

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: So Cal Gas WELL DESIGNATION "Fernando Fee" 32

API No. 037-00686 SE 27 T: 3N R.: 16W, **SB** B. and M.

County: Los Angeles FIELD: Aliso Canyon

Type of Notice: _____ Date 5-25-18 Report Number: _____

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

NEW STATUS

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
<u>LOGIT</u>	<u>3/8/18</u>	<input checked="" type="checkbox"/>		<u>C. Knight</u>

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) _____

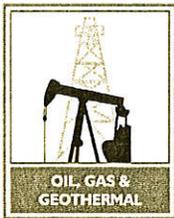
REMARKS

RECORDS SCANNED: _____

(Date)

RECORDS APPROVED: D. e.

(Date and Engineer)



DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765
REPORT ON OPERATIONS

No. T216-0080

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

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

Ventura, California
April 22, 2016

Your operations at well **"Fernando Fee" 32**, A.P.I. No. **037-00686**, Sec. **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/8/2016**, by **Clifford R. Knight**, a representative of the supervisor.

The operations were performed for the purpose of **demonstrating that all of the injection fluid is confined to the approved zone.**

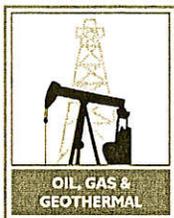
DECISION:

DEFERRED PENDING REVIEW BY THE DIVISION'S SAFETY TEAM.

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By 
Patricia A. Abel
District Deputy

CRK/tkc
OG109



DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765
REPORT ON OPERATIONS

No. T216-0081

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene)

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

Ventura, California
April 22, 2016

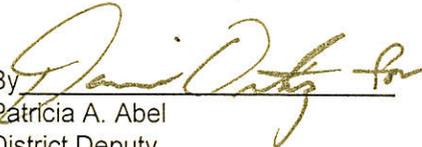
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Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By 
Patricia A. Abel
District Deputy

216-0080
 No. T 216-0081
 15,3

MECHANICAL INTEGRITY TEST (MIT)

Operator: <i>So Cal Gas</i>					Well: <i>Fernando Fee 32</i>																																																						
Sec.	T.	R.	B.&M.	API No.:	Field: <i>Aliso Canyon</i>																																																						
<i>27</i>	<i>3N</i>	<i>16W</i>	<i>SB</i>	<i>0317-00686</i>																																																							
County: <i>Los Angeles</i>					Witnessed/Reviewed on: <i>C. Knight / 3-8-16</i>																																																						
<i>C. Knight</i> , representative of the supervisor, was present from <i>1230</i> to <i>1530 +</i> .																																																											
Also present were: <i>Nick Arbour (Interact), Sergio Macias, Chris Mariessa</i>																																																											
Casing record of the well: <table style="width:100%; border: none;"> <tr> <td style="width:10%;"><i>7</i></td> <td style="width:15%;"><i>23 + 26#</i></td> <td style="width:10%;"><i>0</i></td> <td style="width:15%;"><i>- 7238</i></td> <td style="width:10%;"></td> <td style="width:10%;"></td> <td style="width:10%;"></td> <td style="width:10%;"></td> <td style="width:10%;"></td> <td style="width:10%;"></td> </tr> <tr> <td><i>5 1/2</i></td> <td><i>20#</i></td> <td><i>0</i></td> <td><i>- 7087</i></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><i>5</i></td> <td><i>15#</i></td> <td></td> <td><i>7109 - 7426</i></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><i>2.375</i></td> <td><i>4.7#</i></td> <td></td> <td><i>0 - 7070</i></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><i>Packer</i></td> <td><i>7085 - 7087</i></td> <td colspan="8"><i>(Baker FB-1)</i></td> </tr> </table> <p style="margin-left: 400px;"><i>(open)</i> <i>OT 15-XD-Sliding sleeve 7002.4 - 7005.3 (3 1/16")</i> <i>perf: 7026, 7027, 7029, 7030, 7031, 7040</i> <i>(squeezed?)</i> <i>perf: 7306 - 7336, 7356 - 7364, 7392 - 7406, 7430</i> <i>wire wrapped screen w/ bull plug 7240 - 7426'</i> <i>MP Top 6892'</i></p>										<i>7</i>	<i>23 + 26#</i>	<i>0</i>	<i>- 7238</i>							<i>5 1/2</i>	<i>20#</i>	<i>0</i>	<i>- 7087</i>							<i>5</i>	<i>15#</i>		<i>7109 - 7426</i>							<i>2.375</i>	<i>4.7#</i>		<i>0 - 7070</i>							<i>Packer</i>	<i>7085 - 7087</i>	<i>(Baker FB-1)</i>							
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The MIT was performed for the purpose of <i>perform temp survey and noise log. Run data. No noise log on temp. anomaly areas.</i>																																																											
<input type="checkbox"/> The MIT is approved since it indicates that all of the injection fluid is confined to the formations below <u><i>7085</i></u> feet at this time.																																																											
<input type="checkbox"/> The MIT is not approved due to the following reasons: (specify)																																																											

Well: <u>Fernando Fee 32</u>	Date: <u>3/8/16</u>	Time: <u>1230</u>
Observed rate: _____ B/D	Meter rate: _____ B/D	Fluid level: <u>none</u> feet
Injection pressure: <u>1056</u> psi	MASP:	Pick-up depth: <u>7330</u> feet

Initial annulus pressure: <u>1057</u> psi	Pressure after bleed-off: <u>no bleed-off</u> psi
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Casing vented during test (Y/N) <u>No</u>	Survey company: <u>Will Analysis Corp.</u>
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<u>SPINNER COUNTS</u>						
DEPTH	COUNTS	RATE	DEPTH	COUNTS	RATE	COMMENTS:
<i>(Table content is crossed out with a diagonal line)</i>						

<u>TRACER CASING AND TUBING RATE CHECKS</u>			
Interval	Time (sec.)	Rate (B/D)	Background log: _____ to _____
			COMMENTS: <u>Temp Anomaly noted</u> <u>5250 - 6150' 5750 peak</u> <u>Noise Log Notes:</u> <u>7124' Noise log pickup noted (near top perf)</u> <u>Bottom hole temp 126°F</u>

TOP PERFORATION CHECK

Top perforation depth: <u>Joint perf: (7124) 7240 7306-7336</u>	Wait at: _____ for _____ seconds	Beads: (Y/N) <u>(N)</u>
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Casing shoe at: <u>7251</u>	WSO holes at: <u>many see csg record</u>	Arrival time: <u>Calculated</u> <u>Actual</u>
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LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

PACKER CHECK

Packer at: <u>7085</u>	Wait at: _____ for _____ seconds	Beads: (Y/N) <u>(N)</u>
------------------------	----------------------------------	-------------------------

Tubing tail at: <u>7070</u>	Tubing size: <u>2 3/8</u>	2nd Packer at:	Mandrel:
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LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

COMMENTS:

OPERATOR SOUTHERN CA GAS CO
 WELL NO. "FERNANDO FEE" 32
 MAP

A.P.I. 037-00686
 SECTION 27, T. 3 N, R. 16 W

INTENTION	<u>REWORK</u>					
NOTICE DATED	<u>12-7-92</u>					
P-REPORT NUMBER	<u>292-382</u>					
CHECKED BY/DATE						
MAP LETTER DATED						
SYMBOL	<u>N/C</u>					

	REC'D	NEED								
NOTICE										
HISTORY										
SUMMARY										
E-LOG										
MUD LOG										
DIPMETER										
DIRECTIONAL										
CORE/SWS										
CBL										
<u>CALIPER</u>										

ENGINEERING CHECK

T-REPORTS						
OPERATOR'S NAME						
WELL NO.						
LOC & ELEV						
SIGNATURE						
SURFACE INSP.						
DRILL CARD						

RECORD'S COMPLETE FMN 2/1/94

FINAL LETTER OK _____
 MAILED _____
 RELEASED BOND _____

INJECTION BOOK _____
 IDLE WELL LIST _____
 SURFACE INSP. CARD _____

REMARKS: _____

OK TO RELEASE FROM CONFIDENTIAL _____
 ABANDONED-REMOVED FROM E.D.P. _____

SUBMIT IN DUPLICATE
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

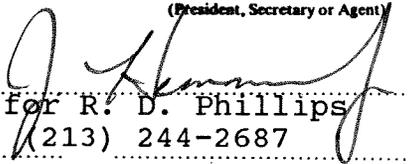
DIVISION OF OIL AND GAS
RECEIVED

JAN 20 1993

VENTURA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well Fernando Fee 32 Sec. 27, T. 3N, R. 16W S.B. B. & M.
A.P.I. No. 037-00686 Name R. D. Phillips Title Agent
Date January 15, 1993 (Person submitting report) (President, Secretary or Agent)

Signature 
J. A. Hemmerly for R. D. Phillips
P. O. Box 3249 Los Angeles, CA 90013-1011 (213) 244-2687
(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

1992

- 12-11 Rigged down. Ready rig for move.
- 12-12 Moved rig from Playa del Rey to Aliso Canyon.
- 12-14 Moved in and rigged up.
- 12-15 Pressure tested lines to wellhead to 3000 psi. Circulated and killed well with 200 Bbls of 69 pcf polymer. Lost 40 Bbls to zone. Installed back pressure valve. Removed xmas tree. Installed Class III 7-1/16" 5000# BOPE. Unable to test BOPE. Changed seal in blind ram door and 3" flex hose bad.
- 12-16 Tested 7-1/16" 5000# BOPE. BOPE test held, however tubing hanger leaking. Unable to unlatch from Baker packer at 7073'. Jet cut 2-3/8" tubing at 7018'. Left 54' of production tools above packer top.
- 12-17 Pulled out of well with 2-3/8" tubing. Recovered all of production tools; 2-3/8" tubing was only partially cut. Ran in well with Model C bridge plug and set at 7024'. Pulled out of well. Laid down 235 joints of tubing. Changed pipe rams to 5-1/2". Pressure tested ram door to 1500 psi.
- 12-18 Removed BOPE, tubing and seal flange. Installed 6" 5000# x 8" 5000# spool. Unlanded 5-1/2" casing. Nippled up BOPE. Jacked 5-1/2" seal out of packer. Pulled 180,000 lbs. Laid down 1 joint of 5-1/2" casing. Unable to circulate well. Filled 5-1/2" casing and annulus.

DOG, 1/19/93

- 12-19 Pulled out of well. Laid down 5-1/2" casing. Laid down 191 joints of Hydril ex-line, 55 joints of 5-1/2" 8rd with turned down STC collars and 100 joints of 5-1/2" Hydril triple seal. Made up 6-1/8" bit on 7" scraper and 2-7/8" drill pipe. Ran in well to 3120'.
- 12-20 Ran in well with 6-1/8" bit on 7" scraper, picking up 2-7/8" drillpipe. Tagged packer at 7077' with scraper. Circulated well clean. Pulled to kill string.
- 12-22 Pulled out of well. Installed shooting flange. Ran Dialog profile caliper log from 7072' to surface. Ran in well with Model C bridge plug. Set bridge plug at 7066'. Changed well over to 63 pcf KCl water. Spotted 6 sacks of sand on top of bridge plug. Pulled up to 6357'.
- 12-23 Tagged top of sand plug at 7043'. Pressure tested casing to 100 psi from surface to 7043' (20 minute test). Pulled out of well. Ran Eastman Teleco Gyro from 7035' to surface. Using Dialog, shot four 1/2" holes at 7040'. Made up 30' of 2-7/8" tubing tail below Robison oil tool fullbore packer. Ran in well to 7017'. Pressured holes to 1500 psi at 7040'. Unable to get break down.
- 12-28 Set packer at 7000' with tubing tail at 7040'. Established break down of 3/4 Bbl/min at 2300 psi. Pumped 12 Bbls of 12-3 acid. Final breakdown of 1 Bbl/min at 2000 psi. Pulled up to 6829' with tubing tail and packer at 6789'. Mixed and pumped 28 cu.ft. of matrix cement with 1% Halad 322 and 50 cu.ft. of Class G cement with .5% Halad 322. Pumped 67 cu.ft. out holes at 7040'. Final squeeze pressure at 2400 psi. Cement in place at 1:08 p.m.
- 12-29 Pulled out of well. Ran in well with 6-1/8" bit on 7" scraper and 123' of 4-3/4" drill collars. Drilled cement from 6887' to 7043'. Cleaned out 5' of sand to 7048'. Circulated well clean. Pressure tested holes at 7040' from surface with 1500 psi (held). Pulled out of well.
- 12-30 Pulled out of well. Made up 31' of 2-7/8" tubing tail below Robison oil tool fullbore packer. Ran in well. Set packer at 6789'. Pressure tested holes at 7040' to 2550' psi for 20 minutes (held). Pulled out of well. Ran in well with bridge plug retrieving tool to 7039'. Cleaned mud pits.
- 12-31 Changed well over to 69 pcf polymer at 7048'. Cleaned out sand to top of bridge plug at 7066'. Pulled bridge plug out of well. Ran in well with test seals on 2-7/8" drill pipe to 7085'. Set 20,000 lbs on Baker FB-1 packer at 7085'. Pressure tested seals and packer to 1500 psi for 20 minutes (held). Pulled out of well laying down 2-7/8" drill pipe.
- 01-02 Pulled out of well laying down 2-7/8" drill pipe. Measured and picked up 232 joints of 2-3/8" tubing. Pulled to kill string.

- 01-04 Rig down. Waiting on 5-1/2" casing.
- 01-05 Unable to run 5-1/2" casing. Cross over from Baker seals is 5-1/2" 20#. Casing threads from seal assembly to innerstring are not compatible. Shut rig down to make new cross over sub.
- 01-06 Pulled out of well. Changed pipe rams to 5-1/2". Ran Baker 4" OD seals and locator sub. Picked up and ran 5-1/2" 20# Hydril triple seal casing externally pressure testing to 4000 psi. Unable to torque turn casing due to rain. Ran 54 joints of 5-1/2", 20#, J-55 Hydril triple seal casing, 1 joint 5-1/2", 20#, J-55 Hydril triple seal pin x ABFL4S box, 47 joints of 5-1/2" ABFL4S 20# N-80 casing.
- 01-07 Ran 5-1/2" 20# N-80 FL4S casing. Stabbed into Baker packer at 7085'. Set 25,000 lbs on packer. Tested seals to 1500 psi. Unstabbed from packer. Pumped 63 Bbls of 63 pcf 3% KCl water with 5 gal/100 Bbl HIB-19, 5 gal/100 Bbl Ucarcide, and 2 gallons of COS. Installed bridge plug at 60'. Stabbed into packer and set 25,000 lbs on packer. Tested seals to 1500 psi. Picked up BOPE and landed 5-1/2" casing with 113,000 lbs on slips. Cut off 5-1/2" casing. Installed tubing head and seal flange. Installed BOPE and tested to 1500 psi.
- 01-08 Pulled bridge plug. Installed shooting flange. Using wireline ran Otis "BWB" packer with 4.36" OD, 2.75" ID. Wireline set packer at 7067'. Activated packing seal, seal flange, tubing head and tested to 5000 psi. Ran production string, Otis guide shoe, two 2.75" OD seals, Otis J latch, one joint of 2-3/8" tubing, Otis 1.790" NoGo nipple, one joint of 2-3/8" tubing, Otis "XD" sliding sleeve, one joint of 2-3/8" tubing, BST KBMG gas lift mandrel, 2-3/8" tubing to surface. Spaced out and landed 10,000 lbs on packer at 7007' and 17,000 lbs on tubing hanger.
- 01-09 Pressure tested Otis packer and seals at 7067' to 1500 psi for 20 minutes (held). Using Santa Paula wireline; pulled dummy valve from mandrel at 6968' and installed 1" pump out valve set at 2700 psi. Open sliding sleeve at 7005'. Installed back pressure in tubing hanger. Removed BOPE. Installed and tested xmas tree to 5000 psi. Changed over to 3% KCl water through sliding sleeve at 7005'. KCl treated with 5 gal HIB /100 Bbls and 5 gal Ucarcide /100 Bbls and 2 gal COS per/100 Bbl. Released rig at 4:00 p.m.
- 01-11 Rigged down and moved rig to CPS yard Compton (440 Bbls of polymer lost in zone).

SOUTHERN CALIFORNIA GAS COMPANY
WELL: FERNANDO #32
LOCATION: ALISO CANYON
DATE: DECEMBER 23, 1992
SURVEY TYPE: SEEKER GYROSCOPIC MULTI-SHOT
SURVEYED BY: EASTMAN TELECO
SURVEYORS: JOE OCHOA / ROBERT ZEMAN

Fernando Fee 32

27-3-16

037-00686

*** ZERROED TOOL AT 7'KB ***

RECORD OF SURVEY

MINIMUM CURVATURE METHOD

DIVISION OF OIL AND GAS
RECEIVED

SEP 29 1993

VENTURA, CALIFORNIA

SOUTHERN CALIF. COMPANY
 WELL: FERNANDO #32
 LOCATION: ALISO CANYON

ON PAGE NO. 1
 TIME DATE
 15:54:07 23-DEC-92

MEASURED DEPTH FEET	DRIFT ANGLE DEG	DRIFT DIRECTION DEG	COURSE LENGTH FEET	TRUE	R E C T A N G U L A R		DOGLEG SEVERITY DG/100FT
				VERTICAL DEPTH FEET	C O O R D I N A T E S FEET		
0	.00	.00	.00	.00	.00	.00	.00
100	.57	S 27.11 W	100.00	100.00	.44 S	.22 W	.57
200	.64	S 19.57 W	100.00	199.99	1.41 S	.64 W	.11
300	.85	S 20.17 W	100.00	299.98	2.63 S	1.08 W	.21
400	.87	S 35.40 W	100.00	399.97	3.95 S	1.78 W	.23
500	.93	S 39.26 W	100.00	499.96	5.19 S	2.73 W	.08
600	.97	S 36.70 W	100.00	599.95	6.50 S	3.75 W	.06
700	.88	S 50.01 W	100.00	699.93	7.67 S	4.84 W	.23
800	.95	S 57.10 W	100.00	799.92	8.61 S	6.12 W	.13
900	.98	S 52.33 W	100.00	899.91	9.58 S	7.49 W	.09
1000	1.06	S 65.01 W	100.00	999.89	10.50 S	9.01 W	.24
1100	1.07	S 59.39 W	100.00	1099.87	11.36 S	10.65 W	.10
1200	1.11	S 65.02 W	100.00	1199.86	12.24 S	12.33 W	.12
1300	1.03	S 58.97 W	100.00	1299.84	13.12 S	13.98 W	.14
1400	1.02	S 61.30 W	100.00	1399.82	14.01 S	15.53 W	.04
1500	.93	S 53.40 W	100.00	1499.81	14.92 S	16.96 W	.16
1600	1.32	S 49.25 W	100.00	1599.79	16.15 S	18.48 W	.39
1700	.98	S 60.74 W	100.00	1699.77	17.32 S	20.10 W	.41
1800	.79	S 65.29 W	100.00	1799.76	18.03 S	21.47 W	.20
1900	.81	S 73.26 W	100.00	1899.75	18.52 S	22.77 W	.11
2000	.79	S 76.64 W	100.00	1999.74	18.88 S	24.11 W	.05
2100	.87	S 77.85 W	100.00	2099.73	19.20 S	25.52 W	.09
2200	.81	S 79.96 W	100.00	2199.72	19.48 S	26.96 W	.07
2300	.67	S 86.27 W	100.00	2299.71	19.64 S	28.23 W	.16
2400	.55	N 78.21 W	100.00	2399.70	19.58 S	29.28 W	.20
2500	.38	N 56.74 W	100.00	2499.70	19.30 S	30.03 W	.24
2600	.50	N 67.14 W	100.00	2599.70	18.95 S	30.70 W	.15
2700	.36	N 55.52 W	100.00	2699.69	18.60 S	31.37 W	.16
2800	.26	N 54.10 W	100.00	2799.69	18.29 S	31.81 W	.11
2900	.14	N 23.50 W	100.00	2899.69	18.05 S	32.04 W	.15
3000	.09	N 74.14 E	100.00	2999.69	17.91 S	32.02 W	.18
3100	.08	N 74.10 E	100.00	3099.69	17.87 S	31.87 W	.01
3200	.20	S 9.67 E	100.00	3199.69	18.02 S	31.77 W	.22
3300	.23	S 7.40 W	100.00	3299.69	18.39 S	31.77 W	.07
3400	.30	S 5.71 E	100.00	3399.69	18.84 S	31.77 W	.09
3500	.22	S 16.64 W	100.00	3499.69	19.28 S	31.80 W	.13
3600	.31	S 8.38 W	100.00	3599.69	19.74 S	31.89 W	.09
3700	.17	S 5.07 W	100.00	3699.68	20.15 S	31.94 W	.13
3800	.17	S 19.29 W	100.00	3799.68	20.44 S	32.00 W	.04
3900	.17	N 66.88 E	100.00	3899.68	20.52 S	31.92 W	.31
4000	.22	N 88.64 E	100.00	3999.68	20.46 S	31.58 W	.09
4050	.24	N 83.22 E	50.00	4049.68	20.44 S	31.38 W	.06
4100	.27	N 84.27 E	50.00	4099.68	20.42 S	31.16 W	.06
4150	.85	S 33.93 E	50.00	4149.68	20.71 S	30.83 W	1.52
4200	1.38	S 31.07 E	50.00	4199.67	21.53 S	30.32 W	1.06

MEASURED DEPTH FEET	DRIFT ANGLE DEG	DRIFT DIRECTION DEG	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOGLEG SEVERITY DG/100FT
4250	2.26	S 17.69 W	50.00	4249.65	22.99 S	30.31 W	3.41
4300	3.85	S 43.60 W	50.00	4299.58	25.14 S	31.76 W	4.13
4350	5.00	S 53.40 W	50.00	4349.43	27.66 S	34.67 W	2.74
4400	5.24	S 54.91 W	50.00	4399.23	30.27 S	38.28 W	.55
4450	5.53	S 53.58 W	50.00	4449.01	33.01 S	42.09 W	.64
4500	5.80	S 51.15 W	50.00	4498.76	36.03 S	46.00 W	.72
4550	6.05	S 49.92 W	50.00	4548.50	39.31 S	49.99 W	.56
4600	6.36	S 48.12 W	50.00	4598.20	42.86 S	54.06 W	.72
4650	6.82	S 47.30 W	50.00	4647.87	46.72 S	58.31 W	.94
4700	7.31	S 45.65 W	50.00	4697.49	50.95 S	62.76 W	1.06
4750	7.53	S 44.77 W	50.00	4747.07	55.50 S	67.34 W	.51
4800	7.74	S 44.64 W	50.00	4796.63	60.23 S	72.02 W	.40
4850	7.92	S 43.00 W	50.00	4846.17	65.14 S	76.73 W	.58
4900	8.17	S 43.25 W	50.00	4895.67	70.25 S	81.52 W	.49
4950	8.88	S 42.82 W	50.00	4945.12	75.67 S	86.57 W	1.44
5000	10.32	S 39.59 W	50.00	4994.42	81.95 S	92.05 W	3.07
5050	11.53	S 35.04 W	50.00	5043.51	89.49 S	97.78 W	2.97
5100	11.43	S 36.89 W	50.00	5092.51	97.55 S	103.62 W	.77
5150	11.74	S 33.84 W	50.00	5141.49	105.73 S	109.42 W	1.38
5200	10.73	S 30.11 W	50.00	5190.54	113.96 S	114.59 W	2.50
5250	11.54	S 29.84 W	50.00	5239.60	122.35 S	119.42 W	1.64
5300	11.85	S 31.85 W	50.00	5288.56	131.05 S	124.61 W	1.02
5350	12.60	S 42.72 W	50.00	5337.43	139.42 S	131.02 W	4.83
5400	13.50	S 52.63 W	50.00	5386.14	146.97 S	139.36 W	4.82
5450	14.43	S 53.39 W	50.00	5434.67	154.23 S	149.00 W	1.89
5500	15.76	S 53.62 W	50.00	5482.94	161.97 S	159.47 W	2.66
5550	16.77	S 52.79 W	50.00	5530.94	170.36 S	170.68 W	2.07
5600	18.46	S 52.24 W	50.00	5578.59	179.57 S	182.68 W	3.40
5650	19.76	S 50.97 W	50.00	5625.84	189.74 S	195.51 W	2.73
5700	20.81	S 50.27 W	50.00	5672.74	200.74 S	208.90 W	2.14
5750	21.87	S 49.81 W	50.00	5719.31	212.42 S	222.85 W	2.16
5800	22.65	S 49.16 W	50.00	5765.58	224.73 S	237.25 W	1.62
5850	23.45	S 49.08 W	50.00	5811.59	237.54 S	252.05 W	1.61
5900	23.79	S 48.48 W	50.00	5857.40	250.75 S	267.12 W	.83
5950	23.90	S 48.08 W	50.00	5903.13	264.20 S	282.20 W	.39
6000	24.31	S 47.67 W	50.00	5948.77	277.90 S	297.35 W	.88
6050	24.70	S 47.62 W	50.00	5994.27	291.87 S	312.67 W	.79
6100	25.03	S 47.31 W	50.00	6039.63	306.08 S	328.17 W	.71
6150	25.41	S 46.77 W	50.00	6084.86	320.60 S	343.76 W	.88
6200	25.74	S 46.52 W	50.00	6129.96	335.42 S	359.45 W	.70
6250	25.89	S 46.03 W	50.00	6174.97	350.47 S	375.19 W	.52
6300	25.20	S 45.89 W	50.00	6220.08	365.46 S	390.69 W	1.38
6350	24.44	S 46.11 W	50.00	6265.47	380.04 S	405.79 W	1.54
6400	23.83	S 46.32 W	50.00	6311.09	394.19 S	420.55 W	1.22
6450	22.99	S 46.24 W	50.00	6356.98	407.92 S	434.91 W	1.69

SOUTHERN CALIFORNIA COMPANY
 WELL: FERNANDO #32
 LOCATION: ALISO CANYON

C O O N PAGE NO. 3
 TIME DATE
 15:54:07 23-DEC-92

MEASURED DEPTH FEET	DRIFT ANGLE DEG	DRIFT DIRECTION DEG	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R C O O R D I N A T E S FEET		DOGLEG SEVERITY DG/100FT
6500	21.95	S 46.51 W	50.00	6403.18	421.11 S	448.74 W	2.10
6550	21.72	S 46.10 W	50.00	6449.59	433.95 S	462.18 W	.55
6600	21.69	S 46.20 W	50.00	6496.05	446.76 S	475.52 W	.09
6650	21.38	S 45.44 W	50.00	6542.56	459.55 S	488.68 W	.82
6700	20.66	S 45.45 W	50.00	6589.23	472.14 S	501.46 W	1.45
6750	20.39	S 45.20 W	50.00	6636.06	484.46 S	513.92 W	.57
6800	19.81	S 45.06 W	50.00	6683.01	496.58 S	526.10 W	1.15
6850	19.21	S 45.05 W	50.00	6730.14	508.38 S	537.92 W	1.22
6900	19.41	S 44.79 W	50.00	6777.33	520.08 S	549.59 W	.43
6950	19.46	S 44.47 W	50.00	6824.48	531.92 S	561.28 W	.23
7000	19.67	S 43.69 W	50.00	6871.60	543.95 S	572.93 W	.68
7035	19.99	S 44.18 W	35.00	6904.52	552.50 S	581.17 W	1.04

FINAL CLOSURE - DIRECTION: S 46.45 W
 DISTANCE: 801.88 FEET
 FILE NUMBER: 033

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

No. P292-382
Field Code 010
Area Code 00
New Pool Code 30
Old Pool Code 30

PERMIT TO CONDUCT WELL OPERATIONS

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

Ventura, California
December 14, 1992

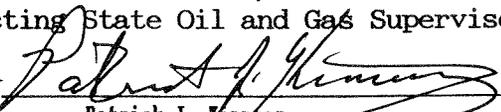
Your proposal to rework well "Fernando Fee" 32,
A.P.I. No. 037-00686, Section 27, T. 3 N, R. 16W, S.B. B.&M.,
Aliso Canyon field, --- area, Sesnon-Fren pool,
Los Angeles County, dated 12-7-92, received 12-9-92, has been
examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class III 5M 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.

Blanket Bond
PK:SF:nr

Engineer Steve Fields
Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor
By 
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.
CGIII

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	FORMS	
	OGD 114	OGD 121
BB	12992 ✓	✓

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 Fernando Fee #32 (Well designation), API No. 037-00686
Sec. 27, T. 3N, R. 16W, SB B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

- Total depth 7435'
- Complete casing record, including plugs and perforations (present hole)
 - 0' - 498' 13-3/8" 55# J-55
 - 0' - 7238' 7" 23# and 26# J-55 and N-80, packer at 7085'
 - 0' - 7085' 5-1/2" 17# J-55, packer at 7073'
 - 7109' - 7426' 5" 15# K-55 18 mesh wire wrapped Gru-V-Kut and 30 mesh slotted

DIVISION OF OIL AND GAS
RECEIVED
DEC 9 1992
VENTURA, CALIFORNIA

- Present producing zone name SH-S8; Zone in which well is to be recompleted same
- Present zone pressure 3000; New zone pressure _____
- Last produced Gas Storage Project (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)
(or)
Last injected _____ (Date) (Water, B/D) (Gas, Mcf/D) (Surface pressure, psig)
- Is this a critical well according to the definition on the reverse side of this form? (Yes) (No)

The proposed work is as follows:

Rig up, install and test BOPE.
Pull tubing and inner casing string.
Cement squeeze leak in 7" casing.
Install inner casing and tubing string.
Return well to 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 P. O. Box 3249 (Street)
Los Angeles, CA 90051-1249 (City) (State) (Zip)
Telephone Number (213) 244-2665

Southern California Gas Co. (Name of Operator)
By E. S. Sinclair for R. D. Phillips (Agent) (Name - Printed)
[Signature] (Name - Signature) 12-7-92 (Date)

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

	(1)	(2)	(3)	()	()	()
INTENTION	DRILL	ALTER CSG & CONVERT TO GAS STORAGE	ALTER CSG			
NOTICE DATED	6-2-48	9-8-72	4-28-75			
P-REPORT NUMBER	1-45082	172-1075	275-165			
CHECKED BY/DATE						
MAP LETTER DATED						
SYMBOL	⊙	⊙	⊙			

	REC'D NEED		REC'D NEED		REC'D NEED		REC'D NEED		REC'D NEED	
NOTICE	6-3-48		9-13-72		5-6-75					
HISTORY	1-28-49		2-11-72		10-14-75					
SUMMARY	1-28-49									
IES/ELECTRIC LOG										
DIRECTIONAL SURV										
CORE/SWS DESCRIP	1-28-49									
OTHER										
RECORDS COMPLETE	②		②		②					

ENGINEERING CHECK

REPORTS _____

OPERATOR'S NAME _____

WELL DESIGNATION _____

LOC & ELEV _____

SIGNATURE _____

FACE INSPECTION _____

FINAL LETTER OK _____

CLERICAL CHECK

POSTED TO 121 _____ 170 MAILED _____

FINAL LETTER _____

MAILED _____

RELEASED BOND _____

REMARKS: HISTORY 6-1-77 NO PROPOSAL

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Ventura, California

October 30, 1991

R. D. Phillips, Agent

SOUTHERN CALIFORNIA GAS COMPANY

P.O. Drawer 3249m Mail Location 22G0

Los Angeles, CA 90051-1249

Your request, dated July 24, 1991, proposing to change the designation of well(s) in Sec. 27, T. 3N, R. 16W, S.B. 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:

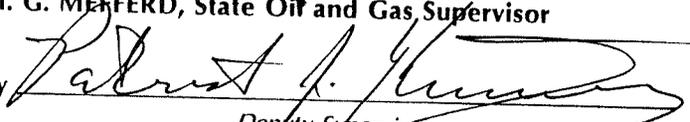
FROM

"SFZU" P-12 (037-00701)
"SFZU" P -14 (037-00703)
"SFZU" P-30 (037-00717)
"SFZU" P-31 (037-00718)
"SFZU" P-32 (037-00719)
"SFZU" P-36 (037-00723)
"SFZU" P-37 (037-00724)
"SFZU" P-45 (037-00732)
"SFZU" FF-32 (037-00686)
"SFZU" P-50A (037-22737)
"SFZU" P-68A (037-22742)
"SFZU" P-37-A (037-22046)
"SFZU" FF-32-A (037-21872)

TO

"Porter" 12 (037-00701)
"Porter" 14 (037-00703)
"Porter" 30 (037-00717)
"Porter" 31 (037-00718)
"Porter" 32 (037-00719)
"Porter" 36 (037-00723)
"Porter" 37 (037-00724)
"Porter" 45 (037-00732)
"Fernando Fee" 32 (037-00686) ✓
"Porter" 50A (037-22737)
"Porter" 68A (037-22742)
"Porter" 37-A (037-22046)
"Fernando Fee" 32-A (037-21872)

M. G. MEFFERD, State Oil and Gas Supervisor

By 

Deputy Supervisor

PATRICK J. KINNEAR

SUBMIT IN DUPLICATE
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED

JUN - 1 1977

History of Oil or Gas Well

SANTA PAULA, CALIFORNIA

Operator SOUTHERN CALIFORNIA GAS COMPANY Field or County ALISO CANYON/Los Angeles
Well name and No. FERNANDO FEE #32, Sec. 27, T. 3N, R. 16W, S.B.B. & M.
A.P.I. well No. 037-00686 Name P.S. MAGRUDER, Jr. Title Agent
Date May 21, 19 77 (Person submitting report) (President, Secretary or Agent)

Signature P.S. Magruder, Jr.

P.O. Box 3249, Terminal Annex, Los Angeles 90051 (Address) (213) 689-3561 (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	
2- 9-77	Using Dowell, pumped 170 barrels of 75# polymer mud down well. Displaced gas into Company line and shut down.
2-10-77	Pumped tubing and casing displacement to displace gas from the mud - lost 20 barrels of fluid, with gas still entering the mud system. Mixed and spotted 70-barrels/150-viscosity polymer on bottom - waited two hours and pumped hole volume again, successfully killing the well.
	<u>NOTE:</u> All valves on the Christmas tree tested O.K. Annulus between 5 1/2" and 7" casing dropped to 0 psi after killing well.
4-12-77	Rekilled well with 150 barrels of 63# polymer mud. Well had 2100 psi on tubing and 575 psi on casing. Circulated until recovered 63# mud from casing.
4-14-77	Moved in rig. Rigging up.
4-15-77	Finished rigging up. Circulated well. Removed Christmas tree and installed Class III 5000 psi 6" B.O.P.E. Tested blind rams and pipe rams with water and nitrogen to 4000 psi for 20 minutes. Tested Hydril with water and nitrogen for 20 minutes to 3000 psi.
4-16-77	Unseated tubing. Pulled out of hole, laid down 2 3/8". McCullough shot four 1/2" deflecting bullet holes at 7070' in 5 1/2" casing. Pumped down 5 1/2" and up 7" x 5 1/2" annulus with 800 psi and lost 165 barrels. Obtained about 15 barrels of 73# drilling fluid from 7" x 5 1/2" annulus. Reversed circulation and holes plugged. Ran Johnston bridge plug and set at 1000'.
4-17-77	Rig and crew idle.
4-18-77	Removed bridge plug. Circulated down 5 1/2" up 7" x 5 1/2" annulus. Circulated out old 73# drilling fluid with 63# polymer drilling fluid. Set wireline RZG plug in "R" nipple attached to seal nipples below Model "D" packer at 7084'. Removed 6" B.O.P.E. and installed 8" Class III 3000 psi B.O.P.E.

- 4-19-77 Could not test B.O.P.E. Casing packing was not holding. Unlanded 5 1/2" with 125,000#. Worked 5 1/2" 20,000# to 150,000# and casing would not come free. Circulated down 7" x 5 1/2" and worked casing. Set packer in 5 1/2" and circulated 90 sec. viscosity pill in well and worked casing 20,000# to 150,000#. Closed well in with packer in 5 1/2".
- 4-20-77 Ran McCullough free point. Found 5 1/2" innerstring free at 6100' with bottom of casing at 7080'. Collars at 6119', 6079' and 6040'. Ran in hole picking up 2 7/8" tubing. Made mechanical cut in 5 1/2" casing at 6020'. Started out of hole.
- 4-21-77 Finished pulling out of hole with 5 1/2" casing cutter. Removed B.O.P.E. Unlanded 5 1/2". Reinstalled B.O.P.E. Laid down 86 joints of 5 1/2" casing.
- 4-22-77 Finished laying down 5 1/2" casing (6020'). Changed rams on B.O.P.E. Ran 6000' 2 7/8" tubing in hole and laid down same. Picked up 2 7/8" drill pipe (1000').
- 4-23-77 Pulled drill pipe out of hole. Set plug in wellhead. Tested blind rams and pipe rams with water and nitrogen with 3000 psi for 20 minutes. Tested Hydril with 3000 psi for 20 minutes with water and nitrogen. Picked up fishing tools. Going in hole, picking up drill pipe.
- 4-24-77 Rig and crew idle.
- 4-25-77 Finished going in hole. Circulated for two hours at 5975' mud 63#. Jarred once on fish and pulled to 120,000# - 5 1/2" casing came free. Started out of hole. When pulling drill pipe, well started to flow. Ran in 10 stands - circulated up gas cut mud. Ran in to fish at 6960'. Circulated up gas cut mud. Increased mud weight to 70#-72#.
- 4-26-77 Pulled out of hole - no recovery. Ran in hole - pulled out with fish. Recovered 1060' of 5 1/2" casing and seal assembly, No-Go nipple and tubing plug was attached to bottom of seal's assembly. Laid down fishing tools and casing.
- 4-27-77 Ran and set D.R. plug in Baker Model "D" packer at 7080'. Capped with 5 sacks of sand. Pulled up 250'. Circulated for two hours. Ran in - found sand at 7063'. Pulled out of hole. Shot four 1/2" jet holes at 7030'. Started in hole with retainer to cement holes at 7030'.
- 4-28-77 Set retainer at 6917'. Obtained breakdown through four 1/2" holes at 7030' at 20 cu.ft./minute under 2600 psi. Mixed 80 sacks of Type "G" cement. Displaced cement below tool and pressure increased to 4000 psi - found cement had been under-displaced by 40 cu.ft. and had not squeezed any cement through holes. Pulled out of hole and found 1600' of drill pipe full of cement. Started in hole with 6 1/8" bit and casing scraper. Cleaned cement out of drill pipe.

- 4-29-77 Ran in hole. Located top of cement at 6914'. Drilled out cement to 7029'. Sand 7066'. Could not pump into formation under 2200 psi. Pulled out of hole. McCullough shot four 1/2" holes at 7031'. Ran in hole with Guiberson retainer and set at 6886'. Mixed 80 sacks Class "G" cement. Used 30 cu.ft. water before and 10 cu.ft. after and 41 cu.ft. of mud. Closed tool. Cleared tool with 3000 psi. Stopped for 5 minutes under 1500 psi. Pumped in 5 cu.ft. and pressure increased to 2800 psi and fell to 1800 psi. Waited 10 minutes. Pumped in 1 cu.ft. and pressure increased to 4000 psi with 52 sacks through holes at 7031'. Started at 7:45 p.m. Finished displacing at 8:20 p.m. Could not release retainer. Sheared safety and released retainer - pulled 5 stands.
- 4-30-77 Pulled Buiberson retainer out of hole. Ran in hole with 6 1/8" bit and scraper. Soft cement 6947' to 7000' - waited until 5:30 - cement still soft.
- 5- 1-77 Rig and crew idle.
- 5- 2-77 Drilled out soft cement 7000'-7030'. Hard cement 7030'-7040'. Circulated hole clean. Pulled out of hole. McCullough shot four 1/2" holes at 7029'. Ran Johnston tester for WSO. Set packer at 6991' with tail to 7004'. Opened tool 5:42 p.m. and had gas to surface at 5:47 p.m. Closed tool at 5:52 p.m. Started out of hole.
- 5- 3-77 Pulled WSO tester out of hole - gas on surface in 7 minutes. WNSO by Company. Ran in hole with Johnston squeeze tool and set retainer at 6884'. Pumped in 30 cu.ft. water, 80 sacks of Class "G" cement and 10 cu.ft. water. Displaced with 46 cu.ft. polymer drilling fluid and closed tool. Cleared tool with 175 cu.ft. polymer drilling fluid at 2400 psi at 12:02 p.m.; 177.50 cu.ft. at 1900 psi at 12:07 p.m.; 179.50 cu.ft. at 2000 psi at 12:17 p.m. and 181 cu.ft. at 4000 psi at 12:29 p.m. Pulled out of hole. Ran in with bit and scraper, located top of cement at 6942'. Drilled out soft cement to 6955'.
- 5- 4-77 Drilled out hard cement from 6955' to 7056'. Circulated hole clean. Pulled out of hole. Using GO-International, shot four 1/2" holes at 7027'. Ran Johnston tester for WSO. Set packer at 6991' and opened tool at 6:00 p.m. - gas flow entire test (light blow). Pulled tool at 7:00 p.m. Started out of hole.
- 5- 5-77 Finished pulling out of hole - WNSO by Company. Ran in hole with Johnston retainer to squeeze holes at 7027'. Set retainer at 6884'. Pumped in formation through holes at 7027' and obtained breakdown under 2700 psi at 8 cu.ft./minute. Pumped in 30 cu.ft. of fresh water, 100 sacks of Class "G" cement and 10 cu.ft. fresh water followed with 19 cu.ft. drilling fluid. Closed tool. Cleared tool with 169 cu.ft. drilling fluid under 2400 psi at 12:25 p.m. At 12:40 p.m. pumped in 5 cu.ft. under 2200 psi; at 12:47 p.m. pumped in 1 cu.ft. under 4000 psi and held until 1:20 p.m. Pulled out of hole. Ran in with 6 1/8" bit and scraper. Soft cement from 6881' to 6886'.

JUN - 1 1977

HISTORY OF FERNANDO FEE #32 - Aliso Canyon

PAGE 4.

SANTA PAULA, CALIFORNIA

- 5- 6-77 Drilled out hard cement 6886' - 7045' and located sand at 7066'. Circulated hole clean. Pulled out of hole. GO-International shot 4 1/2" holes at 7026'. Ran Johnston packer for WSO. Set packer at 6991'. Opened tool at 4:33 p.m. Light blow for 1 minute and dead balance of 90 minute tested. Tool open 90 minutes. Started out of hole.
- 5- 7-77 Pulled Johnston tester. WSO by Company. Ran in hole, cleaned out sand plug and pulled DR plug. Circulated for two hours. Pulled out of hole. Made up Baker packer milling tool and started in hole. Received gas cut mud to surface. Circulated at 2708'. Ran in hole. Circulated for two hours.
- 5- 8-77 Rig and crew idle.
- 5- 9-77 Took 15 barrels to fill hole. Continued running in hole with Baker packer mill. Milled on Model "D" packer at 7095' by pipe measurements. Milled for 2 1/2" hours - tool did not latch in on Model "D" packer. Pulled out, and reset latch-in. Ran in and milled on packer for 5 hours - unable to free packer.
- 5-10-77 Pulled Baker Model "D" milling tool - changed mills. Ran in hole - tight spot at 6625'. Milled on Baker Model "D" packer at 7095' for five hours. Pulled free. Pulled out of hole. Milled over packer to top of bottom slips - left three slips and a few small pieces of iron from bottom skirt below flapper.
- 5-11-77 Ran in hole with 6 1/8" bit and 7" casing scraper to top of liner at 7109'. Circulated bottoms up. Pulled out. Picked up 11 joints of 2 3/8" tubing. Ran in hole with 4 1/8" bit and 5" casing scraper on 11 joints 2 3/8" tubing stinger on 2 7/8" D.P. Cleaned out fill from 7412' to 7424'. Circulated hole clean.
- 5-12-77 Finished pulling out of hole. Rigged up lubricator. GO-International ran gauge feeler in 7" casing to 7100'. Ran Baker 7" Model "FB" packer with 5 1/2" O.D. mill-out extension and Baker "R" nipple with RZG plug 2.75" O.D. in place. Set packer by collar reference at 7085'. Ran 2 7/8" D.P. in hole and laid down 186 joints. Loaded out same.
- 5-13-77 Rigged up to run 5 1/2" innerstring. Made up Baker Locator Cross-over and 4 seals units on first joint. Ran 100 joints of Hydril triple seal and 16 joints of 8Rd 5 1/2" innerstring Liner. Cleaning all pins and boxes. Hydro-testing at 5000 psi - 4760' in.

JUN -1 1977

HISTORY OF FERNANDO FEE #32 - Aliso Canyon

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SANTA PAULA, CALIFORNIA

- 5-14-77 Continued running 5 1/2" innerstring liner - hydrotested at 5000 psi for one minute. Stabbed into FB Baker packer - tested seals with 500 psi with rig pump. Pulled up and spotted 70 barrels of drilling fluid treated with corrosion inhibitor between casings. Lifted B.O.P.E. and landed 5 1/2" inner liner with 20,000# on FB Baker packer. Installed casing hanger and pack-off. Reinstalled 8" B.O.P.E.
- 5-15-77 Rig and crew idle.
- 5-16-77 Removed 8" B.O.P.E. Installed tubing head. Tested 7" casing seals to 3500 psi and 5 1/2" casing seals to 5000 psi. Installed 6" B.O.P.E. Tested Hydril with water and nitrogen to 3400 psi for 20 minutes. Tested blind rams and pipe rams with water and nitrogen to 4000 psi for 20 minutes. Archer-Reed recovered RZG plug from No-Go nipple below Model "F" packer.
- 5-17-77 Ran a feeler on wireline. Ran Baker Model "F" packer on wireline and set at 7075'. Ran 207 joints of 2 3/8" tubing while changing collars, applying Baker seal and hydrotesting to 5000 psi for one minute each test. Tubing includes: Baker Production Tube; four Baker Seals; Baker Latch-in Locator; Otis 10' Blast Joint; Otis 2 3/8" 8Rd "X-N" Nipple 1.56"; Otis 20' Blast Joint and Otis Annular Flow Safety System.
- 5-18-77 Finished running 2 3/8" tubing in the hole while hydrotesting to 5000 psi. Landed tubing in the packer with 10,000# and pulled 20,000# over weight of tubing to check packer latch-in device. Installed plug in tubing hanger. Removed B.O.P.E. Installed Christmas tree and tested tree with 5000 psi pressure for 20 minutes. Circulated polymer fluid out of well with lease water. Otis retrieved plug from annular flow safety system valve. Set plug in No-Go nipple. Pressure tested packer and seal with 1800 psi pressure for 20 minutes. Retrieved plug from tubing. Rig released at 8:00 p.m. Total tubing length 7081', minimum I.D. of No-Go nipple 1.536" at 7061'. Minimum I.D. above No-Go nipple 1.87" in safety system at 7041'.

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

Report on Operations

No. T 277-95

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

Santa Paula, Calif.
May 11, 1977

DEAR SIR:

Operations at well No. "SEZU" FF-32, API No. (037-00686), Sec. 27, T. 3N R. 16W
SB, B & M. Aliso Canyon Field, in Los Angeles County, were witnessed
on 4/23/77. Mr. T. E. Adams, representative of the supervisor was
present from 0930 to 1130. There were also present Alan Smith, company foreman

Present condition of well: additions to the casing record since proposal dated 4/11/77:
5 1/2" casing cut and recovered from 6020'.

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
JOHN F. MATTHEWS, Jr.
Acting, State Oil and Gas Supervisor

By John L. [Signature] Deputy

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

REPORT ON PROPOSED OPERATIONS No. P 277-125

Mr. P.S. Magruder, Jr., Agent
So. California Gas Co. Santa Paula, Calif.
P.O. Box 54790 Terminal Annex Apr. 15, 1977
1 Los Angeles, Calif. 90054

DEAR SIR: alter casing (037-00686)
Your proposal to in gas storage Well No. "SFZU" FF-32
Section 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,
dated _____, received 4/12/77, 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 the Division 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

M. G. MEFFERD (acting)
JOHN E. MATTHEWS, Jr., State Oil and Gas Supervisor
By John L. Harrison, Deputy

DIVISION OF OIL AND GAS
RECEIVED
12
APR 14 1977

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.

SANTA PAULA, CALIFORNIA

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
	✓	✓

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. 5F74 FF-32 ~~PERNANDO FEE #32~~, 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:

- Total depth. 7435'
- Complete casing record, including plugs and perforations:
 - 13 3/8" cemented 498'
 - 7" cemented 7238'
 - 315' 5" landed 7109'-7424' 18-mesh wire-wrapped - gravel packed
 - 5 1/2" landed 0'-7081'
- Present producing zone name SESNON Zone in which well is to be recompleted -
- Present zone pressure 2400 psi New zone pressure -
- Last produced Gas Storage Well
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)
- or
- Last injected _____
(Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

- Move in, rig up, install B.O.P.E. and test. Pull tubing.
- Remove tubing head and pull 5 1/2" casing. Pick up 2 7/8" tubing.
- Shoot and squeeze. Retest WSO near 7070'.
- Rerun 5 1/2" casing. Set packer.
- Run 2 3/8" tubing with down hole safety system.
- 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. by Guy C. Abuhammo
(Name) P.S. Magruder, Jr. (Date)
Type of Organization corporation
(Corporation, Partnership, Individual, etc.)

DIVISION OF OIL AND GAS

OCT 14 1975

History of Oil or Gas Well

SANTA PAULA, CALIFORNIA

OPERATOR SOUTHERN CALIFORNIA GAS COMPANY FIELD Aliso Canyon

Well No. Fernando Fee #32, Sec. 27, T. 3N, R. 16W, S.B. B. & M.

Date September 15, 19 75

Signed P. S. Magruder, Jr.
 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)

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

6-21-75

Moved in California Production Service Rig D-3 and started rigging up. Killed well using 75# brine-polymer circulating fluid and rig pump. Rigged up Archer-Reed and equalized Otis X-N plug at 7172'. Tried to recover X-N plug without success. Rigged down Archer-Reed.

6-22-75

Idle.

6-23-75

Continued rigging up. Unflanged all lateral lines, cut lines at cellar floor and blind-flanged at header.

6-24-75

Continued rigging up. Installed blank plug in doughnut and pulled Christmas tree. Installed Class III B.O.P.E. Using H. & H., hydrostatically tested tested blind rams, pipe rams and bag at 2500 psi for 20 minutes each - O.K. Tests witnessed by Division of Oil and Gas. Using NOWSCO, tested with nitrogen, Hydril bag, complete shut-off rams and pipe rams to 2500 psi for 20 minutes each - O.K. Pulled doughnut free, then pulled Baker seals free (7180'), then laid pulling pups down, then removed doughnut plug (sucked air). Laid down doughnut and installed circulating ball valve at top of string. Circulated bottoms up - no gas. Pulled and laid down Baker seal assembly. Ran in hole with 2 7/8" tubing with Baker drill pipe plug to 6000'.

6-25-75

Ran in and set drill pipe plug in Baker Model "D" packer at 7184'. Pulled out of hole, laying down 2 7/8" tubing. Pulled rotary table and Class III B.O.P.E. stack. Removed tubing head and sent to Shafco for rework (5 1/2"). Installed mud cross, X-over spool and Class III B.O.P.E. stack. Hooked up' choke and kill lines. Reinstalled rotary table.

6-26-75

Tested B.O.P.E. with 1000 psi for 30 minutes - O.K. Rigged up pitcher nipple and flo line. Ran in hole with Baker Model "D" packer plug retriever while picking up

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History of Well FF-#32
September 15, 1975

SANTA PAULA, CALIFORNIA

- 6-26-75 2 7/8" drill pipe and installing rubber drill pipe protectors.
(contd)
- 6-27-75 Continued picking up drill pipe and installing rubber drill pipe protectors. Pulled drill pipe plug out of Baker Model "D" packer at 7184'. Circulated bottoms up.
- 6-28-75 Finished pulling out of hole with Baker drill pipe plug. Ran in hole with Baker Model "R" milling tool on junk sub, on Bowen jars, on 120' of 4 3/4" drill collars and milled out packer at 7184'. Pulled out packer at 7184'. Pulled up hole to 2000'.
- 6-29-75 Idle.
- 6-30-75 Completed pulling out of hole with Baker fished packer. Packer hung up on bit guide and pulled bit guide out of B.O.P.E. stack. Pulled B.O.P.E. stack and reinstalled bit guide. Reinstalled B.O.P.E. stack. Ran in hole with 4 1/8" Economill on 240' of 2 3/8", 4.7#, EUE tubing on 2 7/8" drill pipe to top of fill at 7328'. Cleaned out fill to bottom of 5", 18# liner at 7430' and milled out shoe to 7436'. Circulated high viscosity pill (74#, 60 viscosity, 20 barrels).
- 7- 1-75 Pulled out of hole. Ran in hole with Burns 5" circulating washer on 240' of 2 3/8" EUE tubing on 2 7/8" drill pipe to 7230'. Rigged up HOWCO pump truck and circulated at 900 psi with 3 barrels per minute rate. Washed perforations from 7428' to 7284' (rate at 3 barrels per minute; pressure 600 to 1900 psi). Circulated high-viscosity pill (73#, 50 viscosity, 20 barrels).
- 7- 2-75 Pulled out of hole (swab cups O.K.). Ran in with 5" spear on bumper sub, on jars (55,000#), on 120' of 4 3/4" drill collars, on an accelerator and set spear at 7210'. Jarred on liner for 4-1/2 hours. Released spear. Ran in hole with 5" inside cutter on 30' of 2 7/8" EUE tubing on 5" casing spear, on bumper sub, on jars (55,000#), on 120' of 4 3/4" drill collars, on accelerator.
- 7- 3-75 Made inside cut on 5" liner at 7231'. Recovered liner hanger and 22' of casing. Ran in hole with 5" Burns circulating washer on 2 3/8" tubing stinger.
- 7- 4-75 Idle.
- 7- 5-75 Rigged up cement pump truck. Washed perforations from 7408' to 7270' at the rate of 2.5 to 2.8 barrels per minute at 1000 psi. Circulated bottoms up. Ran in

- 7- 5-75 (cont'd) hole with 5" spear on bumper sub, on jars, on 120' of 4 3/4" drill collars on accelerator and set spear at 7238'. Jarred 2-1/2 hours. Fish did not come free.
- 7- 6-75 Idle.
- 7- 7-75 Ran in hole with Servco 4 1/8" x 5 1/2" x 6" long blades, pilot mill on 4 3/4" of 120' drill collars. Conditioned brine-polymer fluid.
- 7- 8-75 Milled from 7231' to 7257'. Circulated 30-barrel pill (74#, 138 viscosity). Milled from 7257' to 7280'. Circulated bottoms up.
- 7- 9-75 Milled from 7280' to 7350'. Circulated bottoms up.
- 7-10-75 Pulled out of hole. Pilot mill had 1 3/4" of blade left. Ran in with Servco pilot mill #2 (4 1/8" x 5 1/2" x 6 1/8") on 120' of 4 3/4" drill collars and milled from 7350' to 7363'. At 7363' mill did not advance for one hour. Circulated bottoms up.
- 7-11-75 Milled from 7363' to 7406'. Circulated bottoms up.
- 7-12-75 Milled from 7406' to 7430'. Circulated 30-barrel pill (74#, 98 viscosity). Ran in with 6" bit on 120' of 4 3/4" drill collars.
- 7-13-75 Idle.
- 7-14-75 Reamed hole at 7238' to 7420' (top of fill) and cleaned out fill at 7420' to 7430'. Circulated hole. Ran in with 6" x 13" KSA Baker Lockomatic Hole Opener #1 on 120' of 4 3/4" drill collars.
- 7-15-75 Found 7" casing was cemented 13' lower than indicated. . . 7" casing cemented at 7251'. Opened hole from 7251' to 7310'.
- 7-16-75 Ran in with 6" x 13" Hole Opener #2 and opened hole from 7310' to 7341'. Ran in with 6" x 13" Hole Opener #3.
- 7-17-75 Opened hole from 7341' to 7372'. Pulled out of hole and left one cone in hole. Ran in hole with 6" x 13" Hole Opener #4.
- 7-18-75 Opened hole from 7372' to 7378' (6' in 4 hours). Pulled out and cones were bald. Ran in with 6" bit on 120' of 4 3/4" drill collars to 7100'. Conditioned mud and cleaned pit.
- 7-19-75 Continued conditioning mud. Ran in to top of fill at 7380' and cleaned out to 7430'. Ran in hole with 6" x 13" Hole Opener #5.

- 7-20-75 Idle.
- 7-21-75 Opened hole from 7378' to 7402'. Pulled out and left three cones in hole. Ran in with 6" x 13" Hole Opener #6, reamed from 7390'-7402' and opened hole from 7402' to 7408'.
- 7-22-75 Ran in with 6" bit and cleaned out fill from 7410' to 7429'. Circulated 30-barrel pill (74#, 75 viscosity). Ran in with 6" x 13" Hole Opener #7.
- 7-23-75 Opened hole from 7408' to 7424'. Circulated 30-barrel pill (74#, 85 viscosity). Ran in hole with 6" x 13" Hole Opener #8 to 7251' and reamed hole to 7424' and opened hole from 7424' to 7430'. Circulated 30-barrel pill (74#, 78 viscosity).
- 7-24-75 Rigged up Welex and ran Caliper Log from 7430' to 7224' - Caliper O.K. Ran in with 6" bit to 7425' and changed circulating fluid to 78#, 32 viscosity brine-polymer fluid.
- 7-25-75 Picked up 5" liner for conventional gravel pack and hung liner at 7424' (6' off bottom) with top of liner hanger at 7109' (see Liner Detail attached). Set lead seal with 30,000#. Tested lead seal with rig pump at 1000 psi for 15 minutes - O.K. Rigged up Burns. Blanked tool above and below port collar. Straddled port collar and circulated for 30 minutes. Started packing 8-12 gravel at 6:40 P.M. Packing at the rate of 18 cu.ft. per hour.
- 7-26-75 Continued gravel packing at 18 cu.ft. per hour rate. Packed 159 cu.ft. of gravel (calculated volume 150 cu.ft.). Pressure during packing was 500 psi. Backscuttled 2 cu.ft. out of hole. Closed port collar.
- 7-27-75 Idle.
- 7-28-75 Laid down gravel packing tools. Made up and ran Burns 5" circulating washer with 30" spacing on 2 3/8" tubing stinger. Washed perforations from 7424' to 7124' at a pump rate of 2.3 barrels per minute, using a 4-pass cycle. Wash time was 10 minutes per 60' per pass. Blanked washer at 7123'. Circulated hole.
- 7-29-75 Ran in hole with 180' of 2 3/8" tubing stinger on Burns gravel packing tools. Broke circulation, opened port collar, blanked tool above and below port collar, then displaced 7 sacks of gravel to a final pressure of 850 psi. Backscuttled 1-1/2 sacks of gravel to surface. Closed port collar and checked closure. (165 cu.ft. gravel in place - calculated volume 150 cu.ft.). Backscuttled for 30 minutes.
- 7-29-75 Ran in with 6" bit on 7" casing scraper on 120' of 4 3/4" drill collars to 7109'. Pulled out of hole. Ran in with 2 3/8" tubing stinger to top of fill

- 7-29-75 (cont'd) at 7422' and circulated hole. Rigged up McCullough and ran wire-line junk basket to 7109'. Ran in with 7" Baker Model "D" Packer with expendable plug in place and set packer at 7086'.
- 7-31-75 Ran in with 6" bit on 120' of 4 3/4" drill collars to 7000' and changed circulating system to 78# inhibited calcium chloride water. Started out of hole, laying down 2 7/8" drill pipe.
- 8- 1-75 Laid down 2 7/8" drill pipe, 4 3/4" drill collars and Kelly. Trucked in and placed on racks 45 joints of 5 1/2", 17# Extremeline casing and 240 joints of 2 3/8", 4.7#, EUE, 8rd tubing. Started picking up tubing and running in hole.
- 8- 2-75 Completed running tubing to 7000'.
- 8- 3-75 Idle.
- 8- 4-75 Ran in and set Baker 7" Model "C" bridge plug at 55'. Tested 0' to 55' at 1500 psi - no good. Pulled Model "C". Ran in with 7" Baker Model "C" Full-Bore Retrievable Cementer and set tool at 1000'. Tested annulus (0' to 1000') at 1500 psi for 20 minutes - O.K. Pressure tested 7" casing from 1000' to Model "D" Packer at 7086' at 1500 psi for 20 minutes - O.K.
- 8- 5-75 Reset Full-Bore at 6600' and tested 7" casing from 6600' to 7086' at 2400 psi for 30 minutes - O.K. Pulled Full-Bore and set 7" Model "B" Lok-Set at 55'. Tested casing (0' to 55') and B.O.P.E. (2 7/8" pipe rams) to 1500 psi for 20 minutes - O.K. Removed B.O.P.E. and mud spool. Reinstalled 8" x 10" tubing head, top flange bored to land 5 1/2" casing; bottom flange with 7" casing secondary seals (KU modified by Shafco), reinstalled 5 1/2" rams in B.O.P.E. - Class III.
- 8- 6-75 Tested B.O.P.E. at 1500 psi for 15 minutes - O.K. Tested 7" packing at 3500 psi for 30 minutes - O.K. Ran 5 1/2" Burns lead seal hookwall packer on 5 1/2", 17#, R-3 casing with Security Flush Joint end finish to 1286' (31 joints). Hydrotested first 3 joints to 3000 psi for 3 minutes, then re-tested to 3000 psi for 1 minute. Tested balance of string to 3000 psi for 30 seconds.
- 8- 7-75 Continued running and tested 5 1/2" casing.
- 8- 8-75 Continued running and testing - 5 1/2" casing in hole. Casing string is as follows:

BOTTOM TO TOP:

1 Burns 8 5/8" Lead Seal Hookwall Packer
125 Joints 5 1/2", 17#, Security Flush Joint Casing
1-5 1/2", 17#, Cross-Over Joint
12 Joints 5 1/2", 17#, 8rd ST & C with Close Clearance Couplings (5.875")
1-5 1/2", 17#, Cross-Over Joint
36 Joints 5 1/2", 17# Extremeline Casing

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History of Well FF-#32
September 15, 1975

SANTA PAULA, CALIFORNIA

- 8- 8-75 (cont'd) Set lead seal hookwall packer at 6625'. Hydrostatically tested casing string and lead seal - no good.
- 8- 9-75 Re-hydrostatically tested casing and lead seal - no good. Pulled 110,000# on casing to unseat hookwall packer - did not unseat.
- 8-10-75 Idle.
- 8-11-75 Cut off 5 1/2" casing above Hydril bag B.O.P.E. Landed 5 1/2" casing on spider on slips on bag B.O.P.E. with dog collar safety. Made up and ran 5 1/2" Baker Model "B" Lok-Set retrievable bridge plug to 6600'. Could not set - pulled up to 6587' and set bridge plug.
- 8-12-75 Ran in with 5 1/2" inside casing cutter to 6587'. Pulled up to 6582' and cut 5 1/2" casing. Pulled and laid down 38 joints of 5 1/2" casing.
- 8-13-75 Completed pulling and laying down 5 1/2" casing.
- 8-14-75 Ran 5 1/2" spear on bumper sub, on jars (60,000#), on 60' x 4 3/4" drill collars to 6582; jarred five times and recovered. Did not recover lead seal or one slip, but did recover two slips.
- 8-15-75 On sand line ran 4", 5" and 6" magnet to 7086' and recovered small amount of steel trash, but did not recover missing slips. Ran in with 2 7/8" x 4" production tube on Baker seal assembly to 7000' and changed circulating system to 81# per cu.ft. brine-polymer fluid. Calcium chloride water was slightly gas cut. Stabbed into Model "D" at 7086'. Pulled out and re-stabbed, pushing Model "B" expendable plug out. Circulated hole. Re-stabbed seals into Model "D" and set with 6000#. Tested 7" casing from surface to 7086' with 875 psi for 20 minutes - O.K. Retested 7" casing from surface to 7086' with 1060 psi for 20 minutes - O.K.
- 8-16-75 Idle.
- 8-17-75 Idle.
- 8-18-75 Circulated hole at 7050' and lost 156 barrels of fluid. Spotted 60 barrel-LCM pill at 7050' and let stand for four hours. Circulated hole.
- 8-19-75 Made up 5' production tube on 4' seal assembly, on locator sub, on 10' x 5 1/2" casing pup with Baker "F-1" packer in middle, on R-3 casing joint. Plugged seal assembly and tested unit to 3000 psi with water for 3 minutes - O.K. Ran 5 1/2" Security 17# flush joint casing, hydrotesting to 3000 psi for one minute - had three leaks. Laid down 6 joints. Total casing run - 41 joints.

- 8-20-75 Continued running and hydrotesting (3000 psi for one minute) 5 1/2", 17#, Security flush joint casing. Ran 50 joints. Had five leaks and laid down 10 joints.
- 8-21-75 Had trouble testing 5 1/2", 17#, Security flush joint to 3000 psi for one minute. Total Sec. FJ in hole 89 joints. Ran cross-over and 28 joints 5 1/2", 17#, S.T. & C. with close-clearance couplings(5.875"). Testing to 3000 psi for 2-1/2 minutes.
- 8-22-75 Continued running and hydrotesting 5 1/2", 17# casing to 7075'.
- 8-23-75 Pumped 66 barrels of 80#/cu.ft. calcium chloride inhibited water into 5 1/2" x 7" casing annulus (calculated volume 69 barrels). Rigged up Archer-Reed and placed Baker RZP plug in "R" nipple in seal assembly in 5 1/2" casing at 7076'. Tested 5 1/2" casing with 2500 psi. Picked up joint X-line. Made up and stabbed into Model "D" at 7086'. Tested 5 1/2" x 7" annulus with 1400 psi.
- 8-24-75 Idle.
- 8-25-75 Landed 5 1/2" casing with 50,000# on packer and 48,000# on slips (casing detail attached). Stripped out B.O.P.E. Installed slips and packing. Cut off 5 1/2" casing. Installed tubing head and packing. Tested slip packing element at 3500 psi for 30 minutes - O.K. Tested tubing head packing element at 3500 psi for 30 minutes - O.K. Reinstalled B.O.P.E. Tested blind rams and 5 1/2" casing at 1100 psi for 20 minutes - O.K.
- 8-26-75 Retrieved Baker RZP plug from "R" nipple at 7090'. Ran Baker seal assembly with locator sub and latch-in device on Otis "X-N" nipple (empty), on 8' pup, on Otis safety valve system (.81" I.D. by-pass blanking sleeve in place), on 30' tubing joint, on Otis "X" nipple (empty), on 30' tubing joint, on Otis sliding sleeve (closed), on 237 joints 2 3/8" EUE, 8rd tubing.
- 8-27-75 Stabbed into Baker "F-1" packer at 7081' and landed tubing with 5000# compression (tubing detail attached). Installed doughnut plug and removed B.O.P.E. Installed tubing doughnut seals and Christmas tree. Tested doughnut seals at 4500 psi for 30 minutes using Associated Services - test O.K. Tested Christmas tree, using Associated Services, at 4500 psi for 30 minutes - O.K. Displaced circulating fluid with lease salt water. Recovered 142 barrels of circulating fluid. Used 160 barrels of lease salt water. Pulled by-pass blanking sleeve from safety valve system (7060'). Installed Otis "X-N-L" plug (solid bottom) in "X-N" nipple at 7080'. Rig released at 9:00 P.M.

TUBING DETAIL

<u>No.</u>	<u>ITEM</u>	<u>LENGTH</u>	<u>DEPTH</u>
	Below KB	5.00	5.00
	2 3/8" Shafco Doughnut	.40	5.40
1	Pup Joint 2 3/8" EUE, 8rd, N-80	5.68	11.08
1	" " " " " "	2.40	13.48
1	" " " " " "	8.10	21.58
1	" " " " " "	2.35	23.93
235	Joints 2 3/8", 4.7#, EUE, 8rd Tubing	6964.66	6988.59
1	Otis 2 3/8" Sliding Sleeve	3.08	6991.67
1	Joint 2 3/8", 4.7#, EUE, 8rd Tubing	31.18	7022.85
1	Otis 2 3/8" "X" Landing Nipple	1.08	7023.93
1	Joint 2 3/8", 4.7#, EUE, 8rd Tubing	31.17	7055.10
1	Pup Joint 2 3/8", EUE, 8rd, N-80	4.50	7059.60
1	Otis Safety Valve System (detail attached)	11.00	7070.60
1	Pup Joint 2 3/8", 4.7#, EUE, 8rd Tubing	9.18	7079.78
1	Otis "X-N" NO-GO Nipple	1.20	7080.98
1	Baker X-Over 2 3/8" x 2 7/8"	.42	7081.40
1	Baker Latch plus Seals (2 units) with Chamfered 2 3/8" Collar	2.02	7084.14

Tubing Latched into Baker "F-1" Packer at 7082' with 5000# Compression.

"F-1" Packer I.D. 3.000"

Seal Assembly I.D. = 2.375"

INNER CASING (5 1/2") DETAIL

<u>NO.</u>	<u>ITEM</u>	<u>LENGTH</u>	<u>DEPTH</u>
	Below K.B.	6.00	6.00
	Landing Stub Cut-Off	22.32	28.32
22	Joints 5 1/2", 17#, X-Line	879.31	907.63
1	Joint X-Over 5 1/2", 17#, X-Line to 8rd Tubing and Casing	40.99	948.62
62	Joints 5 1/2", 17#, 8rd Tubing and Casing with Close Clearance Couplings (O.D. 5.875")	2493.39	3442.01
1	Joint X-Over 5 1/2", 17#, 8rd Tubing and Casing to Security Flush Joint	37.81	3479.82
88	Joints 5 1/2", 17#, Security Flush Joint	3589.85	7069.67
* 1	Pup Joint 5 1/2", 17#, Security Flush Joint	10.10	7079.77
** 1	X-Over 5 1/2", 17#, Security Flush Joint to Baker Seal Assembly	1.31	<u>7081.08</u>
3	Units Baker Seals	3.77	7085.85
	Baker "R" NO-GO Nipple (I.D. 1.81")	.77	7086.62
	Baker Production Tube	5.04	7091.66

Baker 7" Model "D" Packer Set at 7080'

* Baker 5 1/2" Model "F-1" Packer Set at 7074.67' in
10.10' Pup Joint I.D. = 3.000"

** Baker Seal Assembly O.D. = 3.250"
I.D. = 2.375"

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

Report on Operations

No. T275-229

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

Santa Paula Calif.
July 15, 1975

DEAR SIR:

Operations at well No. "SFZU" FF-32, API No. 037-00686), Sec. 27, T. 3N, R. 16W, S.E., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed on June 24, 1975. Mr. L. Bright, engineer, representative of the supervisor was present from 1000 to 1130. There were also present Mr. C. Downer, foreman

Present condition of well: No additions to casing record since Report P275-165.

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.

r
cc: Operator

THOMAS E. GAY, JR., Acting Chief

~~JOHN E. McATEER, Jr.~~
~~SEAL OF THE STATE OF CALIFORNIA~~

By LOD Petyus Deputy

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

REPORT ON PROPOSED OPERATIONS No. P 275-165

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

Santa Paula, Calif.
May 12, 1975

DEAR SIR:

(037-00686)

Your proposal to alter casing Well No. "SEZU" FF-32,
Section 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,
dated 4/28/75, received 5/6/75, 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. NO CONTAMINANTS OR TOXIC MATERIAL SHALL BE USED IN ANY DRILLING FLUID THAT IS TO BE PLACED IN AN UNLINED SUMP.
2. 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.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT.

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

Blanket Bond
ALL:b
cc: Operator

Thomas E. Gay, Jr., Acting Chief
JOHN F. MATTHEWS, Jr., State Oil and Gas Supervisor

By *John F. Matthews, Jr.*, Deputy

DIVISION OF OIL AND GAS

Notice of Intention to ~~Deepen, Redrill, Plug or~~ Alter Casing in Well

This notice must be given before work begins; one copy only

Handwritten initials

Los Angeles Calif. April 28 1975

DIVISION OF OIL AND GAS

In compliance with Section 3203, Chapter 93, Statutes of 1939, notice is hereby given that it is our intention to commence the work of ~~deepening, redrilling, plugging or~~ altering casing at Well No. FERNANDO FEE #32
(Cross out unnecessary words)

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. 7435'
- 2. Complete casing record, including plugs:

13 3/8" cemented 498'
 7" cemented 7238' WSO by D.O.G. on shoe
 224' 5" landed 7430', top 7206', slotted 7270'-7430'
 shot two 1/2" jet holes per foot 7430'-7422',
 7406'-7372', 7364'-7356' and 7336'-7306'.

DIVISION OF OIL AND GAS
 RECEIVED
 MAY 6 1975
 SANTA PAULA, CALIFORNIA

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

The proposed work is as follows:

- 1. Move in rig and kill well. Install B.O.P.E. and test.
- 2. Pull tubing, laying down same. Pick up drill pipe, recover packer.
- 3. Cut and recover 5" liner - milling, if necessary.
- 4. Open hole to 13" 7238'-7435', land 280' 5" liner and gravel pack.
- 5. Set packer, plug and install new wellhead equipment.
- 6. Run 6700' 5 1/2" casing - hang in old tubing head.
- 7. Lay down drill pipe.
- 8. Run tubing and complete.

MAP	MAP B/L/D	CAND	GOND	FORMS	
				11	12
			bb	✓	✓

P.O.Box 54790, Terminal Annex
 Los Angeles, California 90054
 (Address)
 (213) 689-3561
 (Telephone No.)

PACIFIC LIGHTING SERVICE CO.,
 (Name of Operator)
 By P. S. Magruder, Jr.
 P. S. Magruder, Jr.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATIONDIVISION OF OIL AND GAS
RECEIVED

DIVISION OF OIL AND GAS

DEC 11 1972

History of Oil or Gas Well

LONG BEACH, CALIFORNIA

OPERATOR Pacific Lighting Service Co. FIELD Aliso Canyon

Well No. SFZU FF 32, Sec. 27, T. 3N, R. 16W, SB B. & M.

Date _____, 19_____

Signed *A. B. Maguire Jr.*

P. O. Box 54790, Terminal Annex

Los Angeles, CA 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.

1972

Date

- 10-11 Moved in CPS D-type workover rig.
- 10-12 Killed tubing with 40 barrels Polymer-Brine workover fluid. Pulled Otis storm choke and opened Otis XO side door sleeve. Killed well and circulated out 220 barrels of packer fluid. Installed and tested class III BOPE to 1500 psi, OK.
- 10-13 Pulled tubing and Guiberson KV-30 packer. Ran 6-1/8" bit and positive 7" scraper to top of liner at 7206'.
- 10-14 Ran 4-1/8" bit and positive 5" scraper and cleaned out tight spot at 7325' and rotated and cleaned out to bottom of 5" liner at 7430'. Ran Neutron Life-Time Log and Cement Bond Log.
- 10-15 Idle
- 10-16 Set Baker Lok-Set bridge plug at 7200' and pressure tested bridge plug and 7" casing at 1500 psi for 15 minutes, OK. Removed BOPE.
- 10-17 Removed tubing head and unlanded 7" casing. Found 7" casing landed at more than 312,000#. Found tip of 7" casing worn to approximately .019" wall remaining on one side. Extended 7" casing by making butt weld. X-rayed weld, OK.
- 10-18 Ran Dia-Log Caliper Survey in 7" casing from 1000' to surface finding 0.20" wall remaining at 978' and 0.19" wall remaining at top of 7". Based on Dia-Log Survey decided to run protective string of 5-1/2" casing at a later date. Cut off existing 13-3/8" casing head and base plate and welded on a new 5000 psi casing head by making butt weld in 13-3/8" casing 2" above cellar floor.

1972

- 10-19 X-rayed 13-3/8" weld, OK. Relanded 7" casing with 130,000#. Installed new Shaffer 5000 psi seal flange and tubing head and tested seals to 4500 psi, OK. Re-installed BOPE and tested to 2000 psi, OK. Ran Dia-Log Caliper Survey in 7" casing showing less than 1/4" wall remaining at 6503', 2556', 2565' and 1470'.
- 10-20 Pulled bridge plug from 7200'. Using Go-International re-perforated two 1/2" holes per foot with DML 10 jets from 7430' to 7422', 7406' to 7372', 7364' to 7356' and 7336' to 7306'. Set Baker Model D production packer with check valve at 7184'.
- 10-21 Ran 2-7/8", J-55 8 round tubing with five Baker seal units and landed on donut with 12,000# on packer as detailed below:

Below K.B.	7.10
Fatigue nipple & donut	1.80
Pup joint	2.04
Pup joint	4.02
Pup joint	10.00
228 Joint	7139.60
Otis XO side door nipple (open)	3.12
Pup joint	10.00
Otis XN nipple with NX mandrel & type T injection valve	1.14
Baker Locator Sub	<u>1.68</u>
TOTAL	7180.50

Removed BOPE. Installed and tested production head to 4500 psi, OK. Made up swabbing tools.

- 10-22 Idle
- 10-23 Swabbed fluid down to 5000'.
- 10-24 Swabbed fluid to 6900'. Total 233 barrels.
- 10-25 Released rig.

DIVISION OF OIL AND GAS
RECEIVED

DEC 11 1972

LONG BEACH, CALIFORNIA

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 172-1075

Mr. P. S. Magruder, Jr., Agent
PACIFIC LIGHTING SERVICE CO.
P.O. Box 54790, Terminal Annex
Los Angeles, CA 90054

Inglewood, Calif.
Sept. 19, 1972

DEAR SIR: alter casing and convert
Your proposal to to gas storage Well No. "SFZU" FF-32 (037-00686)
Section 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County,
dated 9/8/72, received 9/13/72, has been examined in conjunction with records filed in this office.

NOTE: 5" 1d 7206'-7430'.

THE PROPOSAL IS APPROVED PROVIDED blowout prevention equipment with a minimum 3000 psi working pressure shall be installed and maintained in operating condition during all stages of perforating.

ADS:dr

cc Company
Blanket Bond

to file

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

By *W. L. Ingram*, Deputy

STATE OF CALIFORNIA DEPARTMENT OF NATURAL RESOURCES

SEP 13 1972

DIVISION OF OIL AND GAS

INGLEWOOD, CALIFORNIA

Notice of Intention to Deepen, Redrill, Plug or Alter Casing in Well

This notice must be given before work begins; one copy only

Los Angeles Calif. September 8, 1972

DIVISION OF OIL AND GAS

Inglewood Calif.

In compliance with Section 3203, Chapter 93, Statutes of 1939, notice is hereby given that it is our intention to commence the work of deepening, redrilling, plugging or altering casing at Well No. "SF2U" FF-32 (Fernando Fee 32)

Sec. 27, T. 3N, R. 16W, SB B. & M.

Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 7435' Redrill No. 2

2. Complete casing record.

13-3/8" 54.5# C. 498
7" 23 & 26# C. 7238
WSO Shoe 7238:
224' 5" 18# Landed 7430'
Perforated 7270' - 7430' 2" x 80 M slots 12 Rows on 6" Centers
Top Liner Hanger 7206'.

Handwritten note: 7430 / 224 / 7206

3. Last produced. 5-10-71 (Date) 5 Bbls. (Net Oil) 26.0 (Gravity) 33.3% (Cut)

The proposed work is as follows:

Jet Perforate 2 1/2" holes per foot in gas productive intervals from 7282' to 7435' as required to convert well to a gas storage well.

Handwritten note: 7430'

Handwritten note: Alter casing of Convert to Gas Storage

Table with columns: MAP, MAP BOOK, CARDS, BOND, FORMS (114, 121). Contains handwritten entries: ARG, B, ARG, ARG.

PACIFIC LIGHTING SERVICE COMPANY

(Name of Operator)

By P.S. Maguides

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

830 North La Brea Avenue

Inglewood, California

September 26, 1968

Mr. Mr. C. G. Nelson, Agent
Getty Oil Co., Operator
P. O. Box 811
Ventura, California 93001

DEAR SIR:

Your ~~request dated~~ letter dated August 26, 1968, relative to change in designation of well(s) in Sec. 27, 28, 34, T.3 N., R.16 W., S.B. B. & M., Aliso Canyon field, Los Angeles County, District No. 1, has been received;

and in accordance with Section 3203, Public Resources Code, reading in part as follows:

"* * * The number or designation by which any well heretofore drilled has been known, and the number or designation specified for any well in a notice filed as required by Section 3203, shall not be changed without first obtaining a written consent of the Supervisor."

the proposed change in designation is hereby authorized as follows: (formerly owned by Getty Oil Co.)

See attached list.

ag
cc: F. E. Kasline
Production Dept.
Conservation Committee

Corrections Made as Follows:	By Whom
Form 114	
" 115	
" 121	ab
" 143	
Cards	
Production Reports	cc
Well Records (Records)	ab
Field Maps (Reports)	
Field Maps 150	
Book 9-26-68	Jeff

F. E. KASLINE

E. R. MURRAY-AARON
State Oil and Gas Supervisor

By Wm C Bailey II
Deputy Supervisor

Proposed Changes of Well Designation

Old Designation:

New Designation:

Sec. 27:

"Fernando Fee" 32
 "Porter" 12
 " 30
 " 31
 " 32
 " 35
 " 37
 " 45

"SFZU" FF-32 (037-00686) ✓
 " P-12 (037-00701) ✓
 " X P-30 (037-00717) ✓
 " P-31 (037-00718) ✓
 " P-32 (037-00719) ✓
 " X P-36 (037-00723) ✓
 " P-37 (037-00724) ✓
 " / P-45 (037-00732) ✓

Sec. 28:

"Porter" 4
 " 25
 " 26
 " 34
 " 35
 " 38
 " 39
 " 40
 " 41
 " 42
 " 43
 " 44
 " 46
 " 47
 "Porter-Season" 42

"SFZU" P-4 (037-00699) ✓
 " P-25 (037-00712) ✓
 " P-26 (037-00713) ✓
 " P-34 (037-00721) ✓
 " P-35 (037-00722) ✓
 " P-38 (037-00725) ✓
 " P-39 (037-00726) ✓
 " P-40 (037-00727) ✓
 " P-41 (037-00728) ✓
 " P-42 (037-00729) ✓
 " P-43 (037-00730) ✓
 " P-44 (037-00731) ✓
 " P-46 (037-00733) ✓
 " P-47 (037-00734) ✓
 " PS-42 (037-00753) ✓

Sec. 34:

"Fernando Fee" 31
 " 33
 " 34
 " 35
 "Mission-Adrian Fee" 3
 " 4
 " 5

"SFZU" FF-31 (037-00685) ✓
 " FF-33 (037-00687) ✓
 " FF-34 (037-00688) ✓
 " X FF-35 (037-00689) ✓
 " MA-3 (037-00693) ✓
 " MA-4 (037-00694) ✓
 " MA-5 (037-00695) ✓

Wm Bailey

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

REPORT OF PROPERTY AND WELL TRANSFER

Field or County **Los Angeles** District **1**
Former Owner: **Getty Oil Company** Date **Sept. 26, 1968**

Description of Property **Sec. 27, 28, 34, T. 3 N., R. 16 W., S. B. D. & M.**

(How → SFZU FF-32)
Sec. 27:
 "Fernando Fee" 32 (037-00686)
 "Porter" 12 (037-00701)
 " " 30 (037-00717)
 " " 31 (037-00718)
 " " 32 (037-00719)
Sec. 28:
 "Porter" 4 (037-00699)
 " " 25 (037-00712)
 " " 26 (037-00713)
 " " 34 (037-00721)
 " " 35 (037-00722)
 " " 38 (037-00725)
 " " 39 (037-00726)
Sec. 28:
 "Porter" 40 (037-00727)
 " " 41 (037-00728)
 " " 42 (037-00729)
 " " 43 (037-00730)
 " " 44 (037-00731)
 " " 46 (037-00733)
 " " 47 (037-00734)
 "Porter-Seanon" 42 (037-00753)
Sec. 34:
 "Fernando Fee" 31 (037-00685)
 " " 33 (037-00687)
 " " 34 (037-00688)
 " " 35 (037-00689)
 "Mission-Adrian Fee" 3 (037-00693)
 " " 4 (037-00694)
 " " 5 (037-00695)

Date of Transfer **August 1, 1968**
 New Owner: **GETTY OIL COMPANY, OPERATOR**
 Address: **3450 Wilshire Boulevard, Room 720
 Los Angeles, California 90005**
 Telephone No. **381-7151**
 Type of Organization **Corporation**
 Reported by: **C. G. Nelson for Getty Oil Co. & Getty Oil Co., Operator (letter of**
 Confirmed by: **8-7-68) ***
 New Operator New Status **PA**, Old Operator New Status **PA**
 Request Designation of Agent **No**

Remarks:

cc: **F. E. Kaeline**
Production Dept.
Conservation Committee
** Ownership Title*

[Signature]
 Deputy Supervisor

	INITIALS	DATE	
Form 121	<i>UG</i>	<i>9-26-68</i>	
New Well Cards	<i>✓</i>	<i>✓</i>	
Well Records	<i>✓</i>	<i>✓</i>	
Electric Logs	<i>✓</i>	<i>✓</i>	
Production Reports	<i>✓</i>	<i>✓</i>	
Map and Book	<i>✓</i>	<i>9-26-68</i>	
Form 148			
Notice to be cancelled			
Bond status	<i>Blanket Pro. da</i>		

LEGEND	
PA	Producing Active
NPA	Non Potential Active
PI	Potential Inactive
NPI	Non Potential Inactive
Ab	Abandoned or No More Wells

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

830 North La Brea Avenue
Inglewood,

California 90302

October 8, 1964

Mr. E. E. Lee
P. O. Box 811
Ventura, California
Agent for TIDEWATER OIL CO.

DEAR SIR:

Mr. W. F. Murray's
Your request dated September 18, 1964, relative to change in designation of well(s) in Sec. 27 & 34, T. 3 N., R. 16 W., S.B. B. & M., Aliso Canyon field, Los Angeles County, District No. 1, has been received; and in accordance with Section 3203, Public Resources Code, reading in part as follows:

"* * * The number or designation by which any well heretofore drilled has been known, and the number or designation specified for any well in a notice filed as required by Section 3203, shall not be changed without first obtaining a written consent of the Supervisor."

the proposed change in designation is hereby authorized as follows:

<u>Old Designation</u>		<u>New Designation</u>	
"Fernando" 1,	Sec. 27	"Fernando Fee" 1,	Sec. 27
"Fernando" 11,	" 27	"Fernando Fee" 11,	" 27
"Fernando" 12,	" 27	"Fernando Fee" 12,	" 27
"Fernando" 30,	" 34	"Fernando Fee" 30,	" 34
"Fernando" 31,	" 34	"Fernando Fee" 31,	" 34
"Fernando" 32,	" 27	"Fernando Fee" 32,	" 27
"Fernando" 33,	" 34	"Fernando Fee" 33,	" 34
"Fernando" 34,	" 34	"Fernando Fee" 34,	" 34
"Fernando" 35,	" 34	"Fernando Fee" 35,	" 34

mt
CC- Mr. E. R. Murray-Aaron
Prod. Dept.
Conservation Committee

E. R. MURRAY-AARON
State Oil and Gas Supervisor

By Wm. C. Baily
Deputy Supervisor

March 26, 1963

Mr. J. M. Tharp, Jr.
District Manager
Tidewater Oil Company
P. O. Box 811
Ventura, California

Dear Mr. Tharp:

This is to acknowledge receipt of your letter of March 22, 1963, notifying this office of your intention to perform a short flow test at your well "Fernando" 32, Sec. 27, T. 3 N., R. 16 W., S.B.B. & M., Aliso Canyon field.

The test, as described in your letter, is approved as being in compliance with the provisions of the July 18, 1961, Order Modifying Judgment Granting Permanent Injunction, Los Angeles County Superior Court of the State of California in the case of the People vs. Carlton Beal, et al, relating to production of gas from the Sesnon zone of Aliso Canyon field.

It is understood that you will notify this office if and when you might find it necessary to test the well in any manner other than that proposed in your letter of March 22.

Sincerely,


WM. C. BAILEY
Deputy Supervisor

WCB:rw

*Completed producing
prop + book 2-28-64 WCB*



TIDEWATER OIL COMPANY

P. O. Box #811
Ventura, California

March 22, 1963

DIVISION OF OIL AND GAS
RECEIVED

MAR 25 1963

INDEWEAR! 22/2/63/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100

Mr. William C. Bailey, Deputy Supervisor
Division of Oil and Gas
830 N. La Brea Avenue
Inglewood 3, California

Dear Sir:

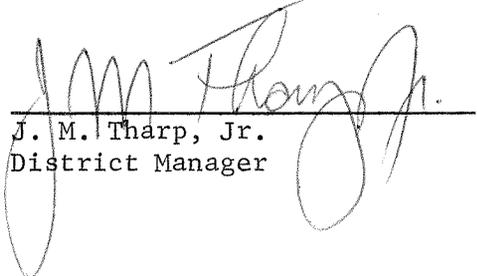
In compliance with the provisions of the July 18, 1961 Order Modifying Judgement Granting Permanent Injunction, Los Angeles County Superior Court of the State of California in the case of the People vs. Carlton Beal, et al relating to production of gas from the Sesnon Zone of the Aliso Canyon Oil Field, we submit this notice of our intention to test the Sesnon Zone as a prospective gas storage reservoir.

We propose to produce our Fernando Fee well #32 for the purpose of obtaining a representative sample of Sesnon Zone gas cap material. The sample will be utilized for obtaining a fractional analysis and other data pertinent to current negotiations with Pacific Lighting Gas Supply Company relative to a proposed gas storage project.

Fernando well #32 is a gas cap well that has been shut-in since completion except for short duration tests. The last such test was conducted in August, 1961 for the purpose of obtaining deliverability data. Our intention is to place this well on production on or about March 27, 1963 at a rate of approximately 2000 MCF per day for a period of four to six hours. Near the end of this flow period we propose to take the desired samples of the produced gas. Following the sampling, the well will be returned to its shut-in status.

Yours very truly,

TIDEWATER OIL COMPANY



J. M. Tharp, Jr.
District Manager

RGT:brm

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

TIDE WATER ASSOCIATED OIL COMPANY

ALISO CANYON

FF-32

Operator FERNANDO 32 Field 27 3 N 16 W S.I.
Well No. 1523.93' South and 1876.76' East of Station #84 Sec. 27, T. 3 N, R. 16 W, B. & M. 2001.99
Location Station #84 Elevation of derrick floor above sea level 2001.99 feet.

In compliance with the provisions of Chapter 93, Statutes of 1939, 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.
January 28, 1949

Date W. E. Perkes R. S. Curl Signed J. C. Foster Title Agent
(Engineer or Geologist) (Superintendent) (President, Secretary or Agent)

Commenced drilling July 10, 1948 Plugged 5040' Completed drilling December 19, 1948 Drilling tools Cable Rotary
Total depth R.D. 7435' Plugged depth 1207' GEOLOGICAL MARKERS DEPTH
Junk (Orig. Hole) Johnston packer, tail pipe, and 1/2 of safety joint. Top at 7335'.

Commenced producing December 22, 1948 (date) Flowing/gas lift/pumping (cross out unnecessary words)

12/22/48
Initial production
Production after 30 days

Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
0		0	4878 - 5049 Rate	2400#	2400#
S.I.					

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 Casing landed in	Number of Sacks of Cement	Depth of Cementing if through perforations
3-3/8"	7438'	0'	54.5#	New	Seamless	J-55	11-1/2"	300	
7"	7235'	0'	25 & 23#	New	Seamless	J-55, K-80	11"	500	
5"	7130'	7206'	18#	New	Seamless	J-55	6"	0	

PERFORATIONS

Size of Casing	From	To	Size of Perforations	Number of Rows	Distance Between Centers	Method of Perforations
5"	7206 ft.	7430 ft.	60 Mesh 2" slots	12	6"	6" undercut by Pacific
	ft.	ft.				
	ft.	ft.				
	ft.	ft.				
	ft.	ft.				

Electrical Log Depths 498' - 7403' & 4440' - 7476' & 4150' - 7435' (Attach Copy of Log)

DIVISION OF OIL AND GAS

History of Oil or Gas Well

ELITE WATER ASSOCIATED OIL COMPANY

ALISO CANYON

OPERATOR _____ FIELD _____

FERNANDO #32

27

3 N

16 W

S.B.

Well No. _____, Sec. _____, T. _____, R. _____ B. & M. _____

Signed _____

January 28, 1949

Agent

Date _____ Title _____

(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

1949

Date	Description
3/18 - 3/19	Graded road.
3/20 - 3/21	Idle.
3/22 - 4/9	Graded road.
4/10	Idle.
4/11	Graded road.
4/12 - 4/25	Graded road and rig site.
4/26	Graded rig site and d&g sump.
4/27 - 4/29	Graded rig site.
4/30 - 5/1	Graded road and rig site.
5/2 - 5/3	Graded road and sump.
5/4 - 5/7	Finished grading road, rig site, and sump. Dug cellar.
5/8 - 5/9	Idle.
5/10 - 5/11	Built foundation forms.
5/12	Poured foundation concrete.
5/13	Finished pouring foundation concrete.
5/14	Erected derrick.
5/15 - 5/16	Idle.
5/17	Erected derrick.
5/18	Finished erecting derrick.
5/19	Built casing racks.
5/20	Finished building casing racks.
5/21 - 5/23	Idle.
5/24	Graveled road.
5/25 - 5/27	Oiled road.
5/28 - 6/2	Idle.
6/3 - 6/5	Moved in rotary equipment
6/6 - 6/8	Rigged up rotary equipment.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR WIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON
Well No. HERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S.B.B. & M.
Signed J. C. Truster
Date January 28, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date 1948 (Cont'd)

6/9 Finished rigging up rotary. Mixed mud and drilled rat hole.
6/10 Spudded 12-1/4" hole at 12:00 Noon and drilled to 70'. Opened 12-1/4" hole to 17-1/2" from surface to 70'.
6/11 Drilled 12-1/4" hole from 70' to 134'.
6/12 Drilled 12-1/4" hole from 134' to 431'.
6/13 Drilled 12-1/4" hole from 431' to 653'.
6/14 Drilled 12-1/4" hole from 653' to 841'.
6/15 Drilled 12-1/4" hole from 841' to 1035'.
6/16 Drilled 12-1/4" hole from 1035' to 1197'.
6/17 Drilled 12-1/4" hole from 1197' to 1241'. Lost cutters from bit in hole. Ran junk basket and recovered cutters.
6/18 Drilled 12-1/4" hole from 1241' to 1356'.
6/19 Drilled 12-1/4" hole from 1356' to 1633'.
6/20 Drilled 12-1/4" hole from 1633' to 1820'. Opened 12-1/4" hole to 17-1/2" from 70' to 138'.
6/21 Opened 12-1/4" hole to 17-1/2" from 138' to 498'. Ran and cemented 13-3/8" Youngstown S&O 54.5# casing at 498' with 350 sacks Victor Construction cement treated with quick setting chemical. Spot welded bottom two joints. Had good cement returns to surface. Pressure increased from 200 - 550# when plugs lumped. Time 7:00 P.M. International Cementers.
6/22 Drilled out cement and plugs from 492' to 510'. Cleaned out to 1820' and drilled to 1843'.
6/23 Drilled 11" hole from 1843 to 2240'.
6/24 Drilled 11" hole from 2240' to 2426'. Lost portion of bit in hole at 2426'. Running junk basket.
6/25 Recovered portions of bit lost in hole. Drilled 11" hole from 2426' to 2522'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TITE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON
Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. S.B. B. & M.
Signed J. C. Foster
Date January 23, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1948

(Cont'd)

6/26	Drilled 11" hole from 2522' to 2569'.
6/27	Drilled 11" hole from 2569' to 3186'.
6/28	Drilled 11" hole from 3186' to 3520'.
6/29	Drilled 11" hole from 3520' to 3595'. Lost cutters from bit in hole at 3540'. Ran Globe Basket and recovered junk.
6/30	Drilled 11" hole from 3595' to 3826'.
6/31	Drilled 11" hole from 3826' to 4100'.
7/1	Drilled 11" hole from 4100' to 4341'.
7/2	Drilled 11" hole from 4100' to 4341'.
7/3	Drilled 11" hole from 4341' to 4518'.
7/4	Drilled 11" hole from 4518' to 4699'.
7/5	Drilled 11" hole from 4699' to 4998'.
7/6	Drilled 11" hole from 4998' to 5220'.
7/7	Drilled 11" hole from 5220' to 5633'.
7/8	Drilled 11" hole from 5633' to 5855'.
7/9	Drilled 11" hole from 5855' to 5934'.
7/10	Drilled 11" hole from 5934' to 6030'.
7/11	Drilled 11" hole from 6030' to 6244'.
7/12	Drilled 11" hole from 6244' to 6448'.
7/13	Drilled 11" hole from 6448' to 6676'.
7/14	Drilled 11" hole from 6676' to 6797'.
7/15	Drilled 11" hole from 6797' to 6856'. Repaired pump motor and changed drilling lines.
7/16	Drilled 11" hole from 6856' to 7103'.
7/17	Drilled 11" hole from 7103' to 7278'. Ran Schlumberger electric log which stopped at 6910'. Conditioned mud and killed gas.
7/18	Conditioned mud and killed gas. Ran Schlumberger electric log to 7278'. Ran dip meter survey at 7272'. Well is 11.42' south, 19.36' west.
7/19	Conditioned mud and killed gas. Ran Eastman drill pipe survey to 7278'.
7/20	Cored 8-1/2" hole from 7278' to 7318'.

SUBMIT IN DUPLICATE
STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANTON

Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. B. B. & M.

Signed J. C. Troster
P.

Date January 25, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1948

(Cont'd)

7/21
7/22

Conditioned mud. Prepared to run formation test.
Ran Johnston Formation tester and set packer on formation shoulder at 7278' with hole open to 7318'. Could not open trip valve. Pulled tester and found 30 stands of mud on top of trip valve. Re-ran tester with 1000' of water cushion and set packer on formation shoulder at 7278' with hole open to 7318'. Opened trip valve at 4:35 P.M. and packer slid to 7280' before holding. Had strong blow with gas to surface in 3 minutes and fluid to surface in 5 minutes. After flowing water cushion and mud produced gas at the rate of 9000 MCF per day with maximum rate of 10,500 MCF. Pulled tester loose after being open 20 minutes and found 80' of fluid remaining in drill pipe, top 30' high gravity condensate and remaining 50' mud.

7/23
7/24
7/25

Cored 8-1/2" hole from 7318' to 7325'.
Cored 8-1/2" hole from 7325' to 7403'.
Conditioned mud. Hung 4" blank drill pipe at 7400'. Pumped in 35 sacks Colton Hi-temperature cement in bulk. Final pressure 200#. Time 11:25 P.M. International Cementers Inc. Pulled up drill pipe to 7200' and circulated.

7/26
7/27

Conditioned mud. Cleaned out cement from 7350' to 7365'. Opened 8-1/2" hole to 7340'.
Opened 8-1/2" hole to 11" from 7278' to 7340'. Cleaned out 8-1/2" hole from 7340' to 7365'.

7/28

Ran Johnston Formation tester on 4-1/2" drill pipe with 1000' of water cushion and set packer on formation shoulder at 7340' with hole open to 7365'. Opened tester at 8:00 A.M. and had strong blow with gas to surface in 3 minutes and fluid to surface in 6 minutes. Well began producing gas at rate of 5000 MCF per day and declined to rate of 100 MCF per day after 25 minutes. Water

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. B. B. & M.

Signed J. C. Foster

Date January 25, 1949 Title Agent
(President, Secretary or Agent)

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Date

1949

7/28 (Cont'd)

cushion produced with gas as a light spray. Closed tester after being open 25 minutes and tried to pull packer loose but without success. Jarred on tester for 2 hours then backed off tester at safety joint leaving packer, tail pipe, and 1/2 of safety joint in hole. Recovered 65 stands of new fluid, top 6 stands drilling mud, and balance salt water testing 525 g/g. Hung blank drill pipe at 7335' and pumped 200 sacks Colton Hi-temperature cement in, followed by 530 cu.ft. of mud. Pulled 5 stands drill pipe and circulated. Located top of hard cement at 7030'.

7/29

Rung 1-1/2" drill pipe at 7030' and pumped in 200 sacks Colton Hi-temperature cement, followed by 524 cu.ft. of mud. Final pressure 1250#. Pulled 5 stands and circulated. Time 7:00 A.M. At 3:00 P.M. located top of hard cement at 6607'. At 7:00 P.M. hung drill pipe at 5147' and pumped in 200 sacks Colton Slow cement, followed by 364 cu.ft. of mud. Final pressure 1500#. Pulled 5 stands and circulated. Located top of plug at 4500'.

7/30

Standing cemented.

7/31

Cleaned out hard cement from 4895' to 4962'.

8/1

Cleaned out hard cement from 4962' to 4975' with 7-1/2" bit. Ran Eastman knuckle joint with 5-1/4" bit at 4975' and re-drilled to 4990'.

8/2

Opened 5-1/4" hole to 7-1/2" from 4990' to 5004'. Opened 7-1/2" hole to 11" from 4962' to 5004', and cleaned out cement to 5022'. Surveyed in Eastman spudding bit at 5022'.

8/3

Set Eastman removable whipstock at 5022' and drilled by to 5036' with 7-1/2" bit. Pulled whipstock and opened 7-1/2" to 11" from 5022' to 5032'.

8/4

Re-drilled 7-1/2" hole from 5036' to 5054'. Opened 7-1/2" hole to 11" from 5032' to 5054'. Reamed 11" hole from 1900' to 2850' with Selvers reamer.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR THE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO #12, Sec. 27, T. 3 N, R. 16 W, S.E. B. & M.

Signed J. C. Foster
P.

Date January 28, 1949 Title Agent
(President, Secretary or Agent)

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Date
1949

(Cont'd)

- 8/5 Reamed 11" hole from 2850' to 5018'.
- 8/6 Could not get inside whipstock hole.
- 8/7 Cleaned out to 5040' with 11" bit. Ran Eastman spudding bit at 5040'.
Set Eastman whipstock at 5040' and drilled by to 5050'.
- 8/8 Re-drilled by Eastman whipstock from 5050' to 5055' with 8-1/2" bit.
Pulled whipstock and opened 8-1/2" hole to 11" from 5040' to 5052'.
Re-drilled 7-1/2" hole from 5055' to 5089'.
- 8/9 Opened 7-1/2" hole to 11" from 5052' to 5089'. Re-drilled 11" hole
from 5089' to 5144'.
- 8/10 Re-drilled 11" hole from 5144' to 5234'.
- 8/11 Re-drilled 11" hole from 5234' to 5274'.
- 8/12 Re-drilled 11" hole from 5274' to 5421'.
- 8/13 Re-drilled 11" hole from 5421' to 5552'.
- 8/14 Re-drilled 11" hole from 5552' to 5696'.
- 8/15 Re-drilled 11" hole from 5696' to 5788'.
- 8/16 Re-drilled 11" hole from 5788' to 5888'.
- 8/17 Re-drilled 11" hole from 5888' to 5964'.
- 8/18 Re-drilled 11" hole from 5964' to 6076'.
- 8/19 Re-drilled 11" hole from 6076' to 6154'.
- 8/20 Re-drilled 11" hole from 6154' to 6250'.
- 8/21 Re-drilled 11" hole from 6250' to 6349'.
- 8/22 Re-drilled 11" hole from 6349' to 6427'.
- 8/23 Re-drilled 11" hole from 6427' to 6585'.
- 8/24 Re-drilled 11" hole from 6585' to 6659'.
- 8/25 Re-drilled 11" hole from 6659' to 6705'.
- 8/26 Re-drilled 11" hole from 6705' to 6855'.
- 8/27 Re-drilled 11" hole from 6855' to 6920'. Cored 8-1/2" hole from
6920' to 6930'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR FIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. R. B. & M.

Signed J. C. Foster

Date January 28, 1949 Title Agent

(President, Secretary or Agent)

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Date

1949

(Cont'd)

8/28 Cored 8-1/2" hole from 6930' to 6975'.
 8/29 Cored 8-1/2" hole from 6975' to 6995'.
 8/30 Opened 8-1/2" hole to 11" from 6920' to 6995'. Re-drilled 11" hole from 6995' to 7021'.
 8/31 Re-drilled 11" hole from 7021' to 7116'.
 9/1 Re-drilled 11" hole from 7116' to 7214'.
 9/2 Re-drilled 11" hole from 7214' to 7279'. Cored 8-1/2" hole from 7279' to 7287'.
 9/3 Cored 8-1/2" hole from 7287' to 7317'.
 9/4 - 10/2 IDLE, on account of strike.
 10/3 Cleaned out and conditioned mud to 4145'.
 10/4 Cleaned out and conditioned mud from 4145' to 7317'.
 10/5 Cleaned out and conditioned mud from 7240' to 7317'. Cored 8-1/2" hole from 7317' to 7336'.
 10/6 Cored 8-1/2" hole from 7336' to 7406'.
 10/7 Cored 8-1/2" hole from 7406' to 7419'. Opened 8-1/2" hole to 11" from 7280' to 7310'. Cleaned out 8-1/2" hole from 7310' to 7419'.
 10/8 Ran Johnston tester on 4-1/2" drill pipe with 12 stands of water cushion and set packer on formation shoulder at 7310' with hole open to 7419'. Opened 3/8" bean at 6:15 P.M. Had fair steady blow throughout 1/2 hour test. Shut on tester 2 hours before packer came loose. Recovered 7 stands of new fluid. Top 4 stands heavy viscous gassy mud. Bottom 3 stands oily gassy mud. No free water in evidence. Sample of drilling fluid one stand from bottom tested 410 g/g. Pressure Bomb Charts checked details of test.
 10/9 Opened 8-1/2" hole to 11" from 7310' to 7419' and re-drilled 11" hole from 7419' to 7425'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR ELIZABETH ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. BERNARD 432, Sec. 27, T. 3 N, R. 16 W, S.B. & M.

Signed J. C. Foster
P.

Date January 25, 1969 Title Agent
(President, Secretary or Agent)

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Date 1968 (Cont'd)

- 10/10 Cored 3-1/2" hole from 7425' to 7454'.
- 10/11 Ran Schlumberger electric log at 7454'. Cleaned out 11" hole to 7425'. Cleaned out 3-1/2" hole from 7425' to 7454'.
- 10/12 Ran Johnston tester on 4-1/2" drill pipe and set packer on formation shoulder at 7425' with hole open to 7454'. Opened 3/8" down at 12:00 Noon. Had medium steady blow with gas to surface in 10 minutes, then hard strong blow for balance of 32-minute test. Packed packer loose after jarring for 15 minutes and recovered 51 stands of new fluid (70 barrels): top 2 stands gassy drilling mud; next 16 stands water cut drilling mud testing 513 g/g; then 8 stands of thin muddy water testing 656 g/g; then 25 stands of salt water testing 766 g/g. Pressure Bomb Charts checked details of test.
- 10/13 Hung 4-1/2" drill pipe at 7464' and plugged with 100 sacks Colton Hi-temperature cement, followed by 350 cu.ft. of mud. Final pressure 800#. Pulled drill pipe to 5124' and plugged with 150 sacks Colton Hi-temperature cement, followed by 366 cu.ft. of mud. Final pressure 675#. Time 11:50 A.M. International Bulk Method. Located top of hard cement at 4860'.
- 10/14 Standing plugged.
- 10/15 Idle.
- 10/16 Hung 4-1/2" drill pipe at 4860' and plugged with 150 sacks Colton Hi-temperature cement, followed by 325 cu.ft. of mud. Final pressure 325#. Pulled 5 stands and circulated. Time 7:50 P.M. International Bulk Method.
- 10/17 Located top of cement at 4263' and cleaned out to 4274'.
- 10/18 Ran Eastman spudding bit and spudded from 4274' to 4275'. Going in hole with whipstock.
- 10/19 Re-drilled 7-1/2" hole by whipstock from 4275' to 4292'. Opened 7-1/2" hole to 11" from 4275' to 4291'. Re-drilled 11" hole from 4291' to 4305'. Ran whipstock at 4305'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR SIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON
 Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. B. & M. S. B. & M.
 Signed J. C. Foster
 Date January 28, 1949 Title Agent
 (President, Secretary or Agent)

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1949
Date

10/20 Set whipstock at 4305' and re-drilled 7-1/2" hole from 4305' to 4312'. Opened 7-1/2" hole to 11" from 4305' to 4312'. Re-drilled 7-1/2" hole from 4312' to 4325'.

10/21 Opened 7-3/2" hole to 11" from 4312' to 4325'. Re-drilled 11" hole from 4325' to 4355'.

10/22 Ran whipstock at 4355'. Re-drilled 7-1/2" hole by whipstock from 4355' to 4374'. Opened 7-1/2" hole to 11" from 4355' to 4374'.

10/23 Re-drilled 11" hole from 4374' to 4414'.

10/24 Re-drilled 11" hole from 4414' to 4454'.

10/25 Re-drilled 7-1/2" hole by whipstock from 4454' to 4468'. Opened 7-1/2" hole to 11" from 4454' to 4468'. Re-drilled 11" hole from 4468' to 4491'.

10/26 Re-drilled 11" hole from 4491' to 4505'. Set whipstock at 4504' and re-drilled 7-1/2" hole to 4517'.

10/27 Re-drilled 7-1/2" hole from 4517' to 4534'. Opened 7-1/2" hole to 11" from 4505' to 4534'. Re-drilled 11" hole from 4534' to 4551'.

10/28 Re-Drilled 11" hole from 4551' to 4564'. Hung 4-1/2" Blank drill pipe at 4300' and pumped in 150 sacks Colton Slow cement treated with quick setting chemical. Final pressure 525#. Time 3:50 P.M. Pulled up 6 stands and circulated. Found top of cement at 4030'. Drilled out cement to 4130'.

10/29 Cleaned out cement from 4030' to 4123'.

10/30 Set Eastman whipstock at 4123'. Re-drilled 7-1/2" hole by whipstock from 4123' to 4135'. Opened 7-1/2" hole to 11" from 4123' to 4135'. Re-drilled 11" hole in cement from 4135' to 4136'.

10/31 Re-drilled 7-1/2" hole by whipstock from 4136' to 4149'. Opened 7-1/2" hole to 11" from 4135' to 4149'.

SUBMIT IN DUPLICATE
STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

TIME WATER ASSOCIATED OIL COMPANY

ALISO CANYON

OPERATOR

FIELD

FERNANDO #32

27

3 N

16 W

S.D.

Well No.

, Sec.

, T.

, R.

B. & M.

Signed

F. C. Foster

January 28, 1949

Date

Title

Agent

(President, Secretary or Agent)

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Date

11/1

Re-drilled 5-1/2" hole from 4149' to 4170'. Opened 5-1/2" hole to 8-1/4" from 4149' to 4165'. Opened 8-1/4" to 11" from 4149' to 4170'.

11/2

Cleaned out and reamed 11" hole from 4170' to 4185'. Cleaned out cement from 4185' to 4207' with 8-1/2" bit.

11/3

Set Eastman removable whipstock at 4207' and drilled by to 4222' with 7-1/2" bit. Opened rat hole to 11" to 4222'. Re-drilled 8-1/2" hole to 4224'.

11/4

Set Eastman removable whipstock at 4224' and drilled by to 4230' with 7-1/2" bit. Pulled whipstock and continued re-drilling 7-1/2" hole to 4280'.

11/5

Re-drilled 7-1/2" hole from 4280' to 4290'. Opened 7-1/2" hole to 11" from 4222' to 4290'. Reamed 11" hole and re-drilled 11" hole from 4290' to 4295'.

11/6

Set Eastman removable whipstock at 4295' and drilled by to 4311' with 7-1/2" bit. Pulled whipstock and opened 7-1/2" hole to 11" from 4295' to 4307'. Re-drilled 7-1/2" hole from 4311' to 4338'. Opened 7-1/2" hole to 11" from 4307' to 4338'.

11/7

Re-drilled 11" hole from 4338' to 4430'.

11/8

Re-drilled 11" hole from 4430' to 4482'.

11/9

Re-drilled 11" hole from 4482' to 4582'.

11/10

Re-drilled 11" hole from 4582' to 4707'.

11/11

Re-drilled 11" hole from 4707' to 4877'.

11/12

Re-drilled 11" hole from 4877' to 4993'.

11/13

Re-drilled 11" hole from 4993' to 5067'.

11/14

Set Eastman removable whipstock at 5067' and drilled by to 5083' with 7-1/2" bit. Pulled whipstock and opened rat hole to 11" and continued re-drilling 11" hole, to 5128'.

11/15

Set Eastman removable whipstock at 5128' and drilled by to 5144' with 7-1/2" bit. Pulled whipstock and opened rat hole to 11".

SUBMIT IN DUPLICATE
STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON
Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. S. 2, B. & M.
Signed J. C. Foster
Date January 28, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1948

(Cont'd)

11/16	Re-drilled from 5144' to 5179' with 7-1/2" bit. Set knuckle joint at 5179' and re-drilled to 5195' with 5-1/2" bit. Opened 5-1/2" hole to 7-1/2" from 5179' to 5193'.
11/17	Opened 7-1/2" hole to 11" from 5144' to 5195'. Re-drilled 8-1/2" hole from 5195' to 5198'. Set Eastman removable whipstock at 5198' and drilled by to 5204' with 7-1/2" bit.
11/18	Drilled by whipstock from 5204' to 5212'. Opened 7-1/2" hole to 11" from 5195' to 5212'. Set Eastman removable whipstock at 5212' and drilled by to 5226'. Opened 7-1/2" hole to 11" from 5212' to 5218'.
11/19	Re-drilled 11" hole from 5226' to 5266' and 7-1/2" hole to 5296'.
11/20	Re-drilled 7-1/2" hole from 5296' to 5327'. Set Eastman removable whipstock at 5327' and drilled by to 5340' with 5-5/8" bit. Pulled whipstock and opened 5-5/8" hole to 7-1/2" from 5327' to 5340'.
11/21	Opened 7-1/2" hole to 11" from 5266' to 5337'. Re-drilled 7-1/2" hole from 5340' to 5369'. Opened 7-1/2" hole to 11" from 5337' to 5369' and re-drilled 11" hole to 5400'.
11/22	Re-drilled 11" hole from 5400' to 5440'.
11/23	Re-drilled 11" hole from 5440' to 5565'.
11/24	Re-drilled 11" hole from 5565' to 5702'.
11/25	Re-drilled 11" hole from 5702' to 5837'.
11/26	Re-drilled 11" hole from 5837' to 5946'.
11/27	Re-drilled 11" hole from 5946' to 5951'. Stuck drill pipe at 5951'. Spotted oil and worked pipe loose. Ran reamer to 5951'.
11/28	Re-drilled 11" hole from 5951' to 6103'.
11/29	Re-drilled 11" hole from 6103' to 6266'.
11/30	Re-drilled 11" hole from 6266' to 6374'.
12/1	Re-drilled 11" hole from 6374' to 6506'.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON
Well No. FERNANDO #32, Sec. 27, T. 3 N, R. 16 W, S. B. & M.
Signed J. C. Foster
Date January 28, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date
1948

(Cont'd)

- 12/2 Re-drilled 11" hole from 6506' to 6659'.
- 12/3 Re-drilled 11" hole from 6659' to 6786'.
- 12/4 Re-drilled 11" hole from 6786' to 6875'.
- 12/5 Re-drilled 11" hole from 6875' to 6970'.
- 12/6 Re-drilled 11" hole from 6970' to 7125'.
- 12/7 Re-drilled 11" hole from 7125' to 7150'. Ran Schlumberger electric log but conductor in cable broke. Re-ran electric log but conductor in cable broke in second truck.
- 12/8 Ran Schlumberger electric log at 7150'. Re-drilled 11" hole from 7150' to 7238'.
- 12/9 Ran and cemented 7", 26# and 23# Youngstown speedtite casing at 7238' with 500 sacks Colton Hi-temperature cement. Pumped in 80 cu.ft. excess mud without bumping plugs. Final pressure 550#. Time 6:40 P.M. International Bulk Method.
Casing detail as follows:
1508' is 26# N
2017' is 23# N
Balance is 23# J
- 12/10 - 11 Standing cemented.
- 12/12 Located top of hard cement at 7168'. Cleaned out cement to 7223'.
- 12/13 At depth of 7223' tested casing with 1500# pressure for 15 minutes without loss. Ran Eastman oriented drill pipe survey at 7223'. Cleaned out hard cement from 7223' to 7238' and drilled 5' for water shut off test.
- 12/14 Ran Johnston tester on 2-7/8" drill pipe with 960' of water cushion and set packer at 7217' with tail pipe to 7235'. Opened tester at 12:25 P.M. and had a hard steady blow with gas to surface in 2 minutes and water cushion in 6 minutes. Gas blow estimated at 10,000 MCF rate. After flowing water cushion blew only gas with small amount of condensate. Pulled tester loose after being open 45 minutes and found no fluid in drill pipe. Test of water shut off witnessed and approved by Division of Oil and Gas.

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR THE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO #12, Sec. 27, T. 3 N, R. 15 W, S. B. B. & M.

Signed J. C. Foster

Date January 28, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

Date 1948 (Cont'd)

- 12/15 Cored 6" hole from 7243' to 7283'.
- 12/16 Cored 6" hole from 7283' to 7321'.
- 12/17 Cored 6" hole from 7321' to 7361'.
- 12/18 Cored 6" hole from 7361' to 7396'.
- 12/19 Cored 6" hole from 7396' to 7435'. Ran Schlumberger electric log at 7400'.
- 12/20 Ran Schlumberger electric log at 7435'. Reamed 6" hole from 7238' to 7435'. Ran 5", 18# Security threaded J-55 liner, including 160' of 80 Mesh perforated and landed at 7430'. Top of perforated 7270'. Top of liner 7206'. Perforations are 80 Mesh, 12 rows, 2" slots, 6" centers, with 6" undercut, by Pacific.
- 12/21 Ran 2-7/8", 6.5# J-55 Upset tubing with swedge on bottom and hung at 7155'. Installed Xmas tree.
- 12/22 Circulated out mud with water and well began flowing at 5:00 P.M. Flowed gas at rate of 4878 MCF to 5049 MCF. 16/64 bean; 2400# tubing pressure; 2400# casing pressure. Shut in at 7:15 P.M.
- 12/23 - 1/12 Shut in. Tubing pressure 2400#; Casing pressure 2400#.
- 1/13 Shut in. Tubing pressure 2400#; Casing pressure 2250#.
- 1/14 Shut in. Tubing pressure 2400#; Casing pressure 2250#.
- 1/15 - 1/18 Shut in. Tubing pressure 2400#; Casing pressure 2250#.
- 1/19 - 1/21 Shut in. Tubing pressure 2350#; Casing pressure 2250#.
- 1/22 Shut in. Tubing pressure 2350#; Casing pressure 2350#.
- 1/23 - 1/26 Shut in. Tubing pressure 2375#; Casing pressure 2375#.

SUBMIT IN DUPLICATE
STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. FERNANDO #33, Sec. 27, T. 3 N, R. 16 W, S.B.B. & M.

Signed J. C. Foster

Date January 28, 1949 Title Agent
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

CASING RECORD

13-3/8", 54.5# C 498'
7", 26# & 23# C 7238'
224' - 5", 18# inc. 160' of Perf. L 7430'. Top 7206'.

TUBING RECORD

2-7/8", 6.5# with swedge on bottom H 7155'.

JUNK (Original Hole)

Johnston packer, tail pipe, and 1/2 of safety joint. Top at 7335'.

MAP	MAP BOOK	CARDS	BOND	FORMS	
				114	121
					EP

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TRUE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
<u>ORIGINAL HOLE</u>					
0'	70'		Drilled		Hard surface sand
70'	1241'		Drilled		Sand and shale
1241'	1261'		Drilled		Sand
1261'	1315'		Drilled		Sand and shale
1315'	1340'		Drilled		Sand
1340'	1356'		Drilled		Sand and brown shale
1356'	1422'		Drilled		Shale
1422'	6676'		Drilled		Sand and shale
6676'	6726'		Drilled		Sand and shale with hard streaks
6726'	6747'		Drilled		Hard sand
6747'	7278'		Drilled		Sand and shale
7278'	7318'		Cored		Oil sand and streaks siltstone
7318'	7394'		Cored		Oil sand and streaks siltstone
7394'	7403'		Cored		Grayish oil sand
<u>FIRST RE-DRILL HOLE:</u>					
5022'	5964'		Redrilled		Sand and shale
5964'	6018'		Redrilled		Hard shale
6018'	6920'		Redrilled		Sand and shale
6920'	6930'		Cored		Grayish oil sand
6930'	6975'		Cored		Grayish oil sand, siltstone and gray sand
6975'	6995'		Cored		Siltstone and gray sand
6995'	7279'		Redrilled		Sand and shale
7279'	7287'		Cored		Shale with thin streaks of oil sand
7287'	7321'		Cored		Hard shale
7321'	7336'		Cored		Hard siltstone
7336'	7419'		Cored		Siltstone and oil sand
7419'	7425'		Redrilled		Hard shale
7425'	7484'		Cored		Silty oil sand and siltstone
<u>SECOND RE-DRILL HOLE:</u>					
4407'	4430'		Redrilled		Sand and shale
4430'	4437'		Redrilled		Sand
4437'	4707'		Redrilled		Sand and shale
4707'	4727'		Redrilled		Hard sand

(Cont'd)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator ELDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S.B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION								
Top of Formation	Bottom of Formation												
	(Cont'd)												
SECOND RE-DRILL HOLE:													
4727'	5420'		Redrilled		Sand and shale								
5420'	5440'		Redrilled		Hard sand								
5440'	5946'		Redrilled		Sand and shale								
5946'	5951'		Redrilled		Shale								
5951'	7238'		Redrilled		Sand and shale								
7238'	7243'		Redrilled		Shale								
7243'	7433'		Cored		Oil sand and siltstone								
7433'	7435'		Cored		Siltstone								
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STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator WIDE WATERS ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #12 Sec. 27, T. 3 N, R. 16 W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
					6-1/2" REEF WIRE LINE CORDS - Original Hole
7276'	7285'			10' 0"	0' 3" Firm, well sorted, silty oil sand. Fair cut and good odor. 0' 6" Dark gray shale with free oil in parting planes. 9' 3" Firm, well sorted, silty oil shale. Fair cut, good odor.
7285'	7298'			10' 0"	6' 0" Firm, well sorted, silty oil sand. Fair cut, good odor. 1' 6" Hard dark gray siltstone. Slight cut and fair odor. 2' 6" Fairly hard silty oil sand. Fair cut, good odor.
7298'	7308'			10' 0"	0' 10" Very hard dark gray siltstone. Slight cut and odor. 3' 0" Fairly hard dark gray sandy siltstone. Fair cut and odor. 6' 2" Unconsolidated medium grained poorly sorted oil sand. Fair cut, good odor.
7308'	7318'			10' 0"	1' 0" Firm, well sorted medium grained oil sand. Good cut and odor. Graded to 6' 6" firm dark gray sandy siltstone. 2' 0" of medium firm fine grained dark gray sandy siltstone. Fair cut and odor. 0' 6" Fragments, hard sandstone shell.
7318'	7320'			No Recovery	
7320'	7325'			3' 0"	Fragments quartzite, very hard dark gray siltstone badly contaminated with drilling mud.
7325'	7327'			2' 0"	Medium grained, well sorted light gray loosely compacted oil sand. Fair cut, good odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S.B.B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
8-1/2" REED WIRE LINE CORES .. Original Hole (Cont'd)					
7327'	7334'			9' 0"	5' 0" Medium grained, well sorted, firm gray oil sand. Fair cut and odor. 2' 0" Fine grained, well sorted firm oil sand. Fair cut and odor. 1' 11" Very fine grained, well sorted firm oil sand. Fair cut and odor. 0' 1" Limestone shell.
7334'	7344'			12' 0"	4' 6" Fine grained, well sorted light gray oil sand. Fair cut, good odor. 2' 0" Fine grained, well sorted, brownish gray oil sand. Good cut and odor. 0' 2" Fine to coarse poorly sorted oil sand. Fragments of shell to 1/4" in diameter. 0' 3" Fine grained, well sorted, brownish gray oil sand. Good cut and odor. 0' 1" Limestone shell. 4' 0" Firm, fine grained, well sorted, brownish gray oil sand. Good cut and odor.
7344'	7354'			11' 0"	0' 6" Firm, fine grained, well sorted, slightly contaminated with drilling mud, brownish gray oil sand, Good cut and odor. 1' 0" Hard calcareous, gray oil sand. Good cut and odor. 0' 6" Firm, fine grained, well sorted, brownish gray oil sand. Good cut and odor. 9' 0" Firm, fine grained, well sorted, brownish gray laminated oil sand. Laminated approximately 1/4" apart at right angles to vertical axis of the core. Good cut and odor.
7354'	7364'			11' 0"	4' 0" Hard calcareous, fine grained, well sorted, brownish gray oil sand. Good cut and odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator PIPE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S. 3. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
1-1/2" REED WIRE LINE CORES - Original Hole (Cont'd)					
					4' 0" Firm, fine grained, well sorted, brownish gray oil sand. Good cut and odor.
					0' 6" Fragments of limestone.
					2' 6" Firm, fine grained, well sorted, brownish gray oil sand. Gas bubbles in mud sheath. Good cut and odor.
7364'	7374'			11' 0"	0' 1" Limestone shell.
					5' 11" Fine, well sorted, brownish gray oil sand. Good cut and odor. Laminated approximately 1/8" to 1/4" apart at right angles to vertical axis of core.
					4' 0" Medium grained, well sorted, brownish gray, well saturated oil sand. Good cut and odor.
					1' 0" Fine grained, well sorted, gray oil sand. Fair cut, good odor.
7374'	7384'			10' 2"	2' 0" Medium grained, well sorted, brownish gray oil sand. Good cut and odor.
					1' 0" Interbedded silt and fine oil sand, oil sand has good cut and odor.
					0' 6" Limestone shell.
					4' 0" Fine, well sorted, brownish gray oil sand. Good cut and odor.
					0' 2" Limestone shell.
					1' 6" Light gray loosely compacted silty sand. Good cut and odor.
7384'	7394'			11' 0"	7' 6" Hard, well sorted, light gray silty oil sand. Fair cut and odor.
					1' 0" Very hard, well sorted, light gray silty calcareous oil sand. Virtually a shell. Mega fossils in abundance. Good cut and odor.
					2' 6" Hard, well sorted, light gray oil sand. Fair cut and odor.

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON
Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 15 W, S.E., B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
<u>6-1/2" BORED WIRE LINE CORES - Original Hole (Cont'd)</u>					
7394'	7400'			6' 0"	Firm, light gray silty oil sand. Looks wet. Fair cut and odor.
7400'	7403'			No Recovery	
<u>6-1/2" BORED WIRE LINE CORES - First Re-drill Hole</u>					
6920'	6930'			4' 0"	0' 8" Fine, well sorted, gray sand inter-bedded with fragments of black shale. Fair cut and odor. 2' 4" Shell. 1' 0" Firm poorly sorted brownish gray sand. Fair cut and odor.
6930'	6940'			9' 0"	5' 0" Fine grained, well sorted, loosely compacted light brown oil sand. Fair cut and odor. Grades to 1' 4" firm, medium grained, poorly sorted, light brown, limy oil sand. Fair cut and odor.
6940'	6950'			6' 0"	3' 5" Loosely compacted, poorly sorted, light brownish gray oil sand. Fair cut and odor. Looks wet. 2' 5" Very hard, limy, sandy siltstone. Slickensides at 6944'. No cut and odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TISS WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 1 N, R. 16 W, S. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
2-1/2'	BEED WINE LINK CORES		First Re-drill Hole		(Cont'd)
6950'	6960'			6' 0"	0' 3" Sandy siltstone. No cut or odor. 3' 0" Hard, poorly sorted, dark gray, silty oil sand. Fair cut and odor with few fragments shale present. 2' 9" Dark gray, sandy, siltstone virtually a shell. Slickensides present. Fracture planes 60°. No cut and odor.
6960'	6970'			11' 0"	11' 0" Hard, sandy siltstone. No cut or odor.
6970'	6980'			9' 0"	8' 0" Hard sandy siltstone. No cut or odor. 1' 0" Shell.
6980'	6990'			6' 0"	2' 0" Fairly hard, sandy siltstone. No cut or odor. 1' 0" Firm, fine to coarse, poorly sorted oil sand. Fair cut and odor. 1' 0" Hard, dark gray siltstone. Fracture plane 60° with slickensides. No cut, slight odor. 2' 0" Hard, poorly sorted, dark gray sand. No cut or odor. Looks wet.
6990'	6995'			5' 4"	3' 0" Poorly sorted, fine to coarse gray sand. No cut, slight odor. Looks wet. 0' 2" Shell. 1' 0" Hard, poorly sorted, gray sand. No cut, slight odor. Looks wet. 1' 0" Shell. 0' 2" Firm, fine, dark gray sand. Interbedded with black shale. Looks wet.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator ELINE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
8-1/2'	7279'		First Drilling Hole		(Cont'd)
7279'	7289'			3' 0"	1' 0" Hard shale with inclusions fine silty oil sand. Slight ether cut and odor. 2' 0" Very hard black carbonaceous shale with slickensides. No cut or odor.
7289'	7297'			6' 0"	1' 0" Hard black shale. Slight cut and odor. 0' 2" Brown, very hard, fine, silty oil sand. Fair cut and odor. 4' 10" Hard black shale. Slight cut, good odor. Few slickensides.
7297'	7307'			11' 0"	Hard tough black shale. Slight cut, fair odor. Good 20 - 35° dips.
7307'	7317'			10' 0"	As above. Good 20 - 30° dips.
7317'	7326'			8' 0"	2' 0" Hard tough black shale. No cut, slight odor. 1' 8" Hard gray sandy shale. No cut, slight odor. 0' 2" Light gray calcareous sandy siltstone. No cut or odor. Virtually a shell. 3' 0" Gray sandy siltstone. No cut, slight odor. 0' 2" Hard dark brown sandy siltstone. No cut, slight odor. 1' 0" Dark brown badly fractured sandy siltstone. Fair cut and odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator SIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #12 Sec. 27, T. 3 N, R. 16 W, S. R. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
8-1/2'	NEED WIRE LINE CORES		First Re-drill Hole		(But'd)
7326'	7336'			10' 0"	2' 0" Hard brown sandy siltstone. No cut, slight odor. Good 30° dips. 1' 0" Shell. 4' 0" Firm, dark gray, sandy siltstone. No cut, fair odor. 1' 0" Firm silty oil sand. Fair cut and odor. 2' 0" Firm gray sandy siltstone. Slight cut and odor.
7336'	7346'			9' 0"	3' 0" Loosely compacted silty oil sand. Fair cut, good odor. 0' 2" Shell. 3' 0" Loosely compacted silty oil sand. Fair cut, good odor. 2' 10" Firm, dark gray, sandy siltstone. No cut, slight odor.
7346'	7356'			10' 0"	3' 0" Hard, dark gray, sandy siltstone. No cut, slight odor. 4' 0" Firm, silty oil sand. Fair cut, good odor. 3' 0" Firm, dark gray, sandy siltstone. Slight cut, fair odor.
7356'	7366'			10' 0"	7' 0" Firm, dark gray, sandy siltstone. Minor oil stains in top of core. Fair cut and odor. 2' 0" Firm, gray, sandy siltstone. Slight cut, fair odor. 1' 0" Shell.
7366'	7376'			10' 0"	6' 10" Firm, gray, sandy siltstone. Slight cut and odor. 0' 2" Shell. 3' 0" Firm, gray, sandy siltstone. Slight cut and odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
8-1/2"	NEED WIRE LINE CONES		<u>First Re-drill Hole</u>		(Cont'd)
7376'	7386'			2' 0"	2' 0" Gray siltstone. No cut, slight odor.
7386'	7396'			12' 0"	6' 0" Fitfable, brown, silty oil sand. Good cut and odor. 0' 6" Shell. 3' 6" Firm, brown, silty oil sand. Good cut and odor. 0' 2" Hard, sandy siltstone. 1' 10" Brown oil sand. Badly cut with drilling mud.
7396'	7406'			No Recovery	
7406'	7416'			10' 0"	1' 0" Loosely compacted, silty oil sand. Fair cut, slight odor. 0' 3" Shell. 3' 0" Firm, brown, silty oil sand. Fair cut, slight odor. 1' 6" Oil stained, sandy siltstone. Good 30° dips. 1' 6" Firm, brown, silty oil sand. Fair cut and odor. 1' 9" As last above. Fair cut, slight odor. 1' 0" Badly burned, sandy siltstone.
7416'	7429'			3' 0"	2' 0" Hard, dark gray, sandy siltstone. No cut or odor. 1' 0" Shell.
7425'	7435'			10' 0"	9' 0" Firm, gray siltstone. No cut or odor. 1' 0" Hard, sandy siltstone. No cut or odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S. R. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
6-1/2" REED WIRE LINE CONES		<u>First Re-drill Hole</u>			(Cont'd)
7435'	7445'			10' 0"	2' 9" Firm, gray, sandy siltstone. No cut or odor. Good 20 - 30° dips. 0' 3" Very hard, gray, sandy siltstone. Virtually a shell. 4' 0" Hard, sandy siltstone. Slight cut and odor. Good 30 - 40° dips. 2' 0" Firm, sandy siltstone. Fair cut and odor. Good 35° dips. 1' 0" Firm, brown, fine grained oil sand. Good cut and odor.
7445'	7455'			10' 0"	10' 0" Firm, gray, silty oil sand. Fair cut and odor. Gas bubbles on mud sheath. Good 30° dips.
7455'	7465'			11' 0"	5' 0" Firm, gray, silty oil sand. Fair cut and odor. Good 30° dips. 1' 0" Hard, gray siltstone. No cut or odor. Looks wet. 2' 0" Firm, gray, silty oil sand. Fair cut and odor.
7465'	7475'			2' 0"	2' 0" Firm, gray, silty oil sand. Fair cut and odor.
7475'	7484'			5' 0"	7' 0" Hard to very hard, gray siltstone. Looks wet. Slight cut and odor. 1' 0" Shell.
		<u>6-1/2" REED WIRE LINE CONES</u>			<u>Second Re-drill Hole</u>
7243'	7263'			12' 0"	0' 9" Firm, fine, silty oil sand. Fair cut, good odor. 0' 3" Shell.

(Continued)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION
Top of Formation	Bottom of Formation				
8-1/2"	Reed Wire Line Cores -		<u>Second Re-drill Hole</u>		(Cont'd)
					(Continued)
					7' 0" Firm, oil stained siltstone. Slight to fair cut, fair to good odor. Top 2' 6" sandier and better saturated.
					4' 0" Firm, dark gray, sandy siltstone. No cut or odor.
7263'	7283'			20' 0"	Hard to very hard, sandy siltstone. Slight cut, good odor.
7283'	7301'			18' 0"	3' 6" Unconsolidated, silty oil sand. Fair cut and good odor. 6' 9" Firm, sandy siltstone. No cut, slight odor. 0' 3" Shell. 3' 0" Firm, sandy siltstone. No cut, slight odor. 2' 0" Firm, fine grained oil sand. Fair cut and odor. 1' 6" Hard, oil stained, sandy siltstone. No to slight cut and odor.
7301'	7321'			20' 0"	6' 0" Firm, silty, well sorted oil sand. Slight to fair cut and odor. 2' 0" Firm, fine grained, poorly sorted oil sand. Fair cut and odor. 10' 0" Consolidated, fine to medium grained poorly sorted oil sand. Under saturated. Slight cut, fair odor. Grades to 2' 0" of loosely consolidated, fine to medium grained, poorly sorted oil sand. Slight cut, fair odor.
7321'	7341'			18' 0"	14' 0" Unconsolidated, fine to medium grained, gassy oil sand. Slight to fair cut, fair odor. 4' 0" Unconsolidated, fine grained, well sorted, gassy oil sand. Slight to fair cut, fair odor.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator ELDER WATER ASSOCIATED OIL COMPANY Field ALISO CANYON
Well No. FERNANDO #32 Sec. 27, T. 3 N, R. 16 W, S. B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Drilled or Cored	Recovery	DESCRIPTION					
Top of Formation	Bottom of Formation									
0-1/2"	Reed Wire Line Cores		Second Re-drill Hole		(Cont'd)					
7341'	7361'			20' 0"	2' 0" Black shale. 0' 6" Firm, gray sandy siltstone. Slight cut, fair odor. 1' 0" Black shale. 15' 4" Firm, gray, sandy siltstone. Slight cut and odor. 0' 2" Shell.					
7361'	7380'			18' 0"	3' 6" Loosely compacted, sandy siltstone. Slight cut and odor. 2' 6" Hard, sandy siltstone. No cut or odor. 5' 6" Firm, friable, fine to silty oil sand. Fair cut, good odor. 0' 6" Hard, fine to medium grained gray sand. No cut or odor. 2' 6" Firm, friable, medium grained gray sand. Slight cut and odor. 0' 6" Hard, sandy siltstone. 2' 6" Firm, fine to silty oil sand with thin streaks of shale. Fair cut and odor. 0' 6" Hard black shale.					
7380'	7396'			12' 0"	6' 0" Soft black shale. 6' 0" Firm, friable, fine grained gray sand. Slight cut, fair odor.					
7396'	7416'			20' 0"	2' 6" Firm, fine grained gray sand. Slight cut and odor. 1' 0" Limestone shell. 16' 6" Firm, fine grained gray sand. Slight cut and odor.					
7416'	7435'			19' 0"	9' 0" Soft black shale and drilling mud. 10' 0" Firm, fine grained gray sand. Slight cut and odor.					
					<table border="1"> <tr> <td>MAP</td> <td>MAP BOOK</td> <td>CARDS</td> <td>BOND</td> <td>FORMS 114 121</td> </tr> </table>	MAP	MAP BOOK	CARDS	BOND	FORMS 114 121
MAP	MAP BOOK	CARDS	BOND	FORMS 114 121						

DIVISION OF OIL AND GAS

Report on Test of Water Shut-off
(FORMATION TESTER)

No. T 1-49120

Los Angeles 15, Calif. December 27, 19 48

Mr. F. C. Foster
Los Nietos, Calif.
Agent for TIDE WATER ASSOCIATED OIL COMPANY

DEAR SIR:

Your well No. "Fernando" 32, Sec. 27, T. 3 N., R. 16 W., S. B. B & M.
Aliso Canyon Field, in Los Angeles County, was tested for water shut-off
on December 14, 19 48. Mr. J. L. White, Inspector, designated by the supervisor,
was present as prescribed in Secs. 3222 and 3223, Ch. 93, Stat. 1939; there were also present Gordon Larter, Engineer;
R. D. Roberts, Drilling Foreman

Shut-off data: 7 in. 23 & 26 b. casing was cemented xxx at 7238 ft.
on December 9, 19 48 in 11 in. hole with 500 sacks of cement
xxx of which 12 sacks was left in casing.

Casing record of well: 13-3/8" cem. 498'; 7" cem. 7238', W.S.O.; T.D. (1st hole) 7403', plugged
with cement 7030'-6607' and 5147'-5040'; T.D. (2nd hole) 7484', plugged with cement 100
sacks at 7464', 5124'-4860' and 4560'-4274'; T.D. (3rd hole) 4564', plugged with cement*
Present depth 7243 ft. Bridged with cement from xxx ft. to xxx ft. Cleaned out to 7243 ft. for test.
A pressure of 1500 lb. was applied to the inside of casing for 15 min. without loss after cleaning out to 7174 ft.
A Johnston tester was run into the hole on 2-7/8 in. drill pipe cutting,
with 968 ft. of water and cushion, and packer set at 7217 ft. with tailpiece to 7235 ft.
Tester valve, with 3/8 in. bean, was opened at 12:25 p.m. and remained
open for xxx hr. and 45 min. During this interval there was a hard steady blow. Gas reached
the surface in 2 minutes and the water cushion in 6 minutes. The well blew an estimated
900'-1000' MCF/day of gas with some condensate.

*4300'-4123'.

THE INSPECTOR ARRIVED AT THE WELL AT 4:30 P.M. AND MR. LARTER REPORTED THE FOLLOWING:

1. An 11" rotary hole was drilled from 1848' to 7340' and an 8-1/2" rotary hole from 7340' to 7403'.
2. A cement plug (200 sacks) was placed in the hole from 7030' to 6607' and a second cement plug (200 sacks) was placed from 5147' to 5040'.
3. A whipstock was set at 5040' and an 11" rotary hole was drilled from 5040' to 7425' and an 8-1/2" rotary hole from 7425' to 7484'.
4. Cement plugs were placed as follows: 100 sacks at 7464', 150 sacks 5124'-4860' and 150 sacks 4560'-4274'.
5. A whipstock was set at 4274' and an 11" rotary hole was drilled from 4274' to 4564'.
6. A cement plug (150 sacks) was placed 4300' to 4123'.
7. A whipstock was set at 4123' and an 11" rotary hole was drilled from 4123' to 7238'.
8. The 7" casing was cemented as noted above.
9. Electrical core readings showed the top of Senon zone 7248' (estimated).
10. Cement was drilled out of the 7" casing from 7174' to 7238', equivalent to 12 sacks.
11. A 6" rotary hole was drilled from 7238' to 7243'.
12. A Johnston tester was run as noted above.

THE INSPECTOR NOTED THE FOLLOWING:

1. When the drill pipe was removed, no fluid was found in the drill pipe above the tester.
2. The recording pressure bomb chart showed that the tester valve was open 45 minutes.

The test was completed at 5:50 p.m.

THE SHUT-OFF IS APPROVED.

cc - T. L. Wark
Joseph Jensen R/CB

R. D. BUSH, State Oil and Gas Supervisor

By E. H. Messer, Deputy

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 1-48514

Mr. F. C. Foster Los Angeles 15, Calif. July 28, 19 48
Los Nietos, Calif.
Agent for TIDE WATER ASSOCIATED OIL COMPANY

DEAR SIR:

Operations at your well No. "Fernando" 32 Sec. 27, T. 3 N., R. 16 W., S. E. B. & M.,
Aliso Canyon Field, in Los Angeles County, were witnessed by
Paul Betts, Inspector, representative of the supervisor,
on July 22, 19 48. There was also present W. Perkes and G. Harter, Engineers

Casing Record <u>13-3/8" cas. 498'; T.D. 7318'</u>	Junk <u>xxx</u>

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

The inspector arrived at the well at 11:55 a.m. and Mr. Perkes reported:

1. A 17-1/2" rotary hole was drilled from surface to 498'.
2. On June 21, 1948, 13-3/8" 54.5 lb. casing was cemented at 498' with 350 sacks of cement.
3. Cement returned to the surface.
4. A 12-1/4" rotary hole was drilled from 498' to 1848'; an 11" rotary hole from 1848' to 7278' and a 7-7/8" rotary hole from 7278' to 7318'.

THE INSPECTOR NOTED that the well was equipped with the following blowout prevention equipment:

1. A Shaffer double cellar control gate for closing in the well with the drill pipe out of the hole and for closing around the 4-1/2" drill pipe.
2. The controls for the above equipment were located outside the derrick.
3. A 3" mud fill-up line, with a 3" high pressure gate valve, into the 13-3/8" casing, below the above equipment.
4. A Hosmer type blowout preventer with packer to fit the 4-1/2" drill pipe.

The inspection was completed at 12:20 p.m.

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

cc - T. L. Wark
Jos. Jensen
Wm. E. Perkes (2)

S/AM

PB:ES

R. D. BUSH
State Oil and Gas Supervisor

By *[Signature]* Deputy

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Report on Proposed Operations

No. P 1-45082

Los Angeles 15, Calif. June 8, 19 48

Mr. F. C. Foster

Los Nietos, Calif.

Agent for TIDE WATER ASSOCIATED OIL COMPANY

DEAR SIR:

Your proposal to drill Well No. "Fernando" 32, Section 27, T. 3 N., R. 16 W., S. B. B. & M., Aliso Canyon Field, Los Angeles County, dated June 2, 19 48, received June 3, 19 48, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES:

"The well is 1513.93 feet S. and 1876.76 feet E. from Station #84. Elevation of ground above sea level 1994.89 feet. All depth measurements taken from top of rig floor, which is 2001.99 feet above ground. We estimate that the first productive oil or gas sand should be encountered at a depth of about _____ feet."

PROPOSAL:

"We propose to use the following strings of casing, either cementing or landing them as herein indicated:

Size of Casing	Weight	Grade and Type	Depth	Landed or Cemented
13-3/8"	54.5#	J-55 T & C	500'	Cemented
7"	23#, 26#, 29#	Speedtite J-55 N-80	7400'	Cemented
5"	18#	J-55, Insert	7750'	Landed

Well is to be drilled with rotary tools.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing."

DECISION:

THE PROPOSAL IS APPROVED PROVIDED THAT

1. Mud fluid consistent with good drilling practice shall be used and the column of mud fluid maintained at all times to the surface, particularly while pulling the drill pipe.
2. Blowout prevention equipment, sufficient to provide a complete close-in of the well under pressure at any time, shall be installed.
3. Any hole to be sidetracked in any oil or gas zone shall be filled with cement, if possible.
4. THIS DIVISION SHALL BE NOTIFIED AS FOLLOWS
 - (a) To inspect the installed blowout prevention equipment before drilling below 1500'.
 - (b) To witness a test of the effectiveness of the 7" shut-off.

cc - T. L. Wark
Jos. Jensen
Wm. E. Perkes (2)

CLB:ES

Blanket bond.

5/6/48

R. D. BUSH

State Oil and Gas Supervisor

By *S. H. Messer* Deputy

DIVISION OF OIL AND GAS
RECEIVED
JUN 3 - 1948 9

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

LOS ANGELES, CALIFORNIA

037-00686

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice must be given and surety bond filed before drilling begins

Los Nietos, Calif. June 2, 1948

DIVISION OF OIL AND GAS

Los Angeles, Calif.

In compliance with Section 3203, Chapter 93, Statutes of 1939, notice is hereby given that it is our intention to commence the work of drilling well No. "Fernando" 32, Sec. 27, T. 3 N. S.W. R. 16W, S.B.B. & M., Aliso Canyon Field, Los Angeles County.

Lease consists of Fernando Fee

The well is 1513.93 feet ~~N.W.~~ S., and 1876.76 feet E. ~~S.W.~~ from Station #84.
(Give location in distance from section corners or other corners of legal subdivision)

Elevation of ground above sea level 1994.89 feet.

All depth measurements taken from top of rig floor, which is 2001.99 feet above ground.

We estimate that the first productive oil or gas sand should be encountered at a depth of about _____ feet.

We propose to use the following strings of casing, either cementing or landing them as herein indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	Grade and Type	Depth	Landed or Cemented
13-3/8"	54.5#	J-55 T&C	500'	Cemented
7"	23#, 26#, 29#	Speedtite J-55 N-80	7400'	Cemented
5"	18#	J-55, Insert	7750'	Landed

MAP	MAP BOOK	CARDS	BOND	FORMS	
				114	121

Well is to be drilled with rotary tools.
~~cable~~

18A/KW
KW

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

Address P. O. Box "Y" Los Nietos, California

TIDE WATER ASSOCIATED OIL COMPANY
(Name of Operator)

Telephone number Whittier 42-043

By J. C. Foster
Agent