DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Fernando Fee" 35B**

API No. **03721458** SE **34** T: **3N** R.: **16W** , **SB** B. and M.

County: **Los Angeles** FIELD: **Aliso Canyon**

Type of Notice: **Rework** **Date** **5/9/2016** **Report Number:** **P216-0066**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

CalWims Abandonment Form: _____ SURFACE INSPECTION NEEDED _____ COMPLETED _____
Date and Inspector

FINAL LETTER NEEDED _____ COMPLETED _____ Calwims DRILL/REDRILL Form _____
(Date)

ENGINEER'S CHECK LIST

T-REPORT(S) _____ OPERATOR'S NAME _____ WELL DESIGNATION _____ SIGNATURE _____

Calwims Location _____ Calwims ELEVATION: _____ CONFIDENTIAL RELEASE DATE: _____ PERMIT REQUIREMENTS MET _____

CLERICAL CHECK LIST

LOCATION CHANGE (OG165) _____ ELEVATION CHANGE (OG165) _____ RELEASE OF BOND (OG150) _____

REMARKS

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: _____
(Date and Engineer)

Modfied OGD2

AOR Datbase _____

JRAL RESOURCES AGENCY OF CALIFORN.
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003 - 4458

No. P 216-0066

Old	New
010	010
FIELD CODE	
00	00
AREA CODE	
30	30
POOL CODE	

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Ventura, California
May 25, 2016

Amy Kitson, Agent
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Your proposal to **Rework** well **"Fernando Fee" 35B**, A.P.I. No. **037-21458**, Section **34**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **5/9/2016**, received **5/17/2016** has been examined in conjunction with records filed in this office. (Lat: **34.308693** Long: **-118.544103** Datum:**83**)

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
   a. Class **III 5M** on the **8 5/8"** casing.
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet. A practice drill may be required at the time of the test/inspection.
4. A Temperature and Noise log are run on the well from the packer to surface.
5. **A Casing Wall Thickness Inspection, Cement Bond Log, and a Multi-Arm Caliper Inspection** shall be performed to demonstrate that the 8 **5/8"**casing has integrity.
6. Prior to commencing injection, a pressure test is conducted to demonstrate the mechanical integrity of the **8 5/8"** casing.
7. Injection shall be through tubing and packer only. Injection or withdrawal through the casing is not permitted.
8. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
9. **THIS DIVISION SHALL BE NOTIFIED TO:**
   a. Inspect the installed blowout prevention equipment prior to commencing **downhole** operations.
   b. Witness a pressure test of the **8 5/8"** casing prior to commencing injection.

Blanket Bond Dated: 7/6/1999
UIC Project No. 0100006

Engineer Kris Gustafson
Office (805) 654-4761

KG/kg

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended. Issuance of this permit does not affect the Operator's responsibility to comply with other applicable state, federal, and local laws, regulations, and ordinances.

OG111 (revised 6/2011)

NOTE:

1. The base of the freshwater zone is at or above **800'±**.
2. No operation shall be undertaken or continued that will contaminate or otherwise damage the environment.
3. This permit is being issued as part of Division Order No. 1109 dated March 4, 2016. Any well that fails any of the testing must be taken out of service and isolated from the storage reservoir pursuant to the Safety Review Testing Regime.
4. The required History of Oil or Gas Well (OG103) shall include a complete description of the required pressure testing. **An updated casing and tubing diagram shall be included with the well history.**
5. **A Well Summary Report (Form OG 100)** and **Well History (Form OG 103)** shall to be submitted to the Division within 60 days after the well is drilled, reworked, plugged and abandoned, or if the work is suspended. Any additional well work will require an additional notice to be submitted to this office prior to well operations.

Enclosure: **Attachment 1 to DOGGR Order 1109. Safety Review Testing Regime for the Aliso Canyon Natural Gas Storage Facility**

ATTACHMENT 1
TO DOGGR ORDER 1109

SAFETY REVIEW TESTING REGIME
FOR THE ALISO CANYON NATURAL GAS STORAGE FACILITY

This document identifies the requirements of this comprehensive safety review that shall be completed by the Southern California Gas Company (Operator) and verified by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division). The Operator shall use accepted industry practices and procedures.

The Division has consulted with independent technical experts from the Lawrence Berkeley, Lawrence Livermore, and Sandia National Laboratories ("National Laboratories") to develop the requirements of this facility safety review. The National Laboratories experts independently reviewed and concurred with the testing requirements for the safety review detailed below.

This comprehensive safety review requires that each of the active injection wells in the Aliso Canyon Storage facility either pass a thorough battery of tests in order to resume gas injection or be taken out of operation and isolated from the underground gas storage reservoir. Several steps, detailed below, are required in this safety review. Documentation of all testing required under this comprehensive safety review shall be provided electronically to the Division within 72 hours of completion of a test in digital (i.e. LAS) and printed (i.e. pdf) form. All pressure tests required under this comprehensive safety review shall be witnessed by Division staff. A well that is properly plugged and abandoned in accordance with Public Resources Code section 3208 is not subject to testing under this comprehensive safety review. A well that does not pass all tests must be repaired, retested, and pass all tests, or be plug and abandoned.

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

Step 1: The Operator shall perform an initial casing assessment on the well consisting of temperature and noise logs.

a. Temperature Log:
   A temperature survey shall be run from the surface to the packer to measure the temperature within the wellbore. A temperature survey that demonstrates no unexplained anomalous temperature changes in the well is one indication of casing integrity.

b. Noise Log:
   An acoustic sensor survey capable of detecting the sound of fluid flow will be conducted the length of the well above the packer to the surface. The survey will include stops at least every 250 feet and at the midpoint of any anomaly detected by the temperature survey. The absence of anomalous sound above the packer is an indication of well integrity

Step 2: The results of the Temperature Logs and Noise Logs will be independently reviewed by Division engineers. Any unexplained abnormal findings in this set of tests shall be addressed by the Operator in one of the following ways:

a. Conduct further investigation and demonstrate to the Division's satisfaction that the abnormal finding is not an indicator of a lack mechanical integrity;
b. Remediate the well to the Division's satisfaction; or
c. With Division review and approval, remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

Necessary actions to remediate any abnormalities revealed by these tests will be reviewed by Division engineers. Once repairs or mitigations are completed, the Temperature Log and Noise Log must then be repeated on the well and reviewed by Division engineers to ensure that there are no additional abnormal test results and to confirm the issue was repaired.

Step 3: After these tests are completed on the well, and all required action has been completed, the operator shall either:

a. Conduct the additional tests and evaluations on the well, outlined in Steps 4a through 7a below, in order to gain approval for injecting gas through that well; or
b. Remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

If Temperature and Noise Logs have been completed on a well and they indicate well integrity, and the Operator designates the well to return to injection operations, then the Operator shall perform the additional testing outlined in Steps 4a through 7a. The results of these tests will be independently reviewed by Division engineers and posted publicly. Each of the following tests requires that the production tubing be removed from the well.

Step 4a: The Operator shall conduct a **Casing Inspection log.**
The Operator shall conduct a Casing Inspection log of the well that measures the thickness of the production casing, from the surface to the bottom of the gas storage reservoir cap rock. If the inspection reveals a reduction in wall thickness, the current minimum strength of the casing will be calculated. If the current minimum strength of the casing has diminished to the point that it cannot withstand authorized operating pressures for the well plus a built-in additional safety factor of pressure, the well has failed this test. *A passing test for a casing inspection log would show no thinning of the casing that diminishes the casing's ability to contain at least 115% of the well's maximum allowable operating pressure as authorized in the current Project Approval Letter.*

Step 5a: The Operator shall conduct a **Cement Bond Log** for the well.
The Operator shall conduct a Cement Bond Log (CBL) that measures the bonding between cement and the production casing of the well, and also the bonding between the annular cement and the formation. Cement should be solidly bonded to both the well's production casing and the geologic formation to ensure a seal that prevents fluids from migrating up or down the outside of the well. *A passing test for a cement bond log shows definitive bond, as demonstrated by sonic waveform,*

between cement and casing and between cement and the gas storage formation and/or cap rock for at least 100 feet above the top of the gas storage reservoir.

Step 6a: The Operator shall conduct a **Multi-Arm Caliper Inspection** of the well. The operator shall conduct an inspection that measures any internal degradation or significant changes to the well's geometry from the surface to the top of the gas storage reservoir, using a minimum 32-arm caliper tool. If the inspection reveals a thinning or deformity of the casing, the current strength of the casing will be calculated. If the current strength of the casing has diminished, such that it cannot withstand authorized operating pressures plus a built-in safety factor of additional pressure, the well fails this inspection. *A passing test for a Multi-Arm Caliper Inspection would show no deformation or thinning of the casing that diminishes the casing from being able to properly contain at least 115% of each well's maximum operating pressure.*

Step 7a: The Operator will conduct a **Pressure Test** of the production casing and of the well once the production tubing has been reinstalled. The Operator may conduct the casing pressure test prior to reinstalling the production tubing. Using a digital recorder, the operator will conduct a liquid-filled positive pressure test within the production tubing of the well, and in the annular space between the production tubing and the casing, to determine the well's ability to withstand normal operating pressures. The production tubing will be isolated and then pressure tested. The annular space between tubing and casing will be pressure tested. This testing also evaluates the integrity of any packers, which seal the annular space between the tubing and casing. The pressure test will be one hour and begin at a pressure of 115% of the maximum operating pressure or the minimum yield strength of the casing and tubing, whichever is less. *A passing pressure test is a pressure loss not exceeding 10% for any 30 minute period during the hour long test.*

After conducting the above tests, the Operator will conduct any indicated remediation so that the well can pass these tests. All remediation will be subject to the review of Division engineers. The well would then be required to undergo the tests once again to demonstrate well integrity.

If the well passes the Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper inspection and the Pressure Test to the Division's satisfaction, then the Division may clear the well for use for gas injections and withdrawal, once the Division has authorized resumption of injection into the gas storage reservoir. As noted below, wells approved for operation will only be permitted to inject or withdraw gas through the production tubing.

REQUIRED ACTIONS IF THE WELL IS TO BE TAKEN OUT OF OPERATION AND ISOLATED FROM THE GAS STORAGE RESERVOIR:

If the operator elects to take a well out of service, then the following steps shall be taken to isolate the well from the gas storage reservoir:

Step 4b: The Operator shall confirm the presence of cement outside the well's external casing in the section of the well that prevents the movement of gas from the underground gas storage reservoir to shallower geologic zones above the gas storage reservoir. Existing cement bond logs and well construction

records may be used to make this confirmation. This confirmation requires concurrence from Division engineers.

Step 5b: The Operator shall install a mechanical seal or "packer" within the well's production casing and install a mechanical plug within the well's production tubing, if applicable. These seals shall be set in place near the bottom of the well, within the portion of the well surrounded by cement. This kind of seal is an industry standard practice for isolating a well from reservoir gases or fluids and will further protect the casing from internal gas pressure.

Step 6b: The Operator shall fill the well with fluid to the well's surface in order to create appropriate downward hydrostatic pressure in the well that further contributes to the integrity of the well seal.

These measures will isolate a well from the underground gas reservoir, as confirmed by National Laboratory experts. Each of the above actions is subject to review and approval by Division Engineers.

Step 7b: Once the Operator has completed steps 4b, 5b, and 6b, and the seal is in place at the bottom of the well and the well is filled with fluid above the seal, the operator shall:

a. Conduct daily gas monitoring at the surface of the non-operational well, including monitoring the area around the well perimeter and in the annular space between the plugged casing string and the outmost casing;
b. Conduct noise log, temperature log and positive pressure test every six months;
c. Conduct weekly monitoring of fluid levels in the well or, install and operate real-time pressure monitors that provide immediate notification to the operator when pressures deviate from normal in the well's interior tubing and its annular space.

The above monitoring shall be reported to Division engineers and maintained as a part of the well file. Division engineers will review all submitted information for evaluation on a regular basis to ensure that the well taken out of service has maintained safety, and the operator shall take all necessary steps maintain the safety of the well.

Any well taken out of operation cannot be approved to resume operations and gas injection until the successful completion of the battery of tests outlined above in Steps 4a through 7a (Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper Extension and the Pressure Test) is completed. Those tests must be successfully completed within one year of completing step 6b. If a well cannot successfully complete all necessary steps required in this safety review after one year of completing step 6b, then the well shall be properly plugged and abandoned in accordance with Public Resources Code section 3208.

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

The Division's authorization to resume injection in the Aliso Canyon Storage Facility will be contingent on the successful completion of this comprehensive safety review. The State Oil and Gas Supervisor must confirm in writing that all wells in the facility have either completed and passed the full battery of tests required in the safety review, been taken out of service and isolated from the underground gas storage reservoir, or been properly plugged and abandoned in accordance with Public Resources Code Section 3208.

NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Rec'd 05-17-16 DOGGR Ventura.

FOR DIVISION USE ONLY			
	Forms		
Bond	~~OGD114~~	OG121	
	CALV WIMS	115	

P216-0066

NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: www.conservation.ca.gov/dog/

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well Fernando Fee 35B, API No. 037-21458,

Sec. 34, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

The complete casing record of the well (present hole), including plugs and perforations, is as follows: (Attach wellbore schematics diagram also.)
See attached wellbore schematic

The total depth is: 7335 feet. The effective depth is: 7331 feet.

Present completion zone(s): Sesnon (Name). Anticipated completion zone(s): Same (Name).

Present zone pressure: storage psi. Anticipated/existing new zone pressure: storage psi.

Is this a critical well as defined in the California Code of Regulations, Title 14, Section 1720(a) (see next page)? Yes☐ No☒

For redrilling or deepening only, is a California Environmental Quality Act (CEQA) document required by a local agency? Yes☐ No☒ If yes, see next page.

The proposed work is as follows: (A complete program is preferred and may be attached.)

See attached program

If well is to be redrilled or deepened, show proposed coordinates (from surface location) and true vertical depth at total depth: _____ feet _____ (Direction) and _____ feet _____ (Direction) Estimated true vertical depth: _____

Will the Field and/or Area change? Yes☐ No☒ If yes, specify New Field: _____ New Area: _____

The Division must be notified immediately of changes to the proposed operations. Failure to provide a true and accurate representation of the well and proposed operations may cause rescission of the permit.

Name of Operator: Southern California Gas Company			
Address: P. O. Box 2300		City/State: Chatsworth	Zip Code: 91313-2300
Name of Person Filing Notice: Mark Ghann-Amoah	Telephone Number: (806) 401-2979	Signature	Date: 05/9/16
Individual to contact for technical questions: Mark Ghann-Amoah	Telephone Number: (806) 401-2979	E-Mail Address: mghann-amoah@semprautilities.com	

This notice and an indemnity or cash bond must be filed, and approval given, before the workover begins. (See the reverse side for bonding information.) If operations have not commenced within one year of the Division's receipt of the notice, this notice will be considered cancelled.

INFORMATION FOR COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 (CEQA)

If an environmental document has been prepared by the lead agency, submit a copy of the ***Notice of Determination*** or ***Notice of Exemption*** with this notice. Please note that a CEQA determination by a local jurisdiction, if required, must be complete, or the Division may not issue a permit.

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
  (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
  (B) Any airport runway.
(2) 100 feet of the following:
  (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;
  (B) Any navigable body of water or watercourse perennially covered by water;
  (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground or any other area of periodic high-density population; or
  (D) Any officially recognized wildlife preserve.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

This form may be printed from the DOGGR website at www.conservation.ca.gov/dog/

Rec'd 05-17-16 DOGGR Ventura.

WORKOVER PROJECT

(FF35B – Well Inspection)

DATE: May 9, 2016
OPERATOR: SOUTHERN CALIFORNIA GAS COMPANY
FIELD: ALISO CANYON
PREPARED BY: MARK GHANN-AMOAH
API NUMBER: 037-21458
ELEVATION: All depths based on original KB, 15' above GL

OBJECTIVE

The intent of this program is to inspect the wells mechanical integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP).
This project will include pulling the current production string, Pressure testing casing and well laterals, running casing inspection logs, installing a new completion string, run patches converting well to tubing flow, and installing pressure monitors.

CASING & CEMENT RECORD

CSG. SIZE (INCHES)	TOP OF CSG (FT)	DEPTH OF SHOE(FT)	WEIGHT OF CASING(LBS)	GRADE & TYPE OF CSG.	HOLE SIZE (INCHES)	SACKS OF CMNT(CF)	CMNT TOP (FT)	TYPE OF CEMENT
13 - 3/8	0	830	54.5	K-55, BTC	17 – 1/2	687	SURFACE	CLASS G
8 - 5/8	0	5834	36	K-55 , LTC	11			CLASS G
7 – 1/4	3976	3999	TELEDYNE	MELA PATCH	6.75(ID)	SQUEEZED	S.COLLAR	
8 – 5/8	5834	7225	36	N-80, LTC	11			CLASS G
5	7100	7331	18	N-80	14	86	GRAVEL	40-60

WELL RECORD

Current Status:	Injection / Withdrawal well	
C/O Depths:	TD: 7335', PBTD - 7331' , Last tagged at 6920'(03/ 22/2016–below GLM)	
Injection Conditions:	Estimated BHT – 158 F	Estimated WHP – 1303psi
Current Injection String:	2-7/8"(2.441"ID) 6.4# 0'/7025' w/GLM at 6920' (5"OD/1.4"RA-Latch), SSD – 6957'(2.313"ID), XN No-Go – 6989'(ID-2.205"), Otis J Latch – 7024.7'(2.91"ID), Otis guide shoe – 7025.35' NB: See attached wellbore schematic for detailed description.	
Proposed Injection String:	See attached	

GEOLOGIC MARKERS

MP	7089'
S1	7138'
S4	7217'
S6	7247'
S8	7307'

WELL WORK HISTORY/ANALYSIS

This well was drilled and completed in 1974. Drilling information from dailies on DOGGR/well files records shows that pipe got stuck at 4137' and 4256' while drilling. Also we had to squeeze casing leak at stage collar in the 8-5/8" at +/- 3987' and run a casing patch. There was no known documentation of having cement to surface.

In 1989 it was recommended by Bret Lane to pull the old vintage liner, c/o gravel and run new wire-wrapped liner and gravel pack. The program also included replacing the casing patch at 3976'/3999'. Since the liner has been in the well since 1989 it will be prudent assess the integrity of the liner while the rig is on the well if possible. Also, it is good to note that during the 1989 rig work it was observed that the 8-5/8" casing was over the 7.7" ID.

Last production data – 1/1/2016 showed that well produced 30bopd, 37bwpd and 172.5MMCF/D with a recorded casing and tubing pressure of 1303psi.
It passed noise and temperature log (1 3/8"OD) ran on 3/22/2016. Last tag depth 3/22/2016 indicates we have junk in the tubing right below the GLM (+/-1920').

PROJECT NOTES

1. BOPE requirements in Gas Company Standard 224.05 shall be fully implemented at all times.
2. The storage reservoir pressures shall be monitored during the workover with a minimum of 300 psig overbalance for well control fluids.
3. Prepare the location by removing all relevant landscaping/lighting fixtures as well as surface piping and electrical components as needed. Locate rig anchors, reinstall if necessary.
4. DOGGR permit must be posted on site. Notify the DOGGR as required for BOPE testing as stated on permit.

PRE-RIG WORK(FOLLOW CURRENT SOP)

1. De-energize and remove all laterals.
   → Install companion flanges for circulating the well.
   → LOTO (lock-out/Tag-out) where required.
2. Ensure there are rig anchors and prepare surface location as required.

WELL KILL REQUIREMENTS

1. Top of Slots = 7212'
2. Bottom of Slots = 7330'
3. Estimated BHP = 1556psia
4. Calculated fluid to provide 500psi over balance = 30#/cu.ft.
5. Wellbore fluid volumes;
   → Tubing = 41bbls
   → Casing/Liner = 5 bbls
   → Annulus = 368 bbls
   414 bbls. Total
6. Pump w/o fluid down tubing at 3bbls/min. through GLM – 6920'
   → Bleed off any gas to Gas company system
   → Obtain assistance from Aliso Canyon shift supervisor when killing well
   → Ensure surface string annulus is bled off
   → Maintain surface volume equal to or greater than well volume.

WELLWORK PROGRAM

1. MIRU Ensign double w/o rig w/all equipment – pump, Baker tank, Shaker and mixer.
   - ➔ Perform JSA, JSP, CW

2. Spot 500 bbls Baker tanks and load well w/3% KCL water or 8.5 ppg.
   - ➔ Connect pump to the tubing and vent the casing through the choke manifold to the SoCal Gas withdrawal system.
   - ➔ Treat all brine with Biocide, 5 gals/100 bbls

3. If tubing pressures up due to junk in well (possible choke holder), RIH w/wireline perforators and shoot holes at +/- 6900'(20' above GLM), POOH.
   - ➔ Pump w/o fluid down tubing at 3bbls/min. through perforations – 6900'
   - ➔ Bleed off any gas to Gas company system

4. Install backpressure valve in tubing hanger. ND tree and NU BOPE.
   - ➔ Send-in tree components to Cameron for inspection.

5. Install 9" Class III 5M BOPE per Gas Company Standard 224.05 and in accordance with the DOGGR permit. All connections and valves must be flanged and at least 5000 psig rated.
   - ➔ Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 20 minutes. Test all lines and connections to 300 psig.
   - ➔ Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the 2-7/8" pipe rams to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.
   - ➔ All tests are to be charted and witnessed by a DOGGR representative.
   - ➔ Pull back pressure valve from tubing hanger.

6. Remove Back Pressure Valve and unland tubing
   - ➔ Release tubing w/160,000lbs from Otis J-Latch packer at +/- 7024.7'
   - ➔ Bull head HEC polymer into the liner and change over above TOL to 3% KCL since well is open to storage zone, in order to minimize loss circulation.
   - ➔ Pump at 2-3bpm MASP- 3625psig
   - ➔ Tubing volume is ~ 41 bbls., Annulus volume ~ 368 bbls.

7. POOH laying down production string, See tubing/production string details attached.
   - ➔ If unable to unset packer assembly at 7029'. E-line cut pipe (tubing) at 6900' (+/- 20' above GLM), POOH. Retrieve patch at 3987' before and fish out rest of tubing string.
     - o NB: OD's / ID's of injections are on first page.
   - ➔ Send tubing hanger to Cameron for rework from 2-7/8" to 3.5" tubing connection.
   - ➔ RIH w/ 8-5/8", 36# casing scraper (positive) on 2-7/8" work string to top of patch before retrieving patch, POOH

8. RIH w/ retrieving BHA and retrieve Pengo Teledyne patch at +/- 3976'/3997' as follows;
   a). RIH w/ 7" spear on fishing assembly to 3976'
   b). Attach to top swage on casing patch and retrieve top swage
   c). RIH w/ 7" spear, spacer, stop sub, bumper sub, hydraulic jars, 3-DC to patch
   d). Retrieve rest of patch from well.

9. RIH w/ milling BHA and mill out OTIS "WB" packer so that we assess the cement integrity around the MP.
   ➔ Milling BHA : Washover shoe

10. PU a 8-5/8", 36# casing scraper (positive) on 2-7/8" work string and RIH to top of liner – 7100'.

11. RIH with c/o assembly for 5" 18# N-80 wire-wrap liner. Tag and c/o well to bottom of liner at 7331' or as deep as possible, POOH.

12. Rig-up wireline unit(s), necessary connections as required to run the following logs:
    a). Gyro survey from TOL to surface (Scientific)
    b). Magnetic flux leakage/vertilog from TOL to surface (Baker)
    c). Multi-arm caliper log from TOL to surface (Baker)
    NB: Send copies of all logs to engineering team for review

13. MU and RIH w/ 8-5/8", 36# RBP on work string. Set at +/- 7090' (10' above liner top). --
    → Sand off, fill hole w/ clean w/o fluid and Pressure Test -1000psi.
    ➔ POOH and lay down BP retrieving head.

14. MU and RIH with 8-5/8", 36# test packer and run a pressure integrity test on the 8-5/8" casing from surface to top of RBP at +/- 7090' to a minimum of 115% of the wells MAOP(3625psi) as per attached pressure test schedule , POOH w/test packer.
    ➔ Follow Pressure Test schedule to avoid over pressuring.

15. Nipple down 11" Class III 5 M BOPE, crossover spool, and primary pack-off.
    ➔ Send wellhead equipment to Cameron for refurbishment
    ➔ NU spare 13 - 3/8" 3M x 11" 5M DSA, spacer spool.
    ➔ Pressure test all the wellhead seals to 3625 psig/ 80% of collapse pressure.
    ➔ Reinstall the 11" Class III BOPE and function test. Retest all connection broken in process.

16. Rig-up wireline unit(s) with lubricator as required to run the following logs in tandom:
    a) Ultrasonic imager from BP to surface (SLB)
    b) Cement bond log from BP to top of cement (SLB)
    NB: Send copies of all logs to engineering team for review

17. ND spare well head equipment and NU refurbished well head from Cameron and install BOPE.
    ➔ Pressure test BOPE and refurbished wellhead equipment per DOGGR requirements.

18. PU retrieving head for BP and RIH to 5' above top of sand.
    ➔ Circulate out sand. Release BP at +/- 7020'.
    ➔ C/O w/weighted brine as required to control well.
    ➔ POOH and lay down work string and RBP.

19. RIH and set new Weatherford metal skin patch at approximately the following depths;
    a) +/- 7015' to 7091'
    b) +/- 3950' to 4026'

20. Test patches at 7015'/ 7091'(lower sleeve).

➔ Follow pressure schedule to ensure we do not exceed burst rating.

21. RIH w/new completion string as follows:
    a) 3-1/2" Wireline re-entry guide
    b) +/- 8ft - 3-1/2" 9.3# TCPC L-80 Production packer (to be set in packer sleeve)
    c) +/- 10ft - Pup joint 3-1/2" 9.3# L-80 TCPC
    d) +/- 2ft – 3-1/2" 9.3# L-80 TCPC XN (2.75" w/2.635" no-go) nipple
    e) +/- 31ft - Full joint 3-1/2" 9.3# L-80 TCPC tubing
    f) +/- 2ft - Pup 3-1/2" 9.3# L-80 TCPC
    g) +/- 2ft – 3-1/2" 9.3# L-80 TCPC (2.813" Open Down) sliding sleeve
    h) +/- 4ft - Pup 3-1/2" 9.3# L-80 TCPC
    i) +/- 7017ft - 3-1/2" 9.3# L-80 TCPC tubing to surface
    j) Pup joints 3-1/2" 9.3# TCPC L-80 for space-out
    k) +/- 4ft - 3-1/2" 9.3# L-80 TCPC fatigue nipple (pin x pin)
    l) Tubing hanger with 3-1/2" EUE top box / 3" BPV / 3-1/2" TCPC bottom box

22. Land tubing on tubing hanger as per vendor specification, same depth as before.
    ➔ NB: Utilize Force Analysis / Tube Move Calculations for packer setting.
    ➔ Set packer at +/- 7025'

23. Rig-up slick line unit and lubricator. Set a plug in the 4-1/2" XN profile.

24. Pressure test annulus to a 1000psi and test tubing to 3700 psi.
    ➔ Notify DOGGR to witness pressure tests
    ➔ Both tests to be an hour in duration and recorded digitally.

25. Prep well to be unloaded after rig moves off.

26. RDMO

EQUIPMENTS / SERVICES

1. Workover Rig double [Ensign Rig 341 – Jeff Sandoval, 6613017102]

1. HEC Polymer, Fluid [GEO drilling fluids – Gilbert Ortega, 6613312697]

2. Separator, well kill [Pacific Petroleum / Onyx – Dean Leal, 6614870492]
    ➔ We will separate well kill – carbon canisters.

3. Tanks / trucking [Doby Haggar – Victor, 6615781453]

4. BOP/ packer [Weatherford – Tim Ludeman, 8053202190]

5. Tubing string [Tuboscope – Nick Taminich, 8052906577]

6. Wellhead [Cameron – Danny Caraan, 6613038615]

WELL WORK PRPOGRAM TO UNLOAD WELL

1. RIH and shift the sliding sleeve open.

2. Rig-up nitrogen unit. Recover workover fluid by pumping down annulus taking returns up tubing.

3. RIH with slick line and shift sliding sleeve closed. POOH and rig down slickline unit.

4. Fill annulus with packer fluid including corrosion inhibitor & biocide.
   a.) Vent nitrogen returns as appropriate.
   b.) Monitor annulus fluid level and re-fill with packer fluid as necessary.

5. Install BPV in tubing hanger. Nipple down the Class III 5M BOPE and install the production tree and test to 5000 psig. Remove BPV.

6. Release production rig, rig down and move out.

WELL LATERAL HYDROTESTING

1. Per Gas Company Standard 182.0170, pressure test the tubing and casing kill laterals from the wellhead to the remote tie in to 3625 psig. Pressure test the tubing and casing withdrawal/injection laterals from wellhead to operating valves to 3625 psig.

2. Reinstall the hydro-tested laterals.

3. Install the well safety systems and instrumentation. Install pressure transmitters on tubing, casing, and surface casing.

4. Release well to operations.

EXTERNAL CORROSION PROTECTION

Per Gas Company Standard 167.30, remove any lead based paint and recoat wellhead, production tree, and laterals.

Current Tubing Detail as ran 12/13/1989

Quantity	Item	Length	Depth
1	KB to donut	35.00	35.00
1	Donut	1.00	36.00
3	2-7/8", EUE 8rd, N-80 pup joint	22.00	58.00
136	2-7/8", EUE 8rd, J-55 tbg.	4249.00	4307.00
1	2-7/8", EUE 8rd, J-55 pup joint	4.00	4311.00
1	Gas Lift Mandrel	6.00	4317.00
1	2-7/8", EUE 8rd, J-55 pup joint	1.00	4318.00
83	2-7/8", EUE 8rd, J-55 tbg.	2605.00	6923.00
1	Baker "BX" No Go Nipple	2.00	6925.00
1	2-7/8", EUE 8rd, J-55 tbg.	29.00	6954.00
1	Halliburton "XD" Slidding Sleeve	4.00	6958.00
1	2-7/8", EUE 8rd, J-55 tbg.	32.00	6990.00
1	Baker L-10 on-off tool	1.00	6991.00
1	2-7/8", EUE 8rd, J-55 tbg.	32.00	7023.00
1	2-7/8" x 3-1/2" cross-over	1.00	7024.00
1	Baker E-22 anchor latch seal unit	1.00	7025.00

Casing Pressure Test Schedule:

Well: Fernando Fee 35B

		External Casing Backup Pressure			Pressure Test Net Burst Pressure @ Depth								Tubing Leak Net Burst Pressure @		
Depth (TVD)	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	1	2	3	4	5	6	7 Above Stage Collar	Final Below Stage Collar	Gas-Filled Annulus	Test Pressuree > 85% of Burst	Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus)
				Surface Test Pressure	3625	3275	3100	2925	2750	2575	2400	2230	3625		
				Test Packer Depth	500	1000	1500	2000	2500	3000	3970	3990			
				Test Down Casing or Tubing	Casing	Casing	Casing	Casing	Casing	Casing	Casing	Tubing			
				Bridge Plug Depth								7090			
0	3791	0.00	0	0	3625	3275	3100	2925	2750	2575	2400	2230	3625		
500	3791	0.00	0	221	3846	3496	3321	3146	2971	2796	2621	2451	3670	86%	
1000	3791	0.00	0	442	-	3717	3542	3367	3192	3017	2842	2672	3716		
1500	3791	0.00	0	663	-	-	3763	3588	3413	3238	3063	2893	3761		
2000	3791	0.00	0	884	-	-	-	3809	3634	3459	3284	3114	3806	85%	
2500	3791	0.00	0	1105	-	-	-	-	3855	3680	3505	3335	3852	86%	
3000	3791	0.00	0	1326	-	-	-	-	-	3901	3726	3556	3897	87%	
3500	3791	0.00	0	1547	-	-	-	-	-	-	3947	3777	3942	88%	
3978	3791	0.00	0	1758	-	-	-	-	-	-	-	3988	3986	89%	
4500	3791	0.00	0	1989	-	-	-	-	-	-	-	4219	4033	95%	
5000	3791	0.00	0	2210	-	-	-	-	-	-	-	4440	4078	100%	
5500	3791	0.00	0	2431	-	-	-	-	-	-	-	4661	4123	105%	
5835	3791	0.00	0	2579	-	-	-	-	-	-	-	4809	4154	108%	
6500	5517	0.00	0	2873	-	-	-	-	-	-	-	5103	4214		
7090	5517	0.00	0	3134	-	-	-	-	-	-	-	5364	4268		
				0.442 psi/ft int. grad.									0.091 psi/ft int. grad.		

Rec'd 05-17-16 DOGGR Ventura.

Well
Fernando Fee 35B

API #: 04-037-21458-00
Sec 34, T3N, R16W

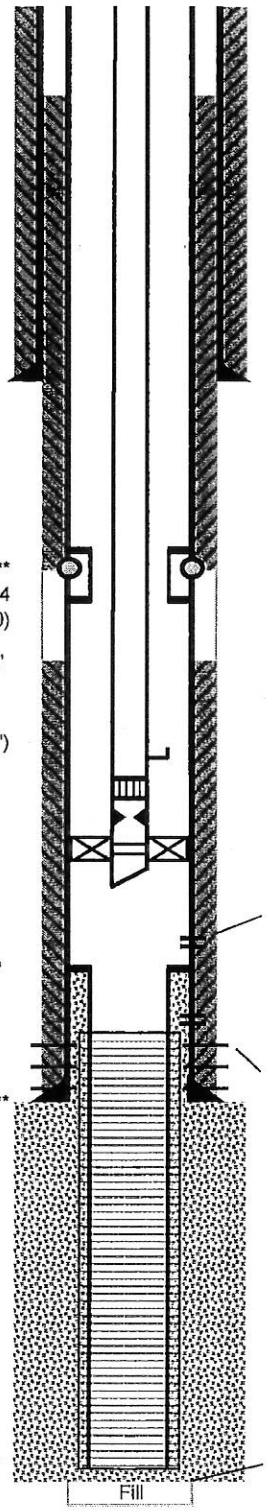
Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 1674' asl
Datum to Ground: 15' KB

Spud Date: 8/20/1974
Completion Date: 9/28/1974

Junk: None



13-3/8" TOC Surface

8-5/8" ETOC (2nd Stage) 335'

17-1/2" Hole (to 832')

Surface Casing
13-3/8", 54.5#, K-55
0' - 830'
CMT'D w/ 587 CF + 100 SKS,
Good CMT Returns to Surface

830'

Stage Collar 3978'**
(80 SKS CMT SQZ'D Away, 9/13/1974 + 4 CF CMT SQZ'D Away, 4/29/1980)

8-5/8" ETOC (1st Stage) 4440'

11" Hole (832' - 7229')

Production Casing
8-5/8"
0' - 5835' 36#, K-55
5835' - 7229'** 36#, N-80

CMT'D w/ 590 CF + 200 SKS (Shoe, 1st Stage),
1100 CF thru Stage Collar @ 3978'** (2nd Stage)

7100'

7229'**

15" Hole (7229' - 7333')

Liner
5", 18#, N-80
7100' - 7331'

7331'

TD 7335'
TD VSS (-5423')
Directionally Drilled: Yes (TD is 761' E, 145' S of Surf, 7112' TVD)

Tubing
2-7/8", 6.4#, N-80
0' - 7025'
(3168' - 6150' Beveled Collars)

3976' - 3999' Teledyne-Merla CSG Patch (7-1/4" O.D. x 6-3/4" I.D.)

6912' Camco GLM MMA 1-1/2" RA Latch w/ 1-1/2" Dummy Valve

6953' Otis SSD XD
6988' Otis XN No-Go Nipple
7021' Otis "WB" PCKR
7025' Tail

7088' - 7089'** Four (4) 1/2" Holes (2 CF CMT SQZ'D Away, 8/26/1978)*
7090' Four (4) 1/2" Holes (8 CF + 9 CF CMT SQZ'D Away, 8/22/1978)*

7107' Possible damage in 8-5/8" CSG (1989)
7199' Four (4) 1/2" Holes (9/15/1974) WSO
7200' Four (4) 1/2" Holes (200 SKS CMT SQZ'D, 9/15/1974)

8-5/8" Perfs:
7217' - 7225' Six (6) 3/4" HPF (12/6/1989)
7219' - 7229' Four (4) 0.42" HPF (9/18/1974)

Liner Perfs:
7211' - 7331' 0.008" WWS

Gravel Packed w/ 155 CF 40-60

7333' C/O Fill Prior to Running Liner (12/7/1989)
(7333' - 7335') 7-5/8" Hole

Notes

*26 CF CMT SQZ'D Away, 11/8/1980

**So. Cal. Gas diagram dated 3/28/90 indicates that in 1989 shoe depth, perfs, & stage collar were corrected per E-log. Diagram shows 8-5/8" shoe @ 7225', stage collar @ 3987', and SQZ Perfs @ 7084'.

Top of Zone Markers		
A1	3850'	(-2154')
LDA	6554'	(-4711')
MP	6900'	(-5023')
S1	7138'	(-5241')
S4	7217'	(-5313')
S8	7307'	(-5397')

Prepared by: CAM (4/27/2016)

InterAct

Rec'd 05-17-16 DOGGR Ventura.

Well

Fernando Fee 35B

API #: 04-037-21458-00
Sec 34, T3N, R16W

Production Casing Pressure Test - Program

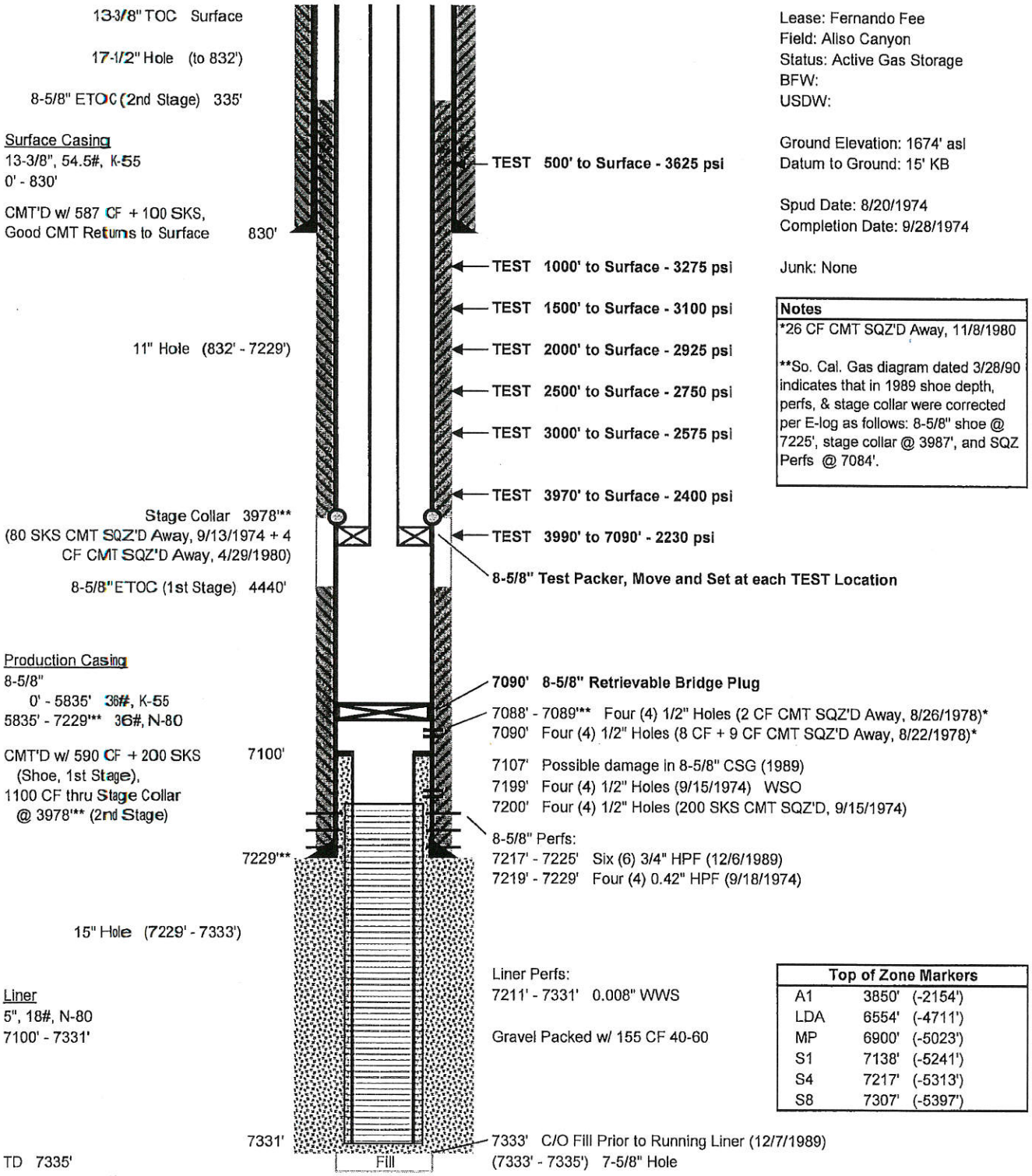
Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 1674' asl
Datum to Ground: 15' KB

Spud Date: 8/20/1974
Completion Date: 9/28/1974

Junk: None



Notes
*26 CF CMT SQZ'D Away, 11/8/1980
**So. Cal. Gas diagram dated 3/28/90 indicates that in 1989 shoe depth, perfs, & stage collar were corrected per E-log as follows: 8-5/8" shoe @ 7225', stage collar @ 3987', and SQZ Perfs @ 7084'.

Top of Zone Markers		
A1	3850'	(-2154')
LDA	6554'	(-4711')
MP	6900'	(-5023')
S1	7138'	(-5241')
S4	7217'	(-5313')
S8	7307'	(-5397')

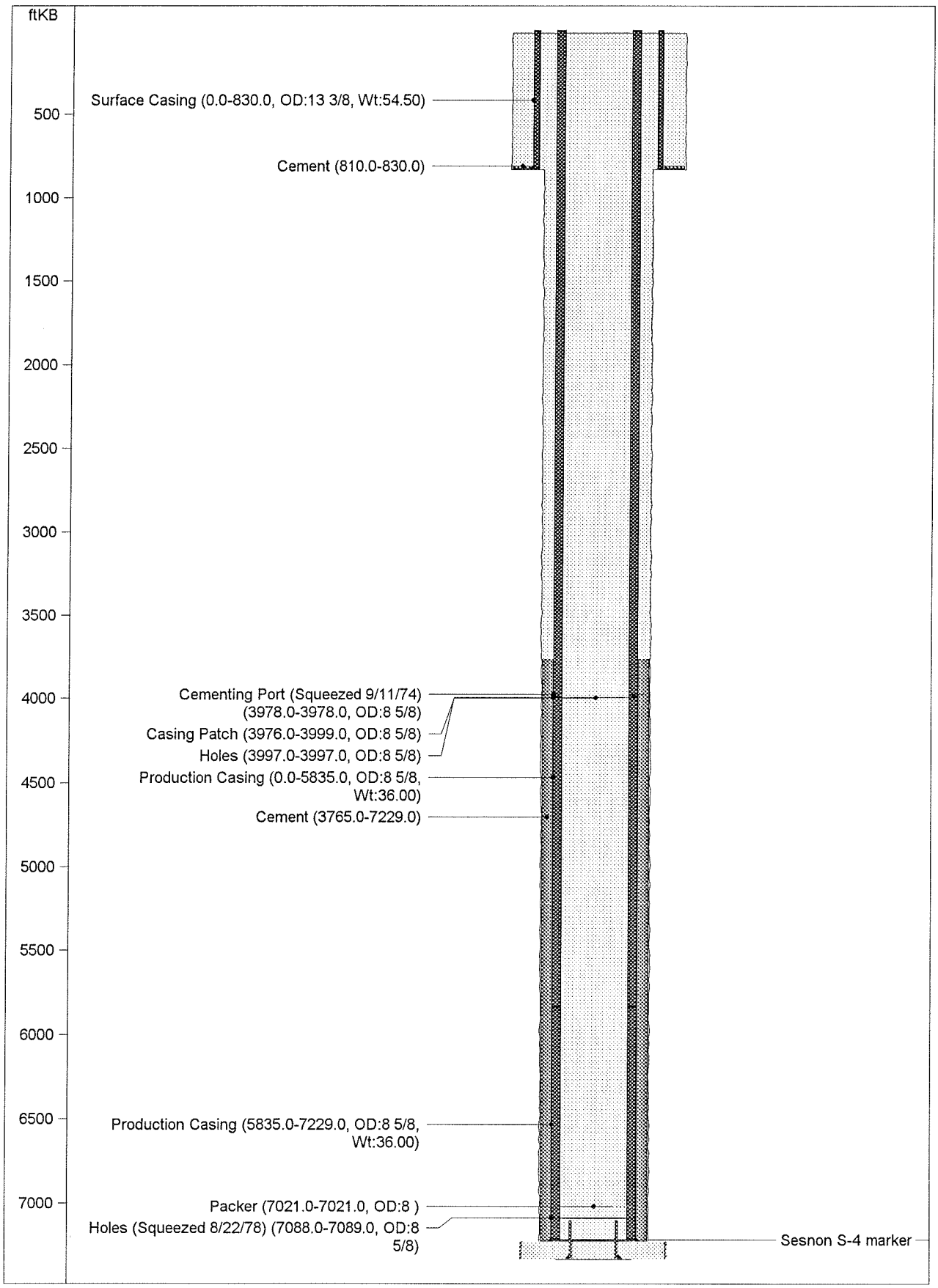
TD 7335'
TD VSS (-5423')
Directionally Drilled: Yes (TD is 761' E, 145' S of Surf, 7112' TVD)

Prepared by: CAM (4/27/2016)
Updated by: LD (5/6/2016)

InterAct

FERNANDO FEE 35B

12/31/98



OPERATOR [illegible]
LSE & NO 1W 82
MAP 250

	(1)	(2)	(3)	( )	( )	( )
INTENTION	DRILL	REWORK	REWORK GAS STOR	alter csg in GS	alter csg in GS	alter Casing
NOTICE DATED	6-18-74	6-25-76	7-20-78	--	10-23-80	6-29-89
P-REPORT NUMBER	274-261	276-233	278-213	280-115	280-379	289-212
CHECKED BY/DATE						
MAP LETTER DATED	10-25-75 PRO 6-6-74 LOC	N/C	N/C	N/C	N/C	NC
SYMBOL	G					

	(1) REC'D	(1) NEED	(2) REC'D	(2) NEED	(3) REC'D	(3) NEED	( ) REC'D	( ) NEED	( ) REC'D	( ) NEED	( ) REC'D	( ) NEED
NOTICE	6-25-74		6-29-76		8-14-78		4-10-80		10-28-80		6-30-89	
HISTORY	3-4-75		10-25-76		10-19-79	X	5-19-80		12-24-80		5/21/90	
SUMMARY	3-4-75				10-19-79	X	—		—			
DIL- IEL IES/ELECTRIC LOG	3-2-79	X										
DIRECTIONAL SURV	10-22-74											
CORE/SWS DESCRIP												
OTHER: microseis - cement bond } caliper log }	11-1-74				csg caliper 11-27-78							
OTHER: Comp N. Form, Form. Factor, Gama Form Dens }	3-2-79											
RECORDS COMPLETE	✓		✓		JR		JR		JR		BH	

ENGINEERING CHECK

T-REPORTS	
OPERATOR'S NAME	
WELL DESIGNATION	
LOC & ELEV	
SIGNATURE	
SURFACE INSPECTION	
FINAL LETTER OK	

CLERICAL CHECK

POSTED TO 121 ______ 170 MAILED ______ FINAL LETTER MAILED ______

RELEASED BOND ______

REMARKS:

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAY 21 1990
VENTURA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Co. Field Aliso Canyon County Los Angeles
Well FF35B, Sec. 34, T 3N, R 16W, SB B. & M.
A.P.I. No. 037-21458 Name R. D. Phillips (Person submitting report) Title Agent (President, Secretary or Agent)
Date April 23, 19 90

Signature J. B. Lane for R.D. Phillips

P.O. Box 3429 Terminal Annex, Los Angeles, CA 90051 (213) 689-3925
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date	
	MWO No. 99109: was issued to replace liner and gravel pack
1989	
10-19 to 10-20	Rigged up. Installed back pressure valve in donut. Removed xmas tree and installed 9" Class 3, 3000 psi BOPE. Tested BOPE with water as follows: blind rams, pipe rams and choke manifold to 3000 psi for 20 minutes; Hydril bag to 2400 psi for 20 minutes. Unlanded tubing with 160,000#. Released from Otis packer at 7150'. Circulated well losing 120 barrels of polymer completion fluid. Displaced 120 barrels of 300 vis pill in well. Steve Mulqueen of the DOG declined to witness BOPE test.
10-21	Pulled out of well with 2-7/8" tubing , laying down production equipment. Found Otis sliding sleeve cut in two pieces leaving fish (one half of sliding sleeve, 2-7/8" x 9' blast joint, 2-7/8" No-Go nipple, 2-7/8" x 19' blast joint, crossover, J-latch, 2' seals, and production tube) in well. Ran 5-3/4" wash pipe with 3-3/4" overshot with 2-7/8" bumper sub on 2-7/8" tubing.
10-23	Washed over fish and latched overshot to fish. Unable to release from Otis packer. Could not release overshot from fish. Made wireline back off shot at 7109'.
10-24	Laid down 229 joints of 2-7/8" 8rd N80 tubing. Ran overshot jars, 6" drill collars on 3-1/2" drill pipe.
10-25	Latched unto fish and jarred at 7112'. Overshot came free. Pulled out of well. Grapple and overshot broken. Ran into fish screw-in sub at 7112'. Jarred one time and came loose.

10-26 Pin broke off of screw-in sub. Ran in well with 4-1/2" overshot with spiral grapple and latched onto fish. Made chemical cut in No-Go nipple at 7130'. Left 5' of wireline tool in well.Ran new overshot and latched onto fish at 7112'.

10-27 to 10-28 Overshot released. Pulled out of well. Spiral grapple left in well. Ran in Lynes 4-5/8" x 7-1/2" inflatable plug and attempted to set at 6300'. Valve in packer would not hold.

10-30 Pulled out Lynes 4-5/8" OD plug. Ran new Lynes 5-3/8" OD inflatable plug to 6300'. Pressure tested to 500 psi. Set 10,000# down and pulled 10,000# string to test. Released from tool. Spotted 6 sacks of sand on plug.

10-31 Removed tubing head and inspected 8-5/8" casing adjacent to casing stub & slip area. Casing was over the 7.7" drift ID and showed no critical wear or damage. Installed new 8-5/8" packing in tubing head.

11-1 to 11-2 Ran 7" spear on fishing assembly to 3966'. Attached to top swage of casing patch and retrieved top swage. Ran 7" Baash-Ross spear, 41' of spacer and 17" OD stop sub below bumper sub, hydraulic jars and 3 drill collars to patch. Worked patch loose and through tight casing head.

11-3 Ran Lynes retrieving tool to top of sand at 6290'. Backscuttled sand off plug to 6300'. Pulled plug out of well.

11-4 Ran 60' of 7-1/4" x 6-3/8" washpipe with sawtooth shoe to 7112' and backscuttled over fish to 7150'. Pulled out with washpipe.

11-6 to 11-8 Ran 7-5/8" x 5-3/4" overshot on fishing assembly to 8218'. Attached to 5-3/4" tool joint on fish. Recovered all of fish: one Otis seal assembly, 10' blast joint, 2-7/8" No-Go nipple, 20' blast joint with centralizing lugs, bottom half of Otis sliding sleeve, 5-3/16" x 3-3/16" overshot with 30' of washpipe and 2-7/8" bumper sub.

11-9 to 11-10 Ran 3-3/4" mill to 7150' and worked junk through 4" packer bore. Retrieved Otis 8-5/8" permatrieve packer with 4" spear. Ran 8-5/8" casing scraper pipe to 7151'.

11-11 Ran 8-5/8" vertilog from surface to 7150'. Ran 6-5/8" casing scraper with 5-5/8" OD mill on drill pipe to 7230' and cleaned out fill. Milled at 7263' for 2 hours, probably bottom of chemical cutter lost previously.

11-13 Ran in new junk mill and milled up iron and cleaned out fill from 7263'-7332'. Circulated well.

11-14 Ran 7-5/8" casing cutter on drill pipe to 7212' and cut 6-5/8" casing. Pulled out of well with cutter.

11-15 Speared 6-5/8" liner at 7197' and pulled out of well retrieving 8-5/8" x 6-5/8' hanger, port collar and 19' of 6-5/8" casing - 24' total. Washed 6-5/8" liner from 7216'-7297' (no returns). Tools would not go deeper.

11-16 Pulled out of well with wash tool. Ran 5-5/8" and cleaned out from 7297' to 7333'.

11-17 to 11-18 Washed 6-5/8" liner from 7216' to 7315'. Re-attached spear to liner at 7210', jarred 120,000# to 150,000# over drill pipe weight for 5-1/2" hours. Pulled out of well recovered 9' of joint #1 and 12' of joint #2.

11-20 Dressed top of liner with5-5/8" tapier mill at 7232' and circulated out fill 7287' to 7332'. Ran washtool and tried to wash 6-5/8" liner 7232' to 7234' (found 7' of fill). Circulated but no sand returns. Slide valve on wash tool probably wasn't closed.

11-21 to 11-24 Ran Tri-State hydraulic pulling tool and set spear in 6-5/8" liner at 7246' with pulling tool. Pulled 6-5/8" liner with 240,000# - no movement.

11-25 Laid down pulling tool. Ran bit to 8332'. Circulated sand out of well. Pulled to top of liner.

11-27 Ran bit to 7310' and cleaned out fill to 7332'. Spotted 50 bbls high viscosity pill across liner and pulled out of well. Set 6-5/8" casing spear at 7240' (first collar of liner) and took free point readings to TD. Found bottom joint of liner stuck.

11-28 Rewashed liner from 7298' - 7326' (found 7' of fill on bottom).

11-29 Attached 6-5/8" spear to liner. Worked liner free and pulled out of well recovering all remaining liner (109'). Found pressure bomb and sinker bars in bottom of liner. Ran 7-5/8" bit in well and cleaned out fill from 7293' - 7333'. Circulated well.

11-30 Ran 7-5/8" bit back in well to 7333' - no fill. Ran Tri-State 15" hole opener to 7229' and opened 14" hole to 15" hole to 7333'

12-1 Cleaned out fill from 7308' - 7333'. Shut rig down to repair pump.

12-2 Rig shut down for repairs.

12-4 Pulled out of well with hole opener; ran bit on drill pipe to 7322' and lost circulation trying to backscuttle fill. Circulated well clean.

12-5 Mixed 750 bbls. of 46 viscosity polymer; cleaned out fill from 7325'-7333'; cleaned out shaker pit; displaced fluid from well with 420 bbls. of new polymer.

12-6 Ran bit back in well to 7333' (no fill). Ran open hole caliper from 7321'-7225'. Ran neutron log from 7225'-5730' and 4250'-3750'. Shot six 3/4" jet perforations per foot from 7225'-7217'.

12-7 Ran 7-5/8" bit back in well to 7220' and cleaned out fill to 7333'. Changed well over to 2 micron absolute filtered 45 viscosity polymer fluid.

12-8 Ran three joints (120') of 5", 18#, N-80, AB FL-4S 0.008" slot wire wrapped with two centralizers; four joints (105') of blank with centralizing lugs ; and 5" (2.10') 18# landing nipple. Ran 255' of 2-3/8" Hydril CS tubing tail inside liner and made up gravel packing crossover tool on top of liner. Landed liner at 7331' with landing nipple at 7103'. Mixed 160 sacks of 40-60 sand in 49 bbls. of gravel pack slurry.

12-9 Dumped 160 cu.ft. of sand behind liner before sanding out at 1750 psi. Backscuttled 5 cu.ft. of sand from well and waited two hours. Repressured gravel pack to 1750 psi. Pressure bled down to 1000 psi in 3 minutes. Released from liner and pulled out of well. Ran and set 8-5/8" x 5" lead seal adapter at 7103' (top at 7100'). Ran 230' of tubing tail on 3-1/2" drill pipe and cleaned out to 7331' (no fill).

12-11 Set Otis 8-5/8" WB packer at 7021', and Teledyne 8-5/8" x 23' casing patch from 3976'-3999' (E Log measurement). Ran test seals on 3-1/2" drill pipe and latched into packer. Pulled 20,000# and set 6,000# down on packer. Pressure tested seals at 1500 psi for 20 minutes. Released from packer.

12-12 to 12-13 Ran new 2-7/8" tubing. Displaced polymer completion fluid from well with 415 barrels of 2% KCl water. Made up Otis production tube, seals and latch, joint of 2-7/8" tubing, No-Go nipple, joint of tubing, 2-7/8" Otis XD sliding sleeve (closed), joint of tubing, 2-7/8" Camco GLM with 1-1/2" dummy valve and ran in well hydrotesting new 2-7/8" tubing to 5000 psi to 7021'. Spaced out and attached to packer. Pulled 20,000# string to check latch and landing with 12,000# on latch when donut was in place. Pressure tested seals 1500 psi for 20 minutes. Installed back pressure valve in donut. Removed BOPE and installed 9" x 2-9/16" x 5000 psi xmas tree.

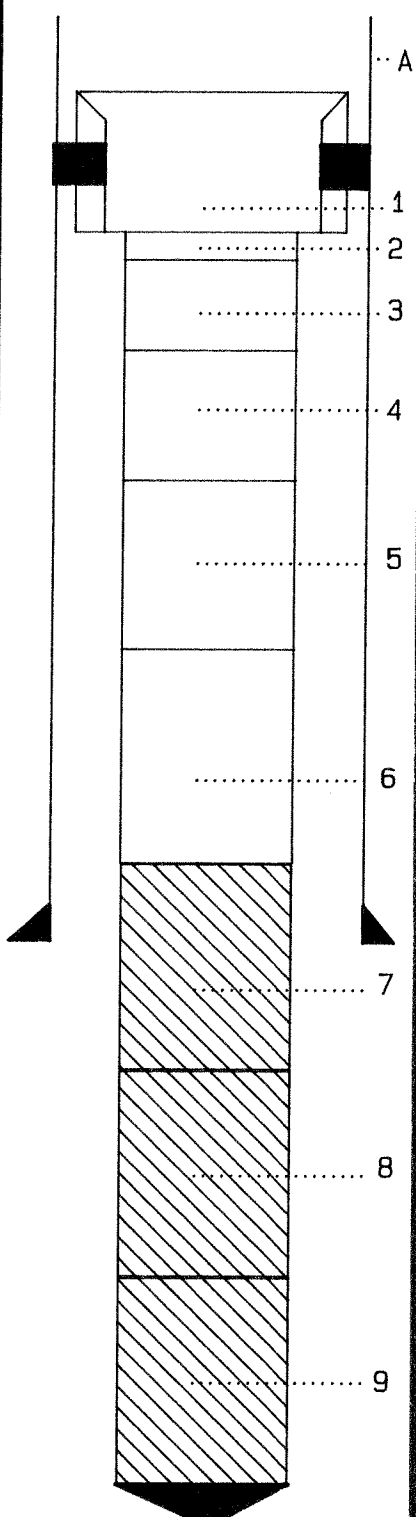
12-14 Pressure tested xmas tree and donut to 5000 psi. Removed back pressure valve from donut. Released rig at 9:00 A.M.

Total fluid lost in well: 1484 BBL.

LINER DETAIL

WELL: Fernando Fee 35 B (IW82) STATUS: Injection/Withdrawal
FIELD: Aliso Canyon DATE: 3/28/90

LINER PROFILE



	LINER		LINER
SIZE	5"	SIZE	5"
WEIGHT	18#	I. D.	4.276"
GRADE	N-80	DRIFT I.D.	4.151"
THREAD	AB-FL-4S	COLLAR O.D.	5.00"
DEPTH	7100' - 7331'	WIRE-WRAP O.D.	6.10"

	LINER DETAIL	LENGTH	DEPTH
A	8-5/8" 36# casing shoe at:		7225.00
1	Halliburton lead seal set at		7100.18
	drive over adapter	3.15	7103.33
2	Landing nipple	2.10	7105.43
3	Blank pup joint	12.67	7118.10
4	Blank pup joint	17.20	7135.30
5	Blank joint	34.86	7170.16
6	Blank joint	40.42	7210.58
7	Wire - wrap joint	40.26	7250.84
8	Wire - wrap joint	40.11	7290.95
9	Wire - wrap joint with	40.05	7331.00
	welded bull - plug		
	Lugs and Centralizers:		
2	4-1/4" lugs		
3, 4	2 lugs 4' down 2 lugs 4' up		
	- 1-1/4" wide		
5	2 lugs 8' down, 2 lugs 8' up, 2 lugs in center		
	-1-1/4" wide		
6	4 lugs 2' down, 4 lugs 2' up, 4 lugs in center		
	-1/4' wide		
7	4 lugs 2' down, 4 lugs center - 1/4"		
8	no lugs, centralizer between 7 & 8		
9	no lugs, centralizer between 8 & 9		
	Liner gravel packed with 155 SX		
	of 40-60 ottowa sand		
	Johnson wire - wrap screen has		
	.008" slots		

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

R.D. Phillips, Agent
Southern Calif. Gas Company
810 S. Flower St.
Los Angeles, CA. 90017

Ventura, California
February 23, 1990

Your request, dated February 13, 1990, proposing to change the designation of wells in Sec. 34, T. 3N, R. 16W, SB B.&M., Aliso Canyon field Los Angeles County, District No. 2, has been received.

The proposed change in designation, in accordance with Section 3203, Public Resources Code, is authorized as follows:

From:		To:	
IW 63	(037-21278)	"Fernando Fee" 35E	(037-21278)
IW 64	(037-21453)	"Fernando Fee" 35D	(037-21453)
IW 66	(037-21457)	"Fernando Fee" 35A	(037-21457)
IW 67	(037-21279)	"Fernando Fee" 35C	(037-21279)
IW 82	(037-21458)	"Fernando Fee" 35B	(037-21458)

bb

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear, Deputy Supervisor

OGD157

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 289-212
Field Code 010
Area Code 03
New Pool Code 30
Old Pool Code 30

PERMIT TO CONDUCT WELL OPERATIONS

R.W. Weibel, Agent
Southern Calif. Gas Company
810 S. Flower St.
Los Angeles, CA. 90017

Ventura, California
July 11, 1989

Your proposal to alter casing well IW 82, A.P.I. No. 037-21458, Section 34, T. 3 N, R. 16W, S.B. B.&M., Aliso Canyon field, Main area, Sesnon-Frew pool, Los Angeles County, dated 6/29/89, received 6/30/89, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class III 3M requirements shall be installed and maintained in operating condition at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
4. THIS DIVISION SHALL BE NOTIFIED:
   a. To witness a pressure test of the blowout prevention equipment before commencing downhole operations.

BOPE TEST WAIVED, NO ENGINEER AVAILABLE, ED BRADBURY/S. MULQUEEN 10-20-89

Blanket Bond
SF:ljg

Engineer Steve Fields

Phone (805) 654-4761

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

RECEIVED
JUN 30 1989
DIVISION OF OIL AND GAS
VENTURA, CALIFORNIA

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
83	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention

to rework well IW #82 (Well designation), API No. 037-21458

Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth 7335'

2. Complete casing record, including plugs and perforations (present hole)

	13-3/8"	cemented at 830'
	8-5/8"	cemented at 7229', casing patch 4007'-3965', stage collar at 3978' - cp'd 80 sks, four 1/2" holes 7199', WSO by D.O.G., shot four 1/2" holes 7219'-7229', shot four 1/2" holes 7090' and 7089' squeezed with cement.
162'	6-5/8"	18 mesh w.w. landed 7333', top 7188', gravel packed w/ 83 cu.ft. 12-20 gravel

3. Present producing zone name Sesnon ; Zone in which well is to be recompleted ---

4. Present zone pressure 3000 psi ; New zone pressure ---

5. Last produced Gas Storage Well (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

(or)

Last injected (Date) (Water, B/D) (Gas, Mcf/D) (Surface pressure, psig)

6. Is this a critical well according to the definition on the reverse side of this form? ☐ (Yes) ☒ (No)

The proposed work is as follows:

1. Move in and rig up. Kill well. Install and pressure test B.O.P.E.
2. Pull tubing. Recover casing patch, packer and 6-5/8" liner.
3. Install and gravel pack new 6-5/8" production liner.
4. Reinstall packer, casing patch, and tubing.
5. Return well to gas storage service.

Note: If well is to be redrilled, show proposed new bottom-hole coordinates and true vertical depth.

It is understood that if changes in this plan become necessary, we are to notify you immediately.

Address Box 3249, Terminal Annex (Street)
Los Angeles, CA 90051 (City) (State) (Zip)
Telephone Number (213) 689-3925

Southern California Gas Company (Name of Operator)
By N.W. Buss for R.W. Weibel, Agent (Name-Printed)
(Name-Signature) 6/29/89 (Date)
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

OG107 (2/86/DWRR/5M)

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Southern Caokfornia Gas Co. Field Aliso Canyon County
Well IW #82, Sec. 34, T 3N, R 16W, SB B. & M.
A.P.I. No. 037-21458 Name J. P. Anand (Person submitting report) Title Agent (President, Secretary or Agent)
Date July 20, 1982

Signature J. P. Anand

P.O. Box 3249 Terminal Annex, Los Angeles, CA 90051 (Address) (213) 689-3925 (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date	
	GWO #98863 was issued to recover piano wire tools.
1982	
7-06	1st Day. Moved in CPS Rig #D-3 on IW #82.
7-07	2nd Day. Rigged up on IW #82.
7-08	3rd Day. Finished rigging up pump and lines. Circulated gas cut fluid out of well and set back pressure valve in doughnut. Removed xmas tree and installed 10" x 5000 psi BOPE.
7-09	4th Day. Tested choke manifold, blind rams and pipe rams to 4000 psi with water. Tested Hydril bag to 3000 psi with water. Worked tubing to unlatch from packer. Measured out of well with 2-7/8" tubing.
7-10	5th Day. Measured out of well. Layed down Otis production equipment. Made up two Otis seals and locator sub and landed with 10,000# on packer at 7150'. Closed pipe rams and pressure tested to 1500 psi. Started out of well.
7-12	6th Day. Finished pulling out with test seals. Made up Otis production tube on latch-in-locator with 2 seals, one 2-7/8" x 10' blast joint, one Otis XN nipple, one 2-7/8" x 20' blast joint, one 2-7/8" Otis sliding sleeve (open), one joint of 2-7/3" tubing, one 2-7/8" Camco gas lift mandrel with DCRT valve in place and hydrotested tubing in well at 5000 psi. Baker sealed the threads. Attached to 8-5/8" permatrieve packer at 7145'. Pulled 20,000# over tubing weight to check latch and landed tubing with 11,000# on latch when doughnut was in place. Installed back pressure valve in doughnut, removed BOPE and installed xmas tree. Installed new doughnut retaining pins in tubing head.
7-13	7th Day. Using Associated Services, pressure tested xmas tree, doughnut and extended neck seals to 5000 psi. Using 440 bbls of 63#/cu. ft salt lease water displaced 76#/cu. ft. polymer completion fluid from well. Released rig at 12:01 P.M. to move to Porter #42.

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Southern California Gas Co. Field or County Aliso Canyon
Well IW #82, Sec. 34, T3N, R16W S.B.B. & M.
A.P.I. No. 037-21458 Name P. S. Magruder, Jr. Title Agent
Date December 1, 1980 (Person submitting report) (President, Secretary or Agent)

Signature P S Magruder

P.O. Box 3249 Terminal Annex, Los Angeles, Cal. 90051 (213) 689-3561
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date	
1980	MWO 99621 was issued to correct shoe leak.
10.29.	1st Day. Removed xmas tree. Installed BOPE.
10.30.	2nd Day. Rigged up California Production Service Rig #D-4. Pressure tested blind rams, pipe rams and manifold to 4,000 psi. Pressure tested hydril to 3,000 psi. Attempted to circulate well, losing 60 bbls per hour. Mixed and displaced high viscosity pill on bottom.
10.31.	3rd Day. Pulled out of well with 2 7/8" tubing. Made up spear and ran in to patch at 3,965'. Pulled on patch with 20,000# overweight of tubing.
11.01.	4th Day. Recovered top swedge from patch. Ran spear in to patch to 4,003'. Pulled out slowly with patch. Patch stopped in wellhead and could not work through same.
11.02.	Rig and crew idle.
11.03.	5th Day. Pulled casing patch to wellhead. Rigged up casing jacks and pulled patch through wellhead with 200,000#. Laid down and loaded out casing jacks. Broke down fishing tools. Made up 7 5/8" junk mill.
11.04.	6th Day. Finished running in well with 7 5/8" mill to 4,008'. Milled on swedge from bottom of casing patch. Pushed swedge to 7,130'. Circulated, conditioned mud for three hours. Ran in with packer retrieving tool. Latched into packer at 7,130'. Worked to release packer. Jars failed. Released from packer.

1.05. 7th Day. Ran in with new jars and latched on to packer at 7,130'. Jarred packer loose. Pulled out 120' with packer swabbing well. Shot two 3/8" holes in 2 7/8" tubing at 6,647'. Pulled packer.

1.06. 8th Day. Ran model "N" drillable bridge plug on wire line set at 7,130'. Ran in retrievable retainer to 7,128' with 300' tubing tail. Circulated polymer fluid out of well with waste salt water.

1.07. 9th Day. Set retainer at 6,828' with 2 7/8" tubing tail to 7,128'. Equalized 100 cu.ft. of 12% HCL and 3% HF acid. Obtained breakdown at 17 cu.ft./minute at 2,400 psi. Mixed 50 cu.ft. of cement, pressured up to 2,500 psi and retainer failed. Backscuttled out cement and pulled out retainer. Ran drillable retainer to 6,980' on wire line.

1.08. 10th Day. Obtained breakdown with 12 cu.ft./minute at 2,400 psi. Mixed 50 sacks self-stress cement. Pumped in well with 26 cu.ft. out holes at final pressure of 2,500 psi. Pulled out of well. Ran in well with 7 5/8" mill and two junk subs.

1.09. Rig and crew idle.

1.10. 11th Day. Milled up retainer at 6,980' and cement to 7,002'. Mill stopped. Pulled out with 7 5/8" mill. Ran back in well with 7 5/8" bit on drilling assembly and drilled out cement from 7,002' to 7,046'.

1.11. 12th Day. Continued drilling out cement from 7,046' to 7,095'. Cleaned out to 7,130' (top of bridge plug). Ran 8 5/8" retrievable retainer with 310' of tail to 7,081'. Pressure tested down tubing 2,000 psi for 20 minutes. Pulled out with retainer.

1.12. 13th Day. Ran in well with 7 5/8" bit and drilling assembly. Displaced 63#/cu.ft. lease water from well with 85#/cu.ft. polymer completion fluid. Drilled up 8 5/8" bridge plug at 7,130' and cleaned out to 7,182'. Pulled out of well. Made up 5 3/4" bit with 4 1/2" O.D. junk sub and 8 5/8" scraper.

1.13. 14th Day. Cleaned out to 7,188' with 5 5/8" bit and junk sub below 8 5/8" scraper. Ran 5 5/8" bit below drilling assembly and cleaned out to 7,274'. Circulated well and started out with bit.

1.14. 15th Day. Ran 5 5/8" concave mill on drilling assembly and cleaned out to 7,333'. Circulated well and pulled out. Made up 8 5/8" test tools on 2 7/8" tubing with 8' of tail and started in well.

11.15. 16th Day. Pressure tested manifold, rig manifold and lines at 4,000 psi for 20 minutes. Set test tools at 7,156' with tail to 7,164'. Opened tool and flowed well for two hours. Had gas to surface in 2 minutes with surface pressure of 2,300 psi. Shut in pressure after flow 2,650 psi. Closed tool and ran Noise log from 7,115' to 4,700'. Showed no noise above WSO holes at 7,190'. Displaced gas from tubing with 87#/cu.ft. polymer completion fluid and released test tools.

11.16. Rig and crew idle.

11.17. 17th Day. Circulated well. Pulled out of well and broke down testing tools. Ran in well with 5 3/4" mill to 7,333' and found no fill.

1.18. 18th Day. Set permatrieve packer in 8 5/8" casing at 7,150'. Ran in with casing patch and set top seal at 3,966' and bottom seal at 4,008'. Set with wire line. Pulled out of well with 2 7/8" tubing. Made up two seals and ran in changing to chamfered collars on tubing.

1.19. 19th Day. Ran in with two seals, latch-in locator sub and latched into packer at 7,151'. Pulled 25,000# over weight of tubing to check latch. With 10,000# on packer tested seals and packer with 1,500 psi. Made up production system and hydrotested tubing to 5,000 psi. Landed tubing with 10,000# on packer. Removed BOPE and installed xmas tree.

1.20. 20th Day. Tested xmas tree to 5,000 psi. Circulated 86# polymer completion fluid out of well with waste salt water. Released rig at 7:00 pm.

280-379

010

03

30

Mr. J. W. Tenfelder, Agent
So. Calif. Gas Co.
12801 Tampa Avenue
Northridge, CA 91324

Santa Paula,
Oct. 28, 1980

Your proposal to alter casing well IW 82
API No. 037-21458, Section 34, T 3N, R 16W, S.B. B & M,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated 10/23/80, received 10/28/80 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
2. Blowout prevention equipment of at least DOG Class III 3M B, shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

Blanket Bond
MD:b

M. G. MEFFERD, State Oil and Gas Supervisor

By John L. Hardoin
John L. Hardoin, Deputy Supervisor

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. IW #82, API No. 037-21458, Sec. 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth.
   7,335'

2. Complete casing record, including plugs and perforations:

13 3/8"		cemented 830'
8 5/8"		cemented 7,229', stage collar 3,988', cp'd 80 sacks four 1/2" holes 7,200', cp'd 200 sacks, four 1/2" holes 7,199', WSO by DOG. Shot four 1/2" holes 7,219' - 7,229', casing patch 4,007' - 3,965'. Shot four 1/2" holes 7,090' and 7,089' squeezed with cement
162'	6 5/8"	18 mesh w.w. landed 7,333', top 7,181', gravel flow packed with 83 cu.ft. 12-20 gravel

3. Present producing zone name Sesnon Zone in which well is to be recompleted -

4. Present zone pressure 3,600 psi New zone pressure -

5. Last produced Gas Storage Well (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

or

6. Last injected (Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

1. Move in and rig up. Kill well. Install BOPE and pressure test.
2. Pull tubing. Recover casing patch and packer. Set bridge plug 7,130'.
3. Squeeze holes at 7,090' with cement. Drill out cement and run Audio Analyzer log. Recement and relog if necessary.
4. Set production packer and run tubing with downhole safety system.
5. Return well to gas storage service.

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box 3249 Terminal Annex (Street)
Los Angeles (City) California (State) 90051 (Zip)
Telephone Number (213) 689-3561

Southern California Gas Company (Name of Operator)
By P.S. Magruder, Jr. 10/23/80
P.S. (Name) Magruder, Jr. (Date)
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAY 19 1980
SANTA PAULA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Co. Field or County Aliso Canyon, Los Angeles
Well IW #82, Sec. 34, T 3N, R 16W, S.B. B. & M.
A.P.I. No. 037 - 21458 Name P. S. Magruder, Jr. Title Agent
Date May 7, 1980 (Person submitting report) (President, Secretary or Agent)

Signature P. S. Magruder, Jr.

P.O. Box 3249 Terminal Annex, Los Angeles, Cal 90051 (213) 689-3561
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date 1980	
	MWO # 99621 was issued to repair leak in stage collar at 3,978' by removing casing patch, cementing leak and installing a new casing patch.
4.17.	1st Day. Moved in rig and rigged up.
4.18.	2nd Day. Circulated out gas and 63#/cu.ft. polymer completion fluid with 76#/cu.ft. polymer completion fluid. Set plug in doughnut and removed xmas tree. Installed BOPE equipment. Pressure tested BOPE with water and nitrogen; blind rams, pipe rams and choke manifold at 4,000 psi for 20 minutes and hydril bag at 2,400 psi for 20 minutes. Finished rigging up.
4.19.	3rd Day. Worked and pulled pipe to the right to unlatch from the packer. Unlatched and pulled 20'. Circulated and pulled 10' and got stuck. Turned pipe and pulled 120,000#. Made 10' but stuck the tubing. Ran Freepoint survey and determined pipe was free to the safety valve. Ran chemical cutter but could not go all the way down the well. Pulled 110,000# to let cutter go down the well and the tubing came loose. Cancelled cutter. Unlatched from packer again and pulled 30 joints of 2 7/8" tubing with collars dragging on the casing patch.
4.20.	Rig and crew idle.
4.21.	4th Day. Measured out of the well. Stopped at casing patch. Could not work through. Ran chemical cutter and cut tubing at 3,974' leaving 165' of 2 7/8" tubing, 40' of safety system and 8' of seals and production tube. Ran 6 1/4" guide shoe and 5 3/4" Bowen overshot without a grapple. Pushed top of fish to 4,109'.

4.22. 5th Day. Pulled out of the well. Ran spear with stop , bumper sub, jars and four 4 3/4" drill collars. Ran in the well to 4,000'. Stop failed to locate the spear correctly. Jarred out of the casing patch. Pulled out of the well. Ran spear, one 4 3/4" drill collar, 7 1/4" stop, bumper sub, jars and four 4 3/4" drill collars. Ran spear to 3,979'. Pushed casing patch together and set spear at 4,009'. Jarred out of the well to 2,000'.

4.23. 6th Day. Finished pulling casing patch to casing head. Using casing jacks, jacked casing patch through casing head. Recovered 36' of patch.

4.24. 7th Day. Pulled out of well. Ran 7" spear, bumper sub, jars and two 4 3/4" drill collars and speared fish at 4,010'. Jarred out of well and recovered bottom 5' section of the casing patch. Ran 2 7/8" overshot, bumper sub, jars and two 4 3/4" drill collars. Located fish at 4,109'. Jarred out of well. Recovered 5 joints of bent 2 7/8" tubing, Otis annular safety system, sheared "J" latch and seals. Ran in well with 7 5/8" bit, scraper and two 4 3/8" drill collars. Located fish at 3,993'. Circulated one hour.

4.25. 8th Day. Ran 4" spear with a 3' stop, bumper sub, jars and two 4 3/4" drill collars. Speared into packer at 3,992'. Jarred on packer and the bottom pack-off of the casing patch. Released spear and left fish in well.

4.26. 9th Day. Pulled out of well. Ran 7 5/8" junk mill, stabilizer, junk sub and 60' of 4 3/4" drill collar. Milled 2' with good cuttings at the surface. Mill hung up on junk. Pulled out of well. Ran 4" spear, stop sub, bumper sub, jars and two 4 3/4" drill collars and accelerator to 3,904'.

4.27. Rig and crew idle.

4.28. 10th Day. Jarred packer loose from 3,904'. Pulled packer. Ran in with 7 5/8" bit, 8 5/8" casing scraper. Cleaned out to 7,183'. Circulated well clean. Pulled out and ran in with Baker model "C" bridge plug set at 4,082'. Closed rams and pressured up to 1,500 psi which bled off 400 psi in 10 minutes.

4.29. 11th Day. Equalized 6 sacks of sand on top of bridge plug at 4,082'. Pulled up 75' and waited one hour. Ran down and located sand at 4,067'. Equalized 50 cu.ft. of 12% HcL and 3% HF acid and pumped away 45 cu.ft. at rate of 17 cu.ft./minute with 2,000 psi. Equalized 115 cu.ft. of class "G" cement with 1% CFR-2 at 3,988'. Pulled up 420' and closed rams and pressured up to 2,200 psi. Displaced 15 cu.ft. of salt water and held for two hours. Bled back 11 cu.ft., thus squeezing away 4 cu.ft. Pulled out and ran in with 7 5/8" bit and 8 5/8" casing scraper and one stand of drill collar. Drilled out cement 3,644' to 3,860'. Circulated well clean.

4.30. 12th Day. Drilled out cement from 3,850' to 3,988'. Tested casing with 1,500 psi for 20 minutes. Circulated waste salt water out of well with 76#/cu.ft. polymer completion fluid. Backscuttled sand off of bridge plug. Recovered model "C" bridge plug. Set 8 5/8" Otis permatrieve packer at 7,130' on wire line.

5.01. 13th Day. Ran in well with Otis latch-in locator and two seals. Set in packer at 7,130' and pulled 20,000# over the weight of string. Pressure tested packer and seals to 1,500 psi. Pulled out and ran and set 42' Pengo casing patch from 4,007' to 3,965'.

5.02. 14th Day. Ran in well with Otis production tube, three seals, latch-in locator, 2.205" "XN" nipple and annular flow safety system. Hydrotested tubing to 4,000 psi and changed collars. Latched in to packer and pulled 20,000# over weight of string to check latch. Set down on packer with 10,000# and secured well.

5.03. 15th Day. Removed BOPE and installed xmas tree. Pressure tested to 5,000 psi. Circulated polymer completion fluid out of well with 440 barrels of waste salt water. Released rig at 7:00 pm.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 280-90

DIVISION OF OIL AND GAS

Report on Operations

J. W. Tenfelder, Agent
Southern California Gas Co.
12801 Tampa Avenue
Northridge, CA 91324

Santa Paula Calif.
April 29, 1980

Your operations at well IW 82, API No. 037-21458, Sec. 34, T. 3N, R. 16W S.B., B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 4/18/80. S. Curran, representative of the supervisor, was present from 1830 to 2230. There were also present J. Montgomery, driller

Present condition of well: No additions to casing record.

The operations were performed for the purpose of testing the blowout prevention equipment and installation.

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED..

R

M. G. MEFFERD
State Oil and Gas Supervisor

By John L. Hardoin
Deputy Supervisor
John L. Hardoin

OG109 (6-77-GSPL-15M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 328-115

REPORT ON PROPOSED OPERATIONS

010 (field code)
03 (area code)
30 (pool code)

J. W. Tenfelder, Agent
Southern Calif. Gas Company
12801 Tampa Avenue
Northridge, CA 91324

Santa Paula, California
April 16, 1980

Your alter casing in proposal to gas storage well IW 82,
A.P.I. No. 037-21458, Section 34, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated ---, received 4/10/80 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
2. Blowout prevention equipment of at least DOG Class III 3M B, shall be installed and maintained in operating condition at all times.

MD 4/18/80
I missed calling to witness test of csng,
DOG will witness test

Blanket Bond
MD:b

A copy of this report must be posted at the well site prior to commencing operations.

M. G. MEFFERD, State Oil and Gas Supervisor
By [signature]

OG111 (4-78-DWRR-5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS
RECEIVED
APR 10 1980
SANTA PAULA, CALIFORNIA

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

FOR DIVISION USE ONLY		
BOND	FORMS	
	114	121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well No. IW 82, API No. 037-21458,

Sec. 34, T. 3N, R16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 7335'

2. Complete casing record, including plugs and perforations:

13-3/8" Cemented 830'
8-5/8" Cemented 7229', stage collar 3988' cp'd
Perf'd four 1/2" holes 7088' cp'd, 7090' cp'd, 7200 cp'd, 7199' WSO
Perf'd four 1/2" HPF 7219'-7229'
Pengo casing patch 3974'-4016'
152' 6-5/8" Landed 7333', top 7181', gravel packed

3. Present producing zone name Sesnon Zone in which well is to be recompleted -

4. Present zone pressure 3000 psi New zone pressure -

5. Last produced Gas Storage Well
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

or

6. Last injected
(Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

1. Move in and rig up. Kill well. Install BOPE and pressure test.
2. Pull tubing. Recover casing patch. Set bridge plug at 4050' and squeeze leaking stage collar at 3988'. Drill out cement and pressure test. Remove bridge plug and set new casing patch 4006'-3966'.
4. Return well to gas storage service.

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box 3249 Term Annex
(Street)
Los Angeles CA 90051
(City) (State) (Zip)

Telephone Number (213) 689-3561

Southern California Gas Company
(Name of Operator)

By P. S. Magruder, Jr. (Name) (Date)

Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

OG107 (12-73-GSR1-15M)

FORM 103

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND G
RECEIVED
OCT 19 1979
SANTA PAULA, CALIFORNI

History of Oil or Gas Well

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD ALISO

Well No. I.W. #82, Sec. 27, T. 3N, R. 16W, S.B. B. & M.

Date 10/24/78, 19 Signed P.S.M. / P.S. Magruder, Jr.

P.O. Box 3249 Terminal Annex
Los Angeles, California 90051 Title Agent
(Address) (Telephone Number) (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

MWO 99530

History of Well I.W. #82 - Aliso

Date	
1978	
7-25	Killed well with 450 barrels of 86#/cu.ft. brine-polymer drilling fluid.
8-9	Moved in California Production Service Rig #D-4. Started rigging up.
8-10	Finished rigging up. Removed Xmas tree and installed B.O.P.E. Tested blind rams and pipe rams to 4000 psi with water and nitrogen for 20 minutes each test. Tested Hydril "GK" to 3000 psi with water and nitrogen for 20 minutes. Released tubing from packer. Attempted to circulate well. Required 188 barrels to fill well. Unable to maintain circulation. Well was taking fluid at a rate of 100 barrels per hour.
8-11	Pumped in 90 sec. viscosity pill to establish circulation. Let pill stand at bottom of well for two hours. Pulled up 12 stands of tubing and attempted to circulate. Unable to maintain circulation and lost 32 barrels to well. Ran 12 stands back in well and pumped in 150 sec. viscosity pill (8 sacks carbonates and 2 sacks HEC polymer).
8-12	Established circulation. Circulated well. Pulled tubing out of well. Picked up Kelly and picked up fishing tools to recover GO-International casing patch. Did not recover patch.
8-13	Rig and crew idle.
8-14	Attempted to recover top section of 8 5/8" casing patch at 3967'. Set spear at 4002' but unable to jar patch loose.
8-15	Ran 5 3/4" spear to 3967' and engaged top of casing patch. When pulling out of well, one stand (60') of 2 7/8" tubing and fishing tools were dropped into well. Unable to run full gauge tools through casing head area, possibly because of junk in wellhead. Made several unsuccessful attempt to run 7 1/4" Johnston Bridge Plug.

8-16 Ran Lynes bridge plug and set at 100'. Dumped two sacks of sand on bridge plug. Removed B.O.P.E. and tubing head. Using Alco casing jacks and spear, removed 40' casing patch from well leaving bottom seals in well. Reinstalled B.O.P.E.

8-17 Reamed 7 13/16" O.D. tapered mill through tight spot in 8 5/8" casing at 14'. Ran in with Lynes retrieving head and circulated sand out. Recovered Lynes packer. Ran Johnston bridge plug and set at 510'. Pressure tested 8 5/8" casing from 510' to surface with 3000 psi for one hour - test O.K. Ran in well with 6 5/8" guide and overshot. Engaged fish at 7086' and pulled to 3989'. Jarred fish through bad spot in casing.

8-18 Laid down fish and fishing tools. Ran in well with Otis seal plug on latch-in locator and set in Otis packer at 7166'. Pulled up 20,000# to check latch. Spotted 10 sacks sand on top of Otis packer at 7166'. Waited one hour. Located sand at 7169'.

8-19 Spotted 10 sacks of sand on top of packer at 7166'. Ran in with 7 13/16" tapered mill and milled from 3990' to 3997'. Circulated well clean. Pulled out of well. Picked up 4 3/4" O.D. jars.

8-20 Rig and crew idle.

8-21 Ran in well with 7 13/16" tapered mill. Reamed from 4038' to 4039'. Ran to 4075' and circulated well clean. Continued running in well. Reamed past tight spot at 5372'. Ran in to 6098' and reamed to top of sand at 7112'. Pulled out of well. Rigged up Welex and shot four 1/2" holes at 7090'. Made up Johnston positrieve squeeze tool with 250' of 2 7/8" tubing stinger below squeeze tool and started running into well.

8-22 Ran in well to 7113'. Spotted 50 cu.ft. of fresh water and established breakdown of 10 cu.ft./minute at 1750 psi. Backscuttled water out. With open-end tubing hung at 7091' and Johnston positrieve squeeze tool at 6841', Dowell mixed and pumped 50 cu.ft. of Neat Class "G" cement with 30 cu.ft. of water ahead, 4 cu.ft. of water behind and 222 cu.ft. of mud to equalize. Pulled 5 stands and backscuttled 22 cu.ft. of excess cement out of well. Cement in place at 11:25 A.M. Set Johnston squeeze tool at 6540' and squeezed away 7.5 cu.ft. of cement at a final pressure of 2500 psi. Held pressure for two hours. Bled off pressure and pulled out of well. Broke off and laid down Johnston squeeze tool. Made up 7 5/8" bit and scraper with 4 drill collars on tubing and ran in well. Tagged soft cement at 6983'. Drilled out from 6983' to 7080'. Circulated well clean.

8-23 Drilled and cleaned out cement from 7080' to 7110'. Circulated well. Pulled out of well and laid down bit and scraper. Made up Johnston positrieve squeeze tool with 250' of 2 7/8" tubing tail on bottom and ran in to 5204'. Set squeeze tool and pressure tested holes at 7090'. Pressure bled from 2500 psi to 1500 psi at a rate of 2 cu.ft. per minute. Ran in to 7091' and set squeeze tool. Obtained breakdown at 2200 psi at a rate of 3 cu.ft. per minute.

8-24 With open-end tubing hung at 7091' and Johnston positrieve squeeze tool at 6841', Dowell mixed and pumped 50 cu.ft. of Neat Class "G" cement with 30 cu.ft. of water ahead, 4 cu.ft. of water behind and 215 cu.ft. of mud to equalize. Pulled 5 stands and backscuttled 20 cu.ft. of excess cement out of well. Cement in place at 7:15 A.M. Set Johnston squeeze tool at 6540' and squeezed away 9 cu.ft. of cement at a final pressure of 2500 psi. Held pressure for four hours. Bled off pressure and pulled out of well. Laid down Johnston squeeze tool. Made up 7 5/8" bit and scraper with four drill collars on tubing and ran in well. Tagged cement at 6978'. Drilled out from 6978' to 7110'. Circulated well clean.

8-25 Pulled tubing out of well. Laid down bit and scraper. Made up Johnston positrieve squeeze tool and ran in to 4300'. Set tool and pressure tested casing. Pressure bled from 2500 psi to 2400 psi in 20 minutes. Pulled tubing and squeeze tool out of well. Rigged up Dresser Atlas and shot two 1/2" holes from 7088' to 7089'. (2 shots misfired). Made second run and shot four 1/2" holes from 7088' to 7089'. Made up squeeze tool and ran in to 7019'.

8-26 With open-ended tubing hanging at 7091' and Johnston positrieve squeeze tool at 6841', Dowell spotted 30 cu.ft. of fresh water and established breakdown of less than 1 cu.ft. per minute at 1900 psi. Backscuttled water out. Dowell mixed and pumped 50 cu.ft. of Neat Class "G" cement with 30 cu.ft. of water ahead, 4 cu.ft. of water behind and 215 cu.ft. of mud to equalize. Pulled 5 stands and backscuttled 36 cu.ft. of excess cement out of well. Cement in place at 9:30 A.M. Set Johnston squeeze tool at 6540' and squeezed away 2 cu.ft. of cement at a final pressure of 2500 psi. Held pressure for 4 hours. Bled off pressure and pulled out of well. Laid down squeeze tool. Made up 7 5/8" bit and scraper with four drill collars on tubing and ran in well. Tagged top of cement at 7094'.

8-27 Rig and crew idle.

8-28 Drilled out cement from 7094' to 7120'. Circulated well clean. Made up Johnston positrieve squeeze tool and ran into well. Set tool at 4300' and pressure tested casing. Pressure bled from 2500 psi to 2300 psi in two minutes. Ran tubing to 7090' and spotted 30 cu.ft. of water across perforations. Pressured up on casing. Casing held 2500 psi O.K. for 20 minutes. Continued pressure testing casing up hole. Isolated possible casing leak between 6014' and 6055'.

8-29 Rigged up Triangle and ran Noise Log. Recorded from 7110' to 3000'. Rigged up McCullough to run Casing Inspection and Caliper Logs. Recorded Caliper Log from 7086' to 3000'.

8-30 Rigged up McCullough to complete Caliper Log. Recorded from 3000' to surface. Ran McCullough Casing Inspection Log. Tool malfunctioned No log was obtained. Rigged up Triangle to verify accuracy of of previously run Noise Log. Results were inconclusive.

8-31 Rigged up McCullough and ran Casing Inspection Log. Recorded from 7080' to surface. Ran Triangle Noise Log. Recorded from 7080' to surface. Determined that gas movement behind casing had stopped. Made up Johnston positrieve squeeze tool and ran in well. Set squeeze tool at 6027' and pressure tested casing to 2000 psi. Casing held pressure. Continued pulling up and testing at 5' intervals. Found no leaks between 6027' and 5894'.

9-1 Picked up Johnston 8 5/8" bridge plug and ran in well on 2 7/8" tubing. Set bridge plug at 6998'. Spotted 10 sacks of sand on top of plug. Pulled tubing out of well. Picked up Johnston positrieve squeeze tool and ran into well. Tagged top of sand at 6970'. Set squeeze tool at 6967' and pressure tested bridge plug. Plug held 3000 psi for 20 minutes. Changed over from polymer fluid to lease water.

9-2 Set Johnston positrieve squeeze tool at 6000'. Tested 8 5/8" casing from 6000' to 6998' with 3000 psi for one hour. Test inconclusive. Made tests with packer set at 4000', 5407', 5997', 5710', 5586' and 5523' with inconclusive results. Will change positrieve squeeze tool.

9-3 Rig and crew idle.

9-4 (Labor Day) Rig and crew idle.

9-5 Laid down Johnston test tool. Ran Baker fullbore. Pressure tested 8 5/8" casing from 6998' to 4000' with 3000 psi for one hour - O.K. Tested from 3995' to surface with 3000 psi for one hour - O.K. Isolated leak in 8 5/8" casing at 3997'.

9-6 Removed B.O.P.E. and installed tubing head. Reinstalled B.O.P.E. Tested pipe rams and blind rams at 4000 psi for 20 minutes. Tested Hydril GK at 3000 psi for 20 minutes. Tests witnessed and approved by D.O.G. Tested flanges and seals on tubing head at 5000 psi. Made up Jonston retrieving head and started running in well.

9-7 Ran in with Johnston retrieving head. Located sand fill at 6970'. Cleaned out to 6998'. Pulled Johnston bridge plug from 6998'. Laid down bridge plug and retrieving tool. Made up Otis retrieving head and ran in to 7056'. Changed over from lease water to 83# per cu.ft. polymer drilling fluid. Cleaned out fill from 7056' to 7159'

9-8 Attempted to recover Otis packer plug. Unable to latch onto plug due to junk (remainder of casing patch seal) wedged inside retrieving tool. Made up new retrieving tool and ran back to top of plug. Latched onto plug and pulled out of packer. Circulated well to clear gas. Approximately 13 barrels were lost to formation. Spotted high viscosity pill (300 sec.) across production zone. Started pulling out of well.

9-9 Ran in well with sawtooth collar on 2 3/8" tubing and cleaned out fill from 7258' to 7333'. Circulated well clean.

9-10 Rig and crew idle.

9-11 Ran in with production tester and set packer at 7082' with tail to 7102'. Opened tool at 11:30 A.M. for 5 minute initial flow. Closed for three hour initial shut-in. Final flow 6 1/2hours with gas to surface at 6:30 P.M. Flowed gas 2 1/2 hours. Closed tool at 9:00 P.M. for final shut-in. Backscuttled well to clear tubing of gas.

9-12 Pulled Lynes tester. Pressure chart readings were as follows:

IH	3970 psi
FH	3920 psi
IF	2300 psi
FF	2240 psi
ISI	2900 psi
FSI	2930 psi

Ran 2 7/8" tubing with 200' 2 3/8" tubing on bottom and sawtooth collars. Cleaned out from 7299' to 7335'. Circulated gas-cut mud from well. Ran in with production Lynes tester #2 to 7102'.

9-13 Set Lynes production tester at 7083' with tail to 7103'. Opened tool at 7:08 A.M. Closed tool at 10:08 A.M. Closed tool for final shut-in at 7:08 P.M. Backscuttled tubing free of gas and secured well. (Final pressure 880 psi).

9-14 Pulled out with Lynes production tester, pressures as follows:

Hydrostatic	3950 psi
Initial Flow	2110 psi
Final Flow	2020 psi
Final Shut-in	2965 psi

Ran Noise Log and found no gas leakage. Ran 7 5/8" bit and 8 5/8" casing scraper to 4100'. Circulated well clean.

9-15 Set casing patch in 8 5/8" 36# casing at 4016' - top 3974' (42') over stage collar leak at 3997'. Laid down 4 3/4 drill collars, Kelly and swivel.

9-16 Ran Otis 2 7/8" annular flow safety system on 2 7/8" EUE 8rd tubing, removing collars, cleaning pins, applying Bker seal and hydrotesting each joint to 5000 psi for one minute test. Landed tubing with 10,000# on packer. Pulled 25,000 and checked latch. Tubing string weight 42,000#.

9-17 Rig and crew idle.

9-18 Removed B.O.P.E. and installed Xmas tree. Rigged up Associated Services test pumps and tested Xmas tree to 5000 psi. Circulated 82#/cu.ft. polymer drilling fluid out of well with lease salt water. Rigged up Archer Reed, ran in and pulled side-door choke. Set plug in NO-GO nipple and tested packer and seals to 2000 psi for 20 minutes. Pulled tubing plug. Started rigging down. RELEASED RIG at 10:00 P.M.

AA/emr

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 278-266

DIVISION OF OIL AND GAS

Report on Operations

Mr. P. S. Haggruder, Jr., Agent
Southern Calif. Gas Co.
P.O. Box 54790 Terminal Annex
Los Angeles, CA 90054

Santa Paula, Calif.
Sept. 7, 1978

Your operations at well IW 82, API No. 037-21458, Sec. 34, T. 3N, R. 16W S.B. B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 9/6/78. T.E. Adams, representative of the supervisor, was present from 1700 to 2000. There were also present J. Awalt, company foreman

Present condition of well: additions to the casing record since proposal dated 7/20/78: Perf. 7088-7089' (cem. off)

The operations were performed for the purpose of testing the blowout prevention equipment and installation.

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

b

M. G. MEFFERD
State Oil and Gas Supervisor

By
Deputy Supervisor
John L. Hardoin

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 278-213

REPORT ON PROPOSED OPERATIONS

Santa Paula, California

Mr. P. S. Magruder, Jr., Agent
Southern Calif. Gas Co.
P.O. Box 54790 Terminal Annex
Los Angeles, CA. ~~90051~~ 90054

Aug. 3, 1978

Your alter casing proposal to in gas storage well IW 82 (Name and number)

, A.P.I. No. 037-21458, Section 34, T. 3N, R. 16W,

S.B. B. & M., Aliso Canyon field, Los Angeles County,

dated 7-20-78, received 8-1-78, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies
2. Blowout prevention equipment of at least DOG Class III 5M, shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

NOTE: A COPY OF THIS APPROVAL SHALL BE AVAILABLE AT THE WELL SITE DURING THE PROPOSED OPERATIONS.

Blanket Bond
MD:b

M. G. MEFFERD
State Oil and Gas Supervisor

By John L. Hardoin
Deputy Supervisor

John L. Hardoin

OG111 (11-76—GSR1—30M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS
RECEIVED
AUG 1 1978
SANTA PAULA, CALIFORNIA

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

FOR DIVISION USE ONLY		
BOND	FORMS	
	114	121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. I. W. #82, API No. 037-21458, Sec. 27, T. 3N, R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 7335'

2. Complete casing record, including plugs and perforations:

13 3/8" cemented 830'

8 5/8" cemented 7229', stage collar at 3978', squeezed with 80 sacks; four 1/2" holes at 7200' squeezed with 200 sacks; WSO 7199'; casing patch 4008'-3967'.

6 5/8" landed 7333', top 7181', wire-wrapped 7333'-7186', gravel flow packed 12-20 gravel.

3. Present producing zone name SESNON Zone in which well is to be recompleted -

4. Present zone pressure 3200 psi New zone pressure -

5. Last produced Gas Storage Well (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

or

6. Last injected (Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

1. Move in rig. Kill well. Install B.O.P.E. and pressure test.
2. Pull tubing. Recover casing patch. Plug packer.
3. Shoot four 1/2" holes at 7090' - squeeze with cement. Pressure test and run Audio Analyzer log. Re-squeeze and re-log as required to stop gas leakage.
4. Run casing patch from 3958' to 3998'.
5. Re-run tubing with down-hole safety system and return well to gas storage.

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box 3249, Terminal Annex (Street)
Los Angeles (City) California (State) 90051 (Zip)
Telephone Number (213) 689-3561

SOUTHERN CALIFORNIA GAS COMPANY (Name of Operator)
By P. S. Magruder Jr. (Name) P. S. Magruder, Jr. (Date) 7-20-78
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

D.O.G.

D.O.G. Notice Sent 7/26
OG-107

I. W. #82 - Aliso Canyon

Program to Repair Shoe Leak

Take all measurements from original Kelly Bushing 15' above ground.

PRESENT CONDITIONS:

13 3/8" cemented 830'

8 5/8" cemented 7229', Baker stage collar 3978', squeezed with 80 sacks - held 3500 psi, shoot four 1/2" holes 7200' and squeezed with 200 sacks, WSO 7199' - held 1700 psi.

152' 6 5/8" landed 7333', top 7131', wire-wrapped from 7333' to 7186', gravel flow packed 12-20 gravel.

No breakdown of leak at 3978' at 3000 psi lost 1 cu.ft. in 40 minutes - set "GO" casing patch from 4008' to 3967'.

TUBING DETAILS:

2 7/8" tubing landed 7174', Otis Permatrieve packer set at 7166', Otis 2 7/8" annular flow safety system.

PROGRAM

Kill well with 82#/cu.ft. of brine-polymer drilling fluid - volume of well = 460 barrels.

1. Move in and rig up. Circulate well. Remove Xmas tree.

2. Install 8" 5000 psi Class III B.O.P.E. Pressure test blind rams and pipe rams to 4000 psi with water and nitrogen. Also pressure test Hydril bag to 3000 psi with water and nitrogen.

3. Unlatch from packer and pull tubing - send in seals, latch-in locator and safety system for inspection and repairs as required.

4. Run tubing and recover "GO" patch - recover top section, 40' and bottom section.
   NOTE: If unable to recover bottom seal section - stab in packer to make sure latch-in locator will function.

5. Set plug in Otis packer at 7166' and cap with 10 sacks of sand. Locate top of sand.

6. Shoot four 1/2" jet holes at 7090'. Run open-end tubing on retainer (200'). Spot water and obtain breakdown - if satisfactory breakdown is not obtained at 2500 psi, spot 10% Hel and obtain breakdown. Equalize up to 50 sacks of Class "G" cement mixed with friction reducer and squeeze, but do NOT exceed 2500 psi. Drill out cement and pressure test to 2500 psi, repeat as required. Run Audio Analyzer - recement and re-run log as required to stop gas leakage.

7. Remove sand and plug from packer. Run clearance tubing through packer and clean out to 7333'.

8. Run tester and set packer near 7100'. Use 4-way valve and three pressure bombs. Take initial flow and shut-in, flow well 12 to 15 hours - open backscuttle valve and fill tubing with drilling fluid - take final shut-in overnight. Pull tester and run Audio Analyzer. Re-cement and re-log as necessary to stop gas leakage.

9. Run retrievable retainer and pressure test stage collar leak at 3978' - do NOT exceed 3000 psi. If leak takes fluid, set bridge plug, cap with sand, Braden head squeeze leak and pressure test.

10. Using reference collars, set "GO" casing patch over stage collar from 3958' to 3998'.

11. Run 2 7/8" tubing, remove collars, clean pins, apply Baker seal and hydrotest to 5000 psi, holding each test for one minute. Tubing to include:

    Otis Production Tube
    Otis Seals (4)
    Otis Latch-in Locator
    Otis 10' Heavy Wall Tube
    Otis 1.79" "XN" NO-GO Nipple with 2 7/8" threads
    Otis 20' Heavy Wall Tube
    Otis 2 7/8" Annular Flow Safety System with Centralizer

12. Land tubing with maximum of 10,000# on packer. Pull 25,000# over weight of tubing to check latch.

13. Remove B.O.P.E. and install Xmas tree. Pressure test Xmas tree to 5000 psi.

14. Circulate brine-polymer drilling fluid out of well with waste salt

water. Set tubing plug in NO-GO nipple. Pressure test seals and packer to 2000 psi. Pull tubing plug and release rig.

G. C. Abrahamson
July 20, 1978

cc: Rig Supervisor
Relief Rig Supervisor
Contract Pusher (2)
Book Copy
Well File

D.O.G. ✓
T. Giallonardo
M. Grijalva
D. Smiley

GCA/jp

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

30981-705 2-75 10M ② OSP

History of Oil or Gas Well

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso Canyon

Well No. I.W. #82 (037-21458), Sec. 34, T. 3N, R. 16W, S.B. B. & M.

Date October 12, 1976 Signed P. S. Magruder, Jr.

P. O. Box 3249, Terminal Annex
Los Angeles, California 90051 Title Agent
(Address) (Telephone Number) (213) 689-3561 (President, Secretary or Agent)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date

8-20-76 Killed well with 86# mud - used 425 ± barrels.

8-21-76 Idle.

8-22-76 Idle.

8-23-76 Moved in POOL Rig #38 from I.W. #70. Rigged up and circulated hole - lost 60 barrels.

8-24-76 Completed rigging up. Circulated hole. Installed tubing hanger plug. Removed Christmas tree. Installed 10 3/4", 5000 psi, Class III B.O.P.E. Tested B.O.P.E., as follows:

Water - H. & H. Triplex pump truck:

Blind Rams	4025 psi for 20 minutes	)
2 7/8" Pipe Rams	4000 psi " 20 "	) All Tests O.K
Shaffer Bag	3125 psi " 20 "	)

Nitrogen - NOWSCO pump truck:

Blind Rams	3800 psi for 20 minutes	)
2 7/8" Pipe Rams	4250 psi " 20 "	) All Tests O.K
Shaffer Bag	3200 psi " 20 "	)

Tests witnessed and approved by Division of Oil and Gas.

8-25-76 Removed tubing hanger plug. Circulated hole. Released 8 5/8" Brown Husky "M-1" packer at 7157'. Circulated hole.

8-26-76 Measured out of hole with 8 5/8" Brown Husky "M-1" packer (no rubber on packer). Ran in with 7 5/8" bit on 8 5/8" Shorty casing scraper to 7171' and circulated hole.

8-27-76 Ran in hole with 5 5/8" bit on 6 5/8" Shorty casing scraper to top of junk at 7328'. Circulated hole. Pulled out of hole. Ran in hole with 6 5/8" Burns washer (cup spacing 3.1') and washed perforations from 7325' to 7215' (breakdown 1000 psi ±, wash at 600 psi) - washed one minute per foot. Came out of liner to make connection and could not get back in liner. Circulated hole - lost 200 barrels while washing.

8-28-76 Measured out of hole. Ran in with new 6 5/8" Burns wash tool. Washed perforations from 7325' to 7211'. Top of liner at 7188'. Circulated hole.

8-29-76 Idle.

8-30-76 Pulled out of hole. Ran in with Burns packing tool on 2 7/8", N-80 tubing....found port collar. Applied left-hand torque nine turns ± at tool (6 1/2 turns friction). Worked port collar for four hours. Broke packing dogs on tool.

8-31-76 Pulled out of hole. Loaded out Burns. Ran in hole with 8 5/8" Baker fullbore cementing tool to 7170'. Using Dowell pump truck, tested casing 7170' to surface at 1100 psi for 20 minutes - O.K. Pulled up to 5000' and tested casing with 1360 psi for 20 minutes - O.K. Pulled up to 4500' and tried to test at 1600 psi - no good. Pulled out of hole and ran in with new fullbore to 4500' - test no good.

9- 1-76 Pulled out of hole. Rigged up Hydrotest - tested in hole with 8 5/8" Baker fullbore, testing tubing to 5000 psi for one minute. Tested 8 5/8" casing, as follows:

Surface	to	500'	at	4025 psi	for	20	minutes	)
"	"	1000'	"	3475 psi	"	20	"	)
"	"	1500'	"	3150 psi	"	20	"	) All Tests O.K.
"	"	2000'	"	3050 psi	"	20	"	)
"	"	3000'	"	2500 psi	"	20	"	)
"	"	3500'	"	2200 psi	"	20	"	)

Set fullbore at 4000' and had casing leak. Located leak from 3980' to 3990'.

9- 2-76 Pulled out of hole. Ran and set 8 5/8" Baker Model "B" Lok-Set bridge plug at 4020' - top of retrieving assembly at 4014.5'. Rigged up Dowell pump truck with open-end pipe at 4005'. Mixed 8 sacks of 10-20 with 32 cu.ft. of water and displaced with 87 cu.ft. of mud, using 20 cu.ft. of water ahead. Waited for five hours - found top of gravel at 4012'(had back-flow up tubing 19 cu.ft. - displaced 40 cu.ft. down tubing). Mixed 10 sacks of gravel with 30 cu.ft. of water, using 20 cu.ft. of water ahead and displaced with 123 cu.ft. of mud.

9- 3-76 Tagged gravel at 4011'. Waited for two hours - tagged gravel at 3995'. Rigged up Dowell pump truck and tagged gravel at 3983'. Circulated hole. Backscuttled hole. Top of gravel at 3995'. Tested casing at 3000 psi - got bleed-off, but no breakdown (1 cu.ft. in 40 minutes). Circulated gravel off bridge plug at 4020'.

9- 4-76 Backscuttled gravel to surface. Released bridge plug and pulled out of hole. Laid down bridge plug. Picked up Servco 7.700" taper mill and casing scraper. Gently milled 18' to 18.4' for 20 minutes. Ran in to 3947' and cleaned out from 3947' to 4024'. Ran in to 7188' and circulated hole.

9- 5-76 Rig and crew idle.

9- 6-76 (Labor Day) Rig and crew idle.

9- 7-76 Pulled out of hole. Rigged up McCullough Wireline Services, ran and set Otis 8 5/8" Permatrieve packer - top at 7166'. Rigged up Go-International patch for 8 5/8" casing - patch stuck at maximum depth 29' K.B. - tried to run several times. Pulled patch and took out second 10' section (out of four) and re-ran 30' patch. Patch went to 33' K.B. then stuck. Pulled and laid down patch - sent patch to machine shop.

9- 8-76 Pulled out of hole. Ran in hole with Servco 7.701" taper mill on 60' of 5 7/8" drill collars to 4045'. Circulated hole. Pulled out of hole. Made up four 10'-section Go-International 8 5/8" casing patch - turned patch down from 7.74" + to 7.65" - 7.67". Ran in with 40 stands 2 7/8" tubing, then drum shaft on rig sheared.

9- 9-76 Waiting on drum shaft to repair rig.

9-10-76 Completed rig repair. Ran in hole. Set Go-International patch at 4008' - top at 3967' (7.65" O.D. to 7.67" O.D. - 6.97" I.D.).

9-11-76 Pulled out of hole and laid down Go-International tools. Rigged up Hydro-test and tested hoses to coupling and bull plug at 5000 psi for 3 minutes - O.K. Ran plugged production tube, Otis seals, J-latch, X-over (2 7/8", 8rd x 3 1/2", 10rd), 10' blast joint, "X-N" nipple, 20' blast joint and hydrotested with water to 5000 psi for 2 minutes - O.K. Unplugged production tube and installed guide. Made up safety system on 20' blast joint. Ran on 2 7/8" tubing, changed couplings, applied Baker seal lubricant to pins only, drifting (2.347") and hydrotesting to 5000 psi for one minute.

9-12-76 Rig and crew idle.

9-13-76 Ran tubing as above. Landed tubing with 10,000# on packer. Picked up 20,000# above weight of tubing to test packer. (Kelly Bushing to hanger 15' - hanger .60'; three 2 7/8" EUE 8rd pup joints - 16.35'; 227 joints of 2 7/8" tubing - 7101.35'; safety system 8.77'; blast joint 2 7/8" - 20.32'; "X-N" No-Go nipple - 1.18'; blast joint 2 7/8" - 10.11'; X-over 4" X 2 7/8" - .82'; seals, J-latch, extension and mule shoe - 8.54'; - totals 7183.04'). Otis Wireline pulled sleeve from safety valve and set plug in No-Go nipple.

9-14-76 Removed B.O.P.E. Installed tubing hanger plug. Installed Christmas tree. Tested tree and hanger leaked. Removed Christmas tree, changed seals and reinstalled Christmas tree. Tested hanger and tree with 5000 psi for 20 minutes - O.K. Changed to lease water. Tested packer and seals with 1500 psi for 20 minutes - O.K.
Rig released at 8:00 P.M.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T 276-256

Mr. P. S. Magruder, Jr., Agent
Southern California Gas Co.
P.O. Box 54790 Terminal Annex
Los Angeles, Calif. 90054

Santa Paula, Calif.
Sept. 15, 1976

DEAR SIR:

Operations at well No. Tw 82, API No. 037-21458, Sec. 34, T. 3N, R. 16W, S.B., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed on 8/24/76. Mr. T. M. Calloway, representative of the supervisor was present from 1700 to 2100. There were also present C. Downy, engineer

Present condition of well: 13 3/8" cem. 830'; 8 5/8" cem. 7229', c.p. 7220', perf. 7199' WSO, perf. 7219-7229'; 6 5/8" ld. 7214-7333' (all perf'd.) P.B.T.D. 7200'. T.D. 7335'.

The operations were performed for the purpose of inspecting and testing the blowout prevention equipment and installation.

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

b

HAROLD W. BERTHOLF
~~JOHN F. MATTHEWS, JR.~~
State Oil and Gas Supervisor

By [signature] Deputy

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 276-233

Mr. P. S. Magruder, Jr., Agent
Southern California Gas Co.
P.O. Box 54790 Terminal Annex
Los Angeles, Calif. 90054

Santa Paula, Calif.
July 9, 1976

DEAR SIR: (037-21458)

Your proposal to rework gas storage Well No. TW 82, Section 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County, dated 6/25/76, received 6/29/76, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. The drilling fluid used shall be of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts; and a reserve supply of this material shall be kept on hand to meet any emergency.
2. Blowout prevention equipment, at least of theDivision of Oil and Gas Class III 3M rating, shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

NOTE: A COPY OF THIS APPROVAL SHALL BE POSTED AT THE WELL SITE PRIOR TO COMMENCING OPERATIONS.

Blanket Bond
MD:b

HAROLD W. BERTHOLF ~~JOHN F. MATTHEWS, JR.~~ State Oil and Gas Supervisor

By John L. Hamilton, Deputy

25476-705 7-74 50M ①D OSP
OG 111

DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

DIVISION OF OIL AND GAS
RECEIVED
JUN 29 1976
SANTA PAULA, CALIFORNIA

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

FOR DIVISION USE ONLY		
BOND	FORMS	
	114	121
B B	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. I.W. #82, API No. _____,

Sec. 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 7335'

2. Complete casing record, including plugs and perforations:

13 3/8" cemented 830'

8 5/8" cemented 7229', stage collar 3978', cp'd 7200', WSO 7199'
perforated 7229'-7219' with four 1/2" holes per foot.

162' 6 5/8" landed 7333', W.W. 18-mesh 7333'-7214'
T.T. 7200'. Gravel packed 12-20 gravel in 14" hole.

3. Present producing zone name SESNON Zone in which well is to be recompleted -

4. Present zone pressure 3000 psi New zone pressure -

5. Last produced Gas Storage Well _____ _____ _____
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

or

6. Last injected _____ _____ _____ _____
(Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

1. Move in rig, kill well, install B.O.P.E. and test.
2. Pull tubing. Clean out to 7333'. Re-gravel pack liner.
3. Pressure test 8 5/8" casing. Perform any remedial work indicated.
4. Run packer, tubing and safety valve. Return well to gas storage.

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box 3249, Terminal Annex
(Street)
Los Angeles, California 90051
(City) (State) (Zip)
Telephone Number (213) 689-3561

SOUTHERN CALIFORNIA GAS COMPANY
(Name of Operator)
By P. S. Magruder Jr. 6/25/76
(Name) P. S. Magruder, Jr. (Date)
Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

OM 100

RESOURCES AGENCY OF CALIFORNIA

DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

Operator Pacific Lighting Service Co. Well No. IW 82

Sec. 27, T. 3N, R. 16W, S.B. B. & M. Aliso Cyn. Field Los Angeles County.

Location From Station 84, 3146' South and 659.9' Easterly at right angles
(Give location from property or section corner, or street center lines)

Elevation of ground above sea level 1674 feet USGS.

All depth measurements taken from top of kelly bushing which is 15 feet above ground.
(Derrick Floor, Rotary Table or Kelly Bushing)

In compliance with Sec. 3215, of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Date _____ Signed P. S. Magruder Jr.

(Engineer or Geologist) (Superintendent) Title Agent (President, Secretary or Agent)

Commenced drilling August 20, 1974

Completed drilling September 16, 1974

Total depth 7335 Plugged depth None

Junk None

GEOLOGICAL MARKERS	DEPTH
Sesnon S-4 marker	7220'

Geologic age at total depth: Sesnon

Commenced producing _____ (Date) Flowing/gas lift/pumping (Cross out unnecessary words)

Name of producing zone Miocene

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	GAS STORAGE WELL					
Production after 30 days						

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforatio
13-3/8"	830	sfc	54.5#	N	S	K-55	17-1/2"	385	
8-5/8"	7229	sfc	36#	N	S	K&N	11"	430 530	Shoe 3978
6-5/8"	7333	7181	24#	N	S	K	7-5/8" opened to gravel packed liner	14"	

PERFORATED CASING
(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

8-5/8" - four 1/2" holes at 7200 squeezed with cement.

8-5/8" - four 1/2" holes at 7199 WSO. Perfd. four HPF 7219-7229.

6-5/8" - perforated liner 7181-7333.

Was the well directionally drilled? Yes Electrical Log Depths 7250 & 7333 (Attach Copy of Log)

△ OSP

FORM 103 SUBMIT IN DUPLICATE △ OSP

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR Pacific Lighting Service Co. FIELD Aliso Canyon

Well No. IW 82, Sec. 27, T. 3N, R. 16W, S.B. B. & M.

Date ____, 19____ Signed P. S. Magruder Jr.

P. O. Box 54790, Terminal Annex
Los Angeles, Cal. 90054 (213) 689-3561 Title Agent

(Address) (Telephone Number) (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date 1974	
8-20	Camay Drilling Company, Contractor, using Rig #8 spudded 17-1/2" hole at 8:00 AM, 8-20-74, and drilled to 60' when circulation was obtained around conductor pipe. Pumped in 200 sacks class "G" with 2% calcium chloride through 5" drill pipe hanging at 58'. Cement in place at 2:00 PM. At 6:00 PM located hard cement at 38' and drilled same out to 60' and drilled to 106'. All drill pipe and drill collars magnafluxed and tuboscoped prior to commencing drilling.
8-21	Drilled 17-1/2" hole to 616'. Mud: 74#, 49 sec., 38 cc., 12% solids.
8-22	Drilled 17-1/2" hole to 832'. Mud: 74#, 40 sec., 24 cc., 12% solids. TO CEMENT 13-3/8" SURFACE CASING: Ran 21 joints or 834.86' of 13-3/8", 54.5#, K-55 buttress thread new seamless casing and cemented same at 830' with 587 cu. ft. of 1-1 perlite, 2% gel followed by 100 sacks class "G" with 2% calcium chloride. Preceded cement with 200 cu. ft. of water and displaced with 748 cu. ft. of mud to bump top plug under 850 psi final pressure. Moved casing 5' while cementing. Good circulation throughout job with cement returns to surface. Cement in place at 6:40 PM. Casing fitted on bottom with TIW fill-up float shoe with centralizer 10' up. Bottom 3 joints and shoe made up with thread locking compound.

1974

8-23 Cut and recovered 22.75' of 13-3/8" casing, welded on Cameron 13-3/8" - 5000# casing head and tested same Ok for 20 minutes with 3500 psi. Installed double Shaffer and GK Hydrill B.O.P.

8-24 Tested Hydril, pipe rams, blind rams and choke manifold with 2500 psi nitrogen Ok for 30 minutes. Ran 11" bit, located cement at 810' and drilled out to shoe and drilled to 1444'.
Mud: 71#, 36 sec., 12.5 cc., 8% solids.

8-25 Drilled 11" hole to 1976'. Circulated out gas cut mud after trips at 1444' & 1742".
Mud: 73#, 43 sec., 4.0 cc., 6% solids.

8-26 Drilled 11" hole to 2265'. Pulled through tight hole 2220'-1940'. Conditioned mud with drilling detergent.
Mud: 75#, 43 sec., 5.6 cc., 10% solids.

8-27 Drilled 11" hole to 2985'. Tight hole 2540' to 1900'.
Mud: 75#, 40 sec., 6.0 cc., 12% solids.

8-28 Drilled 11" hole to 3431'.
Mud: 71#, 41 sec., 4.8 cc., 8% solids.

8-29 Drilled 11" hole to 3868'.
Mud: 76#, 56 sec., 4.8 cc., 12% solids.

8-30 Drilled 11" hole to 4338'.
Mud: 74#, 40 sec., 6.0 cc., 10% solids.

8-31 Drilled 11" hole to 4765'.
Mud: 74#, 40 sec., 6.8 cc., 10% solids.

9-1 Ran Dyna-Dril #1 and tool failed to function. Obtained new tool and Dyna-Dril #1 with Eye tool to 4940'.
Mud: 75#, 39 sec., 6.4 cc., 12% solids.

9-2 Ran in to bridge at 2047' and cleaned out bridge to 2090'. Pipe stuck at 4137'. Worked stuck pipe. Treated mud with NIO. Worked pipe for 3 hours and same came free. Ran in to 4256' and pipe stuck. Worked same free in 6 hours. Reamed 4765'-4940' and directionally drilled 11" hole to 5185'.
Mud: 73#, 46 sec., 6.0 cc., 10% solids.

9-3 Directionally drilled 11" hole to 5613'.
Mud: 78#, 45 sec., 4.4 cc., 14% solids.

1974

9-3 Directionally drilled 11" hole to 5947'.
Mud: 73#, 63 sec., 3.2 cc., 14% solids.
Sweco unit down and mud not treated.

9-5 Directionally drilled 11" hole to 6100'.
Mud: 74#, 44 sec., 3.6 cc., 15% solids. Sweco unit down.

9-6 Reamed 6066-6100 and directionally drilled 11" hole to 6369'.
Mud: 72#, 48 sec., 4.4 cc., 14% solids. Sweco unit down.

9-7 Directionally drilled 11" hole to 6572. Clean out bridge at 6387 and fill from 6472-6532.
Mud:74#, 42 sec., 5.6 cc., Sweco operating.

9-8 Directionally drilled 11" hole to 6892. Measured in hole.
Mud: 74#, 44 sec., 5 cc., 14% solids.

9-9 Directionally drilled 11" hole to 7225'.
Mud: 73#, 40 sec., 5.8 cc., 13% solids.

9-10 Directionally drilled 11" hole to 7250' and conditioned hole.
Ran Schlumberger induction electric log from 7246 to 830'.
Conditioned hole for casing.

9-11 Ran 174 joints or 7244.53 of 8.5/8" 36, K-55 and N-80, 8 rd, LT & C and buttress thread new seamless casing and cemented same at 7229' with 590 cubic feet of 2% Lodense mixed with 18% sodium chloride water followed by 200 sacks of class "G" with 0.75% D-31 and 18% sodium chloride water. Preceded cement with 200 cubic feet of water. Circulated 1 hour, but could not move casing. Displaced cement with one top plug and 2490 cubic of mud to pump plug under 3500 ps. Could not hold pressure as manifold leaked. Bled back 35 cubic. Last 100 cubic of displacement staged over 6o minutes. Start mixing at 11:05 A.M., finishing mixing at 11:20 A.M. Full circulation throughout. Cement in place at 1:30 P.M. Used dual Byron-Jackson pump trucks.

Dropped opening plug and opened Balker stage collar at 3978 under 1000 psi at 2:30 P.M. Circulated for 30 minutes. Pumped in 1100 cubic feet of 2% Lodense. After displacing 1300 cubic feet nipple on cementing manifold cut out. Welded same closed and continued displacing additional 100 cubic feet for final pressure of 2500 psi at 4:30 P.M. Bled back 30 cubic feet. Cement may have set up in pipe and Balker collar may not be closed. Used dual Byron Jackson pumps.

CASING DETAIL

Bottom 33 joints or 1394.01' (7229-5834.99)is 8.5/8" 36#, 8 rd, LT & C, N-80, R-3 new seamless casing fitted on bottom with Davis-Lynch fillup floatshoe at 7158 with Davis-Lynch fill up float collar. Metal petal cement basket at 7145 with turbolizers above and below basket, 10' above shoe above and below float collar and at to of 3, 5, 7, 9, 12 and 15th joints.

1974

CASING DETAIL (cont'd)

Top 141 joints or 5850.52 (5834.99-sfc.) is 8-5/8", 36#, K-55, Buttress thread R-3, new seamless cashing fitted at 3988 with Baker stage collar with Centralizers above and below. Metal petal cement basket on joint below stage collar with Centralizers above and below collar. Centralizers on 73, 75, 79, 81 and 83rd joints.

Total 174 joints or 7244.53' (7229-sfc)

9-12 Installed 8-5/8" slips and packing. Cut and recovered 29' of 8-5/8" casing and reinstalled B.O.P. Test O.K. with 2000' psi water pressure.
Ran 7-5/8" bit with casing scraper above and located cement at 3765 or 207' above stage collar. Drilled out cement and stage collar at 3978 and circulated and conditioned mud at 3993.

9-13 TO SQUEEZE STAGE COLLAR AT 3978 WITH CEMENT:

Ran Johnston positrieve cement tool on 5" drill pipe and set tool at 3773. Pressured annulus with 1500 psi. Applied pressure and stage collar took fluid at 20 cubic feet per minute under 2600 psi. Pumped in 100 sacks of Class "G" cement mixed with 2% calcium chloride. Preceded cement with 100 cubic feet of water and displaced with 10 cubic feet of water and 200 cubic feet of mud, then closed tool and squeezed with additional 209 cubic feet of mud. Last 30 cubic feet of displacement staged over one hour period. Cement in place at 2000 psi final pressure at 4:15 A.M. Bled back 2 cubic feet. Estimate 80 sacks away.
Tested rams, Hydril and choke manifold with 3000 psi nitrogen.

Located top of cement at 3734, medium hard cement at 3858 to 3978.
Ran Johnston positrieve and set same at 3773'. Applied 3500 psi and stage collar and pipe held OK for 20 minutes.

9-14 Ran 7-5/8" bit with scraper above and located cement at 6867; the leak in the cementing manifold on the primary cement job probably is the cause of the cement being located this high. Drilled out cement to 7210.
Ran Welex microseismogram log from 7209'. Ran Welex 4"OD carrier and shot four 1/2" jet holes at 7200' for W.S.O. test. Closed rams, applied pressure and holes took fluid under 750 psi rig pressure.

9-15 TO SQUEEZE HOLES AT 7200' IN 8-5/8" CASING WITH CEMENT

Ran Johnston positrive cementer on 5", 19.5# drill pipe and set same at 7050. Holes took fluid at 36 cubic feet per minute under 1000 psi. Preceded cement with 100 cubic feet of water. Mixed 200 sacks of Class "G" with 2% calcium

1974

9-15 (cont'd)

chloride and displaced with 50 cubic feet of water and 370 cubic feet of mud. Closed tool and squeezed with additional 300 cubic feet of mud. Staged last 16 cubic feet over 30 minutes C.I.P. at 1:05 A.M. under 4000 psi. 118# to 125# / cubic feet slurry. Start mixing at 12:10 A.M., finish mixing at 12:18 A.M. Held 1500 psi on annuls. Used HOWCO.

Held pressure for 3 hours. Pulled out of hole and found 15 joints full of cement.
Located top of cement at 7050 after standing cemented at 12 hours. Drilled out cement to 7210. Closed rams and holes held 1700 psi O.K. for 10 minutes. Ran Welex 4" OD carrier and shot for 1/2" jet holes for W.S.O. at 7199. Closed rams and holes held 1700 psi O.K. for 10 minutes.

9-16 TO TEST WATER SHUT-OFF ON HOLES IN 8-5/8" CASING AT 7199

Ran Johnston tester on 5" 19.5# drill pipe. Set packer at 7157 with tail to 7175. Opened tool at 12:15 A.M. No blow during one hour test. Recovered 5' drilling fluid. Charts showed tool functioned properly. Water shut-off approved by the Division of Oil & Gas.

Run 7-5/8" bit and drilled out cement from 7210to shoe at 7229 and drilled to 7335, TOTAL DEPTH.
Mud: 71#, 38 sec., 9.0 cc., 12% solids.

9-17 Ran Schlumberger Dual Induction-Laterolog, compensated formation density log and compensated Neutron-Formation Density logs.

Ran Grant H.O. #1 and opened 7-5/8" hole to 14" from 7230 to 7282.

9-18 Opened hole to 14" to 7312 with H.O. #1. Ran H.O. #2 and opened hole to 7333. Pulled to shoe and gauged hole with H.O. #2 from 7230 to 7333.
Ran Welex hole caliper which checked shoe at 7229 and showed hole open to 12" instead of 14".
Ran Welex 4" OD carrier with deep penetration charges and shot four 0.42" OD jet holes per foot from 7219 to 7229.
Reran new caliper tool.

9-19 New caliper showed hole open to 14".
Ran 7-5/8" bit to 7333 and displaced with lease salt water treated with Polydrill and Polyseal for completion fluid at 67#-70#.

9-20 Ran 152' of 6-5/8" 24# Layne & Bowler Gru-V-Kut liner with B & W liner hanger, port collar and gravel packing tools. Attempted to set hanger, but same would not hold. Evidently supplier furnished hanger for 8-5/8" 32# casing instead of 8-5/8" 36# casing and slips would not take hold. Pulled out liner.

9-21 Layed down B & W liner hanger and port collar and wait for delivery of new

1974

9-21 (cont'd)

hanger and collar from Burns Tool Co. Tubing stinger for gravel packing had backed off.
Ran 5 joints or 162.38' of 6-5/8", 24#, K-55, 8 rd LT & C with couplings turned to 7.090" O.D, Layne & Bowler Gru-V-Kut wire weld 0.018 gauge liner and hung same at 7181 with bottom at 7333. Used 151' of tubing stringer and gravel packing tools.

LINER DETAIL

Bottom 1 joint or 39.29'(7333-7293.71) is wire weld screen with 6-5/8" collar and bull nose on bottom and xline to 8 rd cross over on top.

Next 3 joints or 79.36'(7293.71-7214.35) is wire weld screen
Ne t 1 joint or 28.34'(7219-35-7186.01) is Tell Tale with 2" screen at 7200'
Next 5.39'(7186.01-7180.62) is Burns Tool Co. 8-5/8" X 6-5/8" lead seal liner hanger with hold down slips and port collar

TOTAL: 5 joints or 152.38'

Commencing at 5:00 P.M. pumped in 86 cubic feet of 12-20 mesh (.030" X .060") Layne & Bowler washed gravel in four hours. Backscuttled 3 cubic feet for total displacement of 83 cubic feet. Theoretical fill is 86 cubic feet.

9-22 Layed down gravel packing tools. Picked up tubing tail and ran in to 7331 and conditioned hole.
Ran Johnston retrievable bridge plug on 5" drill pipe and set same at 7100. Commenced laying down drill pipe and drill collars.

9-23 Finished laying down drill pipe. Change pipe rams to 2-7/8" tubing rams. Measure and stand back 2-7/8" tubing. Removed B.O.P and installed 8" - 5000# Cameron tubing head and tested same O.K. with 3500 psi for 20 minutes. Reinstalled B.O.P and test blind rams OK with 1500 psi.

9-24 & 9-25 Measure and pick up balance of tubing. Tested B.O.P and tubing head with 1800 psi and found leaks in tubing head grease plugs and from valve stem on tubing head. Tested B.O.P with 2000 psi O.K. Picked up retrieving tool for bridge plug while waiting for nitrogen. Applied 1200 psi nitrogen and Hydril bag and pipe rams leaked. Repaired flange leak and pipe rams held O.K. Repaired valve leak on choke manifold. Hydril would not hold. Replaced rubbers in Hydril. Tested Hydril and pipe rams OK with 3000 psi nitrogen for 30 minutes.

9-26 Retested Hydril with 3000 psi, OK for 30 minutes. Ran in to 6700 and raised drilling fluid 69# to 75# / cubic feet.

9-27 Conditioned fluid to 75# / cubic feet. Engaged Johnston bridge plug and unseated same. Circulated out gas cut mud and pulled out of hole slowly. Bridge

1974

9-27 (cont'd)

plug hung up in locking studs on tubing head. Back out studs and layed down bridge plug.

9-28 Ran 2-7/8", 6.5#, N-80, 8 rd EUE, new seamless tubing and broached every 10 stands with 2.340 broach. Replaced one crimped joint. Landed tubing on doughnut with 20,000# set on Brown Husky M-1 packer at 7159 and tail 16' below top of 6-5/8" line.

TUBING DETAIL

K.B. to tubing head 15'		0-15'
224 jts. 2-7/8" EUE N-80 6.5# 8rd. tubing	(7041')	15-7056'
2-7/8" EUE 8rd. Macco sliding sleeve w/shield in open position	(3.08')	7056-7059.8'
1 jt. 2-7/8" EUE N-80 6.5# 8rd. tubing	(30.78')	7059.8-7090.6'
2-7/8" EUE 8rd. Udell landing nipple	(2.33')	7090.6-7092.9'
1 jt. 2-7/8" EUE N-80 6.5# 8rd. tubing	(31.41')	7092.9-7124.3'
2-7/8" EUE 8rd. Udell landing nipple	(2.33')	7124.3-7126.6'
1 jt. 2-7/8" EUE N-80 6.5# 8rd. tubing	(31.47')	7126.6-7157.1'
Baker Model R No-Go w/blanking plug in place (Archer-Reed)	(.83')	7157.1-7157.9'
3-1/2" X 2-1/2" swedge	(1.08')	7157.9-7159.0'
Brown Husky M-1 Packer	(5.39')	7159.0-7164.4'
Landed with 20,000 lbs. down		
3-1/2" X 2-1/2" swedge	(1.08')	7164.4-7165.5'
1 jt. 2-7/8" EUE N-80 6.5# 8rd. tubing w/flared collar on bottom	(31.2")	7165.5-7196.7'

Total tubing 228 joints
Bottom of tubing 16' below
top of 6-5/8" liner

Removed B.O.P. and installed christmas tree

RIG RELEASED AT 4:00 P.M. - 9-28-74

SURVEY RECORD

3146-SOUTH & 660-EAST OF STA. #84

GRD..... 1674
K.B..... 15
ELEV.... 1689

JOB NO IW-82 ONE DATE 8-26-74

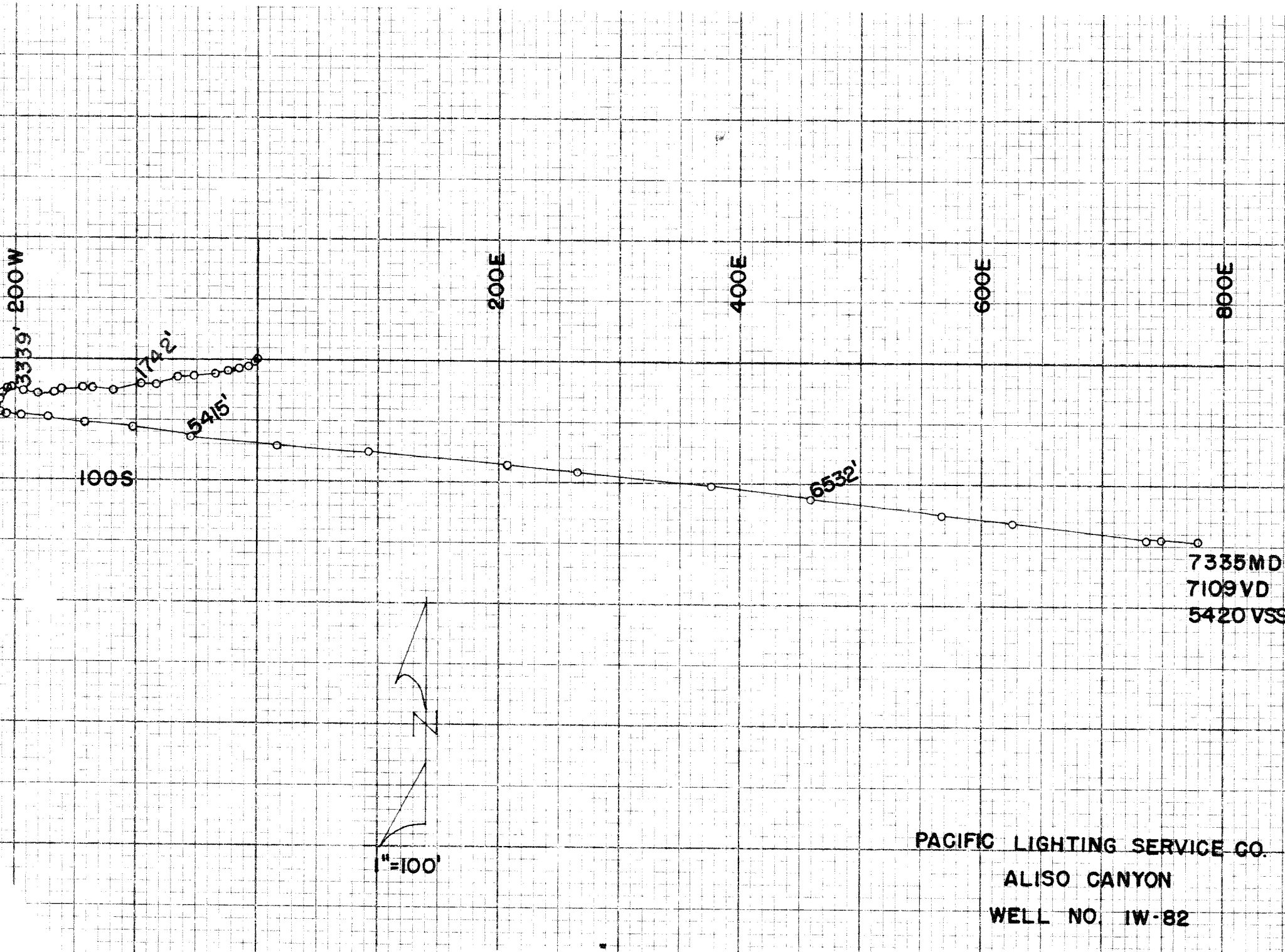
	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES				REMARKS
						NORTH	SOUTH	EAST	WEST	
1	238	.15	238 00		S 58 W		55		88	
2	486	2.00	485 85		S 56 W		5 39		8 06	
3	670	2.15	669 71		S 65 W		8 44		14 60	
4	832	3.00	831 49		S 84 W		9 33		23 03	
5	1032	4.15	1030 94		S 78 W		12 41		37 53	
6	1226	4.30	1224 34		S 80 W		15 05		52 52	
7	1412	4.45	1409 70		S 82 W		17 19		67 77	
8	1598	5.15	1594 92		S 79 W		20 44		84 48	
9	1742	5.30	1738 26		S 84 W		21 88		98 21	
10	1976	5. 0	1971 37		S 84 W		24 01		118 49	
11	2197	5. 0	2191 53		S 86 W		25 35		137 70	
12	2265	5. 0	2259 27		S 84 W		25 97		143 60	
13	2557	3.30	2550 73		S 82 W		28 45		161 25	
14	2704	3. 0	2697 53		S 86 W		28 99		168 92	
15	2993	2.30	2986 25		N 87 W		28 33		181 51	
16	3339	2.15	3331 98		N 75 W		24 81		194 63	
17	3651	1.45	3643 83		N 85 W		23 98		204 12	
18	3960	1.15	3952 76		S 46 W		28 66		208 97	
19	4114	1. 0	4106 74		S 32 W		30 94		210 39	
20	4421	1.30	4413 63		S 19 W		38 54		213 01	
21	4765	1.15	4757 55		S 7 W		45 99		213 92	
22	4830	3.45	4822 41		S 79 E		46 80		209 75	
23	4920	8. 0	4911 53		S 84 E		48 11		197 29	
24	5041	11.15	5030 21		S 84 E		50 58		173 81	
25	5165	14.45	5150 12		S 82 E		54 97		142 55	
26	5289	18.30	5267 71		S 83 E		59 77		103 50	
27	5415	22.30	5384 12		S 84 E		64 81		55 55	
28	5576	26.45	5527 89		S 85 E		71 13	16 64		
29	5729	29.15	5661 38		S 85 E		77 65	91 11		
30	5973	28.45	5875 30		S 85 E		87 85	208 02		
31	6100	27.45	5987 69		S 85 E		93 03	266 93		
32	6347	26.30	6208 74		S 84 E		104 55	376 54		

SURVEY RECORD

JOB NO IW-82 TWO DATE 8-26-74

	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST	REMARKS
33	6532	26.45	6373 94		S 84 E		113 25	459 35		
34	6782	25.45	6599 11		S 83 E		126 49	567 15		
35	6925	24.30	6729 23		S 82 E		134 74	625 87		
S-4 36	7220	22.30	7001 77		S 85 E		144 58	738 33		
37	7250	22.30	7029 49		S 85 E		145 58	749 77		
38	7335	21. 0	7108 84		S 85 E		148 23	780 12		

HORIZONTAL DEPARTURE 794.08' S-79° 14'-E


200W
200E
400E
600E
800E
100S
3339'
1742'
5415'
6532'
7335MD
7109VD
5420VSS
1"=100'
PACIFIC LIGHTING SERVICE CO.
ALISO CANYON
WELL NO. IW-82

FORM 109

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T 274-343

Mr. P.S. Magruder, Agent
Pacific Lighting Service Co.
P.O. Box 54790, Terminal Annex
Los Angeles, California 90054

Santa Paula, Calif.
October 8, 1974

DEAR SIR:

Operations at well No. IW 82, API No. 037-21458, Sec. 34 T. 3N, R. 16W, S.B. B & M. Aliso Canyon Field, in Los Angeles County, were witnessed on Sept. 16, 1974. Mr. L. Bright, representative of the supervisor was present from 0430 to 0630. There were also present Mr. V. M. Gardner, driller

Present condition of well: 13 3/8" cem. 830'; 8 5/8" cem. 7220', perf. 7199' WSO, c.p. 7200'. T.D. 7250'.

The operations were performed for the purpose of testing the 8 5/8" shut-off by means of a formation tester.

DECISION:

THE 8 5/8" SHUT-OFF AT 7199' IS APPROVED.

b
cc: Operator

JOHN F. MATTHEWS, JR.
State Oil and Gas Supervisor

By [signature] Deputy

FORM 111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 274-261

Mr. P.S. Magruder, Jr.
Pacific Lighting Service Co.
P.O. Box 64790, Terminal Annex
Los Angeles, California 90054

Santa Paula Calif.
June 26, 1974

DEAR SIR:

Your proposal to drill (037-21458) Well No. IW 82,
Section 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,
dated 6/18/74, received 6/25/74, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Sufficient cement shall be pumped back of the 13 3/8" casing to fill from the shoe to the surface.
2. Drilling fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used. NO CONTAMINANTS OR TOXIC MATERIAL SHALL BE USED IN ANY DRILLING FLUID THAT IS TO BE PLACED IN AN UNLINED SUMP.
3. Constant surveillance of drilling fluid characteristics and volume shall be maintained by drilling personnel and by the use of mud pit level, volume, and return monitoring equipment.
4. Any sump used during drilling operations shall be thoroughly cleaned of all drilling materials and the site restored to its prior condition as soon as drilling operations are completed.
5. Blowout prevention equipment, at least of the Division of Oil and Gas Class III rating, shall be installed and maintained in operating condition at all times.
6. Blowout-prevention practice drills shall be conducted each tour at least weekly, and recorded in the log book.
7. Fresh waters and oil or gas zones back of the 8 5/8" casing shall be protected with cement.
8. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
   a. A pressure test of the blowout prevention equipment before drilling out of the shoe of the 13 3/8" casing.
   b. A test of the 8 5/8" water shut-off above the Sesnon zone.

A COPY OF THIS APPROVAL SHALL BE POSTED AT THE WELL SITE PRIOR TO COMMENCING OPERATIONS.

Blanket Bond
DER:b

Waived
I can not be in
2 places at once

JOHN F. MATTHEWS, JR., State Oil and Gas Supervisor

By [signature], Deputy

69207-705 12-72 36M ⓪ OSP

21458

FORM 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS
RECEIVED
JUN 25 1974
SANTA PAULA, CALIFORNIA

2

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

037-21458

Los Angeles Calif. June 18 1974

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. IW 82, Sec. 34, T. 3N, R. 16W, S.B B. & M., Aliso Canyon Field, Los Angeles County.

Legal description of mineral-right lease, consisting of ____ acres, is as follows: as previously filed
(Attach map or plat to scale)

Do mineral and surface leases coincide? Yes ____ No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: ____ feet ____ (Direction) along section line and ____ feet ____ (Direction) property at right angles to said line from the ____ property corner of section ____.

From Station 84, 3236' South and 622' East approximate

Elevation of ground above sea level 1674 feet USGS datum.

All depth measurements taken from top of Kelly Bushing which is 15 feet above ground.
(Derrick Floor, Rotary Table or Kelly Bushing)

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
13-3/8"	48#	K-55 Smls	Sfc	800' ±	800' ±
8-5/8"	36#	K & N Smls	Sfc	7500' ±	7500' ± & 3500' ±
6-5/8"	24#	K-55 Smls	7450'	7700' ±	Perforated Liner

Intended zone(s) of completion: Sesnon (Name) 7450' - 7700' (Depth, top and bottom) Estimated total depth 7700'

MAP	MAP CHECK	CARDS	BOND	FORM 114
250	6-6-74 RW	✓	BB	✓

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box 54790, Terminal Annex
Los Angeles, CA 90051

Telephone Number (213) 689-3561

Pacific Lighting Service Co.
(Name of Operator)

By P. S. Magruder Jr.
P. S. Magruder, Jr.

Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)