barbara, California within state waters. The specific location as expressed in State Plane Coordinates (Lambert Zone 6) is X 1,425,158' Y 329,272'. Latitude and longitude may be expressed as 34°23'23.297" N by 119°54'19.129" W. The platform is located approximately 2 miles offshore in about 211 feet of water. The gas pipeline comes ashore directly at the Ellwood Onshore Facility.

The Gas Sales Line starts at the EOF facility and runs along Hollister Ave to the Sales Point at SoCal Gas.

17.03.2 PLATFORM HOLLY PRODUCED GAS PIPELINE (cont.)

Completion Date	1966
Type of Facility	Produced gas pipeline.
Class Location	1
Pipeline Length	16,030 feet.
Pipeline Size	6.625 inches (outer diameter)
Throughput	8 mmscfd avg.
Maximum Allowable Operating Pressure	650 psig.
Normal Operating Pressure	110-160 psig.
Line Test Pressure	975 psig.
Wall Thickness	0.280 inches
Grade & Type of Pipe	Gr. B
Specified Minimum Yield Strength	35,000 psi
External Coating	X-Tru Coat
Cathodic Protection	Galvanic anodes offshore and impressed current onshore.
Valves	There are block valves and automated shutoff valves at both ends of the pipeline.

17.03.3 MAXIMUM ALLOWABLE OPERATING PRESSURE

17.03. A Ellwood Sales Gas Pipeline

Per DOT Regulations 49 CFR, Part 192.619, the Maximum Allowable Operating Pressure (MAOP) is determined by the lesser of: a) the internal design pressure of the pipe, b) 80% of the test pressure, based on a Class location, or c) the design pressure of any other component of the pipeline, including fittings and valve ratings.

Records indicate that the original 6" pipeline is 0.188 wall thickness, API 5L X-46 pipe and has a Specified Minimum Yield Strength of 46,000 psi. Per Part 192.105, this pipe is good for an internal design pressure of 1044 psig based on a Class 3 location. Records indicate that the relocated or replaced sections of the 6" pipeline is 0.288 wall thickness, Grade B pipe and has a Specified Minimum Yield Strength of 35,000 psi. Per Part 192.105, this pipe is good for an internal design pressure of 1479 psig based on Class 3 location. The flanges and valves are ANSI 600#, which is good to 1440 psig. The pipeline was pressure tested at 1500 psig for 8 hours. Based on 80% of the test pressure, the **MAOP is 1152 psig**.

Normally, the Ellwood Sales Gas Pipeline operates at 950 psig.

17.03.B Platform Holly Produced Gas Pipeline

Per DOT Regulations 49 CFR, Part 192.619, the Maximum Allowable Operating Pressure (MAOP) is determined by the lesser of: a) the internal design pressure of the pipe, b) 67% of the test pressure based on the riser, or c) the design pressure of any other component of the pipeline, including fitting and valve ratings. Additionally, since this pipeline is also under the jurisdiction of the California State Lands Commission, the MAOP cannot exceed 67% of the test pressure according to the State Lands Commission Regulations, Article 3.3, Section 2132(h)(6)(C).

Record data indicates that the 6" pipeline is 0.280 wall thickness, Grade B pipe. This pipe has a Specified Minimum Yield Strength of 35,000 psi. Per Part 192.105, this pipe is good for an internal design pressure of 1479 psig based on a design factor of 0.50 for the riser. The flange and valves are ANSI 600#, which are usable for operation up to 1440 psig. However, the MAOP based on 67% of the lowest deadweight reading from the most recent hydrotest was determined to be 650 psig. Therefore, since the criteria of 67% of the test pressure controls, the MAOP of the pipeline is 650 psig.

Normally, the Platform Holly Produced Gas Pipeline operates at 150 psig.

17.03.4 ODORIZATION OF GAS

Ellwood Sales Gas Pipeline is in a Class 3 location and therefore must have a naturally occurring odor or be odorized in accordance with Part 192.625[b]. The sales gas is naturally odorized. To ensure the sales gas maintains the correct amount of odor, the gas is tested weekly and documented on Form 11.01B.

The Platform Holly Produced Gas pipeline is in a Class 1 location and is not required to be odorized.

17.04 UDATING MAPS AND RECORDS

17.04.1 References

49 CFR, sections 192.605(b)(3), 192.517, and 192.491

17.04.2 Purpose

The purpose of this procedure is to provide guidelines for maintaining and updating DOT pipeline maps and records.

17.04.3 Responsibilities for Updating Maps and Records

The Operations Supervisor in charge of the jurisdictional pipelines **keeps** current and comprehensive construction records, maps, and operating history and this information shall be available for use by the appropriate pipeline operations personnel. These records may be contained in this PSOM or may be kept in the facility DOT files.

17.04.4 Tracking and Documentation of Updates to Construction Maps and Records

The Company **uses** the pipeline Management of Change procedure to initiate, review, approve, and track changes to construction maps and records.

17.05 NORMAL SHUTDOWN AND START-UP

17.05.1 References

49 CFR, sections 192.605(b)(5).

17.05.2 Purpose

The purpose of this procedure is to provide guidelines for starting up and shutting down any part of pipeline in a manner designed to assure operation within MAOP limits.

17.05.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

17.05.4 Platform Holly Produced Gas Pipeline Normal Shutdown

The platform shall contact the Ellwood Onshore Facility and advise them of the pipeline shutdown and discuss duration of outage and scheduling.

A normal pipeline shutdown will require stopping of the produced gas to the pipeline. The platform shall be put on gas injection.

- Reduce gas production by cutting back on the high gas producing wells;
- Cut back on the gas well tubing beans;
- Reroute gas production by adjusting the gas injection controller for platform gas injection.
- Manually close the 6" gas pipeline isolation valve and verify "0" on Total Flow;
- Manually isolate and bleed off the air to the 6" ESD valve to close the valve.
- Contact EOF to close the 6" ESD valve and the 6" plant inlet valve on the gas pipeline.

17.05.5 Platform Holly Produced Gas Pipeline Normal Start-Up

Platform operators shall contact the Ellwood onshore processing facility and verify that the plant is ready to accept gas.

Normal startup of the gas pipeline to shore is incorporated into the Platform Holly Shutdown & Startup Procedure.

- Contact EOF to prepare to receive gas;
- The gas pipeline 6" ESD valve is opened at EOF;
- Start the Platform compressors in order: White Superior (C-102), Ingersoll-Rand (C-101) and the Vapor Recovery Compressor (C-100A/B);
- Reset the SSVs on the wells and open the tubing beans slowly while monitoring suction pressure of the Ingersoll-Rand (IR) compressor;
- When pipeline pressure has reached a satisfactory operating pressure, the Ellwood onshore facility starts receiving gas for treatment.
- Platform operators shall maintain a watch over pipeline pressure during start-up and be observant for any abnormal operating conditions. Normal pipeline operating pressure is between 110-160 psig.

17.05.6 Ellwood Onshore Sales Gas Pipeline

During any pipeline shutdown or restart, the following procedure shall be followed:

- Notify the affected personnel that a shutdown will happen or has occurred.
- Isolate the respective segment of the pipeline using the appropriate block valves.
- Upon completion of all shutdown tasks, notify affected personnel that a restart is will happen or has occurred.

17.06 PIGGING OPERATIONS

17.06.1 References

49 CFR, sections 192.605 (b)(5).

17.06.2 Purpose

The purpose of this procedure is to define proper operation and maintenance of the pig launcher and receiver.

17.06.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

17.06.4 General

This section applies to the Platform Holly Produced Gas Pipeline and The Ellwood Sales Gas Pipeline. The Sales Gas Line was smart pigged and hydrotested in 2013. The Platform Holly Produced Gas Pipeline is piggable to run instrumented tools (smart pigs) in the pipeline and minimize any debris build-up by using scraper and brush pigs. Pigging is also used to purge the pipeline of produced gas to facilitate maintenance and to purge the pipeline of air, water, or nitrogen when returning the pipeline to service. The line is piggable from the Platform Holly launcher to the Ellwood Onshore Facility receiver.

17.06.5 Pigging Safety Requirements

In addition to the standard Venoco minimum personnel protective equipment, the following shall be provided for this procedure:

- A minimum of two qualified operators must be present during pigging operations.
- Follow appropriate company safety procedures.
- Face shield
- Chemical glove
- SCBA at the scene for emergency use

Caution: The use of unapproved tools such as snipes, pry bar, etc., on the pig receiver door is strictly prohibited.

17.06.7 Launcher and Receiver Trap Maintenance

Each time a trap is pressurized, the pig launcher trap end closure seal **shall** be checked for tightness.

If leakage is found, the pig launcher trap closure “O” ring **shall** be replaced. When replacing the “O” ring, the “O” ring groove must be wiped clean of all existing grease and dirt. A new “O” ring **shall** be greased and installed.

17.07 DOT INSEPTION AND REPORT SCHEDULE

Refer to the DOT inspection and report schedules following this page.

17.07.1 References

49 CFR, sections 192.605(b)(1) and 191.13(c).

17.07.2 Purpose

The purpose of this procedure is to provide guidance for scheduling and performance for all the required DOT pipeline operations and maintenance requirements described in 49 CFR subpart L (operations) and subpart M (maintenance).

17.07.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

VENOCO Ellwood – Sales Gas Pipeline DOT Inspection and Report Schedule

Item #	Task Description [192 Regulation]:	Freq.	Form #	O&M Sect #	Who	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Operation & Maintenance:																	
1.	Patrols & Critical Crossings [705]	1-4x/yr ⁴	5.02/3	5.03	Oper			X			X					X	
2.	Leak Survey [706]	1-4x/yr ¹	5.02/3	5.02	Oper											X	
3.	Valve Insp. & Maint. [745]	1x/yr ⁴	7.01A	7.01	Oper				X								
4.	Comp. Station Relief Valves [731(a)]	1x/yr ²	7.02A	7.02	Oper	na	na	na	na	na	na	na	na	na	na	na	na
5.	Comp. Station Em Shutdown [731(c)]	1x/yr ²	10.01A	10.1	Oper	na	na	na	na	na	na	na	na	na	na	na	na
6.	Comp. Station Detection & Alarm [736]	1x/yr ³	10.03A	10.3	Oper	na	na	na	na	na	na	na	na	na	na	na	na
7.	Odorization [625]	Weekly	11.01B	11.01	Oper	X	X	X	X	X	X	X	X	X	X	X	X
8.	Pressure Regulators & Sensors [739]	Monthly ⁴	7.02B	7.02	Oper											X	
9.	Pressure Relief Valves [739]	2x/yr ⁴	7.02A	7.02	Oper	X						X					
10.	Vault Inspections [749, 7.03]	1x/yr ²	7.03A	7.03	Oper	na	na	na	na	na	na	na	na	na	na	na	na
11.	Welder re-qualification [227]	2x/yr, AR		9.06	Oper												
12.	NDT re-qualification [243(b)(2)]	AR		15.02	Oper												
13.	Record of Repairs	AR	Record	9.01	Oper												
Damage Prevention & Public Ed.:																	
14.	Public Awareness Mailers [616]	1x/2 yr	Record	3.03	PCC		X										
15.	Gov. Liaison [614]	1x/yr	3.04A	3.03	PCC		X										
16.	Excavators [614]	1x/yr	3.03B	3.03	PCC		X										
17.	Surveys Results & Conclusions [PSA]	1x/yr	Report	3.03	PCC		X										
18.	Self Assessments [PSA]	1x/2 yr	3.03A	3.03	PCC							X					
Corrosion:																	
19.	Exposed Pipe Reports (Ext/Int) [459,475]	AR	3.01B	6.04	O&C												
20.	Int. Corrosion (gas sample) [477]	1x/yr ³	3.01B	6.02	Cont	X											
21.	Pipe to Soil Annual Survey [465(a)]	1x/yr	6.02A	6.05	Cont											X	
22.	Interference Bonds, Critical [465(c)]	6x/yr		6.05	Cont	na	na	na	na	na	na	na	na	na	na	na	na
23.	Interference Bonds, Non Critical [465(c)]	1x/yr		6.05	Cont	na	na	na	na	na	na	na	na	na	na	na	na
24.	Atmospheric Corrosion Monitoring [481]	1x/3 yr	6.01A	6.01	Oper											X	
25.	Rectifier [465(b)]	6x/yr	6.03A	6.07	Oper	X		X		X		X		X		X	
26.	Unprotected Pipeline Inspection	1x/yr	6.09A	6.09	Cont	na	na	na	na	na	na	na	na	na	na	na	na
Plans, Reports, and Reviews:																	
27.	O&M and Corrosion Plan Review [605(a)]	1x/yr	17.01A	PSOM	PCC		X										
28.	Annual Report [191.17]	1x/yr	RSPA	1.04	PCC		X										
29.	Review Work Performed by Oper,605(b)(8)	1x/yr	17.01B	PSOM	Oper		X										
30.	PSV Capacity Review [743]	1x/yr ³	7.02C	7.02	Eng		X										
31.	Class Location Study & MAOP [609, 611]	1x/yr ³	4.01A	4.01,8.01	PCC		X										
32.	Continuing Surveillance Review [613]	1x/yr	5.01A	5.01	PCC		X										
33.	Incident Report [191.15]	AR	1.01B	1.01	PCC												
34.	Safety Related Condition Report [191.23]	AR	1.02B	1.02	PCC												
35.	Abnormal Operations Report [605(c)]	AR	17.08A	PSOM	Oper												
36.	Failure Investigation Report	AR	2055	1.03	PCC												
37.	Conversion of Service Report	AR	12.02A	12.02	Oper												
38.	Abandonment Report	AR	13.01A	13.01	Cont												

17.08 ABNORMAL OPERATIONS & EMERGENCIES

17.08.1 References

49 CFR, sections 192.605(c), 192.615(a), 195.617

17.08.2 Purpose

The purpose of this procedure is to provide safety when operating design limits have been exceeded.

17.08.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

17.08.4 General

An abnormal operation is a non-emergency condition on a gas transmission facility which occurs when the operating design limits have been exceeded due to pressure, flow rate, or temperature change outside the limits of normal operation. When an abnormal operation occurs, it does not pose an immediate threat to life or property, but could if not promptly corrected.

The procedures in this section are to be followed when an "abnormal operating" condition exists, and when responding to, investigating, and correcting the cause of:

- Any pipeline emergency;
- Unintended closure of valves or shutdowns;
- An increase or decrease in pressure or flow rate outside normal operating limits;
- System Over-Pressure Situation or System Under-Pressure Situation (Refer to Emergency Response Procedures for Abnormal Pressure Conditions)
- Loss of communications with automatic device essential for the operation of the system;
- Operation of any safety device;
- Any other malfunction of a component, deviation from normal operation, or personnel error which may result in a hazard to persons or property.

The individual who receives notification that an abnormal condition exists **shall** document the event using the Company "Incident Report" form and notify the Operations Supervisor. The Operator, upon notification of an abnormal condition **shall**:

- ✓ Verify that the condition exists and if necessary respond to the location.
- ✓ Take the necessary steps to rectify the situation which may include the need for additional operational and/or supervisory personnel.
- ✓ Once the situation is rectified, and prior to restoring any service outage, the system shall be checked for variations from normal operation at sufficient critical locations particular to the abnormal condition and the system in which condition occurred. The steps to be taken must ensure the continued integrity and safe operation of all facilities.
- ✓ The Operator must notify the Operations Supervisor that the event has been rectified.

The Operations Supervisor **shall** decide if further action is necessary and **shall** notify the discovering person that the situation has been rectified.

17.08.5 Prevention of Condition from Recurrence.

Immediately following any pipeline emergency or pipeline abnormal operating condition, the Company **shall** initiate an incident investigation to determine causes, **and** evaluate the effectiveness of the procedures. Once the condition has been investigated, and normal or safe operations are restored, the Operations Supervisor shall determine what modifications or improvements can be taken to prevent the cause of the condition from recurring and shall also consider whether these measures shall be implemented elsewhere in the transmission system to avoid similar occurrences.

17.08.6 Follow-up Monitoring.

Various critical locations in the system shall be checked for variations from normal operation after abnormal operation has ended. The extent of follow-up monitoring after the end of an abnormal condition is based on the nature of the condition and the probability that the cause of the condition can recur. The condition is considered corrected when the Operations Supervisor determines at the end of the monitoring period that the pipeline facility has maintained operations within its operating design limits.

17.08.7 Review of Personnel Response.

The Operations Supervisor shall undertake a review of personnel response based on the extent of the abnormal condition. The review shall consider the actions taken, and whether the procedures followed were adequate for the given situation or need to be revised to provide more specificity or more flexibility.

The specific steps for review of the procedures during abnormal conditions include;

1. The Operations Supervisor or designee shall develop a sequence of events by reviewing logs/records and interviewing appropriate personnel involved in the abnormal condition event.
2. The Operations Supervisor shall evaluate the actions (i.e., sequence of events) taken to rectify the abnormal condition to determine if they were adequate.
3. If procedures are determined to be in-adequate, they shall be re-written by the Pipeline Compliance Coordinator with input from appropriate operating personnel.
4. Results of the abnormal condition events shall be reviewed with operating personnel.

17.08.8 Abnormal Operation Notification

The Pipelines are monitored by operating personnel who report all abnormal operations to the Operations Supervisor. If further study into the cause or the correction of the condition that caused the abnormal operation is necessary, the Operations Supervisor shall notify the facility engineering staff. Use **Form #17.08A: Abnormal Operations Report** or its equivalent to document the abnormal operating condition.

17.08.9 Remedial Measures

If the operability of a pipeline is impaired as a result of a pipeline emergency or abnormal condition, the affected pipeline operation shall be evaluated and changes made to improve its operation. The Operating and Maintenance Plan shall be updated if necessary and all affected personnel trained on the changes.

17.08.10 Records and Reports

Any reviews performed under this procedure shall be documented and maintained in the DOT records file for a minimum of five years.

PIPELINE SPECIFIC ABNORMAL OPERATIONS GUIDELINES

17.08.11 Pipeline Specific Abnormal Operating Guidelines

17.08.11A Unintended Mainline Valve Closing

The closure of mainline valves either through error or vandalism **causes** in high pressure indication and alarm. If uncorrected, the compressors upstream of the closure shuts down automatically.

The closed valve shall be located, inspected, and reopened. The compressors shall be restarted under the direction of the platform or facility operator or designee. Pipeline personnel **shall** monitor system operation and pipeline components following startup for an adequate period of time to ensure resumption of normal operations.

17.08.11B Unintended Shutdown

An unintended shutdown of either pipeline can occur as a result of a power outage, H₂S detection, fire detection, LEL, process upset, etc. In addition, for the sales gas pipeline, the Gas Company has the ability to remotely shut-in the Ellwood Sales Gas Pipeline in response to operating upsets within their system. Prior to restarting either pipeline, the cause of the shutdown shall be verified and corrected. Affected personnel shall be notified of the imminent restart. If the restart involves the Ellwood Sales pipeline after the Gas Company triggered shutdown, communication with the Gas Company may be required.

Pipeline personnel **shall** monitor system operation and pipeline components following startup for an adequate period of time to ensure resumption of normal operations.

17.08.11C Pressure Increase

Platform Holly Produced Gas Pipeline:

Pressure increases are identified by pressure safety high (PSH-151) set at 175 psig and pressure safety high-high shutdown (PSHH-151) set at 230 psig for the gas pipeline leaving Platform Holly. The most likely cause of a pressure increase **is** an upset at the Ellwood onshore facility. Short-term pressure increases may also be caused by surges in gas well production.

In the event of a pressure increase, the **Platform Operator** shall contact the Facility Operator at the Ellwood Onshore Facility to verify operating condition of the plant. In the case of production surges and minor plant upsets, the pressure soon **reaches** equilibrium and stabilizes or returns back to normal. In the event of a major processing upset at Ellwood or gas production surges at

Platform Holly, high pressure shutdown switches cause the platform gas compression system to shut-in so as to protect the pipeline.

Pipeline personnel **shall** monitor system operation and pipeline components following startup for an adequate period of time to ensure resumption of normal operations.

Ellwood Onshore Sales Gas Pipeline:

Pressure increases are identified by the pressure safety high (PSH- 600) set at 985 psig on the pipeline which initiates an alarm in the EOF Control Room and pressure safety high-high (PSHH-600) set at 1000 psig which closes PCV-. The Sales Gas Compressors (K-201, 205 & 206) **are** shutdown at 1050 psig discharge pressure. The most likely causes of a pressure increase are the following:

- Closure of Gas Company valves.
- Abnormally high Gas Company trunk line (transmission line) pressure.
-

In the event of a pressure increase (>950 psig), the operator **shall** take the following actions:

- Monitor line pressure and verify pressure increase trend
- Notify Platform Holly of high sales pressure and to shutdown gas flow to EOF;
- Notify the Gas Company of high sales pressure;
- Verify Gas Company valves **are** not malfunctioning; close the 6" ESD valve and the 6" plant inlet valve for the Holly gas pipeline to shore;
- Divert Seep gas to the Hirt Burner (H-205);
- Divert the sales gas to the Hirt Burner (H-205);
- Shutdown the plant if pressure reaches 1000 psig on the pipeline.

Pipeline personnel **shall** monitor system operation and pipeline components following startup for an adequate period of time to ensure resumption of normal operations.

17.08.11D Pressure Decrease

Platform Holly Produced Gas Pipeline:

Pressure decreases **are** identified by pipeline pressure safety low low shutdown (PSLL-151) set at 70 psig monitoring the pipeline on Platform Holly. Triggering the pressure safety low low **shall** result in an automatic shutdown of the gas pipeline (closure of 6" ESD valve) and Platform Holly. The most likely cause of a pressure decrease **are**:

- Decreased platform gas output.
- Line rupture.
- Abnormally low receipt pressure at the Ellwood processing plant.

In the event of a pressure decrease (<100 psig), the platform operator shall take the following actions:

- Contact Ellwood onshore and verify plant conditions.
- Verify gas production/injection system operation;
- Shutdown gas production to the pipeline and verify pipeline valve closures (when shut-in has occurred).
- Notify Platform crew boat to **survey** the pipeline.
- If leak is found, initiate emergency procedures in the Emergency Action Plan, South Ellwood Field.
- Upon startup, pipeline personnel **shall** monitor system operation and pipeline components following startup for an adequate period of time to ensure resumption of normal operations.

Ellwood Onshore Sales Gas Pipeline:

Pressure decreases **are** identified by the pipeline pressure safety low (PSL-600) set at 795 psig and pressure safety low low shutdown (PSLL-600) set at 700 psig for the sales gas pipeline. The low pressure alarm and pressure low low shutdown will alarm in the Control Room and throughout the plant. The pressure low low shutdown **shall** close the 6" sales gas Bettis valve, first valve leaving the facility. The most likely causes of a pressure decrease are the following:

- Line rupture.
- Abnormally low Gas Company transmission line pressure.

In the event of a pressure decrease (<840 psig), the operator **shall** take the following actions:

- Verify gas compression operation;
- Troubleshoot gas process flow for restriction;
- Notify Platform Holly to prepare for gas injection;
- Conduct a right-of-way inspection looking for indications of pipeline damage and leaks;
- Shutdown the facility and isolate the pipeline;

- If leak is found, initiate emergency procedures in the Emergency Action Plan, South Ellwood Field.
- Upon startup, pipeline personnel **shall** monitor system operation and pipeline components following startup for an adequate period of time to ensure resumption of normal operations.

17.08.11E **Flow Increase**

A flow **increases** are identified by gas meters located aboard Platform Holly and at the inlet to the sales gas pipeline. A significant flow increase could be caused by equipment failure, control valve failure, well surges or pipeline leak but is minimized by pipeline protection equipment. Actions that **shall** be taken:

- Investigate possible causes;
- Verify flow meter is not malfunctioning;
- Dispatch operator or crew boat to survey the pipeline route;
- If leak is found, shutdown the pipeline;
- Initiate emergency action procedures in the Emergency Action Plan, South Ellwood Field.
- Pipeline personnel **shall** monitor system operation and components following startup to ensure resumption of normal operations.

17.08.11F **Flow Decrease**

A flow decrease **is** indicated by gas meters located aboard Platform Holly and at the inlet to the sales gas pipeline. The most likely causes of flow decrease are:

- Upset condition
- Reduced gas throughput at the Ellwood onshore plant
- Production surges aboard Platform Holly
- Pressure decrease
- Pipeline personnel **shall** monitor system operation and components following startup to ensure resumption of normal operations.
- **A pipeline leak**

17.08.11G Loss of Communications or Monitoring

If the operator cannot monitor the pipeline system due to a loss of verbal communications and it has been determined that the situation is not temporary (exceeds 15 minutes), the operator **shall**:

- Shut down EOF & Platform Holly utilizing the Platform Holly Shutdown & Startup Procedure to shutdown the pipeline.
- Notify the Platform Foreman and Production Superintendent.

17.08.11H Operation of Any Safety Device

Platform Holly Produced Gas Pipeline:

Activation of safety devices will occur when pipeline operation exceeds the set limits of safety devices. Upon activation of safety devices, the Operator **shall** be dispatched to the field as required and thoroughly investigate the cause of activation.

The **pressure safety high high shutdown (PSHH-151)** is set for 230 psig for the gas pipeline aboard Platform Holly. Response to activation of this safety device is discussed above in section 17.08.11C.

The **pressure relief valve is set for 650 psig** which is the system MAOP. Procedure discussed above in sections 17.08.1 through 17.08.10 **shall** be followed if a relief event occurs.

Ellwood Onshore Sales Gas Pipeline:

Activation of safety devices will occur when pipeline operation exceeds the set limits of safety devices. Upon activation of safety devices, the Operator **shall** be dispatched to the field as required and thoroughly investigate the cause of activation.

The sales gas compressors (K-201, K-205, and K-206) **shall be shutdown at 1050 psig discharge pressure**. Response to activation of this safety device is discussed above in section 17.10.9C.

17. 08.11I Any Other Malfunction of a Component, Deviation from Normal Operation, or Personnel Error Which Could Cause a Hazard to Persons or Property

Malfunction of Mechanical Components:

The malfunction of mechanical pipeline components could include such items as leaking valve packing, flanges, and Pressure Relief Valves (PRVs).

Leaking valve packing and flanges, along with leaking pressure relief valves can be detected by routine line patrols and leakage surveys. Larger leaks can be detected by a decrease in pipeline flow rate (See Section 17.08.11F) and/or pressure (See Section 17.08.11D).

If a leak is detected, shut down the pipeline systems and initiate emergency procedures in the Emergency Action Plan.

Any other malfunction of components, deviation from normal operation and personnel error could possibly cause any one of the abnormal conditions described in Sections 17.08.1 through 17.08.10. They can be identified as such and **shall** be handled as described in those sections.

17.08.12 Emergency Actions Taken by a Controller

17.08.12A General

The individual who receives notification that an emergency exists is to notify the pipeline Controller, Lead Operator and the Operations Supervisor. The Lead Operator or Controller has the authority and is responsible for assessing the situation and taking immediate action during an emergency or if a leak or rupture is suspected.

17.08.12B Specific Controller Actions

The Lead Operator or Controller upon notification of an emergency is to:

- ✓ Assess the situation and ensure the safety of all personnel
- ✓ Shutdown pumps or compressors to stop or reduce flow
- ✓ Isolate or control the affected pipeline by closing main-line valves remotely or dispatching personnel to manually close valves
- ✓ Make all immediate internal and external notifications
 - 9-1-1
 - Alert IIRT and facility personnel
 - Notify OSRO or spill clean-up contractor
 - Notify external agencies (NRC, Cal-EMA, etc.)
- ✓ Consult facility Emergency Action Plan or Oil Spill Contingency Plan as appropriate.

In the event an evacuation of the control room, the Lead Operator or Controller is to:

- ✓ ESD the operating facility and/or pipeline and close main-line valves.

- ✓ Evacuate the control room and/or facility according to the facility Evacuation Plan.

In the event of a pipeline SCADA or communications system failure, the Lead Operator or Controller is to:

- ✓ ESD the operating facility and/or pipeline and close main-line valves.
- ✓ Notify the Operations Supervisor

17.09 EMERGENCY PROCEDURES

Refer to the Venoco Ellwood Emergency Action Plan (EAP) for emergency procedures, resources, government liaison, and Unified command procedures.

17.09.1 References

49 CFR, sections 192.605(e) and 192.615.

17.09.2 Purpose

The purpose of this procedure is to minimize the hazard resulting from a gas pipeline emergency.

17.09.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

17.10 CALIFORNIA STATE LANDS COMMISSION REQUIREMENTS

17.10.1 References

2 CCR h (see table below for specific regulations).

17.10.2 Purpose

The purpose of this procedure is to implement the additional **California State Lands Commission** requirements at this facility.

17.10.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

**TABLE 17.10-1
 SUMMARY OF O&M MANUAL ADDITIONAL SLC REQUIREMENTS**

O&M Sect #	DESCRIPTION	DOT 49 CFR PART 192	SLC TITLE 2, DIV. 3, ART. 3.3 2132	ADDITIONAL SLC REQUIREMENTS:
8.01	Maximum Allowable Operating Pressure (MAOP)	619	2132(h)(2)	MAOP limited by: 1) ANSI Code B31.4, Liquid 2) ANSI Code B31.8, Gas 3) Design pressure of any component 4) 67% of hydro test pressure CSLC Only
5.03	Line Patrol and Leak Survey	705, 706	2132(h)(6) (D)	Weekly surface inspection

7.01, 7.02	Valve and Pressure Device Maintenance	739, 743, 745	2132(h)(8)(F)	<p>1) H/L pressure shut-in sensor</p> <p>2) Auto shut-in valve offshore</p> <p>3) Shut-in valve and input sources</p> <p>4) Remote shut-in valve or check valve at or near receiving facility</p> <p>5) Oil pumps and gas compressors equipped with H/L pressure shut-in</p> <p>6) All pressure sensors, shut-in devices, & auto shut-in valves shall be tested monthly and witnessed by SLC staff</p>
EAP	Communications	615, 605	2132(h)(3)	Transmit info for safe operation
6.03, 6.05, 6.06, 6.07 6.09	External Corrosion Control	455, 457, 459, 461, 463, 465, 467, 471, 473	2132(h)(4) &(7)	<p>1) Qtrly rectifier inspection by qualified inspector</p> <p>2) Daily rectifier output</p>
17.10	ROV Sub Sea Inspection for Damage, Corrosion, and Hazardous Conditions	NA	2132(h)(6)(A)	Annual ROV sub sea inspection
IMP Plan Element #2	Electrical Survey or Pressure Test, Pipeline Inspection Schedule and Line Status	901-951	§2132(h)(6)(B))	Annual electrical survey or pressure test at 1.5x MAOP (Note, inspection frequency can be reduced upon request if no corrosion observed.)

17.10.4 LINE PATROL AND LEAK SURVEY [2 CCR 2132(h)(6)(D)]

A line patrol of the Holly Produced Gas Pipeline to observe surface conditions on and adjacent to the right-of-way shall be conducted weekly. The Captain of the assigned crew boat is responsible for the offshore patrol. A Utility Person is responsible for the onshore portion of the patrol. For the Holly Produced Gas Pipeline, the required frequency for line patrols and leak surveys is determined by CSLC Regulation §2132(h)(6). Immediately following the survey, the patrol person is required to prepare a report of conditions using form #5.02B/5.03B (onshore) and form **DOT-RP-3 Form #5.03H** (offshore).

Refer to the Emergency Action Plan South Ellwood Field to address potential emergencies.

Applicable Forms

Report Forms are found in the PSOM Appendix. Forms include:

#5.02B/5.03B	Gas Leak Survey/Line Patrol (onshore)
# 5.03H	Off-Shore Pipeline Leak & Right-of-Way Survey

Record Keeping

All reports shall be maintained for the life of the pipeline.

17.10.5 PRESSURE DEVICE AND VALVE INSPECTION AND MAINTENANCE [2 CCR 2132(h)(8)(F)]

Pressure Device Inspection and Maintenance

The frequency of inspection for all pressure-safety control devices, except for relief valves, for the Platform Holly Produced Gas Pipeline shall be monthly. The frequency of inspection for the pressure relief valves on the Platform Holly Produced Gas Pipeline shall be every 6 months. The Safety Tester shall complete form #17.10B and place in the DOT files.

Pressure Device Inspection and Maintenance

ESD valves used for the Platform Holly Produced Gas Pipeline shall be inspected and operated monthly. **The Safety Tester shall complete form #7.01A and place in the DOT files.**

Applicable Forms

Report Forms are found in the forms sections of the O&M manual. Forms include:

- #17.10B Pressure Control Device Inspection
- #7.01A Valve Inspection and Maintenance

17.10.6 EXTERNAL CORROSION CONTROL [2 CCR 2132(h)(4)&(h)(7)]

Monitoring Of External Corrosion Control Requirements

The rectifier output shall be recorded daily for the Holly Produced Gas Pipeline. A qualified employee shall survey and perform the necessary test or inspection. Venoco shall take remedial action promptly to correct any deficiencies indicated by the monitoring.

Applicable Forms

- #17.10C Rectifier Data Report (Daily)
- #17.10D Rectifier Output Log (Bi-monthly)
- #6.05A Cathodic Protection System Report

The Facility Project Manager shall submit the annual cathodic protection system survey report for the Holly Produced Gas Pipeline to California State Lands Commission within 60 days of completing the survey.

17.10.7 OFFSHORE PIPELINE EXTERNAL INSPECTION (ROV) [2CCR 2132(h)(6)9A]

Remote Operating Vehicle Inspection

The Platform Holly gas pipeline and corridor is inspected by remote operating vehicle to look for evidence of damage, corrosion, and conditions which may be hazardous to the pipeline. The results of the inspection are filed in appropriate DOT files. The Facilities Project Manager ensures that the pipeline is checked and all inspections are recorded. Records are maintained for the life of the pipeline.

Applicable Records:

Vendor Generated ROV Inspection Report

Report forms are found in Appendix A include:

- #17.10F SLC Information Report.

SLC Record Keeping

The appropriate form shall be completed for each inspection and maintenance, filed onsite, and shall be kept for the life of the pipeline.

17.10.8 Pipeline Inspection and Line Status [2 CCR 2132(h)(6)(B)]

The Ellwood Sales Gas Pipeline does not apply to this section regarding periodic hydrotest or integrity testing. The Holly Produced Gas Pipeline falls under the jurisdiction of the California State Lands Commission (CSLC). Since this pipeline is piggable, CSLC regulation §2132(h)(6)(B) requires that the pipeline shall be inspected at a minimum of one year intervals with an electronic survey tool also known as a smart pig unless the Santa Barbara County System Safety Reliability and Review Committee (SSRRC) and CSLC specifically agree to change frequency. The frequency of inspections may be reduced depending upon the degree of corrosion observed. The results of the inspection are filed in the appropriate DOT file.

Integrity Testing

The Facilities Project Manager administers the program and ensures that all inspections and tests are conducted and recorded. Hydrostatic or integrity test reports are maintained on-site for the life of the line and reviewed by the facilities engineering staff. The annual hydrostatic or integrity test reports are submitted to the California State Lands Commission and the Santa Barbara County Energy Division.

Record Keeping

Records of each leak discovered, repair made, and integrity test conducted must be made and filed. The file must be maintained for the life of the line.

17.11 CITY OF GOLETA REQUIREMENTS

17.11.1 References

County of Santa Barbara Ordinance, #2919 (as adopted by the City of Goleta)

17.11.2 Purpose

The purpose of this procedure is to implement the additional City of Goleta requirements at this facility.

17.11.3 Responsibility for Implementation

The Operations Supervisor is responsible for implementation of this procedure.

Table 17.11A

O&M MANUAL SBC ADDITIONAL REQUIREMENTS

O&M Sect #	DESCRIPTION	DOT 49 CFR PART 192	Ordinance #2919	ADDITIONAL SBC REQUIREMENTS:
5.03	Line Patrol and Leak Survey	705, 706	Condition #63	Daily inspection of surf zone

17.11.4 SURF ZONE INSPECTION

In addition to the SLC requirement of weekly inspections, the Holly Produced Gas Pipeline shall be inspected daily in accordance with the City of Goleta. This is a visual inspection of the pipeline from the surf zone back to the Ellwood Facility. The inspection shall include the following items:

- Time and date of the inspection.
- Name of person conducting the inspection.
- Burial status of pipeline.
- Length of pipeline exposed (if any).
- Estimated wave height.
- Any evidence of pipeline movement.

The Operations Supervisor shall administer the program and ensure that all inspections are conducted and recorded. Records for the visual inspections shall be maintained on site.

Refer to the Emergency Action Plan South Ellwood Field to address potential emergencies.

Applicable Forms

Report Forms are found in Appendix A. Forms include:

- #5.02/5.03** Gas Leak Survey/Pipeline Patrol
- #17.11.A** **City** Pipeline Inspection Report (daily visual)

All reports shall be maintained for the life of the pipeline.

RECORD KEEPING

Records of each leak discovered, repair made, and nondestructive test and pressure test conducted, must be made and filed. The file must be maintained for the useful life of the line.

Each of the appendix items is a folder where records are to be kept for each pipeline. In most of these folders, there is a blank form which may be used to generate the record form at the required interval. For those folders without a blank form, a written report shall be filed in the folder at the required inspection intervals.

Appendix		<u>Description</u>
#17.01A	5 years	Annual Review of the O&M Manual
#17.01B	5 years	Review Work Performed by Operators
#17.01C	5 years	Training Registration
#17.08A	5 years	Abnormal Operations Report
- #5.03B	5 years	Gas Leak Survey - Pipeline Patrol (onshore)
#5.03C	5 years	Navigable Water Crossing Inspection (offshore)
#17.10A	5 years	SLC Daily Discharge Pressure
#17.10B	2 years	Pressure Control Device Inspection
#7.01A	5 years	Valve Inspection and Maintenance
#17.10C	5 years	Rectifier Data Report (Daily)
#17.10D	5 years	Rectifier Output Log (6x/year, not to exceed 2 ½ months)
#6.05A	Life of pipeline	Cathodic Protection System Report
Vendor Report	Life of pipeline	ROV Inspection Report
#17.10F	Life of pipeline	SLC Information Report
Vendor Report	Life of pipeline	Hydro Test or Integrity Testing
#17.11A	2 years	Inspection of Surf Zone (Daily)
7000.1		Annual Report for Calendar Year 2013 Natural or other Gas Transmission and Gathering Systems
MAOP		DOT Pipeline MAOP / MOP Calculation
Maps and Drawings	5 years	As updated for mechanical changes

VENOCO
O&M Procedures – Review Work Performed by Operators
PSOM Form #17.01B

Reference: 49 CFR 192.605(b)(8)

Date Revised: Dec 2012, Rev #1

Frequency: This review shall be performed annually or on a more frequent basis if conditions warrant.

Action: A company supervisor shall review work performed by operators to determine the effectiveness and adequacy of the procedures used in normal operations and maintenance. The procedures should be modified when deficiencies are found.

Name and number of procedure(s) reviewed:

Where procedures adequate? (circle one) Yes No (If no, comments required below.)

Comments: Comments on any discrepancies found in the procedures. Describe discrepancies and recommended action to correct the discrepancy.

Follow Up Action: _____
Procedure Revised By (signature)

Date

Signatures & Date: _____
Review Completed By (signature)

Date

PERSONNEL TRAINING ATTENDANCE LIST
FORM #17.01C
(Not Exceeding 15 Months, But At Least Twice Per Calendar Year)

Course Title: _____ Course No.: _____ Course Location/Code: _____
 Sponsored By: _____ Instructor: _____ Asst. Instructor(s): _____
 Course Date: _____ Course Length: _____ Course Cost: _____

	FULL NAME	SOCIAL SECURITY NO	JOB TITLE	WORK LOCATION	SIGNATURE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Card Issued: _____ Diplomas Issued: _____ Input Date: _____

GAS LEAK SURVEY / PIPELINE PATROL

MO-DAY-YR	PATROL LEAKAGE VEGETATION CONDITIONS	INDICATIONS /	PATROL LOCATION / STATION	REPORTED TO MAINTENANCE / ACTION
MO-DAY-YR	CONSTRUCTION ACTIVITY		PATROL LOCATION / STATION	REPORTED TO MAINTENANCE / ACTION
MO-DAY-YR	UNUSUAL CONDITIONS @ BRIDGE / HIGHWAYS / RR		PATROL LOCATION / STATION	REPORTED TO MAINTENANCE / ACTION
MO-DAY-YR	EROSION SLIPPAGES		PATROL LOCATION / STATION	REPORTED TO MAINTENANCE / ACTION
MO-DAY-YR	PIPELINE MARKERS MISSING/DAMAGED		PATROL LOCATION/STATION	REPORTED TO MAINTENANCE / ACTION
MO-DAY-YR	COMMENTS		PATROL LOCATION/STATION	REPORTED TO MAINTENANCE / ACTION

NAVIGABLE WATERWAY CROSSING INSPECTION FORM

FORM 5.03C

DATE OF SURVEY: _____
MO/DAY/YEAR

NAVIGABLE WATERWAY CROSSED UNDER: _____

MAP REFERENCES: _____

LEAKAGE INDICATIONS DISCOVERED (DESCRIBE LOCATIONS AND INDICATIONS.): _____

LEAKAGE INDICATIONS REPORTED TO: _____

DESCRIBE ANY UNUSUAL CONDITIONS AT WATERWAY CROSSING. _____

EROSION/SLIPPAGE OR EXPOSURE OF PIPE OBSERVED: _____

OTHER FACTORS NOTED WHICH COULD AFFECT SAFETY OF PIPELINE: _____

ACTION TAKEN (REPAIRS, MAINTENANCE OR TESTS RESULTING FROM THIS INSPECTION ETC.): _____

COMMENTS: _____

NO. OF PERSON(S) IN PATROL PARTY: _____

SIGNATURE OF PERSON(S) IN PATROL PARTY: _____

SIGNATURE OF SUPERVISOR: _____ DATE: _____
MO/DAY/YR

VENOCO INC. MANUAL OPERATING PRESSURE LOG

**FORM #17.10A
(AS REQUIRED)**

PIPELINE SYSTEM: _____

REASON: _____

DATE MO-DAY-YR	BY WHO	STATION	ACTUAL READING (PSIG)	NORMAL READING (PSIG)	COMMENTS

VENOCO INC.

PRESSURE CONTROL DEVICE INSPECTION

FORM #17.10B
PAGE 1 OF 2

COMPANY:	OPERATING LOCATION:	DATE: M___D___Y___
SYSTEM:		I.D. NO.:

Reason For Report:	<input type="checkbox"/> Inspection	<input type="checkbox"/> Repair	<input type="checkbox"/> New Installation	<input type="checkbox"/> Removal
System MOP:	Set Pressure:			

Manufacturer:	Type / Model:	Serial #:	Orifice Size:
Inlet: _____ in. <input type="checkbox"/> Screwed	<input type="checkbox"/> Flanged	Rating:	
Outlet: _____ in. <input type="checkbox"/> Screwed	<input type="checkbox"/> Flanged	Rating:	
Block Valve	Size:	Type:	Locked: <input type="checkbox"/> YES <input type="checkbox"/> NO
Test Connection: : <input type="checkbox"/> YES <input type="checkbox"/> NO			Vent Line Size:
Lift Lever: : <input type="checkbox"/> YES <input type="checkbox"/> NO	Relief Valve Installation Braced: : <input type="checkbox"/> YES <input type="checkbox"/> NO		

Relief Valve Location:
<input type="checkbox"/> Side of Header <input type="checkbox"/> Top of Header <input type="checkbox"/> Remote

Rated Capacity: _____ cfm	Required Capacity: _____ cfm	Date: _____
<input type="checkbox"/> Check, No Changes		

Remarks:	
Distribution:	Served By:
_____	_____

_____	Witnessed By:
_____	_____

VALVE INSPECTION AND MAINTENANCE REPORT

FORM 7.01A

COMPANY:	OPERATING LOCATION:	DATE: _____ MO-DAY-YR
SYSTEM:	STATION: <input type="checkbox"/> Haz. Liq. <input type="checkbox"/> Nat. Gas	VALVE I.D.:

VALVE LOCATION

<input type="checkbox"/> Above Ground	<input type="checkbox"/> Valve in vault	<input type="checkbox"/> Under Ground (Buried)
<input type="checkbox"/> Mainline Block Valve	<input type="checkbox"/> Branch Block Valve	<input type="checkbox"/> Bypass
<input type="checkbox"/> Block Under Relief Valve	<input type="checkbox"/> Plant Block Valve	<input type="checkbox"/> Other _____
<input type="checkbox"/> Blowdown Valve	<input type="checkbox"/> Upstream	<input type="checkbox"/> Downstream

VALVE SPECIFICATIONS

Manufacturer:			Type:		Model:
Size:	Rating:	End Connection:	Screwed:	Flanged:	Welded:
Operator: <input type="checkbox"/> Wrench <input type="checkbox"/> Hand Wheel <input type="checkbox"/> Gear <input type="checkbox"/> Operator					

MAINTENANCE PERFORMED

Valve Inspected	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Valve Partially Operated	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Stem & Gearing Parts Inspected	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Stem & Gearing Lubricated	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Power Operator Tested	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Valve Body Drained	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Inspected For Atmospheric Corrosion	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Repairs Required	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Proper Identification For Blow-Off Locations (GAS)	<input type="checkbox"/> YES	<input type="checkbox"/> NO

(Sign Should Indicate "Controlled Blowdown Required Due To Overhead Or Adjacent Facilities")

VALVE SECURITY

Lock And Chain Required:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Lock And Chain In Place:	<input type="checkbox"/> YES	<input type="checkbox"/> NO

REMARKS

DISTRIBUTION:

SUPERVISOR:

SIGNATURE

INSPECTED BY:

SIGNATURE

**VENOCO INC.
INFORMATION REPORT
FORM #17.10F**

Received by _____ Time _____ a.m.
_____ p.m.

Date _____

Reported by: Name _____ Telephone _____
Address _____ Employed by _____

Type of Event: Encroachment On Right-of-Way _____
Other (New Structure, Construction Activity, etc.) _____

When Observed: Date _____ Time _____

Location _____

Description of Reported Condition or Event: _____

NOTE: IF DRAWINGS OR SKETCHES NEED TO BE MADE, USE BACK SIDE OF THIS SHEET OR ATTACH SEPARATE SHEET.

Investigation of Report: _____

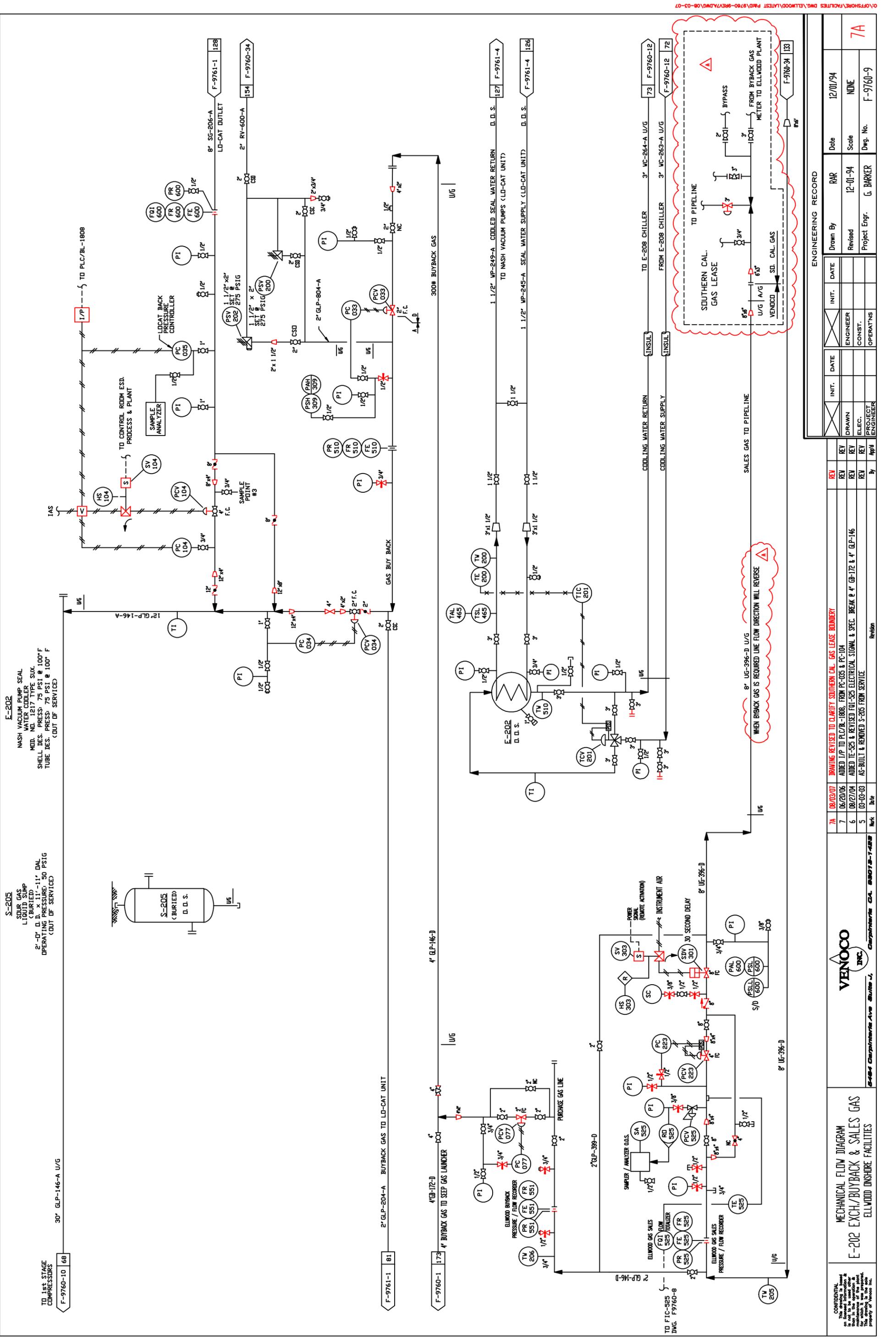
Date _____ Signed: _____

Title: _____

Disposition _____

Signed: _____

Title: _____



E-202
 NASH VACUUM PUMP SEAL
 WATER COOLER SUX.
 MOD. NO. 1217 TYPE SUX.
 SHELL DES. PRESS: 75 PSI @ 100° F
 TUBE DES. PRESS: 75 PSI @ 100° F
 (CUT OF SERVICE)

S-205
 SOUR GAS
 LIQUID SUMP
 (BURIED)
 2'-0" D. D. x 11'-11" DAL
 OPERATING PRESSURE: 50 PSIG
 (CUT OF SERVICE)

TO 1st STAGE
 COMPRESSORS
 F-9760-10 168

30" GLP-146-A U/G

TO PLC/BL-1808

TO CONTROL ROOM ESD,
 PROCESS & PLANT

TO NASH VACUUM PUMPS (LD-CAT UNIT)

TO E-208 CHILLER

TO E-209 CHILLER

TO BYBACK GAS
 METER TO ELLWOOD PLANT

TO PIPELINE

TO PIPELINE

TO PIPELINE

TO PIPELINE

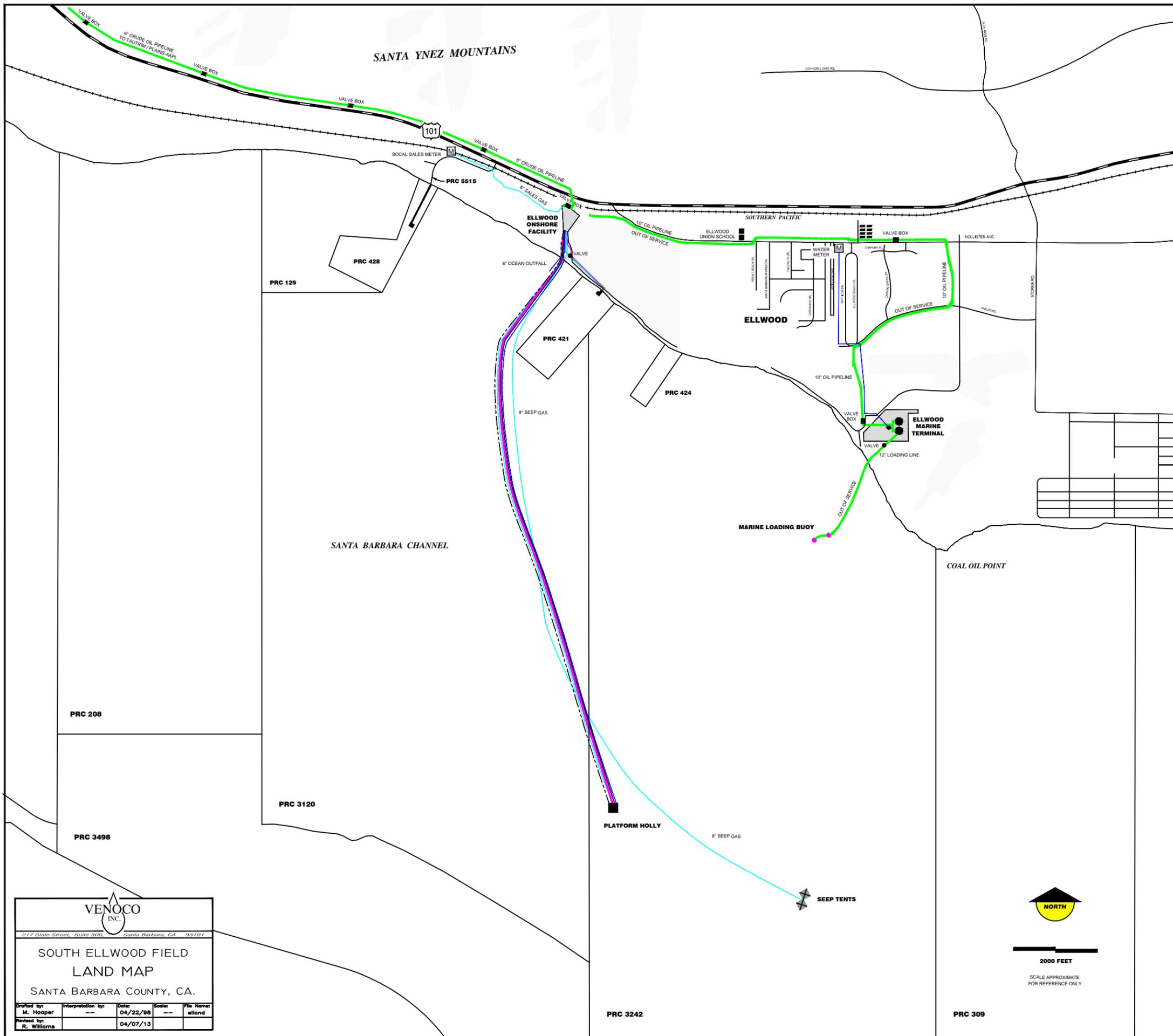
REVISION		DATE		BY	
7A	08/03/07	REWORKING REVISED TO CLARIFY SOUTHERN CAL. GAS LEASE BOUNDARY	REV		
7	06/20/06	ADDED I/P TO PLC/BL-1808 FROM PC-035 & PC-104	REV		
6	08/27/04	ADDED TE-525 & REVISED F01-525 ELECTRICAL SIGNAL & SPEC. BREAK @ 4" GP-172 & 4" GLP-146	REV		
5	03-03-03	AS-BUILT & REMOVED S-205 FROM SERVICE	REV		

ENGINEERING RECORD		DATE		BY	
INIT.	DATE	INIT.	DATE	INIT.	DATE
ENGINEER		ENGINEER		ENGINEER	
CONST.		CONST.		CONST.	
OPERATNS		OPERATNS		OPERATNS	

DRAWING INFORMATION		DATE		BY	
Drawn By	RAR	Date	12/01/94	Scale	NONE
Revised					
Project Engr.	G. BARKER	Dwg. No.	F-9760-9		

MECHANICAL FLOW DIAGRAM	
E-202 EXCH./BUYBACK & SALES GAS	
ELLWOOD ONSHORE FACILITIES	

<p>VENOCO INC. 5400 Carpenter Ave. Suite 101 Ellwood, CA 95022-1429</p>	<p>CONFIDENTIAL on licensed information & from in the operation & for which it is the sole property of Venoco Inc.</p>
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VENOCO
INC.

217 State Street, Suite 300, Santa Barbara, CA 93101

**SOUTH ELLWOOD FIELD
LAND MAP
SANTA BARBARA COUNTY, CA.**

Drafted by:	Interpretation by:	Date:	Scale:	File Name:
M. Hooper	---	04/22/98	---	ellond
Revised by:		04/07/13		
R. Williams				

End Ellwood 6" Sales Gas
33+79 (SoCal Gas Station)



**Bacara Spa
& Resort**

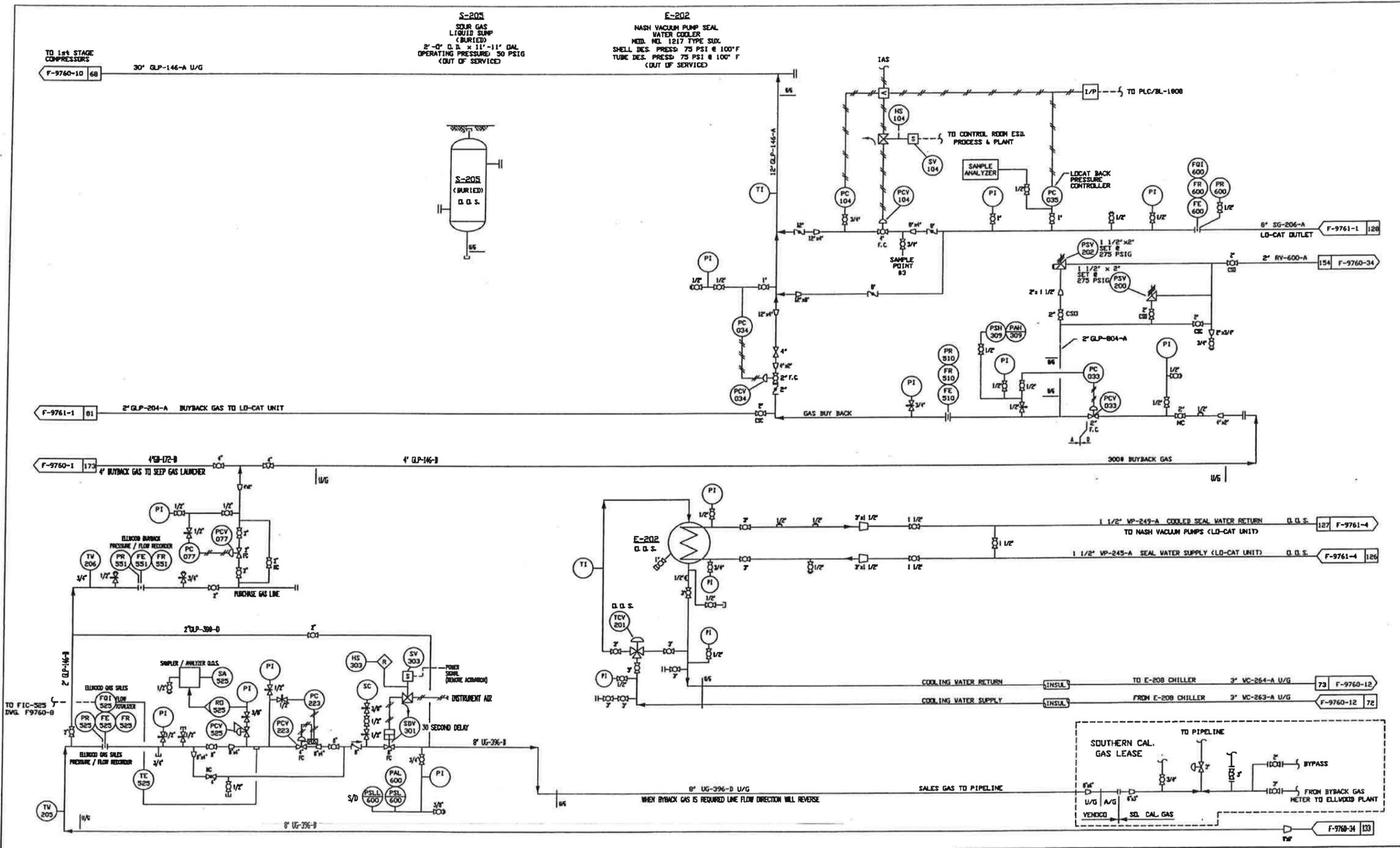
**Tecolote
Creek**

Pacific Ocean

**Bell
Creek**

**Ellwood
Onshore
Facility**

205



ENGINEERING RECORD			
NO.	DATE	DESCRIPTION	BY
8	10/24/07	DRAWING REVISED TO CLARIFY SOUTHERN CAL. GAS LEASE BOUNDARY	REV REY
7	06/20/06	ADDED I/P TO PLC/BL-1808, FROM PC-035 & PC-104	REV REY
6	08/27/04	ADDED TE-525 & REVISED FCI-525 ELECTRICAL SIGNAL & SPEC. BREAK @ 4\"/>	

INIT.	DATE	INIT.	DATE	Drawn By	Date
REY		RAR		RAR	12/01/94
REY		CONST.		Revised	12-01-94
REY		OPERATNS		Project Engr.	G. BARKER

Drawn By	RAR	Date	12/01/94
Revised	12-01-94	Scale	NONE
Project Engr.	G. BARKER	Dwg. No.	F-9760-9

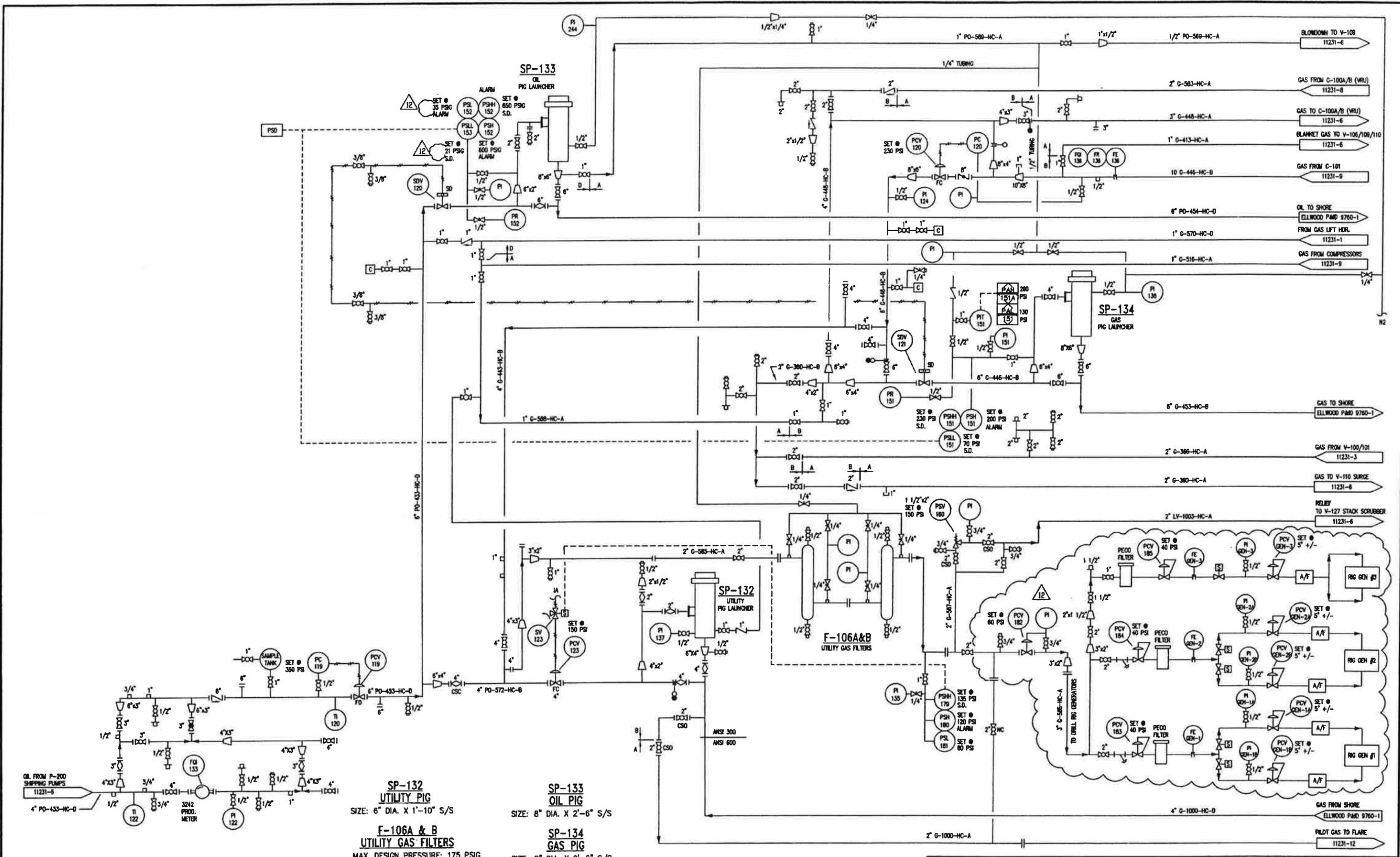
CONFIDENTIAL
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MECHANICAL FLOW DIAGRAM
E-202 EXCH./BUYBACK & SALES GAS
ELLWOOD ONSHORE FACILITIES

VENOCO INC.
8257 Carpinteria Ave Ste 100, Carpinteria CA, 93013

8 10/24/07 DRAWING REVISED TO CLARIFY SOUTHERN CAL. GAS LEASE BOUNDARY REV REY
7 06/20/06 ADDED I/P TO PLC/BL-1808, FROM PC-035 & PC-104 REV REY
6 08/27/04 ADDED TE-525 & REVISED FCI-525 ELECTRICAL SIGNAL & SPEC. BREAK @ 4\"/>

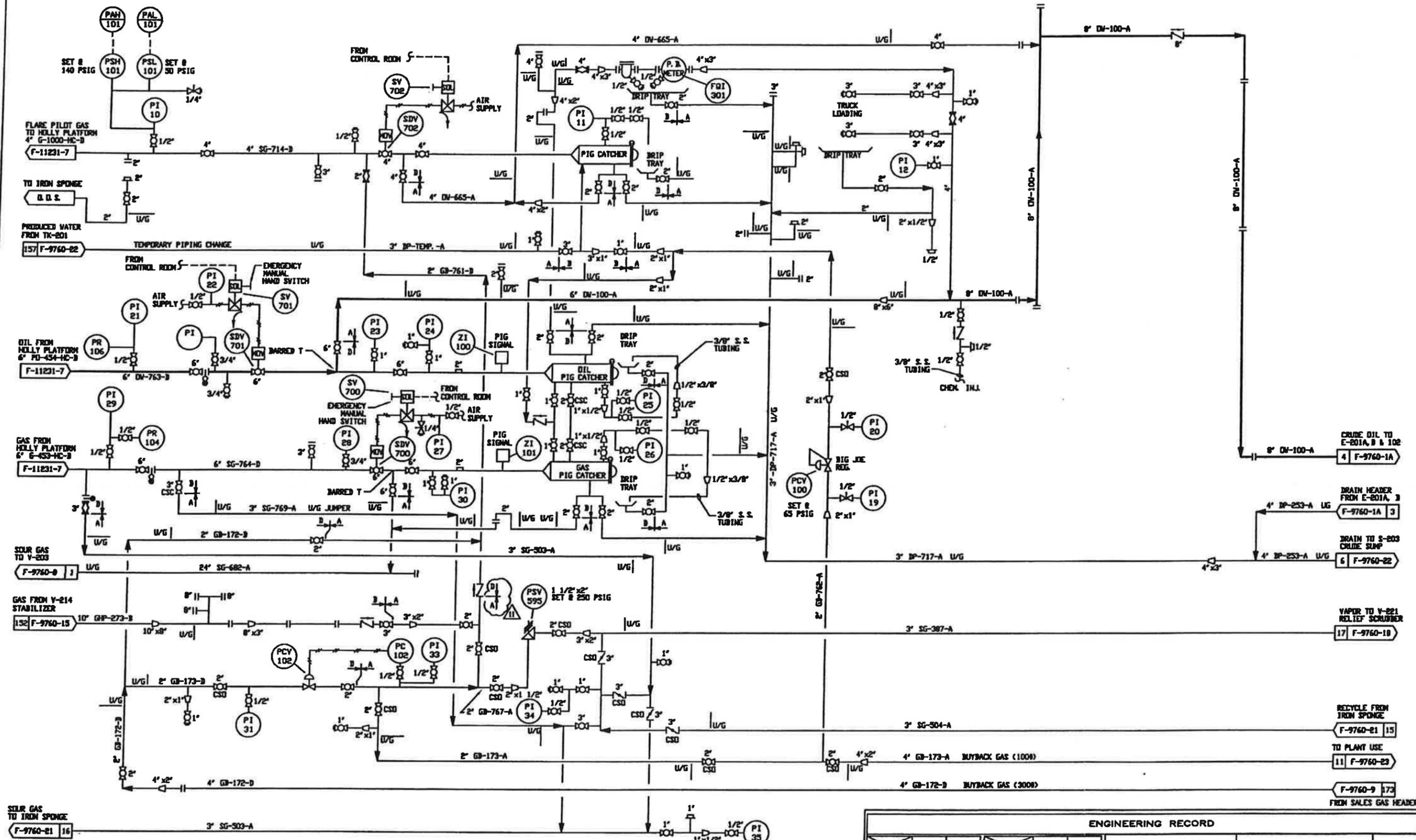
8
8



CONFIDENTIAL				MECHANICAL FLOW DIAGRAM				VENOCO INC.				ENGINEERING RECORD			
This drawing is based on licensed information and is not to be used for any other purpose without the written consent of Venoco Inc.				PLATFORM HOLLY OFFSHORE, SANTA BARBARA, CA.				2627 Carpinteria Ave. Suite 100 Carpinteria, CA. 93013				Drawn By	-	Date	2-12-91
												Revised	1-96	Scale	NONE
												Project Engr.	G. BARKER	Dwg. No.	F-11231-7
															12

Mark	Date	Revision	By	App'd
12	03/22/12	REVISED SIZE & SET PRESS @ PCV-183 & ADDED RIG GEN CONTROL DEVICES	REW	REV
11	07/28/11	ADDED BLIND AT 3" G-446-HC-A	REW	REV
10	04/28/09	AS-BUILT & ADDED GAS FILTERS AND PCV'S AT RIG GENERATORS AND REMOVED V-106 FROM THIS DRAWING	REW	REV

**POSITIVE DISPLACEMENT
METER**
MAMP 1480 PSI MAMP 1440 PSI



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**MECHANICAL FLOW DIAGRAM
PIG CATCHERS
ELLWOOD ONSHORE FACILITIES**



5267 Garpinteria Ave. Suite 100 Garpinteria, CA. 93013

REV	DATE	BY	APP
11	05/12/12	AS-BUILT SPEC. DRAWN	
10	04/05/09	ADDED CHECK VALVE & CHECK BALL POINT & REVISED PIG CAT. DRAWING	
9	08/23/07	CHANGE LINE NO FROM 8\"/>	

ENGINEERING RECORD					
INIT.	DATE	INIT.	DATE	Drawn By	ML
				Revised	3-15-95
				Project Engr.	E. Barker
				Date	1-15-89
				Scale	NONE
				Dwg. No.	F-9760-1

