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

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 25 R
A.P.I. No. 03700712
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: S28 T3N R16W S.B.B.M.
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020
Signature: Thomas McMahon
(Person Submitting Report)

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.

Start Date	Ops this Report (DOGGR)
4/8/2016	none
4/12/2016	OPS isloate well. Bleed down and remove laterals. Grease WH valves. MIRU Welaco and pull noise and temp log. Spot containments. Call out and organize rig, pump, tanks, kill fluid, and BOPE.
4/13/2016	Hold safety meeting with crew and road rig to location. MIRU Rival Rig #6. Spot frac tanks, acuumulator, generator, and pump. Offload BOP equipment. Fill tanks with900 bbls of 8.5 ppg HEC polymer. Spot Onyx flowback separator unit and lay 2" hard lines up to wellhead and tie in flowback tank.Set 16'x8'x1" steel plate over back end of cellar.
4/14/2016	Hold safety meeting with crew. Tubing- 1365 psi / casing-1365 psi. R/U Onyx flow separator to withdraw line and wellhead. OPS unlock withdraw line valve. Calculate kill sheet. Strap tanks- 876bbls of 8.5ppg HEC polymer on location.Spot vac truck. Open well and pump 50bbls 8.5ppg /110visc pill down tubing @ 3bpm and dispalce to top of 5-1/2" liner with 49 bbls 8.5ppg HEC polymer. Begin to open choke per kill schedule and continue pumping the annular volume of 497bbls @ 5bpm. Bleed casing according to kill schedule and kill well. OPS close and ;lock withdraw line. Tubing and casing on vacuum. Strap tanks- 320 bbls on location.Install BPV. N/D wellhead. Install 2-7/8" TIW / remove BPV. N/U spacer spool, and 11" 5M double gate, 11" 5M Hydril Annular Bag. Install 2" block valves, kill lines, 3" block valves, and associated hoses on BOP stack.Close pipe rams and pressure test to 1000 psi with rig pump.Shut in and secure well.SDFN.
4/15/2016	Hold safety meeting with crew. Field pressure= 1045 psi / Tubing pressure= 200 psi/ Casing on vacuum (-0.17 psi). Strap tanks-790 bbls kill fluid on location.Finish hammering up 2" kill lines. MIRU WET BOP test truck.Call DOGGR to witness BOPE testing- (waived by Cliff Knight @ 09:37- Cliff on the lease witnessing block testing elsewhere at the time). Pressure test BOPE to SCG Standard 224.05. Pressure test 2-7/8" pipe rams, 2" kill line valves, 3" mud cross valves, and choke manifold valves to 300 psi min/ 5000 psi max for 20 minutes- charts attached. R/U working floor and pump 100 bbls of 8.5ppg HEC polymer down tubing, up casing @ 5BPM- no returns. Remove TIW valve and install 2-7/8" BPV. Pressure test blind rams to 300 psi min/ 5000 psi max for 20 minutes- chart attached. Pressure test 2-7/8" TIW valves to 300 psi/5000 psi max for 20 min- charts attached. (Cliff Knight- DOGGR inspect BOPE @ 10:45hrs- passed). RDMO test unit. Ready rig to trip pipe. Shut in and secure well. SDFN.
4/16/2016	Hold safety meeting with crew. Send wellhead to Cameron for redress/repair. Pressures: Field=1147 psi/ Tubing=100psi/ Casing=vacuum. R/U tubing swivel & TIW valve. Pump down tubing @ 5bpm and fill well with 160 bbls / 8.5ppg HEC polymer. Circulate 30 bbls and shut down pump- well dead. Unland tubing hanger and HES representative release from seal section on 9-5/8"/47# 'BWD' permanent packer @ 7624' CoE. Lay down tubing hanger and pup joints. Fill well with 20 bbls polymer and continue filling with 3bbls/ row. Pull completion string as follows: 10-3/4" x 2-7/8" tubing hanger, 2-7/8" x 2',8', and 10' J55 pup joints, 240 joints x 2-7/8"/6.5# J55 tubing, 2-7/8" GLM, 1 joint tubing, 2-7/8" x 2.31" 'XO' sleeve, 1 joint tubing, 2-7/8" x 2.31" 'XN' No-Go nipple, 1 joint tubing, and HES 3.25" O.D. x 2-7/8" RH J-latch seal assembly. L/D completion jewelery. P/U 9-5/8"/47# x 2-7/8 casing scraper, 2-7/8" bumper sub, and 2-7/8" x 4' L80 pup joint. RIH w/ BHA and tally in hole with 243 joints of production tubing. P/U pup joints and locate top of 9-5/8" 'BWD' packer @ 7621'mKB. Lay down pups ,plus 2 joints tubing onto trailer. EoT @ 7525'. Secure well. SDFN.
4/18/2016	Hold safety meeting with crew. Pressures: Field= 1180 psi / SITP=vacuum / SICP= vacuum. Strap tanks= 583 bbls of 8.5ppg HEC polymer. Travel to Porter 50A and R/D swivel from Ensign 333 and load out onto trailer. Set containment and spot 3.5 power swivel on location. R/U to tubing and open well. Fill hole with 75bbls polymer and obtain good circulation. Spot trailers and L/D 241 joints x 2-7/8"/6.5# J55 tubing. Fill hole every 25 joints on way out of hole. Send completion tubing to NOV for inspection. Spot 2 trailers with 2-7/8"/6.5# P110, TKC work string. P/U and tally in hole with 1720' kill string. Offload fishing tools, drill collars, and handling equipment. Shut in and secure well. SDFN.
4/19/2016	Hold safety meeting with crew. Pressures: Field= 1180 psi / SITP= vacuum / SICP= vacuum. Strap tanks= 850 bbls / 8.5ppg HEC polymer on location. R/U to tubing and open well. Fill well with 35bbls polymer and establish circulation. Pull out of hole with 54 joints of 2-7/8"/6.5# P110 TKC workstring (260 joints of workstring delivered to location from NOV).P/U Baker packer milling assembly as follows: 8.5" OD mill with 3.25" grapple, 4-1/2" REG boot basket, 4-1/2" REG boot basket, 4-1/2" REG x 3 -1/2" IF bit sub, 4-3/4" string magnet, 4-3/4" string magnet, 4-3/4" shock sub, 4-3/4" jars, 4 @ 4-3/4" drill collars, 2-7/8" IF box x 3-1/2" IF pin Xover, and 2-7/8" IF pin x 2-7/8" TKC box Xover. Fill hole.Tally in hole with BHA joints workstring.Secure well. SDFN.

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(President, Secretary, or Agent)
Telephone Number: 714-398-5020

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Start Date	Ops this Report (DOGGR)
4/20/2016	Hold safety meeting with crew. Pressures: Field= 1181 psi/ SITP= vacuum / SICP= vacuum. Strap tanks= 950 bbls 8.5ppg HEC polymer on location. R/U pump to tubing, fill hole with10 bbls polymer, and establish circulation. Continue to tally in hole with remainder of 232 joints x 2-7/8"/6.5# P110 TKC workstring. Install PGSR rubber. P/U 3.5" power swivel and make up onto jt #233. Break circulation @ 3.5bpm/1100 psi.Come down and tag 9-5/8" x 3.25" ' Otis 'BWD' packer @ 7619'. Engage 3.25" OD grapple and pull 15k over string weight to ensure a good catch. Engage swivel (4000 ft lbs of torque) start milling on packer @ 11:30hrs - pump rate of 4.5 bpm @ 1800 psi. Mill 1.5' off top of packer and pump 80 bbls pill (80 bbls 8.5ppg HEC ploymer and 150lbs of sawdust). Sawdust pill nearly plugged ports on milling assembly. Spot vacuum trucks with 2 @ 60bbls HEC polymer high-visc pills for future sweeps. Mill until 17:45hrs- made 30", pumping high visc sweeps, accordingly. Ready to shut in well-Unsuccessfully attempt to jar packer free. Unsuccessfully attempt to release grapple from seal bore. Inform engineering and supervisor of situation- decision made to keep milling. Pump final sweep @ 17:30 hrs.Spot light tower on location. Continue milling on packer until 20:30 hrs- did not make any more hole and cannot stroke tool making it unable to rotate. Unsuccessfully attempt to free up rotation through milling assembly until 21:00 hrs. Unable to release from packer, unable to jar packer free, and unable to rotate. Shut down pump. Secure well and SDFN.
4/21/2016	Rig crew arrive @ 09:00 hrs. Pressures: Field=1183psi/ SITP=vacuum/ SICP=vacuum.Hold safety meeting with crew. Service rig and perform inspection on derrick and overhead equipment. Strap tanks= 520bbls of 8.5ppg HEC polymer on location.Fill hole with 16bbls of polymer and establish circulation. Engage swivel (4000 ft lbs) and pick up slowly- tubing came free and started to rotate. Start milling on packer again @ 10:30hrs, pumping 4.5bpm @ 1800 psi and sweeping every 30 minutes with 50lbs of sawdust. Fell through packer @ 11:00hrs. Circulate well bore clean with 500 bbls polymer, returning both sawdust sweeps to surface. L/D power swivel and remove PGSR. Pick up 2 joints and tag liner top @ 7691' to ensure grapple is still engaged. Start out of hole with fish and pull first 10 stands slow- packer dragging on the way out. Pull up to a depth of 3756', leaving 56 stands in the hole for overnight. Shut in and secure well. SDFN.
4/22/2016	Hold safety meeting with crew. Pressures: Field= 1184 psi/ SITP= vacuum/ SICP= Vacuum. Strap tanks= 502 bbls of 8.5ppg HEC polymer on location. Open well. R/U to tubing and fill hole with 35bbls polymer. Pull out with 56 stds x 2-7/8"/6.5# P110 TKC tubing. Spot stinger truck. Stand back 4 @ 4-3/4" drill collars and L/D fishing tools. Recovered entire 9-5/8" permanent packer with the exception of 1 lower slip segment (measuring 4" wide x 4-1/4" long x 1/2" thick- will chase to bottom). L/D drill collars and load out fishing tools onto trailer. Break out crossover from power swivel and load out onto trailer- send swivel to FF32B. P/U 9-5/8"/47# casing scraper, 2-7/8" bumper sub, 2-7/8" x 4' L80 pup joint, and Xover to 2-7/8" TKC. RIH w/ BHA and 120 stands of tubing, Tag 5-1/2"/17# liner top 5' above recorded depth of 7691'. Pull up to 6405', leaving 100 stands of tubing in the hole for overnight. Shut in and secure well. SDFN.
4/23/2016	Hold safety meeting with crew. Pressures: Field= 1184psi/ SITP= 0 psi / SICP= 0 psi.Strap tanks= 700 bbls 8.5ppg HEC polymer on location. R/U to tubing and open well. Fill hole with 36bbls polymer and establish circulation. Pull out of hole with remaining 100 stands x 2-7/8"/6.5# P110 TKC tubing and L/D scraper. P/U 2-3/8"/5.8# WTS-6 L80 45* mule shoe, 15 joints x 2-3/8"/5.8# WTS-6 L80 tubing (467'), 2-3/8" WTS-6 pin x 2-7/8" L80 8rd box Xover, and 2-7/8" EUP x 2-7/8" TKC box Xover. RIH with 2-3/8" clean out tail string and 239 joints x 2-7/8" tubing (enter LT @ 7691' on jt # 226 with no problems). Tag fill @ 8103'. P/U swivel and attempt to clean out pumping down casing/ up tubing, but unable to circulate. Switch manifold valves and pump down tubing/ up casing and establish good circulation @ 6 bpm/ 1200 psi. Clean out fill and tag bottom 5' higher than the recorded depth of 8122'. Circulate bottoms up with 605 bbls polymer and clean up any residual cuttings/sawdust from milling operation.Lost 250bbls polymer to the wellbore during clean out operations. Start out of hole- leave 90 stands tubing in hole, plus 2-3/8" tail string @ 6219'. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') Perform BOP drill @ 09:47 hrs- well secured in 57 seconds.

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Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
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4/25/2016	Hold safety meeting with crew. Pressures: Field= 1188psi/ SITP= vacuum / SICP= vacuum. Strap tanks= 605 bbls 8.5ppg 55 vis, HEC polymer on location. R/U to tubing and open well. Fill hole with 126 bbls polymer and establish circulation. Pull out of hole with remaining 90 stands x 2-7/8"/6.5# P110 TKC tubing and L/D 15 joints x 2-3/8"/5.8# WTS-6 tail string. Install shooting flange and R/U Scientific Wire Line. Calibrate Gyro tool and R/U lubricator. RIH with wire line and pull Gyro from stopping point @ 8017' (105' off bottom) to surface. RDMO wireline unit. P/U WFT 9-5/8"/47# x 3-1/2" Lokset RBP, 3-1/2" EUP x 2-7/8" EUB L80 Xover, 2-7/8" H-valve, 7" x 2-7/8" RBP retrieving tool, 2-7/8" x 6' L80 pup joint, and Xover to 2-7/8" TKC. RIH w/ BHA and 25 joints work string.Shallow set RBP @ 1609' and release from tool. Install TIW and pressure test plug to 500 psi/ 5min- good test. Latch onto and release RBP. Continue RIH with remainder of 150 joints work string . Leave end of tubing @ 4788' for overnight. Secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')
4/26/2016	Hold safety meeting with crew. Pressures: Field= 1189psi/ SITP= vacuum / SICP= vacuum. Strap tanks= 851 bbls 8.5ppg 55 vis, HEC polymer on location. R/U to tubing and open well. Fill hole with 20 bbls polymer and establish circulation. Continue RIH w/ remainder of 240 joints x 2-7/8"/6.5# P110 TKC tubing. Tag 5-1/2"/17# liner top 5' higher than recorded depth of 7691' . Record up and down weights of 72k up/ 64k down. Set WFT 9-5/8"/47# Lokset RBP w/ 2-7/8" Hvalve 4' from liner top @ 7678' CoE / 7672.74' Top. Pack off and release from tool. Pull 3 stands tubing, install TIW valve and pressure test RBP/ 9-5/8" casing to 1000 psi for 10min- good test. Dump 4ft3 of 20/40 Ottawa sand down tubing and displace with 40bbls polymer. Est top of sand @ 7262'. Pull out of hole and L/D retrieving tool. P/U WFT 9-5/8"/47# x 3-1/2" AS1-X packer, 3-1/2" SC unloader, 3-1/2" EUP x 2-7/8" EUB L80 Xover, 2-7/8" x 6', and Xover to TKC tubing. RIH w/ BHA and 110 joints x 2-7/8" work string. Set packer @ 3515' CoE. MIRU PROS testing. Attempt to pressure test down tubing against RBP @ 7678' CoE- fluid circulating up casing. Re-pack packer and retry test- same result. Attempt to pressure up on casing- circulating up the tubing- suspect packer leak. Release packer and reset @ 3548'- retest with same results. Release and reset packer @ 3582' CoE (112 joints in hole). Pack off elements from the top down and then pull 50k over string weight. Pressure up casing from 3582' to surface to 3300 psi with rig pump. R/U PROS testing to casing. Continue pressuring up to 3698 psi and record on digital gauge for 1 hour (DOGGR witness)- bled down to 3676psi (22psi loss)- DOGGR passed test and signed off on chart. Bleed down casing. Secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') DOGGR witness casing tests: Ernie Blevins

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Start Date	Ops this Report (DOGGR)
4/27/2016	Hold safety meeting with crew. Pressures: Field= 1188psi/ SITP= 0 psi / SICP= 0 psi. Strap tanks= 866 bbls 8.5ppg 55 vis, HEC polymer on location. R/U to tubing and open well. Pressure up on tubing to 2000 psi with rig pump. MIRU PROS testing and continue to pressure up down tubing between 3582' (packer) and 7678' (RBP) to 2325 psi. Record pressure test on digital gauge for 1 hour- pressure declined to 2317 psi (8psi loss) DOGGR witness, pass test, and sign off on chart. RDMO PROS. Bleed tubing and open well. Release packer and pull tubing. L/D tools and load out WFT. Rig out work floor and spot stinger. N/D 11" Class III 5K BOPE. Attempt to N/D 13-3/8" x 11" 5K tubing spool with assistance from Cameron and unable to pull head. Obtain hot work permit and cut bolts on tubing spool . Load out spool and send in for refurbishing to Cameron in Bakersfield. Remove primary seal upper plate and rubber elastomer (unable to remove lower plate). N/U 13-3/8" 5K x 11" 5K crossover spool. N/U 11" 5K double gate and shooting flange. Top off hole and function test BOPE. Secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') RBP @ 7678' CoE Sand @ 7662'
4/28/2016	Hold safety meeting with crew and loggers. Pressures: Field= 1192psi/ SITP= 0 psi / SICP= 0 psi. Strap tanks= 866 bbls 8.5ppg 55 vis, HEC polymer on location. MIRU Baker Wireline and make up 9-5/8" High Resolution Verti-Log tools and 3-1/2" weight bars. P/U shooting flange and start logging tools in the hole. Tools stopped @ 16' under the wellhead. Pull out and make adjustments to the tension on the pads. Attempt to run back in with same result. Pull out and L/D HRVRT tools. Make up and calibrate Multi-Arm caliper tools. P/U logging tools and RIH- log past area where HRVRT tools stopped and locate a casing collar @ 39' KB. Continue RIH with Multi-Arm caliper tools and tag top of sand @ 7661'. Pull log from 7661' to surface @ 30 fpm. Run back in and re log area around 5200' and 4040'. Pull out of hole and L/D tools. P/U 9-5/8" HRVRT tools and add 4 @ 1-11/16" weight bars on top. Start tools in hole and log down @ 120fpm to sand top @ 7661'. Log up from 7643' to surface @ 120fpm. L/D tools. RDMO wireline. Secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') RBP @ 7678' CoE Sand @ 7662' 9-5/8" Marker Joints: 303-315.5' 2997.5-3012.5' 7477.5-7491.5'

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4/29/2016	Hold safety meeting with crew and loggers. Pressures: Field= 1192psi/ SITP= 0 psi / SICP= 0 psi. Strap tanks= 866 bbls 8.5ppg 55 vis, HEC polymer on location. MIRU SLB Wireline. M/U Ultra Sonic Imaging Tools (USIT, CCL, GR, CBL, Neutron) and lubricator . Open well and start tools in hole. Log down @ 3500 fph from surface to top of sand @ 7661'. Log up @ 2800 fph from 7660' to surface. Correlate on depth using SLB open hole GR (1993). Run back to bottom and log up with high resolution pass @ 2800 fph from 7660' to surface. Locate and record marker joint depths. RDMO wire line. Secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') RBP @ 7678' CoE Sand @ 7662' 9-5/8" Marker Joints: 303-315.5' 2997.5-3012.5' 7477.5-7491.5'
5/3/2016	Hold safety meeting with crew and contractors. Pressures: Field= 1200 psi / SICP= 0 psi. Strap tanks= 866 bbls of 8.5ppg 55 vis HEC polymer on location. Spot Stinger. Remove work floor and N/D 11" 5M double gate and 13-3/8" x 11" 5M crossover spool. Obtain hot work permit and cut 9-5/8"/47# N80 production casing stub down to 6-3/4" from the casing flange- clean up cut. Install new primary seal between 13-3/8"/ 54.5# surface casing and 9-5/8"/47# production casing. Wait on new 1-5/8" wellhead bolts from Cameron Bakersfield. Install new Cameron 13-3/8" x 11" 5M Tubing head with 3-1/8" WKM wing valves over casing stump- Nipple up crew torque bolts to spec. Pressure test primary and P-seals to 300 psi low/ 3625 psi high for 20 min each- chart tests. N/U 11"5M double gate BOP, 11" 5M Annular bag, and associated kill/fill lines. Install Cameron 10-3/4" x 3-1/2" Tubing Hanger. Lock down hanger, install TIW valve, and function test BOPE. Rig Up work floor. Shut in and Secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') RBP @ 7678' CoE Sand @ 7662'

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Start Date	Ops this Report (DOGGR)
5/4/2016	Hold safety meeting with crew and service companies. Pressures= Field 1199 psi/ SICP= 0 psi. Strap tanks= 866 bbls 8.5ppg 55vis HEC polymer on location. MIRU WFT test truck and pressure test BOPE accordingly to 300 psi low/ 3500 psi (annular) & 5000 psi (pipe rams) high to prove seal integrity of any broken BOPE seals during the installation of the new tubing head. Install Cameron 3" BPV into tubing hanger pressure test 300 psi low/ 5000 psi high to prove seal integrity of the new BPV. Chart all tests for 20 min. (DOGGR Ernie Blevins waived witnessing of BOP testing on 5/3/16 @ 15:30 hours). Open well , remove BPV ,and tubing hanger. P/U WFT 7" x 2-7/8" H-valve retrieving tool, 2-7/8" x 6' L80 pup joint, and 2-7/8" EUE x TKC Xover. RIH w/ BHA and 239 joints x 2-7/8"/6.5# P110 TKC tubing. N/U PGSR. Install tubing swivel , pump hose, and TIW on joint # 240. Record up/down weights of 72k/64k. Tag sand top @ 7662' and reverse circulate down to WFT 9-5/8"/47# Lokset RBP @ 7672'(top). Reverse 2x tubing volumes and latch onto RBP. Equalize tool and pump20 bbls @ 2bpm down casing to ensure that valve is open. As per WTF procedure, let RBP equalize for 30 min, and then attempt release RBP. Unable to release RBP(tool will "unset" but will not release the slips from the casing wall and stroke out)- work plug for 2 hours and eventually wear out mandrel. No longer able to execute releasing procedures and rotate through tool . Discuss options with Senior Consultant and WFT Manger. Release from RBP and L/D tubing swivel. N/D PGSR. Pull 2 stands and leave end of tubing @ 7565' for overnight. Install TIW. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122') RBP @ 7678' CoE DOGGR Clifford Knight inspect Class III 5M BOPE @ 07:53 hours. Perform BOP drill @. Well shut in and secured in 2 minutes / 10 seconds..
5/5/2016	Hold safety meeting with crew and service companies. Pressures= Field 1199 psi/ SITP= 0 psi/ SICP= 0 psi. Strap tanks= 760 bbls 8.5ppg 55vis HEC polymer on location. Open well and R/U pump to tubing. Fill hole with 1 bbls of polymer and establish circulation. Pull 236 joints of 2-7/8"/6.5# P110 TKC tubing and tools, filling 3 bbls every 20 stands. L/D RBP retrieving tool. P/U WFT 7" x 2-7/8" RBP retrieving tool, 2-7/8" LBS, 2-7/8" tubing jars, 2-7/8" x 6' L80 pup joint, and 2-7/8" Xover to TKC tubing. RIH w/ BHA and 239 joints workstring. P/U tubing swivel and TIW valve. Latch onto RBP @ 7672'(top) and begin working bridge plug with bumper sub and jars for 1 hour- RBP came free. As per WFT toolman recommendation- stroke tool up 15' , come down past original setting depth, and let elements relax for 1 hour. Pull out of hole @ 60 fpm, filling every 20 stands. Leave 100 joints in the hole- end of tubing @ 3217' Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')

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

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 25 R
A.P.I. No. 03700712
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: S28 T3N R16W S.B.B.M.
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

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.

Start Date	Ops this Report (DOGGR)
5/6/2016	Hold safety meeting with crew and service companies. Pressures= Field 1204 psi/ SITP= 0 psi/ SICP= 0 psi. Strap tanks= 700 bbls 8.5ppg 55vis HEC polymer on location. Open well and pump 15 bbls down casing to fill well. Continue pulling out with the remaining 50 stands x 2-78"/6.5# P110 TKC tubing @ 60fpm (as per WFT recommendation) and L/D fishing tools and RBP. Visual inspection reveals that the 80 durometer lower element, 1 entire upper packer slip, and 1/2 of another upper packer slip are missing from the RBP and have fallen down hole. NOTE: The WFT 9-5/8"/47# Lokset RBP was released and pulled as per WFT (in writing) recommendation. Load out RBP. P/U 9-5/8"/47# x 4-1/2" XH Reverse Circulating Junk Basket, 4-1/2"XH pin x 4-1/2" FH box Xover, 4-1/2" FH pin x 3-1/2" FH box Xover, 3-1/2" FH pin x 2-7/8" EUB Xover, 4-1/2" x 2-7/8" Bumper Sub, 2-7/8" x 6' L80 pup joint, and 2-7/8" Xover to TKC tubing. RIH w/ BHA and 239 joints work string. Drop 1-1/4" ball to activate reverse circulation on junk basket. P/U tubing swivel, TIW, and PGSR. Tag 5-1/2"/17# liner top 5' higher than recorded depth of 7691'. P/U and rotate on tubing just above liner top and pump 100 bbls @ 5bpm/600 psi while slowly working tubing up and down. L/D swivel and PGSR. Pull out with tubing and L/D tools. Inspect junk basket- empty (no rubber or slips). P/U 2-3/8"/5.95# WTS-6 45* mule shoe, 15 joints x 2-3/8"/5.95# WTS-6 L80 tubing, 2-3-/8" WTS-6 pin x 2-7/8" EUB Xover, and 2-7/8" Xover to TKC tubing. RIH w/ clean out BHA and 40 joints x 2-7/8" workstring. Leave end of tubing @ 1763' for overnight. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')
5/7/2016	Hold safety meeting with crew. Pressures= Field 1203 psi/ SITP= 0 psi/ SICP= 0 psi. Strap tanks= 684 bbls 8.5ppg 55vis HEC polymer on location. Open well and pump11 bbls down casing to fill well. Continue RIH w/ 2-3/8"/5.95# WTS-6 L80 tubing tail on 2-7/8" /6.5# P110 TKC tubing. Enter 5-1/2" /17# LT @ 7691' on joint #226 w/ no problems. Tag solid @ 7870'- work tubing but unable to dislodge obstruction. N/U PGSR and circulate down tubing / up casing @ 5bpm/600 psi while working tubing and successfully knock obstruction to bottom. Continue RIH w/ remainder of 239 joints workstring and tag bottom 5' higher than the recorded depth of 8122'. N/D PGSR and L/D 199/239 joints x 2-7/8" workstring. Leave 40 joints work string and 15 joints 2-3/8" tail pipe in hole @ 1763' for overnight. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')

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

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 25 R
A.P.I. No. 03700712
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: S28 T3N R16W S.B.B.M.
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

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.

Start Date	Ops this Report (DOGGR)
5/9/2016	Hold safety meeting with crew. Pressures= Field 1203 psi/ SITP= 0 psi/ SICP= 0 psi. Strap tanks= 684 bbls 8.5ppg 55vis HEC polymer on location. Open well and pump 31 bbls down casing to fill. Lay down remaining 40 joints x 2-7/8"/6.5# P110 TKC tubing. Change slips and elevators to 2-3/8" and L/D 15 joints x 2-3/8"/5.95# L80 WTS-6 tubing and 45* mule shoe (minor damage to shoe caused by working through obstruction @ 7870'). Swap pipe trailers. Change pipe rams to 3-1/2". P/U and RIH w/ 10-3/4" x 3-1/2" EUE Tubing hanger and 3-1/2" x 10' EU L80 pup joint. Land hanger and install lockdowns.Test 3-1/2" TIW valves and pipe rams to 300 psi low/ 5000 psi high for 20 min-chart tests. (DOGGR Chris Gustafson waive BOP inspection- 07:00 hrs). MIRU hydro tester, slick line unit, and pipe inspection services. Attempt to pull tubing hanger from well- hanger stuck. Call Cameron to come assist in trouble shooting situation. After several attempts, finally free up hanger and pull out. Visual inspection reveals that the tubing hanger was not properly landed when locked down, causing damage to it's exterior when pressure was applied during the pressure test. Cameron recommends that a visual inspection of the tubing spool needs to be made to ensure the damage does not extend to the sealing surface. Release slick line and hydro tester. P/U WFT 9-5/8"/47# x 3-1/2" Lokset RBP, 3-1/2" EUP x 2-7/8" EUB L80 Xover, 2-7/8" Hvalve, 2-7/8" H-valve retrieving tool, 2-7/8" EUP x 3-1/2" EUB L80 Xover, and 3-1/2" x 4' /9.3# L80 pup joint. P/U, drift, tally, inspect, and seal lube 3-1/2"/9.3# L80 EUE tubing. RIH w/ BHA and 86 joints x 3-1/2" tubing. Leave EoT @ 2666' for overnight. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')

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

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 25 R
A.P.I. No. 03700712
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: S28 T3N R16W S.B.B.M.
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

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Start Date	Ops this Report (DOGGR)
5/10/2016	Hold safety meeting with crew and service company personnel. Pressures: Field= 1203 psi / SITP= 0 psi / SICP= 0 psi. Strap tanks= 446 bbls 8.5ppg, 55 vis, HEC polymer on location. Change out drill line. Perform rig maintenance. Open well and fill with 6 bbls polymer. Continue to P/U, drift, tally, inspect, and seal lube 3-1/2"/9.3# L80 EUE production tubing. RIH w/ remainder of 130 joints tubing. Set WFT 9-5/8"/47# Lokset RBP w/ 2-7/8" Hvalve @ 4000' CoE / 3994' Top. Pack off and release from RBP. Pull 1 stand of tubing and install TIW valve. Pressure test bridge plug to 1130 psi / 20min (digital gauge)- good test. Bleed off and dump 4ft3 of 20/40 sand down tubing and displace with 30 bbls polymer @ 2bpm/ 200 psi. Estimated top of sand @ 3984'. Pull out and L/D RBP retrieving tool. Remove work floor. MIRU stinger truck. N/D 11" Annular Bag and 11" double gate BOPE. Cameron inspect new 13-3/8" 5M x 11" 5M Tubing Spool for damage related to stuck tubing hanger- visual inspection reveals zero damage to the inside of the tubing spool. Function test all lockdown screws and dry-fit 10-3/4" x 3-1/2" EU tubing hanger. N/U 11" 5M double gate, 11" 5M Annular bag, and associated piping. Function test BOPE. Install tubing hanger, pup joint, and TIW valve. Close pipe rams and pressure test seal flange to 1000 psi- good test. RDMO Stinger. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')

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

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 25 R
A.P.I. No. 03700712
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: S28 T3N R16W S.B.B.M.
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

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Start Date	Ops this Report (DOGGR)
5/11/2016	Hold safety meeting with crew and service company personnel. Pressures: Field= 1203 psi / SICP= 0 psi. Strap tanks= 345 bbls 8.5ppg, 55 vis, HEC polymer on location. MIRU WFT tester. Pressure test 3-1/2" pipe rams to 300 psi low/ 5000 psi high/ 20 min and 11" Annular bag to 300 psi low/ 3500 psi high /20 min- chart tests (tests included all broken seals from tubing spool inspection ops). RDMO test truck. DOGGR perform BOPE inspection. Open well. P/U WFT 7" x 2-7/8" RBP retrieving tool, 2-7/8" EUP x 3-1/2" EUB L80 Xover, and 3-1/2"/9.3# x 4' L80 pup joint. RIH w/ BHA and 129 joints x 3-1/2"/9.3# L80 EUE tubing. Install PGSR. P/U tubing swivel and 3-1/2" TIW valve on joint # 130. Tag sand top @ 3984' and reverse circulate down to top of plug @ 3994' with 105 bbls (3 tubing volumes) @ 5bpm. Latch WFT 9-5/8"/47# Lokset RBP and open bypass. Pump 10 bbls down casing, through bypass @ 1.3 bpm/300 psi. As per WFT recommendation, let well equalize for 15 min. Unset RBP and let elements relax for another 15 min. Pull tubing and L/D tools. P/U pretested BHA: 3-1/2"L80 EUE Re-entry guide, 3-/12" EUP x 4-1/2" EUB L80 Xover, WFT 9-5/8"/47# x 4-1/2" EU AS1-X 7.5K Packer (75k shear), 4-1/2" EUP x 3-1/2" EUB L80 Xover, 3-1/2"/9.3# x 10' L80 pup joint, and 3-1/2" x 2.750" 'WXN' profile nipple c/w 2.635" No-Go. P/U 1 joint x 3-1/2" tubing and 3-1/2" x 2.813" 'WXO' Sliding Sleeve (open down). RIH w/ BHA and 1 stand 3-1/2" tubing. R/U slickline unit and lubricator. RIH and set 2.750" 'N' Test tool in 2.750" 'WXN' nipple. R/U hydrotest unit and bundle test BHA to 5050 psi/20min- digital gauge.Bleed off, RDMO slickline, and continue RIH w/ 32 more stands of 3-1/2"/9.3# EUE L80 tubing (69 joints in hole)- clean, inspect, seal lube, and hydrotest every connection. Leave EoT @ 2155.70' for overnight. Shut in and secure well. SDFN. ~~BOP drill @ 09:00 hrs- well closed in 64 sec~~ David Ortiz -DOGGR for BOPE inspection/drill. ~~Casing: 9-5/8"/47#~~ Liner: 5-1/2"/17# (7691-8122')
5/12/2016	Hold safety meeting with crew and service company personnel. Pressures: Field= 1203 psi / SICP= 0 psi. Strap tanks= 345 bbls 8.5ppg, 55 vis, HEC polymer on location. Open well and fill down casing w/ 5bbls polymer. Continue RIH w/ remainder of 247 joints(above BHA) x 3-1/2"/9.3# L80 EUE production tubing. (Drift, tally, inspect, clean, seal lube, and hydrotest to 5000 psi every joint). P/U & RIH w/ 3-1/2"/9.3# L80 EUE x 8', 6',4' pup joints. P/U & RIH 3-1/2"/9.3# L80 EUE x 12" fatigue nipple, and Cameron 10-3/4" x 3-1/2" Tubing Hanger. M/U landing sub and 3-1/2" TIW valve. Land tubing hanger and leave EoT @ 7664.01' / 9-5/8" AS1-X Packer @ 7654' for overnight. Shut in and secure well. SDFN. Casing: 9-5/8"/47# Liner: 5-1/2"/17# (7691-8122')

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

Rec'd 08-15-16 DOGGR Ventura.

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 25 R
A.P.I. No. 03700712
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: S28 T3N R16W S.B.B.M.
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020

Signature: _____
(Person Submitting Report)

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.

Start Date	Ops this Report (DOGGR)
5/13/2016	Hold safety meeting. Pressures: Field= 1206 psi / SITP= 0 /SICP= 0 psi. 355 bbls 8.5ppg 55 vis, HEC polymer on location. R/U pump to tubing and open well. Pump 110 bbls 3% KCL w/ corrosion inhibitor and biocide (packer fluid) down tubing up casing @ 2bpm/300 psi and displace to 6229' with 54 bbls polymer, balancing packer fluid across the bottom of the completion string. Record up/down weights (110k up/95K down). Set WFT 9-5/8" x 4-1/2" AS1-X 7.5K (75k shear) Packer @ 7656.40' CoE/ 7662.18' EoT. Pack off packer by pulling 60k over string weight and hold for 10 min. Land tubing hanger in +15K compression. Lock down tubing hanger and pressure test casing to 1000 psi with rig pump for 20min-Tubing hanger seals leaking. Bleed down casing. MIRU slickline. M/U 2.750 'PXN' plug body and RIH to 2.750" 'WXN' nipple @ 7640.13'. Set plug body and pull out. M/U 'PXN' prong and RIH. Set prong in plug body and pull out .RDMO slickline. R/U PROS testing to tubing and digitally record pressure test to 3795 psi for 1 hr- pressure declined 6psi to 3689 psi- DOGGR witness and pass test. Bleed down tubing. MIRU Stinger. N/D BOPE. Unlock tubing hanger. P/U on tubing hanger and install new seals (O-rings were badly damaged). Land and lockdown hanger. Pressure test casing to1098 psi and digitally record for 1 hr- pressure inclined slightly to 1102 psi - DOGGR witness and pass test. N/U Cameron 11" 5M WH w/ 3-1/8" 5M master and wing valves. Pressure test WH seals to 300 psi (low) / 5000 psi (high) for 20 min- chart Load out BOPE, choke manifold, and basket- stage at Porter 69 D. Release stinger. Lay down rig. Shut in and secure well. Turn well over to production team. Well full of 432 bbls 8.5ppg, 55 visc, HEC polymer and 100 bbls treated 3% KCL (packer fluid). SDFN. DOGGR-Ernie Blevins Casing: 9-5/8"/47# L80 Liner: 5-1/2"/17# (7691-8122')
5/14/2016	Hold safety meeting with crew and service personnel. Load all misc equipment onto trailer and spot at P69D. Mobilize 2 @ 500 bbls tanks, mud pump, BOPE, and Rival rig #6 to P69D. Clean out and roll up containments. Clean lease. Remove lock from lockbox.

URAL RESOURCES AGENCY OF CALIFORN
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

No. T **216-0178**

REPORT ON OPERATIONS

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

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

Ventura, California
August 10, 2016

Your operations at well **"Porter" 25R**, A.P.I. No. **037-00712**, Sec. **28**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **5/13/2016**, by **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity**.

DECISION:

APPROVED

EB/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

216-0178
#16, 1 No. T

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES

Completion SAPT

PRESSURE BLOCK TEST

Operator So CA Gas Well Designation "Porter" 25 R

Sec. 28 ,T. 3N ,R. 16W B.& M. API No. 037-00712 Field Aliso Canyon

County Los Angeles Witnessed on 5-13-16. Ernie Blevins, representative

Supervisor, was present from 0730 to 1730.

Also present were Jason Fike = Consultant

Casing record of the well

The operation were performed for the purpose of final completion SAPT of the well

Pressure Test Casing

Packer at 7656' Well Type Gas Injector 9 5/8" Casing

Casing Pressured With 8.5# Polymer Volume

Casing Pressure Start (psi) 1098 psi Time End 2:51 pm

Casing Pressure End (psi) 1102 StartTime 3:51 pm

Pressure Held minutes. Total change in pressure + 3 psi %

Test results Good No Good Inconclusive

Pressure Test Tubbing Tubing

Plug-Back to 7646' 2.75" plug Well Type 3 1/2" Tubing

Tubbing Pressured With 8.5 Polymer Volume

Tubbing Pressure Start (psi) 3795 psi Start Time 11:43

Tubbg Pressure End (psi) 3789 End Time 12:43

Pressure Held 60 minutes. Total drop in pressure (-6 psi) psi .158 %

Test results Pass Good No Good Inconclusive

Remarks

URAL RESOURCES AGENCY OF CALIFORN
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

No. T **216-0174**

REPORT ON OPERATIONS

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

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

Ventura, California
August 10, 2016

Your operations at well **"Porter" 25R**, A.P.I. No. **037-00712**, Sec. **28**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **5/11/2016**, by **David Ortiz**, a representative of the supervisor.

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

DECISION:

APPROVED

DO/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

API No. 037-60712 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 216-0174 #12 OK

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator So. Cal Gas Well "Porter" 25R Sec. 28 T. 3N R. 16W
Field Aliso Cyn County Los Angeles Spud Date 11-12-1949

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	5-11-16	D. ORTIZ	(08:00 to 09:00)	Jason Fike	Co. Man
2nd			(to)		

Contractor Rival Rig # 6 Contractor's Rep. & Title

Casing record of well: 13 3/8" (0-825') 55# J-55; 9 5/8" (0-7802') 47# N-80; 5 1/2" 17# (7691'-8122') Slotted 7713'-7795', Wire wrapped screen 7795'-8117'

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☐

DECISION: The blowout prevention equipment and its installation on the 9 5/8" " casing are approved.

Proposed Well Opns: Rework (tubing hanger) . MACP: psi

Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: Cl. II 5M

CASING RECORD OF BOPE ANCHOR STRING

Size	Weight(s)	Grade(s)	Shoe at	CP at	Cement Details	Top of Cement Casing	Top of Cement Annulus
9 5/8	47#	L-80	7802'	None			

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	~~3.5~~	Hydrill	—	11"	5M	4/2016
R	3.5	Shaffer	—	11"	5M	"
R	3.5	Shaffer	—	11"	5M	"

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
9.81						
2.8						
2.8						

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 800 psi
Total Rated Pump Output 5.0 gpm Fluid Level 2/3
Distance from Well Bore 50' ft.

	Accum. Manufacturer	Capacity	Precharge
1	Weatherford	80 gal.	1300 psi
2		gal.	psi

CONTROL STATIONS

	Elec.	Hyd.	Pneu.
✓ Manifold at accumulator unit		✓	
✓ Remote at Driller's station		✓	
Other:			

EMERG. BACKUP SYSTEM

			Press.	Wkg.Fluid
✓ N_2 Cylinders	1	L= 55 "	2300	7.7 gal.
Other:	2	L= " "	2400	8.4 gal.
	3	L= " "	2200	7.1 gal.
	4	L= " "	2500	9.0 gal.
	5	L= " "	2400	8.4 gal.
	6	L= " "	2400	8.4 gal.
		TOTAL:		49.0 gal.

HOLE FLUID MONITORING EQUIPMENT

	Alarm Type: Audible	Alarm Type: Visual	Class
Calibrated Mud Pit			A
Pit Level Indicator			B
Pump Stroke Counter			B
Pit Level Recorder			B
Flow Sensor			C
Mud Totalizer			C
Calibrated Trip Tank			C
Other:			

TOTAL: 12.6

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
Fill-up Line							
✓ Kill Line		2"	5M		✓		5M
✓ Control Valve(s)	2	2"	5M		✓		5M
✓ Check Valve(s)	1						5M
Aux. Pump Cnnct.							
✓ Choke Line	1	3"	5M		✓		5M
✓ Control Valve(s)	6				✓		5M
✓ Pressure Gauge	1				✓		5M
✓ Adjstble Choke(s)	2						5M
✓ Bleed Line	1	2"	5M		✓		5M
Upper Kelly Cock							
Lower Kelly Cock							
Standpipe Valve							
✓ Stndpipe Pres. Gau.	1	3½	5M		✓		5M
✓ Pipe Safety Valve	2	3½	5M		✓		5M
✓ Internal Preventer	1	3½	5M		✓		5M

Hole Fluid Type	Weight	Storage Pits (Type & Size)
HEC polymer	8.5#	344

REMARKS AND DEFICIENCIES:
Fix needle valve (bleeder)
Fixed on site

OGD9 (9/06)

[PARTMENT OF CONSERVA N

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

No. T**216-0160**

REPORT ON OPERATIONS

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

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

Ventura, California
May 09, 2016

Your operations at well **"Porter" 25R**, A.P.I. No. **037-00712**, Sec. **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **5/4/2016**, by **Clifford R. Knight**, a representative of the supervisor.

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

DECISION:

APPROVED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By
Patricia A. Abel
District Deputy

CRK/tkc
OG109

API No. 037-00712 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 216-0160

BLOWOUT PREVENTION EQUIPMENT MEMO 12,1

Operator So Cal Gas Well Porter 2SR Sec. 28 T. 03N R. 16W
Field Aliso Canyon County Los Angeles Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	5-4-16	C. Knight	(0600 to 0900)	Jason Fike	RSS
2nd			(to)		

Contractor Rival Rig # 6 Contractor's Rep. & Title Jason Fike RSS / Jim Dubbs

Casing record of well:

OPERATION: ~~Testing~~ (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☒

DECISION: The blowout prevention equipment and its installation on the 9 5/8 " casing are approved.

Proposed Well Opns: Rework . MACP: psi

Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: Class III 5M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus
9 5/8							

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	CSO	Hydril	CIK10	11 5/8	5M	
RU	2 7/8	Schaffer		11 5/8		
RM	CSO	Schaffer		11 5/8		

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
19					5/4/16	3.5M
3.0					↓	5M
3.0						

TOTAL: 25

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3,000 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore 50+ ft. 1/2

	Accum. Manufacturer	Capacity	Precharge
1	Koomey Type	80 gal.	1,000 psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.	Pneu.
✓ Manifold at accumulator unit		X	
✓ Remote at Driller's station			X
Other:			

EMERG. BACKUP SYSTEM			Press.	Wkg.Fluid
6 N_2 Cylinders	1	L= 55 "	2450	8.70 gal.
Other:	2	L= 55 "	2450	8.70 gal.
	3	L= 55 "	2500	9.02 gal.
	4	L= 55 "	2500	9.02 gal.
	5	L= 55 "	2500	9.02 gal.
	6	L= 55 "	2500	9.02 gal.
		TOTAL:	53.48	gal.

AUXILIARY EQUIPMENT

		No.	Size (in.)	Rated Press	Connections: Weld	Flange	Thread	Test Press.
	Fill-up Line							
1	Kill Line		2	5M			X	5M
2	Control Valve(s)			5M		X		
1	Check Valve(s)			5M		X		
1	Aux. Pump Cnnct.					X		
1	Choke Line		3	5M		✓		
7	Control Valve(s)					X		5M
1	Pressure Gauge					X		
2	Adjstble Choke(s)					X		
—	Bleed Line							
—	Upper Kelly Cock							
—	Lower Kelly Cock							
—	Standpipe Valve							
—	Stndpipe Pres. Gau.							
1	Pipe Safety Valve		2 7/8	5M				
1	Internal Preventer		2 7/8	5M				

HOLE FLUID MONITORING EQUIPMENT

	Alarm Type: Audible	Visual	Class
Calibrated Mud Pit			A
Pit Level Indicator			B
Pump Stroke Counter			B
Pit Level Recorder			B
Flow Sensor			C
Mud Totalizer			C
Calibrated Trip Tank			C
Other:			

Hole Fluid Type	Weight	Storage Pits (Type & Size)
Polymer	8.5	700 bbl Baker

REMARKS AND DEFICIENCIES:

OGD9 (9/06)

[ ]PARTMENT OF CONSERVA[illegible]N
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T**216-0148**

REPORT ON OPERATIONS

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

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

Ventura, California
May 05, 2016

Your operations at well **"Porter" 25R**, A.P.I. No. **037-00712**, Sec. **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **4/26/2016**. **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity.**

DECISION:

APPROVED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By
Patricia A. Abel
District Deputy

EB/tkc
OG109

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

No. T 216-0148
#16, 1

INTERNAL MECHANICAL INTEGRITY TEST (MIT)
(Standard Annulus Pressure Test-SAPT)

Operator: So CA Gas | Well: "Porter" 25R

Sec. 28 | T. 3N | R. 16W | B.&M. SB | API No.: 037-00712 | Field: Aliso Canyon

County: Los Angeles | Witnessed/Reviewed on: 4-26-16 / 4/27/16

Ernie Blevins, representative of the supervisor, was present from 1130 to 1845.

Also present were: Jason Fike - Company man 4-27-16 = 0430 - 0700

Casing record of the well:

9 5/8" 47# N80 0-7691'

5 1/2" - 17# Liner - 7691'

8.5#/gall Polymer fluid

2 7/8" Tubing

Casing Bridge Plug - 7678'

The Internal MIT was performed for the purpose of pressure testing the 9 5/8" casing above 7678' (2) (prior to injecting fluid)

☒ The Internal MIT is approved since it indicates that the 9 5/8" casing has mechanical integrity above 7678' at this time..

☐ The Internal MIT is not approved due to the following reasons: (specify)

PROS Tech - Chris Willard

INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.

2nd Test: 2 7/8" Down thru Tubing to Bridge Plug & Packer

Start Pressure: 2325 → 2318 psi

Start Time: 0633 → 0733

Arrowset Packer 3582'-7678' (-7 psi bleedoff)

1st Test

Top of Casing: 3582'-0' Test Block

Start Press.: 3698 psi → 3676 psi End Press.

Start Time: 4:35 pm → 5:35 pm End Time

Packer @ 3582' (Loss - 22 psi)

PASS

4-27-16 0630

[PARTMENT OF CONSERVA]N
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T216-0129

REPORT ON OPERATIONS

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

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

Ventura, California
May 04, 2016

Your operations at well **"Porter" 25R**, A.P.I. No. **037-00712**, Sec. **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **4/15/2016**, by **Clifford R. Knight**, a representative of the supervisor.

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

DECISION:

APPROVED

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel
District Deputy

CRK/tkc
OG109

API No. 037-00712 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 219-0129

BLOWOUT PREVENTION EQUIPMENT MEMO 12,1

Operator So. Cal Gas Well Porter 25R Sec. 28 T. 3N R. 16W
Field Aliso Canyon County Los Angeles Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	4-15-16	C. Knight	(1015 to 1045)	Jason Fike	ASS
2nd			(to)		

Contractor Rival Rig # 6 Contractor's Rep. & Title
Casing record of well: Jeremy - weatherford

OPERATION: ~~Testing~~ (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☒
DECISION: The blowout prevention equipment and its installation on the 9 5/8 " casing are approved.

Proposed Well Opns: Rework . MACP: psi
Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: Class III 5M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	CSO	Hydrill	GK 10 5K	↑	5M	4/2016
Rd	2 7/8	Schlumber	LXT	↑	↓	↓
Rd	CSO	"	LXT	9 5/8	↓	↓

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
9.81					4/15/16	
2.80					↓	5K
2.80					↓	

TOTAL: 15.41

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3,000 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore 50+ ft. 1/2

	Accum. Manufacturer	Capacity	Precharge
1	Koomey Type	80 gal.	1,000 psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.	Pneu.
1 Manifold at accumulator unit		X	
Remote at Driller's station			
Other:			

EMERG. BACKUP SYSTEM			Press.	Wkg.Fluid
6 N_2 Cylinders	1	L= 55 "	2500	9.34 gal.
Other:	2	L= 55 "	2500	9.34 gal.
	3	L= 55 "	2500	9.34 gal.
	4	L= 55 "	2500	9.34 gal.
	5	L= 55 "	2500	9.34 gal.
	6	L= 55 "	2500	9.34 gal.
		TOTAL:		56.04 gal.

AUXILIARY EQUIPMENT

		No.	Size (in.)	Rated Press	Connections: Weld	Flange	Thread	Test Press.
	Fill-up Line							
1	Kill Line		2	5M			X	
3	Control Valve(s)			5M		X		
1	Check Valve(s)			5M		X		
1	Aux. Pump Cnnct.			5M		X		
1	Choke Line		3	5M		X		5K
2	Control Valve(s)			5M		X		5K
1	Pressure Gauge					X		
5	Adjstble Choke(s)		3	5M		X		5K
	Bleed Line							
	Upper Kelly Cock							
	Lower Kelly Cock							
	Standpipe Valve							
	Stndpipe Pres. Gau.							
1	Pipe Safety Valve		2 7/8	5M				5K
1	Internal Preventer		2 7/8	5M				5K

HOLE FLUID MONITORING EQUIPMENT

	Alarm Type: Audible	Visual	Class
Calibrated Mud Pit			A
Pit Level Indicator			B
Pump Stroke Counter			B
Pit Level Recorder			C
Flow Sensor			C
Mud Totalizer			C
Calibrated Trip Tank			C
Other:			

Hole Fluid Type	Weight	Storage Pits (Type & Size)
Polymer	8.4	870 bbl bunker tanks

REMARKS AND DEFICIENCIES:

OGD9 (9/06)

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern Califronia Gas Company** WELL DESIGNATION **"Porter" 25R**

API No. **03700712** SE **28** T: **3N** R.: **16W** , **SB** B. and M.

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

Type of Notice: **Rework** **Date** **4/14/2016** **Report Number:** **P216-0047**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)			✓	
History (OG103)	7/25/16	✓		
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
BOPE Insp.	4/15/16	✓		
Press. Test	4/27/16	✓		Electric data submitted
BOPE Insp	5/4/16	✓		
" "	5/11/16	✓		
Press. Test	5/13/16	✓		Elect. data submitted

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

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

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

ENGINEER'S CHECK LIST

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

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

CLERICAL CHECK LIST

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

REMARKS

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: D. ORTIZ 8-15-16
(Date and Engineer)

Modified OGD2

AOR Datbase _____

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

No. P 216-0047

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

PERMIT TO CONDUCT WELL OPERATIONS

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

Ventura, California
April 18, 2016

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

Your proposal to **Rework** well **"Porter" 25R**, A.P.I. No. **037-00712**, Section **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **--** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **4/14/2016**, received **4/14/2016** has been examined in conjunction with records filed in this office. (Lat: **34.316756** Long: **-118.561240** Datum:**83**)

THE PROPOSAL IS APPROVED PROVIDED:

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

(CONTINUED ON PAGE 2)

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

Engineer Randall Morlan
Office (805) 654-4761

RM/rm

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
For Patricia A. Abel, *District Deputy*

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

Well #: **"Porter" 25R**
API #: **037-00712**
Permit : **P 216-0047**
Date: 04/18/2016

NOTE:

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

Enclosure: **Requirements of Comprehensive Safety Review of the Aliso Canyon Natural Gas Storage Facility**

cc:

ATTACHMENT 1
TO DOGGR ORDER 1109

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

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

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

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

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

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

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

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

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

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

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

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

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

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

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

Rec'd 04-14-16 DOGGR Ventura.

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

FOR DIVISION USE ONLY		
	Forms	
Bond	~~OGD114~~	OGD121
	CAL ✓ WIMS	115 ✓

P216-0047

NOTICE OF INTENTION TO REWORK / REDRILL WELL

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well Porter 25R, API No. 037-00712,

Sec. 28, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

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

See attached wellbore schematic

The total depth is: 8122 feet. The effective depth is: 8122 feet.

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

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

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

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

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

See attached program

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

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

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

Name of Operator: Southern California Gas Company			
Address: P. O. Box 2300		City/State: Chatsworth	Zip Code: 91313-2300
Name of Person Filing Notice: Jovy Kroh	Telephone Number: 937-239-0279	Signature: Jovy E Kroh	Date: 04/14/2016
Individual to contact for technical questions: Jovy Kroh	Telephone Number: 937-239-0279	E-Mail Address: jkroh@semprautilities.com	

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

Rec'd 04-14-16 DOGGR Ventura.

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

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

CRITICAL WELL DEFINITION

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

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

WELL OPERATIONS REQUIRING BONDING

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

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

Rec'd 04-14-16 DOGGR Ventura.

WORKOVER PROJECT

Porter 25R – Well Inspection

DATE: April 14, 2016

OPERATOR: SOUTHERN CALIFORNIA GAS COMPANY

FIELD: ALISO CANYON

WELL: Porter 25R

API NUMBER: 037-00712

ELEVATION: All depths based on original KB, 24' above GL

SURFACE LOCATION: SEC 28, T3N, R16W, S.B. B&M

OBJECTIVE

The intent of this program is to inspect the well integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP). This project will include pulling 2-7/8" completion string, running casing inspection logs, pressure testing casing and well laterals, installing a new completion string, converting well to tubing flow, and installing pressure monitors. Baseline assessment data will be gathered on vertical casing pipe and other well components.

WELL RECORD

Current Status:	Shut-in
TD:	8122'
Special Conditions:	Last tagged at 8119', temp survey 10/29/2015
Casing Record:	13-3/8", 54.5#, J-55 casing cemented at 825' with 660 sks 9-5/8", 47#, N-80 casing cemented at 7802' with 3151 ft3 5-1/2", 17#, K-55 liner from 7691'-8122'; perforated with 0.012" slots from 7713'-7795 and 0.012" WWS from 7795'-8117'; liner Gravel packed inside 15" hole with 428 ft3 20-40 sand

GEOLOGIC MARKERS

UDA1	6043'md	-3324'vss	S4	7821'md	-5072'vss
UDA2	6270'md	-3547'vss	S6	7858'md	-5108'vss
MDA	6748'md	-4017'vss	S8	7917'md	-5166'vss
LDA	6963'md	-4229'vss	S10	7956'md	-5204'vss
MP	7520'md	-4776'vss	S12	8019'md	-5266'vss
S1	7719'md	-4972'vss	S14	8068'md	-5314'vss
S2	7762'md	-5014'vss			

Estimated Field Pressure: 1050 psi on 4/14/2016 (Variable)

Estimated Bottom-hole Temperature: 162°F from 10/29/15 temperature survey

Rec'd 04-14-16 DOGGR Ventura.

PROJECT NOTES

1. BOPE requirements in Gas Company Standard 224.05 shall be fully implemented at all times.

2. The storage reservoir pressures shall be monitored during the workover with a minimum of 300 psig overbalance for well control fluids.

3. Prepare the location by removing all relevant landscaping/lighting fixtures as well as surface piping and electrical components as needed. Locate rig anchors, reinstall if necessary.

4. DOGGR permit must be posted on site. Notify the DOGGR as required for BOPE testing as stated on permit.

PRE-RIG WORK

1. De-energize and remove all laterals. Install companion flanges for circulating the well.

2. Complete slickline work as required to set-up well for circulation.

WELLWORK PROGRAM

1. Move in production rig and rig pump with tank, shaker, and mixer.

2. Spot 500 bbl Baker tanks and load with 8.5 ppg KCl brine.

   a.) Connect pump to the tubing and vent the casing through the choke manifold to the SoCalGas withdrawal system.
   b.) Treat all brine with Biocide, 5 gals/100 bbls

3. Change well over to 8.5 ppg KCl. The tubing volume is approximately 44 bbls. and the annulus is approx. 497 bbls. Use HEC polymer as required to minimize lost circulation.

4. Install backpressure valve in tubing hanger. Nipple down tree. Send-in wellhead and tree components to Cameron for inspection.

5. ++Install a Class III 5M BOPE per Gas Company Standard 224.05 and in accordance with the DOGGR permit. All connections and valves must be flanged and 5000 psig rated.

   a.) Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the 2-7/8" pipe rams to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.
   b.) Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 20 minutes. Test all lines and connections to 300 psig.
   c.) All tests are to be charted and witnessed by a DOGGR representative.
   d.) Remove BPV.

6. Attempt to un-latch from Otis BWD seal-bore packer at 7624' and POOH laying down all 2-7/8", EUE 8rd, J-55 tubing string and jewelry. Note: tubing landed in 13,000 lbs. compression.

7. If tubing doesn't release, fish tubing and mill over/recover Otis BWD packer as required

using 2-7/8", 6.5#, P-110 TKC workstring.

8. Pick-up a 9-5/8", 47# casing scraper on 2-7/8" workstring string and RIH to 5-1/2" liner top at 7691'. Circulate well clean. POOH.

9. RIH with clean-out assembly for 5-1/2", 17# liner and clean-out to bottom of liner at 8122'. POOH. Note: Found pick-up at 8119' during 10/29/2015 temp. survey.

10. Make up and run a 9-5/8" retrievable bridge plug (BP). Set at approximately 7681' (10 ft above liner top), pressure test, and sand off.

11. Rig-up wireline unit(s) with lubricator and run the following:

    a.) Gyro survey from BP to surface
    b.) Ultrasonic imager from BP to surface
    c.) Cement bond log from BP to top of cement
    d.) Magnetic flux leakage BP to surface
    e.) Multi-arm caliper log from BP to surface

12. RIH with a test packer and run a Pressure Integrity Test on 9-5/8" casing from surface to BP to 115% of the wells maximum allowable operating pressure (3625 psi) as per attached Pressure Test Schedule. POOH with test packer.

    a.) Engineering team to analyze log and pressure test results and recommend any additional remediation.

12. Nipple down 11" Class III 5 M BOPE, crossover spool, and primary pack-off.

    a.) Replace the pack-off seals and reinstall tubing head, refurbished as necessary. Install new wellhead and tree valves.
    b.) Pressure test all the wellhead seals to 3625 psig.
    c.) Reinstall the 11" Class III BOPE and function test.

13. RIH with retrieving tool for BP to top of sand. Circulate out sand and engage BP. Release BP at 7681', circulate as required to control well. POOH and lay down tubing.

14. RIH with new completion string as follows:

    a.) 4-1/2" 12.6# L-80 EUE 8RD wireline re-entry guide
    b.) 4-1/2" 12.6# x 9-5/8" 47# TCPC production packer
    c.) 10' pup joint 4-1/2" 12.6# L-80 TCPC tubing
    d.) 4-1/2" 12.6# L-80 TCPC XN no-go nipple
    e.) 8' Blast joint 4-1/2" 12.6# L-80 TCPC tubing
    f.) Full joint 4-1/2" 12.6# L-80 TCPC tubing
    g.) 4-1/2" 12.6# L-80 TCPC sliding sleeve
    h.) Full joint 4-1/2" 12.6# L-80 TCPC tubing
    i.) 4-1/2" 12.6# TCPC Pin x 5-1/2" 20# TCPC Box Crossover pup joint
    j.) 5-1/2" 20# L-80 TCPC tubing to surface
    k.) Pup joints 5-1/2" 20# L-80 TCPC tubing for space-out
    l.) 4' 5-1/2" 20# L-80 TCPC fatigue nipple (pin x pin)
    m.) 10-3/4" Tubing hanger w/ 4-1/2" EUE top box / 4" BPV / 5-1/2" TCPC bottom box

Note: Run sliding sleeve in closed position. Ensure new production packer depth is at or above depth at which retrievable bridge plug was used for pressure testing.

15. Land tubing as per vendor specifications. **Note: amount of compression to set on packer will be determined by Force Analysis / Tube Move Calculations.**

16. Rig up slickline unit and lubricator. Set a plug in the 4-1/2" XN profile.

17. Notifiy DOGGR to witness pressure tests of annulus to 1000 psi. and tubing to 3700 psi. Both tests to be an hour in duration and recorded digitally.

18. RIH and recover plug from XN nipple. RIH and shift the sliding sleeve open.

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

20. RIH with slickline and shift sliding sleeve closed. POOH and rig down slickline unit.

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

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

WELL LATERAL HYDROTESTING

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

22. Reinstall the hydro-tested laterals.

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

24. Release well to operations.

EXTERNAL CORROSION PROTECTION

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

Rec'd 04-14-16 DOGGR Ventura.

Well
Porter 25R RD

API #: 04-037-00712-01
Sec 28, T3N, R16W

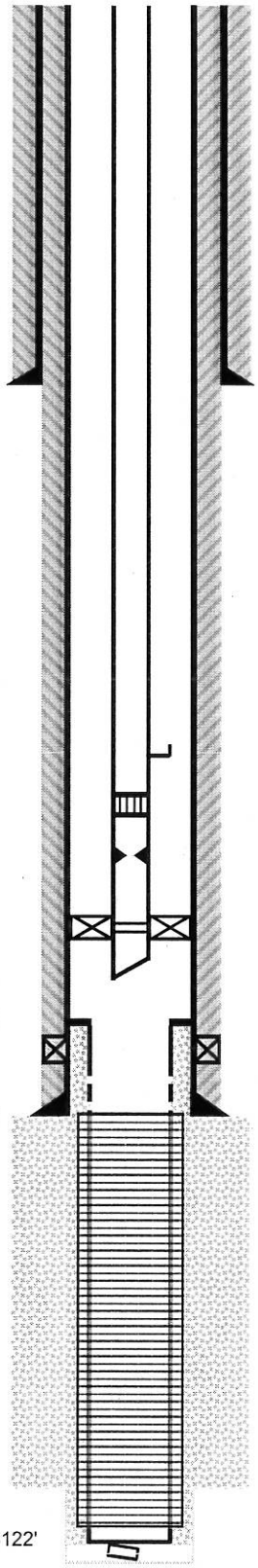
Operator: So. California Gas Co.

Lease: Porter
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 2680.44' asl
Datum to Ground: 24' KB*

Spud Date: 11/12/1949
Redrill (RD) Kick-off Date: 10/11/1993
Completion Date: 11/9/1993

Junk: Nose from hole opener below 8124'



13-3/8" TOC Surface
9-5/8" TOC Surface

17-1/2" Hole

Surface Casing
13-3/8", 54.5#, J-55
0' - 825'

CMT'D w/ 550 SKS** + 110 SKS
Top Job thru 1" pipe @ 40'

825'

12-1/4" Hole

Production Casing
9-5/8", 47#, N-80
0' - 7802'

CMT'D w/ 3151 CF, Trace CMT
Returns to Surface

7691'

7802'

15" Hole (to 8110')

Liner
5-1/2", 17#, J-55
7691' - 8122'

8-1/2" Hole (8110' - 8125')

8122'

TD 8125'
TD VSS (-5369')
Directionally Drilled: Yes (8122' MD is 221' W, 388' N of Surf, 8071' TVD)

Tubing
2-7/8", 6.5#, J-55
0' - 7628'

830' Redrill (RD) KOP (from OH) into this wellbore (See History)

7511' MMA GLM (w/ 1-1/2" RA Latch)

7560' Otis "XD" Sliding Sleeve

7591' Otis "XN" Nipple

7624' Haliburton BWD PCKR w/ J-Latch

7628' Tail

7693' 9-5/8" ECP Inflated w/ 89 CF CMT

Liner Perfs:
7713' - 7795' 1.5" x 0.012" , 12R, 6"C Slots
7795' - 8117' 0.012", 90 wire WWS

Gravel Packed w/
428 CF (120% of theor.) 20-40

Junk below 8124' (see desc. above)

Wellbore History
Orig. Hole (OH) TD @ 8625'
(See Porter 25R OH)
RD KOP @ 830'
TD @ 8125'

Notes
* +17' datum change from orig. hole (OH datum: 6.92' DF)
**Lost circ. while displacing last 250 SKS CMT

Top of Zone Markers		
UDA1	6043'	(-3324')
MDA	6748'	(-4017')
LDA	6963'	(-4229')
MP	7520'	(-4776')
S1	7719'	(-4972')
S4	7821'	(-5072')
S8	7917'	(-5166')

Prepared by: LD (4/11/2016)

InterAct

Rec'd 04-14-16 DOGGR Ventura.

Well

Porter 25R RD

API #: 04-037-00712-01
Sec 28, T3N, R16W

Production Casing Pressure Test - Program

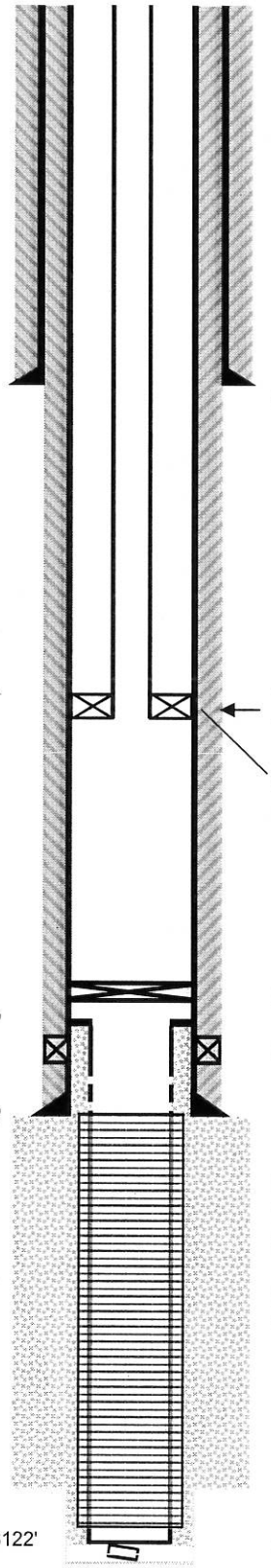
Operator: So. California Gas Co.

Lease: Porter
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 2680.44' asl
Datum to Ground: 24' KB*

Spud Date: 11/12/1949
Redrill (RD) Kick-off Date: 10/11/1993
Completion Date: 11/9/1993

Junk: Nose from hole opener below 8124'



13-3/8" TOC Surface
9-5/8" TOC Surface

17-1/2" Hole

Surface Casing
13-3/8", 54.5#, J-55
0' - 825'

CMT'D w/ 550 SKS** + 110 SKS
Top Job thru 1" pipe @ 40'

825'

830' Redrill (RD) KOP (from OH) into this wellbore (See History)

TEST 3500' to Surface - 3625 psi
TEST 3500' to 7681' - 2250 psi

12-1/4" Hole

9-5/8" Test Packer (COE @ 3500')

Production Casing
9-5/8", 47#, N-80
0' - 7802'

CMT'D w/ 3151 CF, Trace CMT
Returns to Surface

7681' 9-5/8" Retrievable Bridge Plug

7691'

7693' 9-5/8" ECP Inflated w/ 89 CF CMT

7802'

Liner Perfs:
7713' - 7795' 1.5" x 0.012" , 12R, 6"C Slots
7795' - 8117' 0.012", 90 wire WWS

15" Hole (to 8110')

Gravel Packed w/
428 CF (120% of theor.) 20-40

Liner
5-1/2", 17#, J-55
7691' - 8122'

8-1/2" Hole (8110' - 8125')

8122'

Junk below 8124' (see desc. above)

TD 8125'
TD VSS (-5369')
Directionally Drilled: Yes (8122' MD is 221' W, 388' N of Surf, 8071' TVD)

Wellbore History
Orig. Hole (OH) TD @ 8625'
(See Porter 25R OH)
RD KOP @ 830'
TD @ 8125'

Notes
* +17' datum change from orig. hole (OH datum: 6.92' DF)
**Lost circ. while displacing last 250 SKS CMT

Top of Zone Markers		
UDA1	6043'	(-3324')
MDA	6748'	(-4017')
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MP	7520'	(-4776')
S1	7719'	(-4972')
S4	7821'	(-5072')
S8	7917'	(-5166')

Prepared by: LD (4/11/2016)

InterAct

Rec'd 04-14-16 DOGGR Ventura.

		External Casing Backup Pressure			Pressure Test Net Burst Pressure @ Depth				Tubing Leak Net Burst Pressure @ Depth		
Depth (TVD)	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	1	2	3	Final	Gas-Filled Annulus	Test Pressuree > 85% of Burst	Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus)
				Surface Test Pressure	3625			2250	3625		
				Test Packer Depth	3500						
				Test Down Casing or Tubing	Casing			Tubing			
				Bridge Plug Depth				7681			
0	5840	0.00	0	0	3625			2250	3625		
500	5840	0.00	0	221	3846			2471	3670		
1000	5840	0.00	0	442	4067			2692	3716		
1500	5840	0.00	0	663	4288			2913	3761		
2000	5840	0.00	0	884	4509			3134	3806		
2500	5840	0.00	0	1105	4730			3355	3852		
3000	5840	0.00	0	1326	4951			3576	3897		
3500	5840	0.00	0	1547	5172			3797	3942		
4000	5840	0.00	0	1768	-			4018	3988		
4500	5840	0.00	0	1989	-			4239	4033		
5000	5840	0.00	0	2210	-			4460	4078		
5500	5840	0.00	0	2431	-			4681	4123		
6000	5840	0.00	0	2652	-			4902	4169		
6500	5840	0.00	0	2873	-			5123	4214		
7681	5840	0.00	0	3395	-			5645	4321		
				0.442 psi/ft int. grad.					0.091 psi/ft int. grad.		

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

API No. 037-00712

WELL SUMMARY REPORT

Operator	Well				
Southern California Gas Co.	Porter 25R				
Field	**County**	**Sec.**	**T.**	**R.**	**B.&M.**
Aliso Canyon	Los Angeles	28	3N	16W	S.B.

Location (Give surface location from property or section corner, street center line and/or California coordinates)
206.7' South and 4510.5' West from Station 84

Elevation of ground above sea level
2680'

Commenced drilling (date): 10/10/93
Completed drilling (date): 11/9/93
Commenced producing (date): Gas Storage
☐ Flowing ☐ Pumping ☐ Gas lift
Name of producing zone(s): Sesnon

Total depth (1st hole)	(2nd)	(3rd)
8625'	8122'	n/a

Present effective depth: 8122'
Junk: None

Depth measurements taken from top of: ☐ Derrick Floor ☐ Rotary Table ☒ Kelly Bushing
Which is 24 feet above ground

GEOLOGICAL MARKERS	DEPTH
MP	7520'
S-1	7720'
S-4	7822'
S-8	7920'

Formation and age at total depth: Sesnon - Miocene

	Clean Oil (bbl per day)	Gravity Clean Oil	Percent Water including emulsion	Gas (Mcf per day)	Tubing Pressure	Casing Pressure
Initial Production						
Production After 30 days						

CASING RECORD (Present Hole)

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New or Second Hand	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (if through perforations)
13-3/8"	Surface	825'	55.4#	J-55 ST&C	New	17-1/2"	660 sacks	
9-5/8"	Surface	7802'	47#	N-80 LT&C	Both	12-1/4"	3240 cu.ft.	

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforation and method.)
5-1/2", 17#, K55,LT&C Top: 7691', Bottom: 8122'. Slotted 7713'-7795' with .012" x 1.5" slots, 12 rows, 6" centers. Wire wrapped screen 7795'-8117' with .012" 90 wire. Gravel packed in 15" open hole with 428 cu.ft. 20-40 sand.

Was the well directionally drilled? If yes, show coordinates at total depth
☒ Yes ☐ No

392.01'N & 218.75'W at a TVD of 8071.44'

RECEIVED
APR 29 1994
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

Other surveys
DIL, SFL, GR: 823'-7815'. DLL, MSFL, GR: 7500'-8121'

In compliance with Sec. 3215, Division 3 of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Name	Title	
D. G. Neville	Drilling Engineer	
Address	**City**	**Zip Code**
P. O. Box 3249 M. L. 22GO	Los Angeles, CA.	90051-1249
Telephone Number	**Signature**	**Date**
(213) 244-2658	D. G. Neville	2/11/94

12-07 Landed 6-5/8" casing with 10,000 lbs on packer at 5840' and 110,000 lbs on slips. Ran and set Baker Model C bridge plug at 54'. Installed seal flange and tubing head. Pressure tested seal flange and tubing seals to 5000 psi (held o.k.). Pressure tested BOPE to 2000 psi. Pulled bridge plug from 45'. Ran in well with Baker retrieving tool to 5800'.

12-08 Circulated well at 5800'. Pulled Baker Model C bridge plug. Ran production string; Otis guide shoe, two Otis seals, one joint of 2-7/8" tubing, Otis XN NoGo 2.205" ID, one joint of 2-7/8" tubing, Otis XD sliding sleeve, one joint of 2-7/8" tubing, MMA gas lift mandrel. Externally tested tubing collars to 5000 psi. Spaced out tubing string. Landed 12,000 lbs on packer at 4823' and set 25,000 lbs on tubing hanger. Pressure tested 6-5/8" casing to 2500 psi for 20 minutes with no pressure bleed off or fluid flow through tubing. Pulled dummy valve from mandrel at 5724'. Ran and set 1-1/2" pump-out valve (set at 2700 psi) in mandrel. Opened sliding sleeve at 5759'. Shut in well.

12-09 Installed and tested xmas tree to 5000 psi. Changed well over through Otis sliding sleeve at 5759' with 3% KCl water, treated with HIB 19, Ucarcide Biocide, and COS-oxygen scavenger. Rigged down. Released rig.

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

RECEIVED
JAN 12 1994
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well Porter #25R, Sec. 28, T3N, R16W, S.B.B. & M.
A.P.I. No. 037-00712 Name M. A. Woiemberghe (Person submitting report) Title Agent (President, Secretary or Agent)
Date January 7, 1994

Signature D G Neville

D G. Neville for M. A. Woiemberghe

P. O. Box 3249 Los Angeles, CA 90051-1249 (213) 244-2658
(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	
1993	
09/30	Moved in and rigged up. Set back pressure valve in wellhead. Removed tree. Installed and pressure tested BOPE. Ran in well with the existing 2-7/8" production tubing and tagged top of cement plug at 7360'.
10/01	Opened well and circulated. Rigged up cementers. Pumped 86 sacks Class G cement through open ended tubing at 7360'. Pulled to 6368' and reverse circulated. Pumped 146 sacks Class G cement, pulled up and reverse circulated.
10/02	Ran in well with 2-7/8" tubing and tagged top of cement at 5169'. Cement tag witnessed by Division of Oil & Gas. Pumped 47 bbls of 72 pcf abandonment mud. Pulled to 4227' and reverse circulated. Pulled out of well with tubing. Shot eight 1/2" holes from 4150' to 4152'. Established a pump rate of 1.0 barrel per minute at a pressure of 1600 psi. Ran in well with retainer and set at 4138'. Stabbed into retainer and pumped 108 cf Class G cement below retainer. Pulled out of retainer and pumped an additional 125 cf Class G cement above retainer. Pulled tubing to 4000' and reverse circulated. Pumped 81 bbls of 72 pcf abandonment mud. Pulled tubing to 1820' and reverse circulated.
10/04	Shot four 1/2" holes from 1800' to 1801'. Ran in well with retainer and set at 1790'. Stabbed into retainer and pumped 78 sacks of Class G cement below retainer. Equalized cement on top of retainer. Pumped 24 bbls of 72 pcf abandonment mud. Pulled out of well. Ran in well with casing cutter to 1000'. Made cut on 7", 23# casing at 1000'. Removed BOPE and tubing head. Unable to un-land slips. Re-installed BOPE.

D.O.G. 1/10/94

10/05 Removed BOPE. Rigged up casing jacks. Un-landed and pulled 320,000 lbs to move casing. Jacked casing 40' and then pulled remainder with the workover rig. Laid down 1000' of 7", 23# casing. Reinstalled BOPE.

10/06 Ran in well with 12-1/4" bit on 3-1/2" drill pipe. Tagged fill at 812'. Rigged up stripping head and power swivel. Cleaned out and gauged hole to top of 7" casing stub at 1000'. Circulated clean. Pulled out of well with bit. Ran in well with 3-1/2" drill pipe.

10/07 Continued in well and tagged fill at 982'. Circulated to top of 7" casing stub at 1000'. Could not get into stub. Rigged up cementers. Pumped 270 sacks Class G cement at 17.5 ppg with .75% CFR-3. Theoretical top of equalized cement plug at 700'. Division of Oil & Gas Engineer, Pete Wygle, witnessed and approved placement of cement. Rigged down and released rig.

10/09 Moved in Kenai #44 (drilling rig).

10/10 Moved in Kenai #44. Installed and pressure tested blow out equipment. BOPE testing was witnessed and approved by Division of Oil and Gas Engineer, Pete Wygle. Measured and made up 12-1/4" drilling assembly.

10/11 Tagged top of cement at 745'. Cleaned out to 785'. Tested 13-3/8" casing to 500 psi (O.K.). Cleaned out cement to 830'. Using mud motor and 1-3/4° kick sub began making kick-off. Directionally drilled to 928'. The survey at 928' showed 1/2° off vertical.

10/12 Drilled and surveyed from 928' to 1197'. Pulled out of hole for bit change. Drilled and surveyed ahead to 1554'.

10/13 Drilled from 1554' to 1715'. Hole took fluid at 1715'. Drilled from 1715' to 1857'. Spotted lost circulation material pill as needed.

10/14 Drilled and surveyed from 1857' to 3000'. Wiped hole from 2351' to 1755' (15,000 lbs. drag).

10/15 Drilled and surveyed from 3000' to 3594'. Circulated and pulled out of hole. Made up bit #5 and ran in hole. Wiped hole on 8 hour intervals (40,000-50,000 lbs. drag).

10/16 Drilled and surveyed from 3594' to 4453'. Wiped hole in 8 hour intervals (50,000 lbs. drag).

10/17 Drilled and surveyed from 4453' to 5100'. Wiped hole on 6-7 hour intervals (40,000-60,000 lbs. drag). Pulled out of hole. Made up directional drilling assembly and ran in hole.

10/18 Continued running in hole. Directional drilled from 5100' to 5511'. Wiped hole at 5265' (no drag). Wiped hole at 5451' (no drag).

10/19 Continued directional drilling to 5523'. Pulled out of hole. Changed out bottom hole assembly and ran in hole with bit #7. Reamed from 5050' to 5523'. Drilled and surveyed from 5523' to 6000'. Wiped hole at 5692' (no drag). Wiped hole at 6000' (10,000-15,000 lbs. drag).

10/20 Drilled and surveyed from 6000' to 6952'. Wiped hole at 6460' (Pulled 50,000 lbs. - 60,000 lbs. drag from 6220' - 5910'). Wiped hole at 6711' (Pulled 35,000 lbs. - 40,000 lbs. drag from 6482' - 6328').

10/21 Drilled from 6957' to 7049'. Wiped hole from 7049' to 825' (20,000 lbs. drag). Drilled from 7049' to 7180'. Pulled out of hole and changed bit. Ran in hole. Drilled from 7180' to 7258'. Bit showed signs of being locked up. Pulled out of hole.

10/22 Pulled out of hole. Cleaned out junk sub. Ran back in hole. Reamed from 7174' to 7258'. Drilled from 7258' to 7315'. Pulled out of hole. Made up bit #9. Ran in hole. Reamed from 7110' to 7315'. Drilled from 7315' to 7357'.

10/23 Drilled and surveyed 12-1/4" hole to 7366'. Wiped hole to 6401'. Drilled ahead to 7412'. Wiped hole to 6912'. Drilled and surveyed ahead to 7550'. Drilling rate indicated top of M-P marker at 7530'±. Wiped hole to 7090'. Hole was tight from 7550' to 7370'. Drilled ahead to 7612'.

10/24 Drilled and surveyed 12-1/4" hole to 7675'. Wiped hole to 6713'. Drilled and surveyed ahead to 7808' (logging point). Wiped hole to shoe. Ran back to bottom. Circulated and conditioned mud. Started pulling out of hole for logs.

10/25 Ran Dual Induction/SP/GR log from 7808' to 825'. Ran Caliper/GR log from 7800 to 825'. Rigged up on 10 lines. Ran in hole with gauged assembly to 7748'. Reamed hole to 7808'. Circulated and conditioned mud for casing. Pulled out of hole.

10/26 Ran 191 joints of 9-5/8", 47#, N-80, LT&C casing to 7802'. Cemented casing as follows: Pumped 20 bbls of mud flush. Pumped 2679 cf of 11.4 ppg Class G lead cement with 15% Silicalite and 15% Spherelite. Pumped 472 cf of 15.8 ppg Class G tail cement with 3% CaCl2. Dropped top plug and pumped an additional 89 cf of 15.8 ppg Class G inflation cement with 3% CaCl2. Displaced cement with 531 bbls of fresh water. Received a trace of cement returns to surface. Inflated external casing packer set at 7693' with 3200 psi surface pressure.

10/27 Nippled down BOPE. Installed seal flange and tubing head. Nippled up BOPE on tubing head. Tested BOPE. Test witnessed and approved by Pete Wygle of the Division of Oil & Gas. Installed wear bushing.

10/28 Ran in well with 8-1/2" bit on 6" drill collars. Cleaned out cement from 7589' to 7775'. Pressure tested casing to 1500 psi surface pressure. Cleaned out to 7790'. Changed fluid system over to 2% KCL with XC polymer. Cleaned pits. Drilled out shoe at 7802'. Cleaned out to 7808'. Drilled from 7808' to 7820'. Pulled out of well.

10/29 Ran in well with 8-1/2" X 4" core barrel assembly. Cored from 7820' to 7860'. Recovered 33' of core. Cored from 7860' to 7918' and recovered 60' of core (2' of the 60' recovery was from the first 40' core run). Ran in well with core barrel.

10/30 Continued in well with core barrel. Cored from 7918' to 7958'. Pulled out of well. Laid down core barrel and core, recovering 40'. Ran in well with 8-1/2" bit. Drilled from 7958' to 8012'. Circulated and wiped hole to 7795'. Circulated clean and pulled out of well to log.

10/31 Ran Dual Laterolog/MSFL/SP/GR log from 8016' to 6700'. Ran in well with 8-1/2" bit. Drilled from 8012' to 8120'. Pulled out of well. Ran in well with 8-1/4" X 15" under-reamer.

11/01 Continued in well. Under-reamed to 15" from 7795' to 7907'.

11/02 Under-reamed to 15" from 7907' to 7950'. Pulled out of well leaving one cone. Made up 8-1/2" mill and junk sub on bottom hole assembly. Ran in well to 8074'. Cleaned out to 8116'. Milled on cone and cleaned out to 8120'. Drilled from 8120' to 8125'. Pulled out of well and laid down bottom hole assembly.

11/03 Made up #2 under-reamer and ran in well to 7950'. Under-reamed hole to 15" from 7950' to 8033'.

11/04 Under-reamed from 8033' to 8067'. Pulled out of well and changed under-reamer. Ran in well with #3 under-reamer. Strung back to 8 lines. Slipped and cut drilling line. Re-gauged hole to 15" from 8039' to 8067'. Opened hole from 8067' to 8073'.

11/05 Under-reamed from 8067' to 8110'. Pulled out of well and laid down under-reamer. Nose missing from hole opener. Ran in well with 8-1/2" bit. Circulated and cleaned out to 8124'. Changed fluid system over to 2% KCl with HEC polymer and pulled out of well.

11/06 Rigged up loggers. Ran Dual Laterolog/MSFL/SP/GR/Caliper log from 8123' to 6700'. Rigged up to run 5-1/2" liner. Ran 431' of 5-1/2", 17#, J-55, LT&C liner. Rigged up to gravel pack. Pumped first pack consisting of 350 cu.ft. of 20 - 40 Ottawa gravel.

11/07 Waited on pack. Re-packed with 78 cu.ft. of 20 - 40 Ottawa gravel. Waited on pack. Attempted to re-pack with 35 cu.ft. of 20 - 40 Ottawa gravel. Unable to pack. Pressured up during displacement. Total sand in place was 428 cu.ft. or 120% of

theoretical. Reversed out and released from liner. Pulled out of well. Laid down gravel pack tools. Ran in well with lead seal drive-over adapter set lead seal.

11/08 Pulled out of well. Laid down lead seal setting tool. Made up tubing tail. Ran in well. No fill. Pulled out of well laying down drill pipe and tubing. Made up Otis 9-5/8" BWD packer on wireline. Ran in and set packer at 7624'. Pulled wear bushing. Rigged up to run production tubing.

11/09 Ran 2-7/8" production tubing and stabbed into Otis packer. Landed donut with 13,000 lbs. Nippled down BOPE. Nippled up Xmas tree. Opened sliding sleeve. Changed fluid system over to 2% KCl water (5 gal per 100 bbl Ucarcide, 5 gal per 100 bbl Hib 19, and 2.5 gal per 100 bbl COS). Released rig.

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CORE LABORATORIES

SOUTHERN CALIF. GAS CO.

CORE ANALYSIS REPORT
PORTER-25R
API# 04-037-00712
LOS ANGELES, CALIF.
CL FILE NO. BP-3-1539

Performed by:

Core Laboratories
8005 Schoon St.
Anchorage, AK 99518
(907) 349-3541

Final Report Presented
January 25, 1994

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DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

These analysis, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgement of Core Laboratories (all errors and omissions excepted); but Core Laboratories and it's officers and employees assume no responsibility and make no warranty of representation as to the productivity, proper operations, profitability of any oil, gas or other mineral well or formation in connection with which such report is used or relied upon.

INTRODUCTION

Core Laboratories was requested to perform a core analysis study on behalf of Southern California Gas Co. for whole core samples recovered from the Porter 25R well from the Aliso Canyon Field, Los Angeles, California. Presented herein are the results of this study.

One foot sections of conventional cores cut with a water based mud were processed by Core Laboratory's personnel. A service description and methodology are presented in section 1. The core analysis results and lithological descriptions are presented in section 2. Section 3 contains copies of shipping and receiving transmittals.

We sincerely appreciate this opportunity to be of service and hope this data proves beneficial in the evaluation of this reservoir.

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Section	
1	CONVENTIONAL CORE ANALYSIS, SERVICE DESCRIPTION
2	CONVENTIONAL CORE ANALYSIS, TABULAR RESULTS
3	TRANSMITTALS

SECTION 1

CONVENTIONAL WHOLE CORE

Whole Core Processing in Anchorage

One foot sections of whole core in Saran Wrap and aluminum foil arrived at Core Laboratories' Anchorage facility. The preserved core pieces were removed from the boxes, placed in depth order, removed from their wrapping and trimmed to four inch length on a dry saw.

Conventional Analysis Techniques

Dean-Stark Fluid Saturation Measurements

Water was extracted from the samples by Dean-Stark technique using toluene in cleaned apparatuses. Fresh commercial grade toluene was used for each extraction. Extraction continued until no change in water volume was observed over a four hour period. Cleaning was performed in the same apparatus and toluene until no cut fluorescence was observed using trichloromethane under an ultraviolet light.

Porosity and Permeability Measurements

Extracted samples were dried in a 180 degrees F. convection oven for a minimum of 48 hours. Samples were cooled in a desiccator to room temperature before grain volume, pore volume, and horizontal permeability were measured. The sample ends were cleaned in a sonic cleaner and the samples dried using the same procedure before vertical permeabilities was measured.

Grain volumes and pore volumes were measured with an Extended Range Helium Porosimeter. Pore volumes and permeabilities were measured at a confining pressure of 4200 psig using a triaxial holder.

Dean-Stark Fluid Saturation Measurements

Saturations by Dean-Stark methods were calculated using Equations 1 and 2.

$$So = [((W1 - W2 - H2O)/Do)/Vp] \times 100 \quad (1)$$

$$Sw = [H2O/Vp] \times 100 \quad (2)$$

Where:

- So = Oil Saturations, Percent
- Sw = Water Saturation, Percent
- W1 = Natural Weight
- W2 = Extracted and Dried Weight
- H2O = Extracted Water, Density Assumed 1.0 gm/cc
- Do = Density of Oil, .9042 gm/cc
- Vp = Pore Volume

Grain Density

Grain volume determinations were measured on all samples according to Boyle's Law utilizing the Extended Range Helium Porosimeter. The equipment was calibrated to yield a grain density variation of less than .01 gm/cc. Grain densities were calculated using Equation 3.

$$Dg = Mg/Vg \tag{3}$$

Where: Dg = Grain Density
Vg = Grain Volume
Mg = Grain Mass

Overburden Porosity

The samples were measured for porosity using an Extended Range Helium Porosimeter while confined at 4200 psig in a triaxial holder. Porosity was calculated using Equation 4.

$$P = [Vp/(Vp+Vg)] \times 100 \tag{4}$$

Where: P = Porosity, Percent
Vp = Pore Volume
Vg = Grain Volume

Atmospheric Permeability to Air

Permeabilities of horizontal, horizontal 90, and vertical orientations were measured in a triaxial core holder at a confining pressure of 4200 psig. The sample ends were sonic cleaned and redried before vertical permeabilities were measured. Permeability calculations were performed as defined by Darcy's Equation for compressible fluids, Equation 5 was used to determine permeabilities.

$$K = \frac{Pa \times v \times 1000}{\frac{(P1 - P2)(P1 + P2)}{2}} \times \frac{Qa \times L \times L}{Vb} \tag{5}$$

Where: K = Permeability
v = Gas Viscosity
$P1 - P2$ = Differential Pressure

$\frac{P1 + P2}{2}$ = Mean Pressure

Pa = Atmospheric Pressure
Qa = Flow Rate
L = Length
Vb = Bulk Volume

CORE LABORATORIES

S. CALIFORNIA GAS CO.
PORTER 25R
ALISO CANYON FIELD
LOS ANGELES, CA

FILE: BP-3-1539
DATE: 24-JAN-94
ANALYSTS:PB,DS,TR

DEAN STARK ANALYSIS
WHOLE CORE

SMPL #	SMPL TYPE	DEPTH FT	PERMEABILITY KAIR, Md HORIZONTAL*	PERMEABILITY KAIR, Md HORIZONTAL, 90*	PERMEABILITY KAIR, Md VERTICAL*	POROSITY (HELIUM)* (%)	SATURATIONS OIL % Pv	SATURATIONS WATER % Pv	GRAIN DENSITY GM/CC	DESCRIPTION
1	FD	7836.0	0.25	0.01	0.01	14.5	5.5	89.5	2.69	SS-mltgy,vfgr,vwsrtd,rnd,wcmt,qtz,ltgy cly,tr biot,tr dol
2	FD	7869.0	0.26	0.09	0.15	15.8	6.2	71.5	2.68	SS-mltgy,vfgr,vwsrtd,rnd,wcmt,qtz,ltgy cly,tr biot,tr dol
3	FD	7872.0	2.03	1.71	1.39	17.6	5.1	69.1	2.65	SS-mltgy,vfgr,vwsrtd,rnd,wcmt,qtz,ltgy cly,tr biot,tr dol
4	FD	7912.0	1.50	2.11	2.56	17.0	4.4	63.6	2.66	SS-mltgy,vfgr,vwsrtd,rnd,wcmt,qtz,ltgy cly,tr biot,tr dol
5	FD	7914.0	4.43	3.59	5.14	14.7	6.5	72.1	2.65	SS-mltgy,vfgr,vwsrtd,rnd,wcmt,qtz,ltgy cly,tr biot,tr dol
6	FD	7927.0	19.9	21.7	25.4	15.4	1.8	60.5	2.63	SS-mltgy,vf-vcgr,mod srtd,rnd,wcmt,qtz,ltgy cly,biot
7	FD	7953.0	2.56	2.23	2.34	18.2	6.3	64.8	2.67	SS-mltgy,vf-fgr,pred vfgr,wsrtd,rnd,wcmt,qtz,ltgy cly,biot

* - Permeability and Porosity measured at an overburden stress of 4200 psig.

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CORE LABORATORIES

TRANSMITTAL AND ACKNOWLEDGEMENT OF RECEIPT

TO: CORE LABORATORIES
3430 UNICORN RD.
BAKERSFIELD, CA 93308
ATTN: JEFFRY SMITH

MATERIALS RECEIVED VIA: FEDERAL EXPRESS

ITEMS RECEIVED: WELL : PORTER 25R
ONE FOOT SEGMENTS OF 7 WHOLE CORE
FROM : SOUTHERN CALIF. GAS CO.

SAMPLE #	DEPTH
1	7836 – 7837
2	7869 – 7870
3	7872 – 7873
4	7912 – 7913
5	7914 – 7915
6	7927 – 7928
7	7953 – 7954

Shipped by: TIM RHO for CORE LAB Date: 05–Jan–94

Recieved by: _____ for CORE LAB Date: _____

Please note that the items listed above are inventoried, shipped and recieved in good faith, but due to errors, are subject to minor adjustments. In such case both shipper and receiver agree to make a timely and bona fide effort to correct any observed discrepancies.

Western Atlas International

CORE LABORATORIES

SOUTHERN CALIFORNIA GAS COMPANY

CORE ANALYSIS RESULTS

"PORTER" P-25R WELL

ALISO CANYON FIELD
LOS ANGELES COUNTY, CA

CL FILE #093244

PERFORMED BY:
CORE LABORATORIES
3430 UNICORN ROAD
BAKERSFIELD, CA 93308
(805) 392-8600

FINAL REPORT PRESENTED
FEBRUARY 8, 1994

RECEIVED
FEB 09 1995
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

The analyses, opinions or interpretations contained in this report are based upon observations and material supplied by the client for whose exclusive and confidential use this report has been made. The interpretations or opinions expressed represent the best judgment of Core Laboratories. Core Laboratories, however, assumes no responsibility and makes no warranty or representations, express or implied, as to the productivity, proper operations, or profitableness of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever. This report shall not be

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INTRODUCTION

Core Laboratories was selected by Southern California Gas Company to perform a core analysis study upon samples recovered from the Aliso Canyon Field, Los Angeles County, California. Aluminum barrel cores were submitted. Presented herein are the results of analysis.

This report is divided into five sections. The first section provides a description of services. The second section contains a tabular presentation of the results of analysis performed upon horizontally oriented samples. The third section contains a tabular presentation of the results of analysis performed upon vertically oriented samples. Hydraulic unit information in tabular and graphic presentations are included in section 4, and the final section contains an inventory of the core material recovered.

In conjunction with the report, the results of analyses are supplied on an IBM PC compatible floppy diskette. A data file in ASCII format (Filename.DAT) as well as a comma separated values ASCII format file (FILENAME.CSV) are included on the diskette for your convenience.

We appreciate this opportunity to be of service and hope these data prove beneficial in the development of this reservoir.

ALUMINUM BARREL

Field Procedures

Aluminum barrel coring equipment, in conjunction with water base drilling fluids, was used to extract the cores. These cores were handled by Core Laboratories field personnel.

Core Handling and Marking

When practical, the aluminum core barrels were marked for orientation with parallel scribe lines prior to coring. Looking toward the top end of the barrel, a red line on the right and a black line on the left, was used to indicate orientation. After each core was cut, the core barrel was laid on the cat walk and cut into three foot sections. Each section was measured and marked for depth at one-foot intervals. Where applicable, depths were assigned such that any core not recovered was attributed to the bottom of the cored interval. The core sections were boxed and then placed in an insulated crate at the well site.

Upon completion of each core, the boxed core was transported to our Bakersfield facility and placed into chilled storage at the laboratory.

Core Processing

Spectral Gamma Surface Log

Each core was scanned for natural gamma radiation utilizing Corelab's gamma spectrometer. The cores were passed through the spectrometer's detector at a rate of one half foot per minute. Total gamma radiation and uranium-free gamma radiation are reported in API units.

Potassium, uranium, and thorium, the elements primarily responsible for a typical rock gamma spectrum, are quantified. The concentrations of uranium and thorium are reported in parts per million and that of potassium is reported as a percentage.

Core Lay-out and Slabbing

The core was removed from the aluminum barrel and then laid out for viewing by Southern California Gas Company's representatives. Sample points were selected at this time. Both horizontally and vertically oriented samples were requested from each foot of core. In addition to the routine samples, seven intervals were selected for full diameter analysis.

Following removal and preservation of the full-diameter samples, the cores were slabbed parallel to the core axis utilizing a one/third - two/thirds cut. Liquid nitrogen was used as the blade coolant. The one-third sections were placed into slab boxes with styrofoam inserts.

Sample Preparation

Horizontally and vertically oriented one-inch diameter plug samples were drilled from each foot of the chilled core sections. Liquid nitrogen was used as the bit coolant.

Where core friability dictated, the sample plugs were placed in thin-walled metal jackets and fitted with 120 mesh end-screens. The jackets were set to the plugs under hydrostatic loading conditions at a pressure equal to 1000 psig.

Analysis Techniques

Extraction and Saturation Determinations (Dean Stark Analysis)

Oil and water were extracted from the samples by Dean Stark methods using toluene as the solvent. Samples were removed from the Dean-Stark apparatus after water readings had stabilized. Following Dean-Stark extraction, the samples were placed into soxhlet extractors where complete hydrocarbon extraction was performed with methylene chloride. After thorough cleaning, the samples were removed from the soxhlets and dried at 240°F in a convection oven until stable weights were attained.

Oil and water saturations were calculated by Dean Stark methods by using Equations 1 and 2.

$$S_o = [((W_1 - W_2 - H_2O)/D_o)/V_p] \times 100 \quad (1)$$

$$S_w = [H_2O/V_p] \times 100 \quad (2)$$

Where:

S_o = Oil Saturation, Percent

S_w = Water Saturation, Percent

W_1 = Natural Weight

W_2 = Extracted and Dried Weight

H_2O = Extracted Water, Density Assumed 1.0 gm/cc

D_o = Density of Oil - 25 API°

V_p = Pore Volume

Grain Density Determination (Dean Stark Analysis

Grain volume determinations were performed using a Boyle's Law extended range helium porosimeter. Where required, metal jacket and end-screen weight and

volume corrections were applied to the jacketed samples. Grain density was calculated using Equation 3.

$$D_{ma} = M_g / V_g \quad (3)$$

Where: D_{ma} = Grain Density

V_g = Grain Volume

M_g = Grain Mass

Core Measurements at Overburden Stress

Southern California Gas Company requested that core measurements be made at a confining stress of 3600 psi. Core Laboratories' automated core measurement system, the CMS-300 was utilized to perform permeability and porosity measurements at stress. A permeability cut-off of .01 md was used. Samples which were less permeable were not tested at stress, an ambient bulk volume measurement was made to allow calculation of the sample pore volume.

Porosity (Ambient Analysis)

Bulk volumes of the samples which were unsuitable for analysis using the CMS-300, permeabilities <0.01 md, were measured utilizing a mercury displacement pump. Pore volumes of these samples were calculated using Equation 4, and porosities were calculated using Equation 5.

$$V_p = (V_b - V_g) \quad (4)$$

$$\phi = (V_p / V_b) \times 100 \quad (5)$$

Where: V_p = Pore Volume

V_g = Grain Volume

V_b = Bulk Volume

ϕ = Porosity, Percent

Hydraulic Unit Analysis

Following porosity and permeability determination, a hydraulic unit analysis was performed. Reservoir Quality Index (average pore throat size) values were calculated using Equation 6.

$$RQI = 0.0314 * SQRT (K / PHI) \quad (6)$$

Where: K = Klinkenberg Permeability

PHI = Fractional Porosity

In addition, Pore Ratio values were calculated using Equation 7.

$$PR = PHI / (1 - PHI) \quad (7)$$

RQI and PR data were then cross-plotted on a log - log scale and the data grouped into hydraulic units. Each unit represents a unique pore geometry relationship and provides the foundation for the integration of core and electric log data. The tabular data are presented sorted by depth as well as being sorted by hydraulic unit in order to make representative sample selection for any additional testing easier.

Full Diameter Analysis

Testing upon the full-diameter samples was performed by our Anchorage, Alaska facility. The results of this analysis are presented under separate cover.

Core Photography

After scraping the one-third core sections to remove cuttings and saw marks, composite photographs were taken under simulated natural and ultra-violet lighting conditions. The results of photography will be presented under separate cover.

Sample Disposition

The one-third and two-thirds sections of core is stored chilled at a commercial warehouse in Bakersfield, California pending instructions for additional work or permanent storage arrangements.

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R
Location : SEC. 28-T3N/R16W
Co.State : LOS ANGELES COUNTY, CA

Field : ALISO CANYON FIELD
Formation :
Coring Fluid : WATER BASE
Elevation : 2704'KB

File No.: 93244
Date : 07-FEB-94
API No. : 04-037-00712
Analysts: BAKERSFIELD

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
1	7820.5	0.85	18.5	15.4	53.3	68.7	0.29	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
2	7821.5	0.37	17.1	10.2	58.3	68.4	0.17	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
3	7822.5	0.19	16.5	18.7	66.7	85.5	0.28	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
4	7823.5	0.01	16.3	20.9	59.9	80.8	0.35	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
5	7824.5	0.12	16.2	15.7	70.9	86.6	0.22	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
6	7825.5	0.13	16.3	15.2	66.4	81.5	0.23	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
7	7826.5	0.16	14.6	18.6	75.7	94.3	0.25	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
8	7827.5	0.01	3.9	17.7	81.3	99.0	0.22	2.69	Lst gry-tn v slty lt sptd stn dull or flu/frac
9	7828.5	0.06	13.7	16.7	79.1	95.8	0.21	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
10	7829.5	0.53	16.8	17.0	65.5	82.5	0.26	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
11	7830.5	0.23	16.2	11.6	68.9	80.5	0.17	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
12	7831.5	0.33	16.6	8.1	70.0	78.1	0.12	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
13	7832.5	0.58	18.0	11.5	72.7	84.2	0.16	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
14	7833.5	0.01	3.5	14.3	81.8	96.1	0.17	2.69	Lst gry-tn v slty lt strk stn yel flu
15	7834.5	0.28	15.6	18.4	67.5	85.9	0.27	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
16	7835.5	0.16	15.8	24.0	63.7	87.6	0.38	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
17	7837.5	0.01	15.3	9.5	80.9	90.3	0.12	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
18	7838.5	0.01	12.5	8.4	90.4	98.9	0.09	2.69	Sltst lt brn-gry calc lt sptd stn dull or flu
19	7839.5	0.15	15.4	11.7	73.2	84.9	0.16	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
20	7840.5	2.0	18.2	9.5	70.3	79.8	0.13	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
21	7841.5	0.09	14.9	11.6	74.0	85.6	0.16	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
22	7842.5	0.01	12.7	7.5	90.5	98.0	0.08	2.70	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
23	7843.5	0.38	17.0	8.5	68.8	77.3	0.12	2.68	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
24	7844.5	0.35	16.8	7.5	69.6	77.2	0.11	2.68	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
25	7845.5	0.38	16.2	5.3	71.6	76.9	0.07	2.68	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
26	7846.5	0.01	3.6	0.0	77.1	77.1	0.00	2.72	Sst gry vfgr v slty calc no stn no flu
27	7847.5	0.01	3.0	0.0	72.0	72.0	0.00	2.71	Sst gry vfgr v slty calc no stn no flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
28	7848.5	5.7	17.7	6.4	75.9	82.3	0.08	2.64	Sltst lt brn calc m stn dull or flu
29	7849.5	21	20.6	4.4	59.8	64.2	0.07	2.64	Sltst lt brn calc m stn dull or flu
30	7850.5	11	20.2	5.4	61.2	66.6	0.09	2.64	Sst lt brn vfgr v slty calc m stn dull or flu
31	7851.5	0.52	19.2	5.7	64.8	70.5	0.09	2.64	Sst lt brn vfgr v slty calc m stn dk or flu
32	7852.5	4.5	19.1	10.3	58.3	68.7	0.18	2.66	Sst lt brn vfgr v slty calc m stn dk or flu
33	7858.5	0.11	15.4	19.0	65.2	84.2	0.29	2.69	Sltst lt brn calc m stn dull gld flu
34	7859.5	0.04	13.6	23.4	76.2	99.6	0.31	2.69	Sltst lt brn calc m stn dull gld flu
35	7860.5	0.01	7.1	0.0	79.8	79.8	0.00	2.71	Lst gry vfgr sdy v slty no stn no flu
36	7861.5	0.02	13.1	8.2	83.9	92.1	0.10	2.72	Sltst lt brn-gry calc lt sptd stn dull or flu
37	7862.5	0.01	14.2	5.8	87.5	93.3	0.07	2.73	Sltst lt brn-gry calc lt sptd stn dull or flu
38	7863.5	0.02	12.6	14.1	73.5	87.6	0.19	2.72	Sltst lt brn-gry calc lt sptd stn dull or flu
39	7864.5	0.03	12.7	10.7	84.7	95.4	0.13	2.72	Sltst lt brn-gry calc lt sptd stn gld flu
40	7865.5	0.01	11.6	0.0	89.5	89.5	0.00	2.74	Sltst gry calc no stn no flu
41	7866.5	0.01	13.3	0.0	90.1	90.1	0.00	2.72	Sltst gry calc no stn no flu
42	7867.5	0.01	14.0	0.0	85.1	85.1	0.00	2.71	Sltst gry calc no stn no flu
43	7868.5	0.10	14.8	10.5	69.2	79.6	0.15	2.69	Sltst lt brn-gry calc lt sptd stn dull or flu
44	7870.5	0.17	14.9	12.4	67.4	79.8	0.18	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
45	7871.5	0.09	13.4	11.4	73.9	85.3	0.15	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
46	7873.5	1.9	18.0	6.9	65.8	72.7	0.11	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
47	7874.4	0.01	5.8	20.9	54.2	75.0	0.39	2.67	Lst gry-tn lt sptd stn dull gld flu/frac
48	7875.5	6.1	18.5	13.3	56.0	69.3	0.24	2.65	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
49	7876.5	8.5	19.4	10.6	56.7	67.3	0.19	2.64	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
50	7877.5	2.5	18.0	9.4	63.9	73.3	0.15	2.65	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
51	7878.5	1.2	17.7	8.2	63.9	72.1	0.13	2.65	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
52	7879.5	15	21.2	7.6	53.2	60.9	0.14	2.64	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
53	7880.5	4.2	20.0	9.8	56.5	66.3	0.17	2.65	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
54	7881.7	0.91	16.6	14.8	61.7	76.4	0.24	2.66	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
55	7882.5	0.08	14.0	22.0	67.5	89.6	0.33	2.68	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
56	7883.5	0.75	17.5	14.8	50.0	64.8	0.30	2.67	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
57	7884.5	0.94	18.1	17.4	59.2	76.6	0.29	2.67	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
58	7885.5	0.13	15.0	18.8	67.9	86.7	0.28	2.67	Sst lt brn gry vfgr vslty calc lt sptd stn dk or flu
59	7886.5	0.01	11.6	1.1	90.4	91.5	0.01	2.68	Sltst tn gry vfgr sd calc lt sptd stn dk or flu
60	7887.5	0.02	11.9	0.0	89.0	89.0	0.00	2.68	Sltst gry calc no stn no flu
61	7888.5	0.01	12.7	0.0	86.5	86.5	0.00	2.68	Sltst gry vfgr sd calc no stn no flu
62	7889.5	0.01	15.5	6.6	72.0	78.5	0.09	2.67	Sltst gry tn vfgr sd calc lt sptd stn v dk or flu
63	7890.5	4.6	17.8	2.6	81.6	84.2	0.03	2.65	Sst lt brn vf fgr v slty calc lt stn dk or flu
64	7891.5	7.9	14.5	0.5	91.7	92.2	0.01	2.64	Sst lt brn vf cgr v slty calc lt stn dk or flu
65	7892.5	21	21.2	5.2	57.1	62.3	0.09	2.64	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
66	7893.5	10	19.9	3.8	61.7	65.5	0.06	2.64	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
67	7894.5	16	20.4	8.2	54.0	62.3	0.15	2.64	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
68	7895.5	9.0	20.2	2.9	61.5	64.5	0.05	2.64	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
69	7896.5	6.9	19.3	6.5	57.2	63.8	0.11	2.65	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
70	7897.5	2.0	18.6	8.8	58.1	66.9	0.15	2.65	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
71	7898.5	1.9	18.2	6.7	61.9	68.6	0.11	2.66	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
72	7899.5	2.4	19.6	6.1	56.3	62.5	0.11	2.65	Sst lt brn vfgr v slty slily calc lt stn v dk or flu
73	7900.5	2.0	18.1	4.9	65.9	70.8	0.07	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
74	7901.5	2.5	19.5	2.5	60.5	63.1	0.04	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
75	7902.5	1.0	18.0	6.5	61.7	68.1	0.10	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
76	7903.5	1.5	19.2	5.4	60.4	65.8	0.09	2.67	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
77	7904.5	1.3	17.8	8.9	54.9	63.8	0.16	2.67	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
78	7905.5	0.28	15.3	13.1	52.4	65.5	0.25	2.67	Sst gry tn vfgr v slty lt stn wh-v dk or flu
79	7906.5	0.59	18.7	8.1	54.6	62.6	0.15	2.66	Sst lt brn vfgr v slty lt stn v dk or flu
80	7907.5	2.5	20.3	4.3	58.0	62.3	0.07	2.66	Sst lt brn vfgr v slty lt stn v dk or flu
81	7905.5	15	20.5	4.0	56.3	60.3	0.07	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
82	7909.5	5.6	19.9	5.7	51.9	57.6	0.11	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
83	7910.5	2.2	18.5	5.4	57.1	62.4	0.09	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
84	7911.5	3.2	19.3	5.6	52.1	57.7	0.11	2.66	Sst lt brn gry vfgr v slty lt sptd stn v dk or flu
85	7913.5	19	16.0	4.7	60.4	65.1	0.08	2.64	Sst lt brn gry vf mgr slty lt sptd stn v dk or flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
86	7915.5	0.58	10.5	8.7	71.5	80.3	0.12	2.64	Sst lt brn gry vf fgr slty lt sptd stn v dk or flu
87	7916.5	7.0	16.3	4.0	60.6	64.6	0.07	2.64	Sst lt brn gry vf fgr slty lt sptd stn v dk or flu
88	7917.5	7.1	15.5	3.9	61.1	65.0	0.06	2.64	Sst lt brn gry vf fgr slty lt sptd stn v dk or flu
89	7918.5	160	18.2	4.4	43.5	47.9	0.10	2.62	Sst tn gry vf cgr slily slty mic lt sptd stn v dk or flu
90	7919.5	467	18.7	0.6	43.9	44.5	0.01	2.63	Sst tn gry vf mgr slty mic lt sptd stn v dk or flu
91	7920.5	402	18.5	2.1	46.5	48.6	0.05	2.62	Sst tn gry vf mgr slty mic lt sptd stn v dk or flu
92	7921.5	458	18.7	6.4	38.6	45.1	0.17	2.62	Sst tn gry vf mgr slty mic lt sptd stn v dk or flu
93	7922.5	410	19.9	1.4	38.9	40.3	0.04	2.62	Sst tn gry vf mgr slily slty mic lt sptd stn v dk or flu
94	7923.5	463	19.5	1.8	35.4	37.2	0.05	2.62	Sst tn gry vf mgr slily slty mic lt sptd stn v dk or flu
95	7924.5	311	19.8	4.4	36.7	41.1	0.12	2.62	Sst tn gry vf mgr slily slty mic lt sptd stn v dk or flu
96	7925.5	60	17.3	19.5	34.2	53.8	0.57	2.63	Sst tn gry vf mgr slily slty mic lt sptd stn v dk or flu
97	7926.5	47	17.6	3.8	48.4	52.3	0.08	2.63	Sst tn gry vf cgr slty mic lt stn v dk or flu
98	7927.5	36	14.3	4.7	49.3	54.0	0.10	2.63	Sst tn gry vf cgr slty mic lt stn v dk or flu
99	7928.5	35	15.0	5.6	50.6	56.2	0.11	2.63	Sst tn gry vf cgr slty mic lt stn v dk or flu
100	7929.5	1.1	18.5	5.2	52.7	57.9	0.10	2.64	Sst tn gry vf mgr slty mic lt sptd stn v dk or flu
101	7930.5	12	20.3	6.5	53.9	60.4	0.12	2.64	Sst tn gry vfgr v slty lt sptd stn v dk or flu
102	7931.5	20	20.0	5.3	56.4	61.7	0.09	2.64	Sst tn gry vfgr v slty lt sptd stn v dk or flu
103	7932.5	8.2	19.2	10.0	57.1	67.0	0.17	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
104	7933.5	16	19.8	7.1	55.7	62.8	0.13	2.64	Sst tn gry vfgr v slty lt sptd stn v dk or flu
105	7934.5	5.6	19.2	9.3	54.5	63.8	0.17	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
106	7935.5	1.5	17.4	9.3	58.6	67.9	0.16	2.66	Sst tn gry vfgr v slty lt sptd stn v dk or flu
107	7936.5	2.4	18.3	6.2	57.3	63.6	0.11	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
108	7937.5	4.1	19.0	5.4	59.4	64.8	0.09	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
109	7938.5	4.5	19.3	6.5	56.4	62.9	0.11	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
110	7939.5	5.7	18.9	6.3	60.1	66.4	0.10	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
111	7940.5	2.9	19.3	6.4	56.6	63.0	0.11	2.64	Sst tn gry vfgr v slty lt sptd stn v dk or flu
112	7941.5	12	20.5	6.7	55.2	62.0	0.12	2.64	Sst tn gry vfgr v slty lt sptd stn v dk or flu
113	7942.5	6.4	19.6	4.9	60.6	65.5	0.08	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu
114	7943.5	0.14	15.3	14.7	51.8	66.5	0.28	2.65	Sst tn gry vfgr v slty lt sptd stn v dk or flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
115	7944.5	0.01	5.8	20.6	59.3	79.9	0.35	2.68	Sst gry tn vfgr v slty calc lt strk stn v dk or flu
116	7945.5	4.8	19.4	6.9	53.3	60.2	0.13	2.65	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
117	7946.5	2.3	18.7	6.0	57.8	63.8	0.10	2.66	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
118	7947.5	2.5	19.2	7.8	59.1	66.9	0.13	2.67	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
119	7948.7	0.45	15.8	6.4	67.0	73.5	0.10	2.67	Sst tn gry vf fgr v slty calc lt strk stn v dk or flu
120	7950.5	3.0	19.4	5.7	57.9	63.6	0.10	2.66	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
121	7951.5	1.3	18.4	6.0	61.1	67.1	0.10	2.65	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
122	7952.5	1.7	18.4	7.6	59.3	66.9	0.13	2.66	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
123	7954.5	3.5	19.1	8.0	59.5	67.5	0.13	2.65	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
124	7955.5	1.3	18.2	6.7	62.4	69.1	0.11	2.66	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
125	7956.5	1.8	18.1	11.0	50.3	61.3	0.22	2.66	Sst tn gry vfgr v slty slily calc lt sptd stn v dk or fl
126	7957.5	0.11	9.7	13.8	73.0	86.8	0.19	2.65	Sst gry tn vf mgr vslty mic slily calc lt sptd stn dk gl

CORE LABORATORIES

ompany : SOUTHERN CA. GAS CO.
'ell : PORTER 25R
ocation : SEC. 28-T3N/R16W
o.State : LOS ANGELES COUNTY, CA

Field : ALISO CANYON FIELD
Formation :
Coring Fluid : WATER BASE
Elevation : 2704'KB

File No.: 93244
Date : 07-FEB-94
API No. : 04-037-00712
Analysts: BAKERSFIELD

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
1	7820.5	0.41	17.3	20.5	56.9	77.5	0.36	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
2	7821.5	0.31	17.5	28.7	36.5	65.2	0.79	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
3	7822.5	0.17	16.9	26.9	57.5	84.4	0.47	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
4	7823.5	0.13	16.0	25.4	63.8	89.2	0.40	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
5	7824.5	0.10	16.2	19.6	64.2	83.8	0.30	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
6	7825.5	0.18	16.8	21.9	59.4	81.3	0.37	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
7	7826.5	0.13	15.1	24.4	63.0	87.4	0.39	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
8	7827.5	0.01	4.6	33.6	63.1	96.7	0.53	2.70	Lst gry-tn v slty lt sptd stn dull or flu/frac
9	7828.5	0.08	14.8	20.1	70.9	91.0	0.28	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
10	7829.5	0.32	17.3	23.6	54.3	77.9	0.44	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
11	7830.5	0.62	18.1	14.0	64.3	78.3	0.22	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
12	7831.5	0.30	16.6	14.8	64.9	79.6	0.23	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
13	7832.6	0.01	16.8	14.0	64.1	78.1	0.22	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
14	7833.5	0.01	6.9	30.9	55.1	86.0	0.56	2.68	Lst gry-tn v slty lt strk stn yel flu
15	7834.5	0.27	16.7	19.6	60.3	79.9	0.33	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
16	7835.5	0.12	15.6	23.0	69.3	92.4	0.33	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
17	7837.5	0.09	14.8	10.5	81.9	92.4	0.13	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
18	7838.5	0.01	13.2	8.8	90.8	99.6	0.10	2.70	Sltst lt brn-gry calc lt sptd stn dull or flu
19	7839.5	0.12	15.4	17.6	67.9	85.5	0.26	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
20	7840.5	2.8	19.3	23.9	54.8	78.7	0.43	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
21	7841.5	0.05	18.2	16.8	53.3	70.1	0.32	2.68	Sltst lt brn-gry calc lt sptd stn dull or flu
22	7842.5	0.03	13.2	12.6	86.7	99.3	0.15	2.68	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
23	7843.5	0.33	16.2	8.3	69.1	77.4	0.12	2.66	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
24	7844.5	0.24	16.4	11.7	61.7	73.4	0.19	2.67	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
25	7845.5	0.43	16.8	8.9	67.6	76.5	0.13	2.66	Sltst lt brn-gry fos incl calc lt sptd stn dull or-wh fl
26	7846.5	0.01	3.0	0.0	94.7	94.7	0.00	2.70	Sst gry vfgr v slty calc no stn no flu
27	7847.5	0.01	2.5	0.0	96.6	96.6	0.00	2.70	Sst gry vfgr calc no stn no flu

CONVENTIONAL CORE DATA 3 - 1

(VERTICAL)

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
28	7848.5	6.9	19.8	8.9	62.7	71.6	0.14	2.63	Sltst lt brn calc m stn dull or flu
29	7849.5	16	20.4	8.2	57.6	65.8	0.14	2.63	Sltst lt brn calc m stn dull or flu
30	7850.5	18	20.7	7.1	58.9	66.0	0.12	2.64	Sst lt brn vfgr v slty calc m stn dull or flu
31	7851.5	8.1	19.6	8.5	63.4	71.9	0.13	2.63	Sst lt brn vfgr v slty calc m stn dull or flu
32	7852.5	4.0	19.1	11.9	56.5	68.4	0.21	2.64	Sst lt brn vfgr v slty calc m stn dull or flu
33	7858.5	0.09	14.5	20.8	67.0	87.9	0.31	2.67	Sltst lt brn calc m stn dull gld flu
34	7859.5	0.07	14.4	20.0	72.2	92.2	0.28	2.67	Sltst lt brn calc m stn dull gld flu
35	7860.5	0.01	7.4	18.1	76.1	94.2	0.24	2.69	Lst gry vfgr sdy v slty no stn no flu
36	7861.5	0.02	13.7	10.4	83.0	93.4	0.13	2.70	Sltst lt brn-gry calc lt sptd stn dull or flu
37	7862.5	0.01	13.3	15.1	81.3	96.4	0.19	2.71	Sltst lt brn-gry calc lt sptd stn dull or flu
38	7863.5	0.03	13.3	20.0	64.0	84.0	0.31	2.69	Sltst lt brn-gry calc lt sptd stn dull or flu
39	7864.5	0.02	13.5	19.6	70.2	89.8	0.28	2.69	Sltst lt brn-gry calc lt sptd stn gld flu
40	7865.5	0.01	12.1	0.0	97.6	97.6	0.00	2.71	Sltst gry calc no stn no flu
41	7866.5	0.01	14.0	0.0	90.4	90.4	0.00	2.73	Sltst gry calc no stn no flu
42	7867.5	0.01	12.8	0.0	99.5	99.5	0.00	2.69	Sltst gry calc no stn no flu
43	7868.5	0.09	15.2	13.8	64.1	77.9	0.22	2.67	Sltst lt brn-gry calc lt sptd stn dull or flu
44	7870.5	0.28	16.6	11.1	61.0	72.1	0.18	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
45	7871.5	0.17	15.4	18.3	60.0	78.3	0.31	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
46	7873.5	1.4	17.7	10.0	64.4	74.4	0.16	2.66	Sltst lt brn-gry calc lt sptd stn dull or flu
47	7874.4	0.01	3.2	3.3	93.8	97.2	0.04	2.69	Lst gry-tn lt sptd stn dull gld flu/frac
48	7875.5	7.4	18.8	1.7	64.9	66.6	0.03	2.63	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
49	7876.5	12	19.8	5.0	62.4	67.4	0.08	2.63	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
50	7877.5	6.6	19.2	8.9	61.2	70.2	0.15	2.63	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
51	7878.5	3.7	18.6	23.0	47.5	70.5	0.49	2.64	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
52	7879.5	11	19.8	2.2	61.9	64.0	0.04	2.62	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
53	7880.5	7.7	19.7	6.1	62.7	68.8	0.10	2.63	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
54	7881.7	0.59	16.2	12.7	63.4	76.1	0.20	2.66	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
55	7882.5	0.42	15.8	11.3	63.6	74.9	0.18	2.67	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
56	7883.5	0.86	17.5	12.3	60.0	72.3	0.21	2.67	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
57	7884.5	0.68	17.6	17.1	59.1	76.2	0.29	2.67	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
58	7885.5	0.01	14.5	21.1	69.3	90.4	0.31	2.68	Sst lt brn-gry vfgr v slty calc lt sptd stn dull or flu
59	7886.5	0.01	12.2	16.8	79.4	96.2	0.21	2.70	Sltst tn-gry vfgr sdy calc lt sptd stn dull or flu
60	7887.5	0.01	12.8	9.5	83.6	93.1	0.11	2.70	Sltst gry calc no stn no flu
61	7888.5	0.02	12.6	18.6	79.6	98.2	0.23	2.70	Sltst gry vfgr sdy calc no stn no flu
62	7889.5	0.01	14.5	18.4	57.3	75.6	0.32	2.69	Sltst gry-tn vfgr sdy calc lt sptd stn v dull or flu
63	7890.5	3.4	16.7	7.0	75.3	82.3	0.09	2.65	Sst lt brn-gry vf-fgr v slty calc lt sptd stn dull or fl
64	7891.5	6.1	13.8	5.9	80.0	85.8	0.07	2.64	Sst lt brn-gry vf-cgr v slty calc lt sptd stn dull or fl
65	7892.5	27	20.6	4.3	64.2	68.4	0.07	2.64	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
66	7893.5	14	19.6	5.9	62.3	68.2	0.09	2.65	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
67	7894.5	16	20.1	10.4	58.3	68.7	0.18	2.64	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
68	7895.5	10	20.2	12.9	54.2	67.1	0.24	2.65	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
69	7896.5	10	20.1	1.9	62.0	63.9	0.03	2.65	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
70	7897.5	4.0	18.8	3.6	62.7	66.3	0.06	2.66	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
71	7898.5	4.2	19.1	4.9	59.2	64.1	0.08	2.66	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
72	7899.5	4.4	18.5	5.7	62.9	68.6	0.09	2.65	Sst lt brn-gry vfgr v slty sl calc lt sptd stn v dull or
73	7900.5	0.01	18.7	4.7	61.2	65.9	0.08	2.67	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
74	7901.5	4.9	19.5	4.8	61.0	65.7	0.08	2.67	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
75	7902.5	2.3	18.3	11.2	60.3	71.5	0.19	2.67	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
76	7903.5	1.8	17.8	7.6	55.8	63.4	0.14	2.68	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
77	7904.5	1.4	18.0	8.9	49.4	58.3	0.18	2.68	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
78	7905.5	0.54	15.7	15.1	51.3	66.4	0.29	2.68	Sst gry-tn vfgr v slty lt sptd stn wh-v dull or flu
79	7906.5	2.7	17.4	8.8	55.3	64.0	0.16	2.66	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
80	7907.5	15	20.7	6.6	51.7	58.3	0.13	2.66	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
81	7908.5	10	20.6	6.3	54.9	61.3	0.12	2.66	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
82	7909.5	4.1	19.1	5.1	58.5	63.6	0.09	2.67	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
83	7910.5	6.1	19.7	6.3	57.3	63.6	0.11	2.67	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
84	7911.5	6.4	20.0	7.2	56.2	63.3	0.13	2.66	Sst lt brn-gry vfgr v slty lt sptd stn v dull or flu
85	7913.5	5.4	16.1	8.3	57.3	65.5	0.14	2.66	Sst lt brn-gry vf-mgr slty lt sptd stn v dull or flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
86	7915.5	0.01	15.1	7.2	58.5	65.8	0.12	2.64	Sst lt brn-gry vf-fgr slty lt sptd stn v dull or flu
87	7916.5	11	16.5	5.9	60.8	66.7	0.10	2.65	Sst lt brn-gry vf-fgr slty lt sptd stn v dull or flu
88	7917.5	8.5	15.7	7.1	66.5	73.6	0.11	2.64	Sst lt brn-gry vf-fgr slty lt sptd stn v dull or flu
89	7918.5	184	16.8	12.6	46.0	58.6	0.27	2.63	Sst tn-gry vf-cgr sl slty mica lt sptd stn v dull or flu
90	7919.5	503	18.9	2.2	43.2	45.4	0.05	2.63	Sst tn-gry vf-mgr slty mica lt sptd stn v dull or flu
91	7920.5	502	18.8	2.8	45.3	48.1	0.06	2.64	Sst tn-gry vf-mgr slty mica lt sptd stn v dull or flu
92	7921.5	360	18.6	9.0	41.7	50.8	0.22	2.62	Sst tn-gry vf-mgr slty mica lt sptd stn v dull or flu
93	7922.5	294	18.0	4.5	44.9	49.4	0.10	2.62	Sst tn-gry vf-mgr slty mica lt sptd stn v dull or flu
94	7923.5	400	18.5	5.2	42.5	47.7	0.12	2.62	Sst tn-gry vf-mgr sl slty mica lt sptd stn v dull or flu
95	7924.5	274	18.3	10.2	38.0	48.2	0.27	2.63	Sst tn-gry vf-mgr sl slty mica lt sptd stn v dull or flu
96	7925.5	84	17.7	12.1	42.4	54.6	0.29	2.66	Sst tn-gry vf-mgr sl slty mica lt sptd stn v dull or flu
97	7926.5	53	16.9	6.2	48.8	55.0	0.13	2.64	Sst tn-gry vf-cgr slty mica lt sptd stn v dull or flu
98	7927.5	24	14.5	4.6	51.9	56.5	0.09	2.63	Sst tn-gry vf-cgr slty mica lt sptd stn v dull or flu
99	7928.5	20	14.5	5.2	58.3	63.5	0.09	2.63	Sst tn-gry vf-cgr slty mica lt sptd stn v dull or flu
100	7929.5	1.1	18.6	5.2	56.4	61.6	0.09	2.64	Sst tn-gry vf-mgr slty mica lt sptd stn v dull or flu
101	7930.5	11	20.0	5.8	59.8	65.6	0.10	2.64	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
102	7931.5	9.6	19.6	15.4	59.2	74.6	0.26	2.65	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
103	7932.5	9.4	19.6	6.4	57.7	64.1	0.11	2.65	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
104	7933.5	21	20.6	5.4	55.2	60.5	0.10	2.64	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
105	7934.5	7.7	19.9	6.3	58.0	64.3	0.11	2.65	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
106	7935.5	3.0	18.8	5.0	63.4	68.3	0.08	2.66	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
107	7936.5	2.0	17.5	5.9	66.3	72.3	0.09	2.66	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
108	7937.5	5.2	18.6	8.8	59.0	67.8	0.15	2.65	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
109	7938.5	3.0	17.3	5.3	63.3	68.6	0.08	2.66	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
110	7939.5	6.2	19.3	3.6	60.1	63.6	0.06	2.66	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
111	7940.5	10	19.7	3.8	50.0	53.8	0.08	2.66	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
112	7941.5	8.7	19.6	6.8	59.7	66.5	0.11	2.65	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
113	7942.5	5.7	19.1	9.9	56.9	66.8	0.17	2.65	Sst tn-gry vfgr v slty lt sptd stn v dull or flu
114	7943.5	0.50	14.4	19.0	49.0	67.9	0.39	2.66	Sst tn-gry vfgr v slty lt sptd stn v dull or flu

CORE LABORATORIES

Company : SOUTHERN CA. GAS CO.
Well : PORTER 25R

Field : ALISO CANYON FIELD
Formation :

File No.: 93244
Date : 07-FEB-94

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	TOTAL FLUIDS	OIL WATER RATIO	GRAIN DENSITY gm/cc	DESCRIPTION
115	7944.5	4.0	18.3	8.5	58.7	67.1	0.14	2.65	Sst gry-tn vfgr v slty calc lt strk stn v dull or flu
116	7945.5	4.3	19.0	7.6	63.5	71.0	0.12	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
117	7946.5	3.1	19.1	7.9	59.8	67.6	0.13	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
118	7947.5	3.8	19.3	8.3	58.2	66.5	0.14	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
119	7948.7	2.5	18.8	10.3	63.6	73.9	0.16	2.67	Sst tn-gry vf-fgr v slty calc lt strk stn v dull or flu
120	7950.5	4.5	19.5	6.3	57.3	63.6	0.11	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
121	7951.5	1.4	17.7	4.4	68.7	73.1	0.06	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
122	7952.5	2.1	18.2	9.8	62.5	72.4	0.16	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
123	7954.5	3.6	19.0	7.1	62.9	70.0	0.11	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
124	7955.5	0.01	18.0	5.5	55.3	60.8	0.10	2.67	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
125	7956.5	2.2	18.2	8.6	52.3	60.9	0.17	2.66	Sst tn-gry vfgr v slty sl calc lt sptd stn v dull or flu
126	7957.5	0.14	14.1	18.7	62.5	81.2	0.30	2.66	Sst gry-tn vf-mgr v slty mica sl calc lt sptd stn dull g

Western Atlas International

CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
1	7820.5	0.2956	0.067	8
2	7821.5	0.2235	0.046	8
3	7822.5	0.1692	0.033	7
4	7823.5	0.0398	0.008	4
5	7824.5	0.1402	0.027	7
6	7825.5	0.1446	0.028	7
7	7826.5	0.1925	0.033	7
8	7827.5	0.3924	0.016	9
9	7828.5	0.1290	0.021	7
10	7829.5	0.2760	0.056	8
11	7830.5	0.1938	0.038	7
12	7831.5	0.2219	0.044	8
13	7832.5	0.2563	0.056	8
14	7833.5	0.4556	0.017	9
15	7834.5	0.2286	0.042	8
16	7835.5	0.1703	0.032	7
17	7837.5	0.0445	0.008	4
18	7838.5	0.0618	0.009	5
19	7839.5	0.1692	0.031	7
20	7840.5	0.4628	0.103	9
21	7841.5	0.1363	0.024	7
22	7842.5	0.0602	0.009	5
23	7843.5	0.2295	0.047	8
24	7844.5	0.2251	0.046	8
25	7845.5	0.2471	0.048	8
26	7846.5	0.4374	0.016	9
27	7847.5	0.5907	0.018	10
28	7848.5	0.8253	0.178	10
29	7849.5	1.2174	0.316	11
30	7850.5	0.9335	0.236	10
31	7851.5	0.2174	0.052	8
32	7852.5	0.6432	0.152	10
33	7858.5	0.1445	0.026	7
34	7859.5	0.1123	0.018	6
35	7860.5	0.1541	0.012	7
36	7861.5	0.0839	0.013	6
37	7862.5	0.0505	0.008	5
38	7863.5	0.0960	0.014	6
39	7864.5	0.1063	0.015	6

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Western Atlas International

CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
40	7865.5	0.0700	0.009	5
41	7866.5	0.0559	0.009	5
42	7867.5	0.0516	0.008	5
43	7868.5	0.1490	0.026	7
44	7870.5	0.1903	0.033	7
45	7871.5	0.1693	0.026	7
46	7873.5	0.4689	0.103	9
47	7874.4	0.2090	0.013	8
48	7875.5	0.7883	0.179	10
49	7876.5	0.8581	0.207	10
50	7877.5	0.5278	0.116	9
51	7878.5	0.3799	0.082	9
52	7879.5	0.9746	0.262	11
53	7880.5	0.5717	0.143	9
54	7881.7	0.3692	0.073	9
55	7882.5	0.1497	0.024	7
56	7883.5	0.3050	0.065	8
57	7884.5	0.3233	0.072	8
58	7885.5	0.1624	0.029	7
59	7886.5	0.0699	0.009	5
60	7887.5	0.0921	0.012	6
61	7888.5	0.0609	0.009	5
62	7889.5	0.0437	0.008	4
63	7890.5	0.7318	0.159	10
64	7891.5	1.3714	0.232	11
65	7892.5	1.1657	0.314	11
66	7893.5	0.9141	0.227	10
67	7894.5	1.0733	0.275	11
68	7895.5	0.8259	0.209	10
69	7896.5	0.7856	0.188	10
70	7897.5	0.4466	0.102	9
71	7898.5	0.4552	0.102	9
72	7899.5	0.4497	0.109	9
73	7900.5	0.4679	0.104	9
74	7901.5	0.4615	0.112	9
75	7902.5	0.3445	0.076	8
76	7903.5	0.3644	0.087	9
77	7904.5	0.3878	0.084	9
78	7905.5	0.2326	0.042	8

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Western Atlas International

CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
79	7906.5	0.2415	0.056	8
80	7907.5	0.4343	0.111	9
81	7905.5	1.0324	0.266	11
82	7909.5	0.6682	0.166	10
83	7910.5	0.4712	0.107	9
84	7911.5	0.5330	0.127	9
85	7913.5	1.7969	0.343	12
86	7915.5	0.6262	0.074	10
87	7916.5	1.0527	0.206	11
88	7917.5	1.1553	0.212	11
89	7918.5	4.1791	0.931	13
90	7919.5	6.8013	1.567	14
91	7920.5	6.4312	1.462	14
92	7921.5	6.7297	1.552	14
93	7922.5	5.7343	1.425	14
94	7923.5	6.3409	1.531	14
95	7924.5	5.0179	1.242	14
96	7925.5	2.8016	0.585	13
97	7926.5	2.4175	0.516	12
98	7927.5	2.9759	0.495	13
99	7928.5	2.7109	0.479	13
100	7929.5	0.3338	0.076	8
101	7930.5	0.9425	0.240	10
102	7931.5	1.2445	0.312	11
103	7932.5	0.8677	0.206	10
104	7933.5	1.1242	0.278	11
105	7934.5	0.7137	0.169	10
106	7935.5	0.4422	0.093	9
107	7936.5	0.5048	0.113	9
108	7937.5	0.6221	0.146	10
109	7938.5	0.6344	0.151	10
110	7939.5	0.7394	0.173	10
111	7940.5	0.5104	0.122	9
112	7941.5	0.9378	0.242	10
113	7942.5	0.7372	0.180	10
114	7943.5	0.1686	0.030	7
115	7944.5	0.2129	0.013	8
116	7945.5	0.6540	0.157	10
117	7946.5	0.4759	0.109	9

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CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

SORTED BY HYDRAULIC UNIT

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
4	7823.5	0.0398	0.008	4
62	7889.5	0.0437	0.008	4
17	7837.5	0.0445	0.008	4
37	7862.5	0.0505	0.008	5
42	7867.5	0.0516	0.008	5
41	7866.5	0.0559	0.009	5
22	7842.5	0.0602	0.009	5
61	7888.5	0.0609	0.009	5
18	7838.5	0.0618	0.009	5
59	7886.5	0.0699	0.009	5
40	7865.5	0.0700	0.009	5
36	7861.5	0.0839	0.013	6
60	7887.5	0.0921	0.012	6
38	7863.5	0.0960	0.014	6
39	7864.5	0.1063	0.015	6
34	7859.5	0.1123	0.018	6
9	7828.5	0.1290	0.021	7
21	7841.5	0.1363	0.024	7
5	7824.5	0.1402	0.027	7
33	7858.5	0.1445	0.026	7
6	7825.5	0.1446	0.028	7
43	7868.5	0.1490	0.026	7
55	7882.5	0.1497	0.024	7
35	7860.5	0.1541	0.012	7
58	7885.5	0.1624	0.029	7
114	7943.5	0.1686	0.030	7
3	7822.5	0.1692	0.033	7
19	7839.5	0.1692	0.031	7
45	7871.5	0.1693	0.026	7
16	7835.5	0.1703	0.032	7
44	7870.5	0.1903	0.033	7
7	7826.5	0.1925	0.033	7
11	7830.5	0.1938	0.038	7
47	7874.4	0.2090	0.013	8
115	7944.5	0.2129	0.013	8
31	7851.5	0.2174	0.052	8
12	7831.5	0.2219	0.044	8
2	7821.5	0.2235	0.046	8
24	7844.5	0.2251	0.046	8

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CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

SORTED BY HYDRAULIC UNIT

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
15	7834.5	0.2286	0.042	8
23	7843.5	0.2295	0.047	8
78	7905.5	0.2326	0.042	8
79	7906.5	0.2415	0.056	8
25	7845.5	0.2471	0.048	8
13	7832.5	0.2563	0.056	8
10	7829.5	0.2760	0.056	8
119	7948.7	0.2846	0.053	8
1	7820.5	0.2956	0.067	8
56	7883.5	0.3050	0.065	8
126	7957.5	0.3067	0.033	8
57	7884.5	0.3233	0.072	8
100	7929.5	0.3338	0.076	8
75	7902.5	0.3445	0.076	8
76	7903.5	0.3644	0.087	9
54	7881.7	0.3692	0.073	9
121	7951.5	0.3725	0.084	9
124	7955.5	0.3748	0.084	9
51	7878.5	0.3799	0.082	9
77	7904.5	0.3878	0.084	9
8	7827.5	0.3924	0.016	9
122	7952.5	0.4240	0.095	9
80	7907.5	0.4343	0.111	9
26	7846.5	0.4374	0.016	9
106	7935.5	0.4422	0.093	9
70	7897.5	0.4466	0.102	9
125	7956.5	0.4490	0.099	9
72	7899.5	0.4497	0.109	9
71	7898.5	0.4552	0.102	9
14	7833.5	0.4556	0.017	9
74	7901.5	0.4615	0.112	9
20	7840.5	0.4628	0.103	9
73	7900.5	0.4679	0.104	9
46	7873.5	0.4689	0.103	9
83	7910.5	0.4712	0.107	9
117	7946.5	0.4759	0.109	9
118	7947.5	0.4775	0.113	9
107	7936.5	0.5048	0.113	9
111	7940.5	0.5104	0.122	9

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CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

SORTED BY HYDRAULIC UNIT

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
120	7950.5	0.5178	0.124	9
50	7877.5	0.5278	0.116	9
84	7911.5	0.5330	0.127	9
123	7954.5	0.5706	0.135	9
53	7880.5	0.5717	0.143	9
27	7847.5	0.5907	0.018	10
108	7937.5	0.6221	0.146	10
86	7915.5	0.6262	0.074	10
109	7938.5	0.6344	0.151	10
32	7852.5	0.6432	0.152	10
116	7945.5	0.6540	0.157	10
82	7909.5	0.6682	0.166	10
105	7934.5	0.7137	0.169	10
63	7890.5	0.7318	0.159	10
113	7942.5	0.7372	0.180	10
110	7939.5	0.7394	0.173	10
69	7896.5	0.7856	0.188	10
48	7875.5	0.7883	0.179	10
28	7848.5	0.8253	0.178	10
68	7895.5	0.8259	0.209	10
49	7876.5	0.8581	0.207	10
103	7932.5	0.8677	0.206	10
66	7893.5	0.9141	0.227	10
30	7850.5	0.9335	0.236	10
112	7941.5	0.9378	0.242	10
101	7930.5	0.9425	0.240	10
52	7879.5	0.9746	0.262	11
81	7905.5	1.0324	0.266	11
87	7916.5	1.0527	0.206	11
67	7894.5	1.0733	0.275	11
104	7933.5	1.1242	0.278	11
88	7917.5	1.1553	0.212	11
65	7892.5	1.1657	0.314	11
29	7849.5	1.2174	0.316	11
102	7931.5	1.2445	0.312	11
64	7891.5	1.3714	0.232	11
85	7913.5	1.7969	0.343	12
97	7926.5	2.4175	0.516	12
99	7928.5	2.7109	0.479	13

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Western Atlas International

CORE LABORATORIES

Company	SOUTHERN CALIFORNIA GAS COMPANY	File Number	57111-93244
Well	PORTER 25R	Date	2/7/94
Field	ALISO CANYON FIELD		

Hydraulic Unit I.D.

SORTED BY HYDRAULIC UNIT

Sample	Depth (feet)	Flow Zone Indicator	Reservoir Quality Index	Hydraulic Unit
96	7925.5	2.8016	0.585	13
98	7927.5	2.9759	0.495	13
89	7918.5	4.1791	0.931	13
95	7924.5	5.0179	1.242	14
93	7922.5	5.7343	1.425	14
94	7923.5	6.3409	1.531	14
91	7920.5	6.4312	1.462	14
92	7921.5	6.7297	1.552	14
90	7919.5	6.8013	1.567	14

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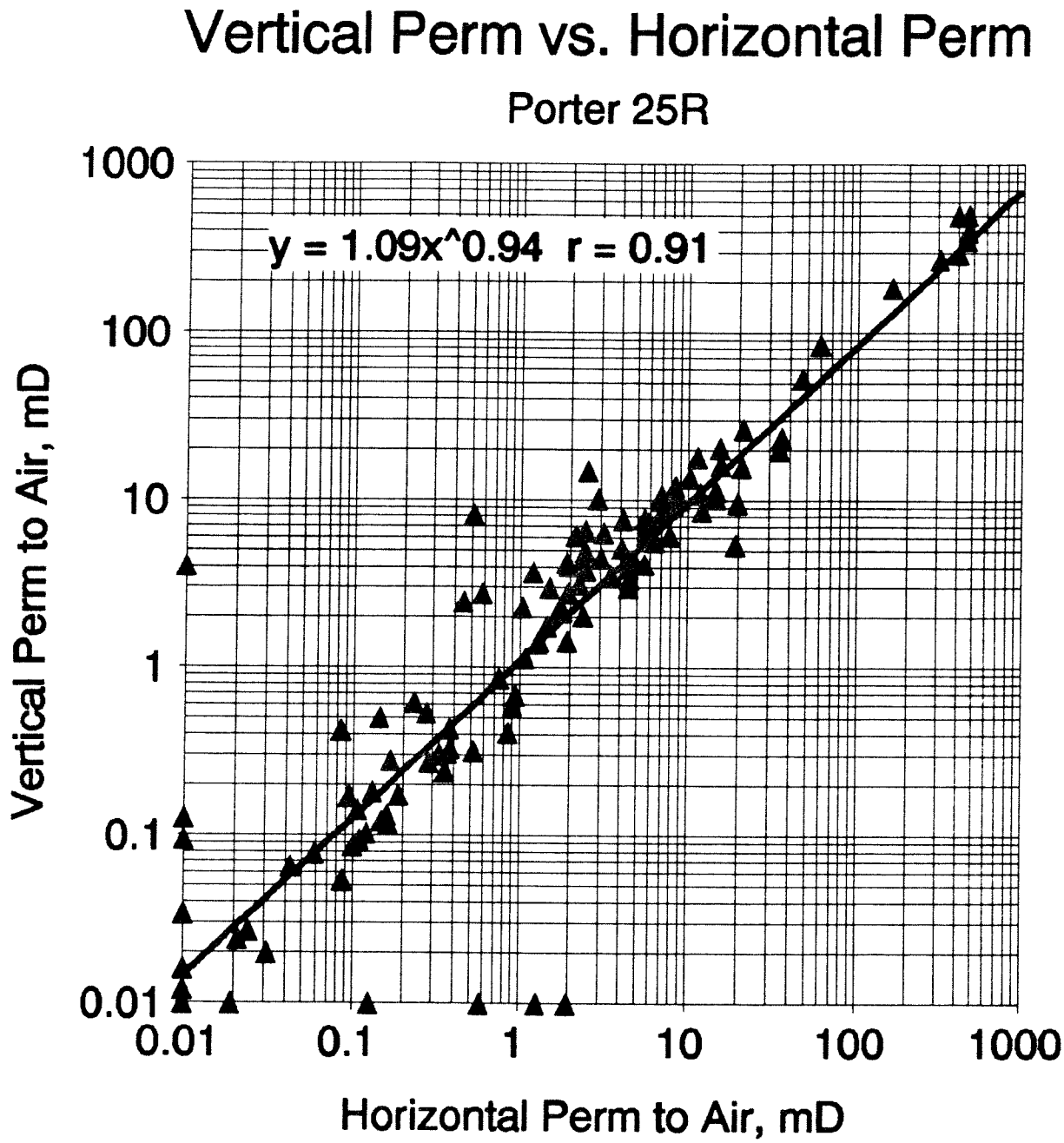
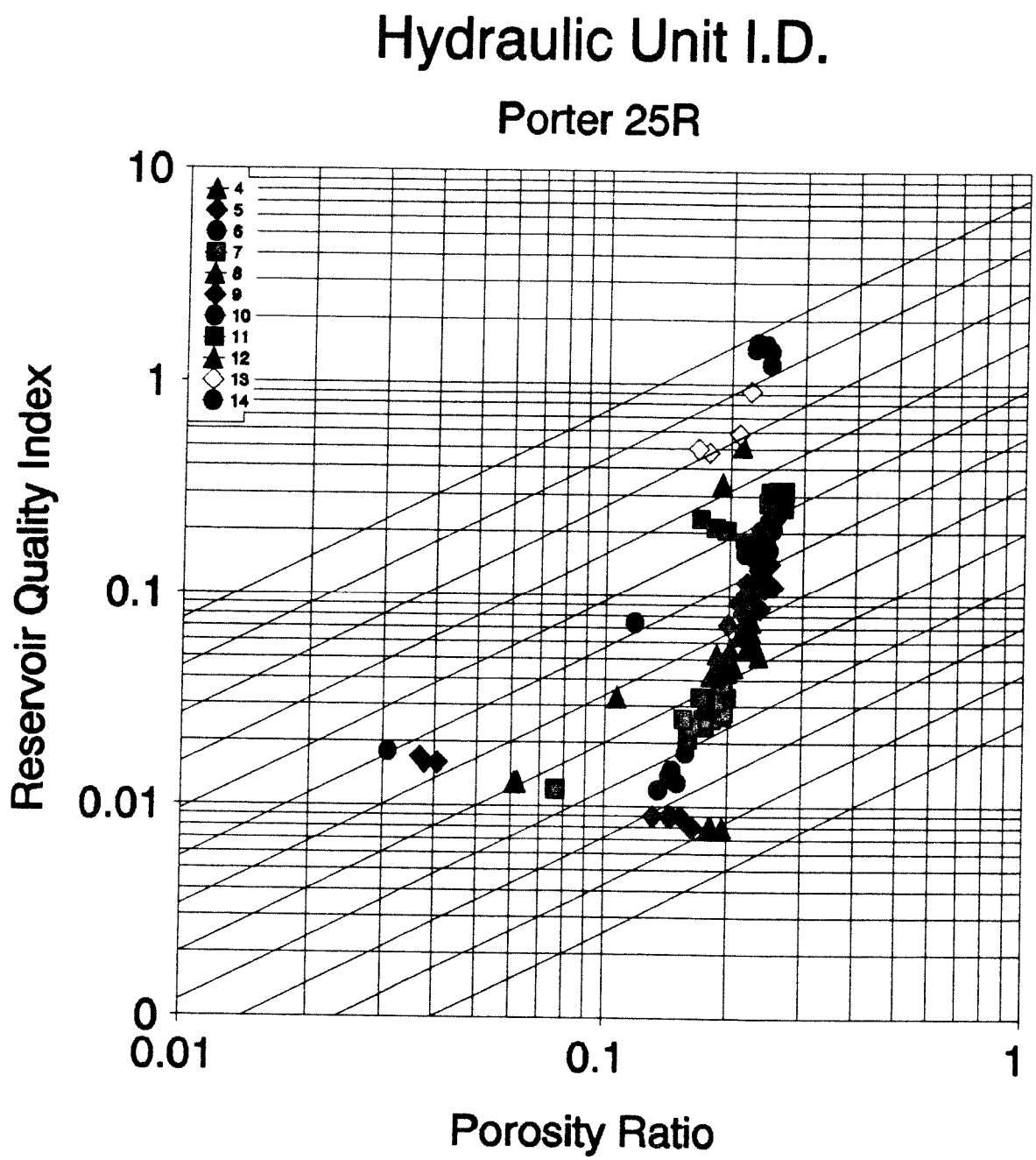
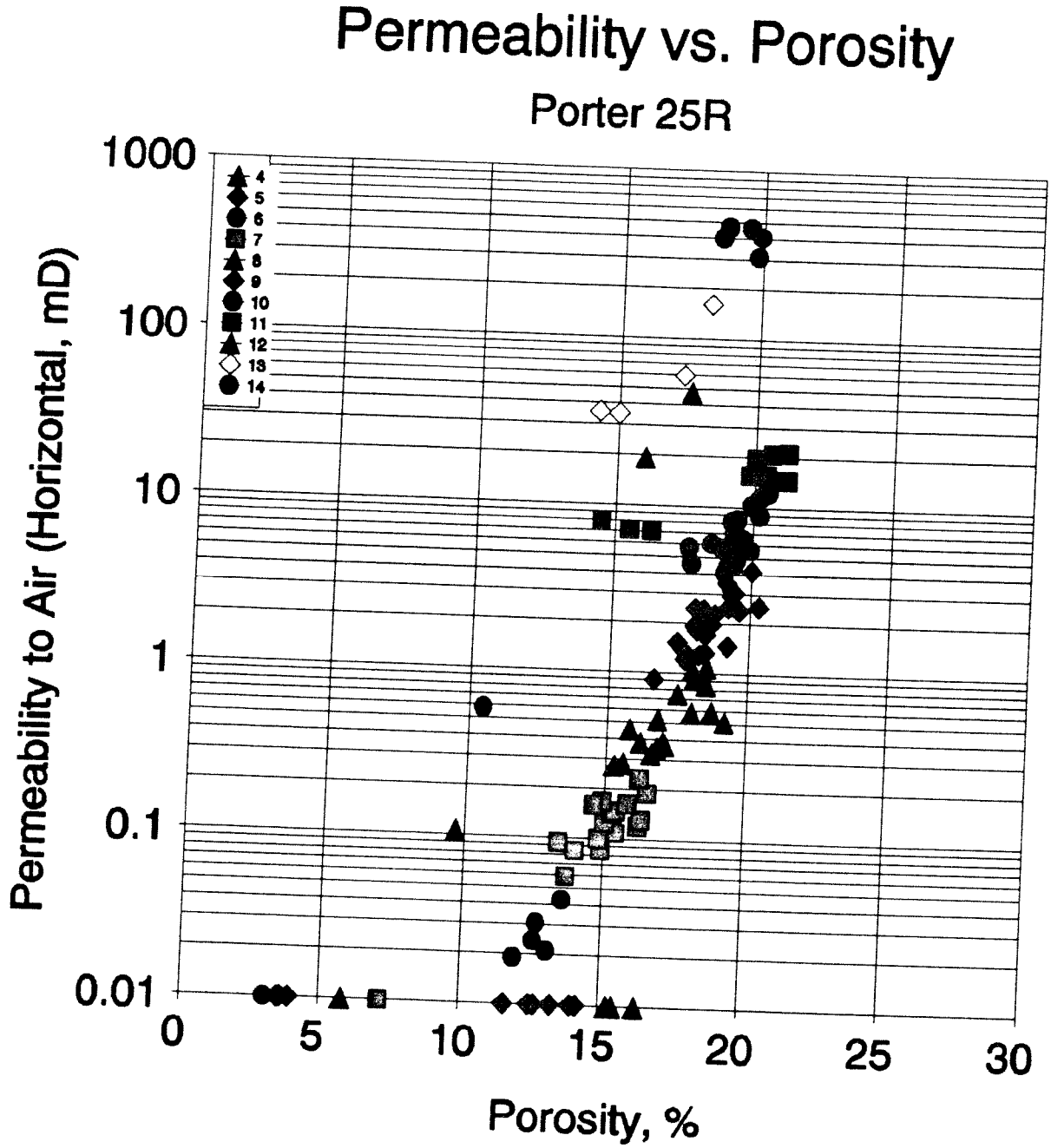

Vertical Perm vs. Horizontal Perm
Porter 25R
y = 1.09x^0.94 r = 0.91
Vertical Perm to Air, mD
1000
100
10
1
0.1
0.01
0.01
0.1
1
10
100
1000
Horizontal Perm to Air, mD


Hydraulic Unit I.D.
Porter 25R
Reservoir Quality Index
10
1
0.1
0.01
0
4
5
6
7
8
9
10
11
12
13
14
0.01
0.1
1
Porosity Ratio


Permeability vs. Porosity
Porter 25R
Permeability to Air (Horizontal, mD)
1000
100
10
1
0.1
0.01
0
5
10
15
20
25
30
Porosity, %
4
5
6
7
8
9
10
11
12
13
14

SOUTHERN CALIF. GAS C[illegible]
PORTER P-25R
ALISO CANYON FIELD
LOS ANGELES COUNTY CA

Date : 08-FEB-94
File : 93244
API :

CORE INVENTORY

Core No.	Box No.	Core Recovered	Depth
1		7820.0 - 7852.5	
	1		7820.0 - 7822.4
	2		7822.4 - 7825.0
	3		7825.0 - 7828.0
	4		7828.0 - 7831.0
	5		7831.0 - 7834.0
	6		7834.0 - 7837.0
	7		7837.0 - 7840.0
	8		7840.0 - 7843.0
	9		7843.0 - 7846.0
	10		7846.0 - 7849.0
	11		7849.0 - 7852.0
	12		7852.0 - 7852.5
2		7858.0 - 7918.0	
	13		7858.0 - 7861.0
	14		7861.0 - 7864.0
	15		7864.0 - 7867.0
	16		7867.0 - 7870.0
	17		7870.0 - 7873.0
	18		7873.0 - 7876.0
	19		7876.0 - 7879.0
	20		7879.0 - 7882.0
	21		7882.0 - 7885.0
	22		7885.0 - 7888.0
	23		7888.0 - 7891.0
	24		7891.0 - 7894.0
	25		7894.0 - 7897.0
	26		7897.0 - 7900.0
	27		7900.0 - 7903.0
	28		7903.0 - 7906.0
	29		7906.0 - 7909.0
	30		7909.0 - 7912.0
	31		7912.0 - 7915.0
	32		7915.0 - 7918.0
3		7918.0 - 7958.0	
	33		7918.0 - 7919.4
	34		7919.4 - 7922.4
	35		7922.4 - 7925.4
	36		7925.4 - 7928.4
	37		7928.4 - 7928.9
	38		7928.9 - 7931.9
	39		7931.9 - 7934.9
	40		7934.9 - 7937.9
	41		7937.9 - 7940.9

CORE INVENTORY

Core No.	Box No.	Core Recovered	Depth
	42		7940.9 - 7943.9
	43		7943.9 - 7946.9
	44		7946.9 - 7949.9
	45		7949.9 - 7952.9
	46		7952.9 - 7955.9
	47		7955.9 - 7958.0

FINAL PRINT

THE GAS COMPANY
PORTER

PORTER 25R
PORTER 25R
ALISO CANYON
CALIFORNIA

S U R V E Y L I S T I N G

by
Eastman Teleco

Your ref : REDRILL
Our ref : svy3019
License :

Date printed : 7-Jan-94
Date created : 13-Oct-93
Last revised : 7-Jan-94

Field is centred on 0.000,0.000,999.00000,+
Structure is centred on 0.000,0.000,3.00000,N

Slot location is s0 0 2.051,w1 30 3.301
Slot Grid coordinates are N -63.172, E -1378.507
Slot local coordinates are 206.70 S 4510.50 W
Reference North is True North

THE GAS COMPANY
PORTER,PORTER 25R
ALISO CANYON,CALIFORNIA

SURVEY LISTING Page 1
Your ref : REDRILL
Last revised : 7-Jan-94

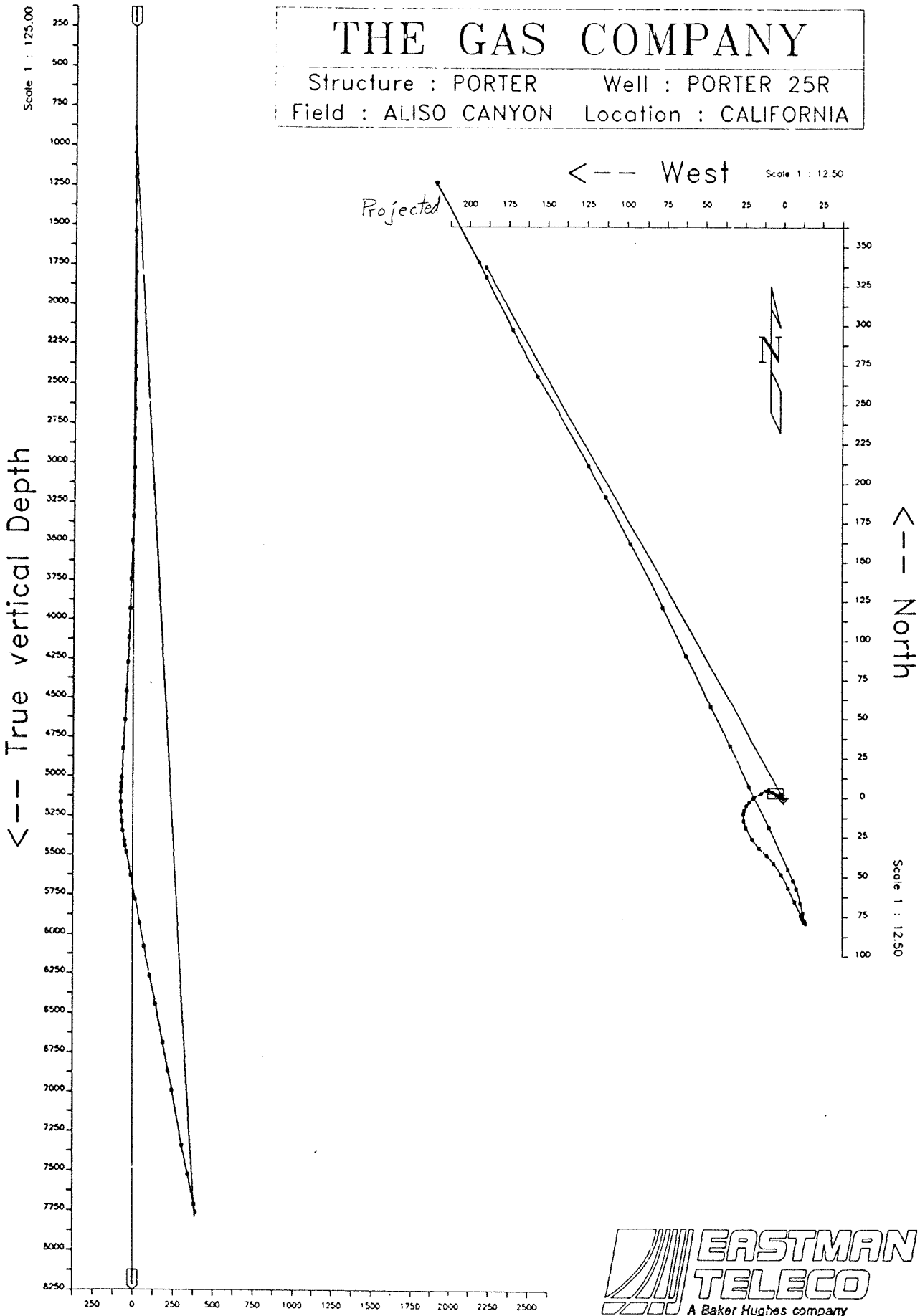
Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 N 0.00 E	0.00	0.00
825.00	0.00	0.00	825.00	0.00 N 0.00 E	0.00	0.00
890.00	0.50	314.00	890.00	0.20 N 0.20 W	0.77	0.27
1043.00	0.50	254.00	1042.99	0.48 N 1.32 W	0.33	1.06
1197.00	0.75	299.00	1196.98	0.78 N 2.85 W	0.34	2.08
1352.00	0.75	306.00	1351.97	1.87 N 4.56 W	0.06	3.86
1537.00	1.00	311.00	1536.95	3.64 N 6.76 W	0.14	6.49
1799.00	0.50	265.00	1798.93	5.04 N 9.62 W	0.28	9.11
1954.00	1.00	248.00	1953.92	4.47 N 11.55 W	0.35	9.56
2109.00	1.00	239.00	2108.89	3.27 N 13.96 W	0.10	9.70
2393.00	1.00	239.00	2392.85	0.72 N 18.21 W	0.00	9.56
2476.00	1.00	229.00	2475.84	0.13 S 19.38 W	0.21	9.39
2661.00	1.00	224.00	2660.81	2.35 S 21.72 W	0.05	8.60
2849.00	1.00	219.00	2848.78	4.80 S 23.89 W	0.05	7.53
3032.00	1.00	201.00	3031.75	7.54 S 25.47 W	0.17	5.92
3155.00	1.25	184.00	3154.73	9.88 S 25.95 W	0.34	4.12
3341.00	1.50	169.00	3340.68	14.29 S 25.62 W	0.23	0.11
3495.00	2.00	155.00	3494.60	18.70 S 24.10 W	0.42	-4.48
3745.00	2.00	144.00	3744.45	26.19 S 19.70 W	0.15	-13.16
3930.00	2.00	137.00	3929.34	31.16 S 15.60 W	0.13	-19.50
4116.00	2.25	134.00	4115.21	36.07 S 10.76 W	0.15	-26.16
4271.00	2.50	142.00	4270.08	40.85 S 6.49 W	0.27	-32.42
4456.00	3.00	149.00	4454.87	48.18 S 1.51 W	0.32	-41.24
4642.00	3.00	156.00	4640.61	56.80 S 2.98 E	0.20	-50.96
4826.00	3.00	154.00	4824.36	65.52 S 7.04 E	0.06	-60.56
5011.00	3.00	154.00	5009.11	74.22 S 11.29 E	0.00	-70.22
5050.00	2.80	153.00	5048.06	75.99 S 12.17 E	0.53	-72.19
5073.00	2.70	153.60	5071.03	76.98 S 12.66 E	0.45	-73.29
5104.00	2.40	149.00	5102.00	78.19 S 13.32 E	1.17	-74.67
5166.00	0.50	0.10	5163.98	79.03 S 13.99 E	4.58	-75.73
5226.00	3.00	348.80	5223.95	77.23 S 13.69 E	4.19	-74.01
5288.00	5.40	345.20	5285.78	72.81 S 12.63 E	3.89	-69.65
5349.00	7.50	346.20	5346.39	66.17 S 10.94 E	3.45	-63.04
5412.00	9.80	341.00	5408.67	57.11 S 8.22 E	3.85	-53.80
5443.00	10.70	337.40	5439.18	51.96 S 6.25 E	3.56	-48.35
5484.00	11.30	335.30	5479.42	44.79 S 3.11 E	1.76	-40.56
5634.00	11.00	334.00	5626.59	18.58 S 9.30 W	0.26	-11.63
5788.00	10.75	334.00	5777.82	7.53 N 22.04 W	0.16	17.37
5942.00	10.75	334.00	5929.12	33.35 N 34.63 W	0.00	46.05
6091.00	10.75	334.00	6075.51	58.33 N 46.81 W	0.00	73.79
6281.00	11.00	334.00	6262.10	90.55 N 62.53 W	0.13	109.58
6464.00	10.50	334.00	6441.88	121.23 N 77.49 W	0.27	143.65
6713.00	10.50	333.00	6686.71	161.84 N 97.74 W	0.07	188.97
6898.00	10.50	331.00	6868.62	191.60 N 113.56 W	0.20	222.67
7022.00	10.50	332.00	6990.54	211.46 N 124.34 W	0.15	245.26
7377.00	10.50	329.00	7339.60	267.74 N 156.19 W	0.15	309.94
7561.00	10.50	333.00	7520.52	297.05 N 172.44 W	0.40	343.45
7757.00	11.75	333.00	7712.83	330.75 N 189.61 W	0.64	381.23
7808.00	11.75	333.00	7762.76	340.00 N 194.32 W	0.00	391.61
TD: 8125'	Est. 10.5	Est 333°	8074.45	391.47 N 220.55 W		449.32 (Projected)

All data is in feet unless otherwise stated
Coordinates from PORTER 25R and TVD from wellhead (2703.90 Ft above mean sea leve
Vertical section is from wellhead on azimuth 330.63 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

THE GAS COMPANY

Structure : PORTER Well : PORTER 25R

Field : ALISO CANYON Location : CALIFORNIA



EASTMAN TELECO
A Baker Hughes company

Vertical Section on 330.63 azimuth with reference 0.00 N, 0.00 E from PORTER 25R

All data is in feet unless otherwise stated
Coordinates from PORTER 25R and TVD from wellhead (2703.90 Ft above mean sea leve
Bottom hole distance is 391.62 on azimuth 330.25 degrees from wellhead.
Vertical section is from wellhead on azimuth 330.63 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Eastman Teleco

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

No.T293-255

REPORT ON OPERATIONS

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

Ventura, California
October 27, 1993

Your operations at well "Porter" 25R, API No. 037-00712-01, Sec. 28, T. 3N, R. 16W, S.B.B.&M. Aliso Canyon Field, in Los Angeles County, were witnessed on 10-11-93. Pete Wygle, representative of the supervisor, was present from 1000 to 1200. There were also present D. Grimes, Foreman.

Present condition of well: 20" ld 27'; 13 3/8" cem 808'. ED 765'. TD (1st hole) 8625'.

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

DECISION:

The blowout prevention equipment and its installation on the 13 3/8" casing are approved.

tkc

WILLIAM F. GUERARD, Jr.
State Oil and Gas Supervisor

By Patrick J. Kinnear
Deputy Supervisor

OG109

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

No.T293-244

REPORT ON OPERATIONS

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

Ventura, California
October 26, 1993

Your operations at well "Porter" 25R, API No. 037-00712-01, Sec. 28, T. 3N, R. 16W, S.B.B.&M. Aliso Canyon Field, in Los Angeles County, were witnessed on 10-7-93. Pete Wygle, representative of the supervisor, was present from 0700 to 0800. There were also present Jim Volkmar.

Present condition of well: 20" ld 27'; 13 3/8" cem 808'; 7" cem 5770', perf 5751' WSO, perf & sqz 1800', 4150' & 5755'; 5" ld 5678'-8600', perf & sqz 6326', 6368', 6593', 6595', 6927' & 6930', damaged @ 6370' (Sqzd off), cut and rec fr 1000'. ED 7360'. TD (1st hole) 8625'. Plugged w/ cem 7360'-5169', w/ 80 cf of cem below ret @ 4138'-4013', w/ 64 cf of cem below ret @ 1790', w/ cem 1790'-1668' & 1000'-700'±.

The operations were performed for the purpose of witnessing the plugging operations.

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

WILLIAM F. GUERARD, Jr.
State Oil and Gas Supervisor

By
Patrick J. Kinnear
Deputy Supervisor

OG109

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Ventura, California
September 16, 1993

R.D. Phillips, Agent
Southern Calif. Gas Company
810 S. Flower St.
Los Angeles, CA. 93005

Your request, dated September 8, 1993, proposing to change the designation of well(s) in Sec. 28, T. 3N, R. 16W, SB B.&M., Aliso Canyon field Los Angeles County, District No. 2, has been received.

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

Change well name from "Porter" 25 to "Porter" 25R.

tkc

MAP	MAP BOOK	CARDS	BOND	EDP	FORMS 114	FORMS 121
✓	✓			✓	—	✓

WILLIAM E. GUERARD, Jr.
State Oil and Gas Supervisor

By Patrick J. Kimear
Patrick J. Kimear, Deputy Supervisor

OGD157

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

No. P293-315

PERMIT TO CONDUCT WELL OPERATIONS

010 (field code)
00 (area code)
30 (new pool code)
30 (old pool code)

GAS STORAGE

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

Ventura, California
September 13, 1993

Your proposal to re-drill well "Porter" 25R, A.P.I. No. 037-00712-01, Section 28, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon field, ------ area, Sesnon-Frew pool, Los Angeles County, dated 9/8/93, received 9/9/93, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating condition at all times during abandonment operations.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 7423'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72 lbs./cu. ft and a minimum gel-shear strength of 25 lbs./100 sq. ft.
5. The cement plug proposed to be placed from 7423' to 5500' shall extend to at least 5400'.
6. The Aliso Zone, which is the top uppermost oil and gas zone, shall be protected by either cementing through perforations at 4150' and squeezing 100 linear feet or by placing cement across a cavity shot at 4150'. The casing shall be cleaned out to the estimated bottom of the cavity and a 100' cement plug be placed in the casing from the clean out point. The volume of cement inside the casing shall be at least 100 feet above the perforations or cavity shot.

POK/Sinclair 3M on 13 3/8"
5M on 9 5/8" DOG To Test 5M
10/12/93

Continued on Page 2

Blanket Bond
SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

William F. Guerard, Jr.
State Oil and Gas Supervisor

By Patrick J. Kinnear

Patrick J. Kinnear
Deputy Supervisor

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

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (Modified 1993)

6. The fresh waters shall be protected by either cementing through perforations at 1800' and squeezing 100 linear feet or by placing cement across a cavity shot at 1800'. The casing shall be cleaned out to the estimated bottom of the cavity and a 100' cement plug be placed in the casing from the clean out point. The volume of cement inside the casing shall be at least 100 feet above the perforations or cavity shot.
7. Blowout prevention equipment conforming to DOGGR Class IIIB 5M requirements is installed on the 13-3/8" casing and maintained in operating condition at all times during redrilling operations.
8. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
9. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet.
10. If extensive, unplanned drill pipe operations occur (such as fishing, milling, etc.) and there is a possibility of casing damage, the casing must be pressure-tested prior to resuming normal operations. This Division must be notified to witness the test.
11. This office shall be consulted before sidetracking the well or running any additional casing.
12. The 9-5/8" casing is cemented with sufficient cement to fill behind this casing to at least 500 feet above the uppermost oil and/or gas zone (estimated to be at 4100') or anomalous pressure interval, whichever is higher.
13. Freshwater deposits are to be protected by cement behind the 9-5/8" casing. Sufficient cement must be used to fill to least 100 feet above the base of the freshwater deposits, which is estimated to be at 1800'. If cementing through ports set between 50 and 100 feet below the base of fresh water deposits, sufficient cement to fill 500 feet of casing annulus must be used.
14. Requirements specified in our approval of the Gas Storage project dated July 26, 1986 shall apply.
15. A mechanical integrity test, consisting of noise log or static temperature survey shall be run with 90 days after well is returned to gas storage operations.
16. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.

17. THIS DIVISION SHALL BE NOTIFIED:
    A. To witness the location and hardness of the cement plugs at 5400' 4050' and 1700'.
    B. To witness the mudding of the well below 1100'.
    C. To witness a pressure test of the blowout prevention equipment prior to commencing redrilling operations.
    D. To witness a mechanical integrity test within 90 days after well is returned to gas storage operations.

NOTE:

1. In the event that data can be supplied that the top of cement behind the 7" casing is above 4050' then the requirement of either perforations or a cavity shot at 4150' can be deleted.

STARTED PLUGGING WORK, PRIOR TO RIGHILL ON 9-30-93
9-30-93 RICHARD JACKSON / SPM

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

NOTICE OF INTENTION TO REWORK WELL

FOR DIVISION USE ONLY			
BOND	FORMS		EDP WELL
	OGD114	OGD121	FILE
BB	✓	✓	

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

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

rework well Porter 25R *(Well designation)*, API No. 037-00712-01

Sec. 28, T. 3N, R. 16W, SB B.& M., Aliso Canyon Field,

Los Angeles County.

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:

See Attached

2. The total depth is: 8625 feet. The effective depth is: 7423 feet.

3. Present completion zone (s): None *(Name)*. Anticipated completion zone (s): Plugged Back *(Name)*.

4. Present zone pressure: N/A psi. Anticipated/existing new zone pressure: 3000 psi.

5. 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)*

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

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

See Attached

DIVISION OF OIL AND GAS
RECEIVED
SEP 13 93
VENTURA, CALIFORNIA

Note: If the well is to be redrilled, show the proposed bottom-hole coordinates and estimated true vertical depth.
The Division must be notified if changes to this plan become necessary.

Name of Operator	Telephone Number	
Southern California Gas Co.	(213) 244-2665	
Address	City	Zip Code
P. O. Box 3249	Los Angeles	90051-1249
Name of Person Filing Notice	Signature	Date
E. S. Sinclair for R. D. Phillips (Agent)	E. S. Sinclair	9-8-93

File In Duplicate

OG107 (3/90/GSR1/5M)

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

NOTICE OF INTENTION TO REWORK WELL
PORTER 25

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:

0' - 808'	13-3/8"	55#	J-55
0' - 5770'	7"	23#	J-55 & N-80 WSO at 5750'
5678' - 8600'	5"	18#	WSO's at 7853' & 8211'
			Cement plugs at 8625'-8560', 8440'-7886' and 7786'-~~7423'~~ 7360'

The proposed work is as follows:

DIVISON OF OIL AND GAS
RECEIVED
SEP 2 b.
VENTURA, CALIFORNIA

1. Move in, rig up; install and test BOPE.
2. Pull production tubing.
3. Clean out to top of cement at ~~7423'~~ 7360.
4. Set cement plug from ~~7423'~~ 7360' to 5500'.
5. Mud well from 5500' to 1100'±.
6. Cut and pull 7" casing from 1000'±.
7. Lay cement plug from 1100' to 800'±.
8. Kick off and drill new hole from approximately 900' to approximately 8200'.
9. Install 9-5/8", 54.5# casing from 0'-7800'± cementing casing to 7800'.
10. Install 5-1/2", 17# liner from approximately 7700'-8200'±. ~~will~~ may be completed
11. Gravel pack liner.
12. Install packer and production tubing.
13. Remove BOPE and install xmas tree.
14. Release well for service.

NOTE: Well will be renamed Porter 25R after redrill completion.

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

No.T292-132

REPORT ON OPERATIONS

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

Ventura, California
August 26, 1992

Your operations at well "Porter" 25, API No. 037-00712, Sec. 28T. 3N,R. 16W, S.B.B.&M. Aliso Canyon Field, in Los Angeles County, were witnessed on 06-23-92. Stephen Mulqueen, representative of the supervisor, was present from 1000 to 1100. There were also present Randy Patterson.

Present condition of well: 13 7/8" cem 808'; 7" cem 5770', perf 5750' WSO; 5" cem 5678'-8600', perf 7853' WSO & perf 8211' WSO, cp 6326', 6593', 6928', 7627' & 7777', perfs @ int 7888'-8088' & 8280'-8494', milled 7775'-7760'. TD 8625'. Plugged w/cem 8600'-8560', 8440'-7886' & 7786'-~~7695~~ 7423 7360'.

The MIA Pressure Test was performed for the purpose of demonstrating mechanical integrity on the 7" casing.

DECISION:

The MIA Pressure Test is approved.

K.P. HENDERSON, Acting Chief

By Patrick J. Kinnear
Deputy ~~Supervisor~~

OG109/PK:nr

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Ventura, California

November 6, 1991

R. D. Phillips, Agent
SOUTHERN CALIFORNIA GAS COMPANY
P.O. Drawer 3249 Mail Location 22GO
Los Angeles, CA 90051-1249

Your request, dated July 24, 1991, proposing to change the designation of well(s) in Sec. 28, 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	TO
"SFZU" P-4 (037-00699)	"Porter" 4 (037-00699)
"SFZU" P-25 (037-00712)	"Porter" 25 (037-00712)
"SFZU" P-26 (037-00713)	"Porter" 26 (037-00713)
"SFZU" P-34 (037-00721)	"Porter" 34 (037-00721)
"SFZU" P-35 (037-00722)	"Porter" 35 (037-00722)
"SFZU" P-38 (037-00725)	"Porter" 38 (037-00725)
"SFZU" P-39 (037-00726)	"Porter" 39 (037-00726)
"SFZU" P-40 (037-00727)	"Porter" 40 (037-00727)
"SFZU" P-41 (037-00728)	"Porter" 41 (037-00728)
"SFZU" P-42 (037-00729)	"Porter" 42 (037-00739)
"SFZU" P-43 (037-00730)	"Porter" 43 (037-00730)
"SFZU" P-44 (037-00731)	"Porter" 44 (037-00731)
"SFZU" P-46 (037-00733)	"Porter" 46 (037-00733)
"SFZU" P-47 (037-00734)	"Porter" 47 (037-00734)

M. G. MEFFERD, State Oil and Gas Supervisor

By _____
Deputy Supervisor
PATRICK J. KINNEAR

OGD157 (10/85/DWRR/1M)

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
SEP 22 1982
SANTA PAULA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Co. Field Aliso Canyon County Los Angeles
Well Porter #25, Sec. 28, T 3N, R 16W, SB B. & M.
A.P.I. No. 037-00712 Name J. P. Anand (Person submitting report) Title Agent (President, Secretary or Agent)
Date September 9, 1982.

Signature J. P. Anand

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

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

Date	
	GWO #98869 was issued to plug off storage zone and convert to observation well.
1982	
7-28	1st Day. Loaded rig out from Porter #42. Set rig in on Porter #25 and rigged up.
7-29	2nd Day. Rigged up. Removed xmas tree and installed 10" 5000 psi BOPE. Repaired H&H test pump. Tested blind and pipe rams to 4000 psi. Had to tighten all rams, doors and studs. Tested Hydril to 3000 psi. Tested choke manifold to 4000 psi. Changed one choke valve and one block valve. All BOPE tests held satisfactory.
7-30	3rd Day. Released from packer and circulated gas out of well. Pulled out of well. Layed down production equipment and installed 7" lubricator. Ran Dialog casing profile caliper log from 7870' to 5678' in 5" casing and from 5600' to surface in 7" casing. Installed flow nipple.
7-31	4th Day. Picked up Kelly. Ran in well with Baker C-1 milling tool and six 3-1/8" drill collars. Milled on packer at 7870'. Rotary table drive line broke. Released from packer and pulled out of well.
8-02	5th Day. Rig down for repairs until 2:00 P.M. Pulled out. Reset milling tool. Ran in well with mill and milled on packer at 7870'. Mill stopped milling at 8:00 P.M. Released tool from packer. Pulling out of well.
8-03	6th Day. Finished pulling out of well. Changed Baker mill and ran in well with mill #2 on packer at 7871'. Milled 6-1/2 hours and released tool from packer. Pulling out of well.
8-04	7th Day. Pulled out of well. Layed down Baker tools. Waited on mill from Midway. Made up mill shoe. Ran in well and milled on packer at 7871'. Circulated well clean.

8-05 8th Day. Finished pulling out of well with mill shoe #3. Ran in well with #4 mill on packer at 7871'. Circulated well clean. Milled on packer. Pulling out of well.

8-06 9th Day. Finished pulling out of well with mill shoe #4. Waited on 2.50" spear from Midway. Made up spear and ran in well. Pushed packer 60' down. Pulling out of well.

8-07 10th Day. Pulled out of well with spear. Ran in well. Pushed packer down well from 7930' to 8412', unable to push down further. Set spear in packer. Jarred loose packer. Pulled out of well. Recovered 16" of packer mandrel.

8-09 11th Day. Ran 4-1/2" O.D. mill shoe on drilling assembly and pushed Baker Model "D" packer to 8440'. Pulled out of well. Ran open ended tubing to 8440'. Preceded by 10 cu. ft. and followed by 3 cu. ft. of fresh water, mixed, spotted and balanced 32 cu. ft. of Neat "G" with 0.75% D-65 from 8440' to 8119'. Back scuttled well at 8119'. Preceded by 10 cu. ft. and followed by 3 cu. ft. of fresh water, mixed, spotted and balanced 32 cu. ft. of Neat "G" cement with 0.75% D-65 from 8119' to 7800;. Back scuttled well and pulled 5 stands.

8-10 12th Day. Ran tubing back in well. Found top of cement plug at 7887' with tubing at 7886'. Preceded by 10 cu. ft. and followed by 3 cu. ft. of fresh water, mixed, spotted and balanced 15 cu. ft. of Neat "G" with 0.75% D-65 from 7886' to 7737'. Back scuttled 10 cu. ft. of cement out of well from 7800'. Pulled out of well. Made up Tri-State 5" section mill on milling assembly and ran to 7886' (top of cement plug). Pulled mill up to 7760' and started cutting 5" casing.

8-11 13th Day. Continued milling at 7760' for 6 hours and could not cut through casing. Pulled out of well. Installed new blades in cutter. Ran back to 7760' and continued cutting 1 hour.

8-12 14th Day. Continued milling with 5" section mill from 7761' to 7765'.

8-13 15th Day. Milled with 5" section mill from 7765' to 7765-1/2'. Swivel failed on rig. Shut down to obtain new swivel.

8-14 16th Day. Continued milling 5" casing from 7765' to 7766'. Arms cut off milling tool. Pulled out of well. Removed 5" mill. Layed down 6 damaged drill collars. Picked up 6 new 3-1/8" drill collars.

8-16 17th Day. Made up mill #2. Ran in well and milled 5" casing to 7767'. Sliding down well. Pulled out of well. Changed cutters and ran in well. Using mill #3, milled 5" casing to 7768'. Circulated well clean and pulled out of well.

8-17 18th Day. Finished pulling out of well. Changed cutters on mill. Ran in well. Milled 5" casing to 7769'. "U" joint on rotary drive failed.

8-18 19th Day. Milled 5" casing to 7769'. Pulled out of well. Layed down mill.

8-19 20th Day. Made up and ran in well with mill. Circulated well and milled 5" casing to 7772'. Circulated well clean.

8-20 21st Day. Milled 5" casing to 7776'. Circulated well clean and pulled out. Layed down Tri-State mill. Made up Tri-State 8" hole opener. Ran in well. Opened hole to 8" from 7761' to 7776'. Circulated polymer fluid out of well with 63#/cu. ft. waste salt water. Held BOPE drill with crew.

8-21 22nd Day. Cleaned mud tank. Pulled out of well. Made up Howco RTTS tool with 2-3/8" tubing tail. Ran into 7790'. Rigged up Howco and obtained breakdown of 3-1/2 cu. ft. per minute at 1850 psi. Equalized 25 cu. ft. 12% 3% acid. Squeezed away acid. Equalized 50 sacks Class "G" cement with 0.5% CFR-2 and 0.6% Halad 9. Pulled above cement. Set retainer at 6498' with tail at 7181'. Squeezed 14 cu. ft. away with pressure to 2500 psi. Back scuttled clean. Estimate top of cement 7670'.

8-23 23rd Day. Ran in well and located top of cement plug at 7360'. Witnessed by Division of Oil and Gas. Rigged up and ran Mc Cullough noise log from 7350' to 500' which showed no gas movement. Pulled out of well. Layed down 14 joints of 2-7/8" tubing, 20 joints of 2-3/8" tubing, six 3-1/8" drill collars and Kelly. Ran in well with 39 stands of 2-3/8" tubing and 2-7/8" tubing.

8-24 24th Day. Landed tubing at 7306'. Removed BOPE. Installed xmas tree and pressure tested with 5000 psi for 20 minutes. Inhibited water. Released rig at 12:01 P.M., 8-24-82.

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

DIVISION OF OIL AND GAS
RECEIVED
JUL 31 1980
SANTA PAULA, CALIFORNIA

Operator Southern California Gas Co. Field or County Aliso Canyon
Well Porter #25, Sec. 28, T 3N, R 16W S.B.B. & M.
A.P.I. No. 037-00712 Name P. S. Magruder, Jr. (Person submitting report) Title Agent (President, Secretary or Agent)
Date July 2, 1980

Signature P. S. Magruder Jr.

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

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

Date	
1980	MWO # 99614 was issued to repair a shoe leak.
3.24.	Moved California Production Service Rig #D-3 on location.
3.25.	Rigged up. Filled hole with 40 bbls and circulated out 78#/cu.ft. mud with 68#/cu.ft. polymer. Set back pressure valve in tubing hanger. Removed tree. Installed BOPE.
3.26.	Raised sub-base 12". Pressure tested blind rams to 4,000 psi with water for 20 minutes. Pressure tested pipe rams and choke manifold to 5,000 psi with water for 20 minutes. Pressure tested hydril to 3,000 psi with water for 20 minutes.
3.27.	Pressure tested BOPE with nitrogen - blind rams to 4,000 psi, manifold and pipe rams to 5,000 psi and hydril to 3,000 psi for 20 minutes. Released from packer. Circulated for one and half hours.
3.28.	Pulled tubing. Laid down 2 3/8" hydril tubing. Ran in hole with six 3" drill collars, jars and "J" latch. Recovered packer from 6,238'. Started in hole with 4 1/8" bit and casing scraper.
3.29.	Picked up 1,500' of 2 3/8" tubing. Ran in well with 4 1/8" bit, casing scraper and 178' of drill collars to packer at 7,824'. Circulated for two and half hours. Pulled out of hole. Log tool malfunctioned. Ran 2,000' of tubing.
3.30.	Rig and crew idle.
3.31.	Ran casing inspection and internal caliper log and recorded to 6,600'. Tool failed at 6,600'. Ran in hole with mill.
4.01.	Finished going in hole with mill. Milled 7,824' - 7,826'. Pulled into 7".
4.02.	Ran in to packer. Milled 7,826' - 7,827' and pushed packer to 8,456'. Started out of well.

4.03. Pulled mill. Ran casing inspection and internal caliper log from 8,600' - 5,678'. Ran and set bridge plug at 7,873'. Equalized three sacks of sand on bridge plug at 7,873'.

4.04. Located sand at 7,848'. Washed out sand to 7,856'. Pulled out of well. Ran in with fullbore and 408' of 2 3/8" tail. Equalized 30 cu.ft. of 12% HCL and 3% HF acid at 7,850'. Breakdown 18 cu.ft./minute at 2,000 psi. With tail at 7,850', equalized 20 sacks class "G" cement plus 1% CFR-2. Pulled tail to 7,450', fullbore at 7,042' and reversed out with 250 cu.ft. Set fullbore at 7,042' and squeezed 15 cu.ft. at 2,000 psi, 20 cu.ft. at 2,300 psi dropped to 1,800 psi. 35 cu.ft. cleared holes pumping at 1,800 psi. Pulled into 7" casing.

4.05. Set fullbore at 7,371' with tail at 7,779'. Breakdown 14 cu.ft./minute at 1,900 psi. Equalized 30 sacks class "G" cement plug 1% CFR-2. Pulled 420' and reversed out all cement. Repeated cementing as above. Pulled out and ran new fullbore. Breakdown 13 cu.ft./minute at 1,900 psi. Equalized 30 sacks class "G" cement plus 1% CFR-2, 113#/cu.ft. with tail at 7,790'. Pulled 420'. Reversed out no cement. Squeezed with fullbore at 6,971', tail at 7,374'. Pumped in 50 cu.ft. with maximum pressure 1,900 psi. Pulled out of hole.

4.06. Rig and crew idle.

4.07. Finished pulling tubing. Ran new fullbore to 7,371' with tail at 7,779'. Obtained breakdown at 8 cu.ft./minute at 2,200 psi. Equalized 30 sacks class "G" cement and 1% CFR-2 at 7,849'. Pulled 420' and reversed out. Set fullbore, squeezed cement and cleared holes with maximum pressure 1,900 psi. Ran to 7,779'. Obtained breakdown 8 cu.ft./minute at 2,200 psi. Equalized 30 sacks class "G" cement at 7,779'. Pulled 420' and reversed out. Set fullbore at 6,971' with tail at 7,379'. Squeezed with 500 psi on casing. Pumped in 3.5 cu.ft. at 2,300 psi and held for 30 minutes. Recovered 2 cu.ft. back when released pressure. Pulled out of well. Ran 4 1/8" bit, casing scraper and drill collars. Top of cement 7,428'. Drill out cement to 7,478'. Pulled out of liner.

4.08. Drilled out cement 7,428' - 7,860' and circulated two hours. Started out of well.

4.09. Pulled bit and scraper. Ran fullbore and set at 7,391' with tail at 7,832'. Tested 5" casing from 7,391' to 7,860' with 2,200 psi for 20 minutes. Pulled fullbore. Shot four 1/2" holes at 7,777'. Ran and set fullbore at 7,391' and tested holes at 7,777' with 2,200 psi for 20 minutes.

4.10. Finished pulling tubing. Set packer at 7,595' with tail at 7,614'. Opened tool at 12:00 noon for one hour. Small puff then dead. Pulled out of well and charts showed no fluid entry. Ran Noise Log from 7,860' - 7,000'. Ran in hole with 4 1/8" bit and scraper.

4.11. Drilled cement 7,860' - 7,862'. Cleaned out sand to 7,873'. Circulated well clean. Pulled out of well. Ran in and recovered bridge plug at 7,873'. Started in well with tester.

4.12. Finished running tester. Set packer at 7,863' and opened tool at 12:15 pm. Had small blow then dead. Pulled tool free at 1:00 pm and started out of hole. Pulled 240' and tubing was full of polymer drilling fluid. Dropped bar to open, circulating sub and pulled out of well. Ran in well with tester to 5,600'.

4.13. Rig and crew idle.

4.14. Continued running in well with tester and set packer at 7,878' with tail at 7,885'. Tested all lines to 3,000 psi. Opened tool at 7:55 am with 875 psi surface pressure. Surface pressure stabilized at 800 psi in 30 minutes. Closed tool at 8:00 pm. Backscuttled well.

4.15. Ran Audio Analyzer Log from 7,836' to 5,000' which showed gas leakage. Pulled out of well. Ran retrievable bridge plug which malfunctioned on surface. Ran in well to 2,856' open ended.

4.16. Ran in to 7,850' open ended and circulated one and half hours. Pulled out and ran in with 5" retrievable bridge plug and set at 7,878'. Equalized 2 sacks of sand. Pulled up to wait on sand to fall. Ran back after two hours to 7,876' and found no sand. Pulled up to 7,158'.

4.17. Ran in from 7,158' and tagged sand at 7,871'. Equalized 4 additional sacks of sand. Pulled up to wait on sand to fall. Backscuttled and cleaned out to 7,860'. Pulled out and ran fullbore packer with 430' tail. Set fullbore at 7,430' with tail at 7,860'. Pressured up to 2,500 psi. Held for 20 minutes - no breakdown. Pulled tail to 7,230'.

4.18. Ran in well with 430' of 2 3/8" tubing tail and fullbore cement retainer from 7,140'. With tail at 7,860' and retainer at 7,430', equalized 30 cu.ft. of 12% HCL and 3% HF acid. Obtained breakdown at rate of 16 cu.ft./minute with 1,800 psi. Pulled out and ran in with fullbore on bottom of string to 7,576'. Mixed 20 cu.ft. of 12% HCL and 3% HF acid followed by 115 cu.ft. of class "G" cement with 1% CFR-2. Squeezed away at rate of 16 cu.ft./minute with 1,800 psi. Cleared holes with 35 cu.ft. of 68#/cu.ft. polymer. Second squeez job: 10 cu.ft. of fresh water ahead of 115 cu.ft. class "G" cement with 1% CFR-2. Squeezed away at 16 cu.ft./minute with 1,900 psi. Cleared holes with 35 cu.ft.

4.19. Obtained breakdown rate of 22 cu.ft./minute with 2,200 psi. Pumped 20 cu.ft. of fresh water followed by 230 cu.ft. class "G" cement and 1% CFR-2. Squeezed away 200 cu.ft. at rate of 18 cu.ft./minute with 2,000 psi and the last 20 cu.ft. at 12 cu.ft./minute with 2,000 psi. Cleared holes with 35 cu.ft. of 68# polymer fluid, held pressure 650 psi for two hours. Ran in and located cement at 7,628'. Fourth cement job: 20 cu.ft. of fresh water, 230 cu.ft. of class "G" neat cement, 10 cu.ft. of fresh water behind. Retainer set at 7,452'. Squeezed away 180 cu.ft. at 18 cu.ft./minute with 2,000 psi and 50 cu.ft. at 10 cu.ft./minute with 2,000 psi. Cleared tool with 8 cu.ft. leaving 9 cu.ft. in casing with 1,000 psi bled off to zero in two hours. Pulled out and ran in well with six 3 1/8" drill collars, 4 1/8" bit and 5" casing scraper.

4.20. Rig and crew idle.

4.21. Bit was plugged so pulled out of well and found four joints of tubing and drill collars full of soft cement. Pumped cement. Ran new 4 1/8" bit and casing scraper. Drilled out cement from 7,612' - 7,727'. Circulated one hour and pulled out of liner.

4.22. Ran in liner and found fill at 7,703'. Tubing plugged. Pulled out of well and unplugged bit and scraper. Ran in well, cleaned out fill from 7,703' - 7,727'. Drilled hard cement 7,727' - 7,791' and stringers 7,791' - 7,822'. No cement 7,822' - 7,860'. Circulated one and half hours and pulled into 7" casing.

4.23. Pulled bit and scraper. Ran fullbore retainer to 7,860'. Equalized 30 cu.ft. of water. Set fullbore at 7,475'. Broke down 8 cu.ft./minute at 2,200 psi. Pumped in 20 cu.ft. water. Mixed 100 sacks of class "G" cement and 1% CFR-2. Squeezed with 2,400 psi and final 2,200 psi. Displaced cement and water, clearing holes with 217 cu.ft. of drilling fluid. Closed in for 20 minutes at 800 psi. Reversed out with 250 cu.ft. of drilling fluid. Pulled into 7" casing.

4.24. Ran in well and set fullbore retainer at 7,485'. Pumped into formation with 2,200 psi at 14 cu.ft./minute. Pumped in 20 cu.ft. water, 100 sacks class "G" cement with 1% CFR-2, density 113#/cu.ft., 17 cu.ft. mud and closed tool. Squeezed at 3 cu.ft./minute, maximum 2,000 psi. Cleared holes. Reversed out and pulled six doubles. Ran in well and found cement at 7,847'. Set fullbore retainer at 7,485' and pumped into formation at 2,100 psi, 17 cu.ft./minute. Pumped 20 cu.ft. water, 100 sacks latex cement 110#/cu.ft., 40 cu.ft. water, 7 cu.ft. mud and closed tool. Squeezed at 3 cu.ft./minute maximum 2,100 psi. Reversed out. Pulled into 7".

4.25. Set fullbore retainer at 7,485'. Could not breakdown holes at 2,000 psi. Pressure bled off to 1,500 psi. Equalized 40 cu.ft. 12% HCL and 3% HF acid at 7,844'. Set fullbore retainer at 7,485'. Obtained breakdown 14 cu.ft./minute at 2,100 psi. Pumped in 20 cu.ft. water, 100 sacks latex cement, 40 cu.ft. water and 7 cu.ft. drilling fluid and closed tool. Squeezed at 3 cu.ft./minute with final pressure 1,800 psi. Cleared holes. Reversed out. Pulled into 7" casing.

4.26. Ran fullbore retainer and set at 7,485'. Breakdown 14 cu.ft./minute at 2,000 psi. Mixed 100 sacks class "G" cement. Displaced with 217 cu.ft., final pressure 2,500 psi. Pulled retainer out and found tubing plugged. Tried to reverse circulate. Pulled wet tubing and found 19 joints of 2 3/8" full of set cement. Started in hole with 4 1/8" bit, scraper and drill collars.

4.27. Rig and crew idle.

4.28. Finished running in well. Drilled out cement from 7,484' to 7,840'. Cleaned out to 7,860'. Circulated hole clean. Pulled into 7" casing.

4.29. Finished pulling bit and scraper. Ran fullbore retainer and set at 7,480'. Holes bled off 2,000 psi to 1,400 psi in 1 minute. Obtained breakdown at 2,500 psi and 1.5 cu.ft./minute. Pulled out of well and ran 430' of 2 3/8" tubing below retainer. Equalized 30 sacks class "G" cement at 7,856'. Pulled 7 doubles with tail at 7,424'. Reversed out with 250 cu.ft. of mud. Set retainer at 6,996'. Circulated around retainer. Set retainer at 6,991' and circulated around it again. Pulled out of well. Started in well with bit and scraper.

4.30. Finished going in well with bit and scraper. Drilled out cement from 7,530' - 7,860'. Circulated hole clean. Pulled into 7" casing.

5.01. Finished pulling bit and scraper. Ran retainer with 430' of 2 3/8" below retainer. Set retainer at 7,416' with tail at 7,846'. Tested with 2,000 psi which bled off to 1,500 psi in 20 minutes. Equalized 40 cu.ft. 12% HCL and 3% HF acid at 7,856'. Pulled and set retainer at 6,986'. No bleed off from 2,500 psi in 20 minutes. Reversed out acid. Tested again and obtained breakdown at 2,500 psi at 6 cu.ft./minute. Equalized 30 sacks class "G" cement at 7,886'. Pulled and set retainer at 6,986' and reversed out. Squeezed to 2,500 psi. Pumped away 4 cu.ft. cement. Held for 20 minutes. Started out of hole.

5.02. Finished pulling retainer. Ran 4 1/8" bit and scraper. Drilled out cement from 7,546' to 7,860'. Circulated hole clean and started out of well.

5.03. Pulled bit and scraper. Ran retainer with 430' of 2 3/8" tubing tail. Set retainer at 7,398' and tested holes with 2,000 psi, which bled off to 1,700 psi in 2 minutes. Obtained breakdown at 2,400 psi of 7.5 cu.ft./minute. Equalized 30 sacks class "G" cement at 7,856'. Pulled 430' and reversed out. Set retainer at 6,997' and squeezed with 2,500 psi. Held 2,400 psi for 25 minutes and squeezed away 1 cu.ft. cement. Pulled out of well. Going in hole with bit and scraper.

5.04. Rig and crew idle.

5.05. Finished going in well. Drilled out cement from 7,522' - 7,860'. Circulated hole clean. Pulled bit and scraper. Started in hole with retainer.

5.06. Ran cement retainer and set at 7,420' with tail at 7,850'. Tested holes with 2,000 psi which bled off to to 1,900 psi in 20 minutes. Breakdown of 2,400 psi and 4 cu.ft./minute. Equalized 36 cu.ft. class "G" cement and 1% CFR-2 and 0.2% HR-7 at 7,850'. Pulled 7 doubles and reversed out. Set retainer at 6,690'. Squeezed with 2,500 psi for two hours and squeezed away 2 cu.ft. of cement. Pulled retainer. Started in hole with 4 1/8" bit and casing scraper.

5.07. Finished running bit and scraper. Drilled out cement from 7,538' - 7,860'. Circulated well clean. Pulled out and started in hole with cement retainer.

5.08. Finished going in well with retainer. Set retainer at 7,416'. Tested holes with 2,000 psi for 20 minutes. Pulled out of well. Ran Audio Analyzer log from 7,860' - 6,300' which confirmed no gas movement. Repaired BOPE. Tested pipe rams with 4,000 psi of water for 20 minutes. Started in hole with retrieving tool for bridge plug.

5.09. Finished going in well. Increased drilling fluid weight to 70#/cu.ft. Recovered bridge plug and pulled out of well. Ran in with test tool.

5.10. Tested head, lines and manifold with 3,400 psi using water for 20 minutes. Set packer at 7,869' and opened tool at 10:15 am. Flowed well until 7:00 pm. Closed tool and circulated polymer into tubing. Well flowed 7 MMCF/day rate.

5.11. Rig and crew idle.

5.12. Ran Audio Analyzer log through tubing to 7,805' which showed gas movement. Ran in well to 8,650'. Circulated for five hours and conditioned drilling fluid to 74#/cu.ft. Pulled tester tool. Ran in well open ended to 2,000' with 2 7/8" tubing.

5.13. Pulled 2,000' of tubing out of hole and ran back in with bridge plug. Set bridge plug at 7,878' and pulled up tubing to 7,860'. Displaced 3 sacks of sand slurry with 210 cu.ft. drilling fluid and pulled up to 7,674'. Waited one hour for sand to settle on plug. Located sand at 7,875'. Mixed and displaced additional 3 sacks of sand slurry. Pulled up tubing to 7,674' and waited 3 hours for sand to settle. Continued out of hole to 2,859'.

5.14. Finished pulling out of hole and laid down bridge plug setting tools. Made up fullbore cement retainer with 426' of tubing tail. Ran in hole on tubing and located sand at 7,856' and reverse circulated out sand to 7,860'. Spotted 30 cu.ft. 12% HCL and 3% HF acid. With retainer at 7,434' and tail bottom at 7,860', broke down formation at 25 cu.ft./minute with 2,500 psi surface pressure. Pulled out of well. Made up drillable cement retainer and ran in hole to top of liner at 5,678'.

5.15. Continued in hole with drillable cement retainer to 7,575'. With retainer set at 7,575', pumped 10 cu.ft. water and 20 cu.ft. 12% HCL and 3% HF acid 'spearhead' followed by 230 cu.ft. class "G" and 1% CFR-2 cement slurry. Squeezed away all slurry at 800 psi pressure and reverse circulated to clear tubing. Second squeeze with 200 sacks latex cement at 1,500 psi. Maximum pressure and again reverse circulated to clear tubing. Waited on cement for four hours. Attempted to breakdown formation for a third squeeze at 2,500 psi surface pressure. Failed. Pulled out of hole with tubing. Made up 4 1/8" bit and drill collars on tubing and went back in hole to 3,041'.

5.16. Continued in hole with 4 1/8" bit and six 3 1/8" drill collars to top of drillable cement retainer at 7,575'. Drilled and pushed retainer down to top of cement at 7,596'. Drilled out retainer and solid cement (no stringers encountered) from 7,596' to 7,730'. Circulated hole for two hours and pulled up into 7" casing.

5.17. Ran back in hole to 7,730' and began to drill on cement and retainer. Drilled 1' in two hours. Replaced 4 1/8" bit with 4 1/16" mill. Milled out cement and retainer from 7,731' to 7,767' and circulated hole clean. Pulled back into 7" casing.

5.18. Rig and crew idle.

5.19. Ran in well with 4 1/8" mill. Milled on junk and cement from 7,736' to 7,860'. Circulated hole clean. Pulled mill. Ran retainer and set at 7,432' with tail at 7,859'. Pumped into holes at 1,800 psi. Obtained breakdown at 2,400 psi and 8 cu.ft./minute.

5.20. Breakdown into holes 2,400 psi and 8 cu.ft./minute. Equalized 30 sacks class "G" cement mixed to 114#/cu.ft. slurry at 7,859'. Pulled 430' and reversed out. Set retainer at 7,005' with tail at 7,432'. Squeezed with 2,500 psi and held for one hour. Squeezed away 2 cu.ft. of cement. Pulled out of well. Started in hole with 4 1/8" mill and casing scraper.

5.21. Finished going in hole with mill and scraper. Drilled out hard cement from 7,580' - 7,860'. Circulated hole clean. Pulled into 7" casing.

5.22. Pulled bit and scraper. Ran retainer with 430' of tail. Set at 7,432'. Tested holes with 2,000 psi for 20 minutes. Pulled retainer. Ran Audio Analyzer log from 7,860' - 6,760'. Log indicated gas leakage. Started in hole with retainer.

5.23. Ran and set retainer at 7,432'. Obtained breakdown with 65 cu.ft. 12% HCL and 3% HF acid at 2,250 psi and 20 cu.ft./minute. Pulled out and ran drillable retainer on tubing - did not set. Pushed retainer to 7,860'. Pulled tubing. Set drillable retainer at 7,574'. Going in well to cement.

5.24. Pumped in 50 cu.ft. water and 150 cu.ft. flo-chek and stabbed into retainer. Squeezed balance of 50 bbls flo-chek, 50 cu.ft. water and started mixing cement. Pump truck broke down. Reversed out cement. Equalized 60 cu.ft. water. Stabbed into retainer but could not clear holes with 2,500 psi. Pulled out of well and ran in well with 4 1/8" mill.

5.25. Rig and crew idle.

5.26. Rig and crew idle.

5.27. Ran to 7,574'. Milled retainer and pushed to 7,858'. Milled for two hours. Started out of well.

5.28. Finished pulling out of well. Ran retrievable retainer and set at 7,432'. Equalized 30 cu.ft. acid outside tubing. Closed tool. With 500 psi on casing and tubing, squeezed out 30 cu.ft. 12% HCL and 3% HF acid at 9 cu.ft./minute. Pulled out of well. Ran drillable retainer and set at 7,570'. Started in hole with stab-in tool for retainer.

5.29. Finished going in hole. Tested lines to 3,000 psi with water. Pumped in 20 cu.ft. water, 30 cu.ft. 12% HCL and 3% HF acid, 50 cu.ft. water, 125 cu.ft. salt water and stabbed into retainer. With 500 psi on casing, squeezed acid out holes and displaced with 50 cu.ft. water. Breakdown at 2,350 psi of 23.5 cu.ft./minute. Pumped in 30 cu.ft. water, 165 cu.ft. flo-chek and 23 cu.ft. water. Stung into retainer which moved down 5'. Squeezed with 500 psi on casing. Squeezed 27 cu.ft. water, 50 sacks class "G", 0.8% Halad 22A, 3% Potassium Chloride (116#) and 50 cu.ft. water and 215 cu.ft. salt water. Retainer started leaking after flo-chek passed retainer. Had 1,000 psi on casing when completed squeezing. Tried to stab into retainer and found it had gone down hole. Pulled out of well. Ran 4 1/8" mill, found retainer at 7,842'. Milled to 7,843' and pulled into 7".

5.30. Ran in liner and found junk at 7,843'. Milled on junk to 7,860'. Started out of hole.

5.31. Finished pulling out of well. Ran mill #4. Started milling on junk at 7,558'. Milled to 7,863'. Pulled into 7" casing.

6.01. Rig and crew idle.

6.02. Ran in well with mill and junk sub. Junk at 7,860'. Milled on junk to 7,865' to top of sand. Pulled out of well. Ran reverse circulation junk basket. Dropped ball made 1'. Pulled out with no recovery of junk. Started in hole with retrievable retainer to pressure test.

6.03. Ran in hole with retainer and set at 7,410'. Tested lines to 3,000 psi. Could pump into holes at 1 cu.ft./minute at 2,000 psi and 17 cu.ft./minute at 2,500 psi. Pulled out of well. Ran drillable retainer. Checked liner top at 5,678', collars at 7,578', 7,545', 7,513', 7,480', 7,447' and 7,414'. Set retainer at 7,552'. Ran in hole with stab-in tool. Stabbed into retainer with 500 psi on casing, check retainer with 2,500 psi on tubing. Pulled out of retainer. Pumped in 100 cu.ft. water, 100 cu.ft. 10% Calcium Chloride water, 13 cu.ft. water and stabbed into retainer. With 500 psi on casing, squeezed 13 cu.ft. water, 50 bbls flo-chek, 50 cu.ft. water, 50 sacks class "G" cement + 0.8% Halad 22A and 3% Potassium Chloride mixed at 116#, 50 cu.ft. water, 170 cu.ft. mud. Cement was below retainer. Stopped for 10 minutes. Displaced cement out of holes by 20 cu.ft. Maximum pressure 2,250 cu.ft. No build up. Reversed out with 250 cu.ft. polymer. Pulled five doubles.

6.04. Ran to retainer. Spotted 30 cu.ft. water and stabbed into retainer. With 500 psi on casing, tested holes with 2,000 psi for 20 minutes. Pulled out of well. Ran in with drill collars, junk sub and mill #5. Milled on retainer at 7,552' for five hours. Retainer moved down hole to 7,789', milled on retainer three hours and then pulled into 7".

6.05. Milled on retainer at 7,789'. Pushed retainer to 7,860'. Milled from 7,860' - 7,861'. Pulled out of well. Ran noise log from 7,832' - 6,800'. Checked top of liner on way in. No leak. Started in hole with junk sub and mill #5.

6.06. Finished going in hole with mill. Milled on retainer and junk from 7,861' - 7,878' (top of bridge plug). Pulled out of well. Started in well with retrieving tool, bumper sub and jars.

6.07. Finished going in hole with retrieving tool. Circulated down tubing and could not get over retainer. Rotated and circulated down tubing and could not go over top of retainer. Pulled out of hole. Ran in with washover pipe and mill shoe, junk sub, jars and six drill collars. Milled from 7,879' - 7,880'. Pulled into 7" casing.

6.08. Rig and crew idle.

6.09. Ran back into liner and continued milling from 7,879' - 7,879.2'. Pulled out of well. Made up new shoe. Ran back into well and milled from 7,879.2' to 7,880'. Pulled out of well to 4,000'.

6.10. Continued pulling out of well from 4,000'. Made up and ran shoe #3 to 7,880'. Milled to 7,881'. Pulled out of well. Made up shoe #4 and ran drilling assembly back in well to top of 5" liner at 5,678'.

6.11. Ran back into liner with shoe #4. Milled from 7,880' - 7,881'. Retainer came loose and ran down to 8,450'. Pulled out of well. Made up and ran shoe #5 to 8,450'. Milling at 8,450'.

6.12. Continued running into well and milled from 8,450' - 8,450.5'. Circulated well bottom up for two and half hours. Pulled out of well. Made up and ran tester to 7,820' with tail at 7,827'. Rigged up and pressure tested test lines to 3,000 psi for 20 minutes.

6.13. Set test tool with top at 7,821' and tail at 7,828'. Opened tool at 9:30 am and began production test till 1:30 pm. Flowing 7.5 mcf at 1,150 psi. Closed tool and bled well down. Ran noise log to 7,740'. Logged to 6,700'. Showed noise. Pulled tubing to 5,100'.

6.14. Finished pulling out of hole. Ran to 8,450' with mill 4 1/8" and casing scraper. Circulated gas out. Pulled out of hole. Going in hole with tester.

6.15. Rig and crew idle.

6.16. Finished going in hole with tester. Set packer at 7,876'. Opened tool at 8:00 am. Well unloaded and had 2,100 psi, closed at 8:30 am. Ran noise log 7,816' - 6,800'. Small amount of noise 7,650' - 7,800'. Opened bleeder and ran log. There was a large increase in noise on log. Closed test tool and filled tubing with water. Pulled out of well.

6.17. Ran and set retrievable bridge plug at 7,870'. Equalized 4 sacks sand. Pulled stands and found sand at 7,866'. Equalized 4 sacks sand and pulled up 5 stands. Located sand at 7,860'. Pulled out of well. Ran in hole with cement retainer. Set at 7,580'. Tested casing with 2,000 psi and lose 100 psi in 2 minutes.

6.18. Ran retrievable retainer to 7,860' and equalized 10 cu.ft. 12% HCL and 3% HF acid. Pulled up and set retainer at 7,572'. Squeezed acid away at 20 cu.ft./minute and 2,500 psi. Pumped 20 cu.ft. water, 35 cu.ft. drilling fluid and closed tool. Squeezed cement below retainer and stopped pumping for 10 minutes. Staged cement three times with final pressure of 2,500 psi. Reversed out. Pulled retainer. Ran to top of liner with 4 1/8" mill and casing scraper.

6.19. Ran in well and located top of cement at 7,589'. Drilled out cement from 7,589' - 7,780'. Circulated well clean. Pulled into 7" casing.

6.20. Drilled cement from 7,780' - 7,831'. Ran to 7,860'. Circulated hole clean. Pulled out of well. Ran retainer and set at 7,580'. Pressure tested casing 7,580' - 7,860' with 2,000 psi for 20 minutes. Pulled retainer and started in with hole retrieving tool.

6.21. Ran retrieving tool and recovered bridge plug from 7,870'. Circulated out gas and pulled out of well. Made gauge run which stopped at 7,616'. Started in hole with positive scraper.

6.22. Rig and crew idle.

6.23. Ran positive scraper through tight casing at 7,616' - 8,078'. Circulated hole clean. Ran packer which stopped at 7,616'. Ran in hole with two casing scrapers and jars. Scraped casing 7,616' - 8,078'. Pulled above liner.

6.24. Finished pulling out of well. Ran 4.05" OD packer. Packer stopped at 7,610'. Ran 3.968" OD packer, stopped at 7,616'. Ran in hole with two positive scrapers and mill. Worked scrapers through tight casing at 7,616'.

6.25. Finished pulling out of hole. Ran packer to 7,616'. Packer would not go through tight spot. Ran and set packer at 7,870' on tubing. Going in hole to test packer.

6.26. Latched into packer at 7,870'. Tested with 1,000 psi for 20 minutes. Pulled out of hole. Hydrotested tubing in hole at 5,000 psi holding each test for 1 minute. Spaced out.

6.27. Removed BOPE. Installed xmas tree. Pressure tested xmas tree with 5,000 psi for 20 minutes. Changed from polymer to lease salt water using 275 bbls. Checked tree bolts and installed blind flanges. Rig released at 9:00 pm.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 282-185

DIVISION OF OIL AND GAS

Report on Operations

Mr. J. P. Anand, Agent
Southern California Gas Co.
Box 3249 Terminal Annex
Los Angeles, CA 90051

Santa Paula, Calif.
Aug. 30, 1982

Your operations at well "SFZU" P-25, API No. 037-00712,
Sec. 28, T. 3N, R. 16W, SB B.& M. Aliso Canyon Field, in Los Angeles County,
were witnessed on 8/23/82. R. Hauser, representative of
the supervisor, was present from 0630 to 0745. There were also present Jerry Wood,
Company representative
Present condition of well: 13 3/8" cem, 808'; 7" cem, 5770', perf 5750' WSO; 5" cem 5678-8600',
cp at intervals 7783-7777', 7632-7627', 6930-6928', 6593', and 6326', milled 7775-7760',
perfs at intervals 8494-8280' and 8088-7888', perf 8211' WSO, perf 7853' WSO, T.D. 8625',
plugged w/cem 8600-8560', w/cem 8440-7886', and w/cem 7786-~~7423~~ 7360', Effective depth ~~7423~~ 7360'.

The operations were performed for the purpose of plugging back and converting to an observation well.

DECISION:

THE LOCATION AND HARDNESS OF THE CEMENT PLUG AT ~~7423~~ 7360' IS APPROVED.

b

M. G. MEFFERD
State Oil and Gas Supervisor

By _____
Deputy Supervisor
Murray W. Dosch

OG109(12-80-15M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 282-181

DIVISION OF OIL AND GAS

Report on Operations

Mr. J. P. Anand, Agent
Southern Calif. Gas Co.
Box 3249 Terminal Annex
Los Angeles, CA 90051

Santa Paula, Calif.
Aug. 27, 1982

Your operations at well "SFZU" P-25, API No. 037-00712,
Sec. 28, T. 3N, R. 16W, SB B.& M. Aliso Canyon Field, in Los Angeles County,
were witnessed on 7/29/82. R. Habel, representative of
the supervisor, was present from 1430 to 1730. There were also present Jerry Woods,
So. Calif. Gas Co. representative
Present condition of well: 13 3/8" cem 808'; 7" cem 5770', perf 5750' WSO; 5" cem 5678-8600',
cp at intervals 7783-7777', 7632-7627', 6930-6928', 6593' and 6326'; perf at intervals
8494-8280', and 8088-7888', perf 8211' WSO, perf 7835' WSO; T.D. 8625', plugged w/cem
8600-8560'; effective depth 8560'.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

B

M. G. MEFFERD
State Oil and Gas Supervisor

By _____
Deputy Supervisor
Murray W. Dosch

OG109(12-80-15M)

FORM OG111(10/81/DWRR/5M)

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

No. P 282-270

REPORT ON PROPOSED OPERATIONS

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

Mr. Kern Guppy, Agent
So. California Gas Co.
12801 Tampa Ave.
Northridge, CA 91324

Santa Paula, California
July 27, 1982

Your plug back & convert to proposal to observation well well "SFZU" P-25,
A.P.I. No. 037-00172, Section 28, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated 7/27/82, received 7/27/82 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
2. Blowout prevention equipment of at least DOG Class III 3M shall be installed and maintained in operating condition at all times.
3. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
4. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
   a. A pressure test of the blowout prevention equipment before commencing downhole operations.
   b. The location and hardness of the cement plug at 7800'.

Blanket Bond
RLH:r

M. G. MEFFERD, State Oil and Gas Supervisor

By
Murray W. Dosch, Deputy Supervisor

A copy of this report 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.

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	
	OGD114	OGD121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well "SFZU" ~~Porter~~ #25 (Well designation), API No. 037-00712

Sec. 28, 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 8625', plug 8560'

2. Complete casing record, including plugs and perforations

13-3/8" cemented 808'
7" cemented 5770'
2922' 5" cemented 8600', Top 5678', WSO on lap, WSO 8211'
perforated at intervals 8494'-8280', WSO 7853'
perforated at intervals 8088'-7888', cp'd 7618', 6593', 6928', 6368', 6930', 6595', 6326', 7783', 7782', 7627'-32', 7781' and 7777'.

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

4. Present zone pressure 3400 psi ; New zone pressure -

5. Last produced Gas storage well (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

(or)

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

The proposed work is as follows:

1. Move in & rig up. Kill well. Install BOPE & pressure test.
2. Pull tubing & recover packer from 7870'.
3. Plug with cement from 8450'-7800' in two stages.
4. Cut section in 5" 7760'-7775' & open hole to 8".
5. Squeeze section with cement leaving top cement 7660'.
6. Land tubing near 7600' & convert to observation well.

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)

LA (City) CA (State) 90051 (Zip)

Telephone Number (213) 689-3925

Southern California Gas Company (Name of Operator)

By J. P. Anand (Print Name)

J. P. Anand 7-27-82 (Signature) (Date)

OG107 (6/81/GSR1/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 280-68

DIVISION OF OIL AND GAS

Report on Operations

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

Santa Paula, Calif.
April 10, 1980

Your operations at well "SFZU" P-25, API No. 037-00712, Sec. 28, T 3N, R 16W S.B., B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 3/26/80. S. Curran, representative of the supervisor, was present from 1300 to 1600. There were also present E. Livingston, production foreman

Present condition of well No additions to the casing record.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION.

b

M. G. MEFFERD
State Oil and Gas Supervisor

By _____
Deputy Supervisor
John L. Herdoin

OG109 (6-77-GSR1-15M)

FORM OG111

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

No. P 280-7

REPORT ON PROPOSED OPERATIONS

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

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

Santa Paula, California
Jan. 9, 1980

Your proposal to alter casing in gas storage well "SFZU" P-25,
A.P.I. No. 037-00712, Section 28, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated ---, received 1/4/80 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
2. Blowout prevention equipment of at least DOG Class III 3M, shall be installed and maintai in operating condition at all times.
3. A Supplementary Notice shall be filed with the Division when it is determined whether the well is to be abandoned or used for observation purposes.
4. THIS DIVISION SHALL BE NOTIFIED TO WITNESS A PRESSURE TEST OF THE BLOWOUT PREVENTION EQUIPMENT BEFORE COMMENCING DOWNHOLE OPERATIONS.

Blanket Bond
MD:b

M. G. MEFFERD, State Oil and Gas Supervisor

By John L. Hardoin, Deputy Supervisor

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

DIVISION OF OIL AND GAS
RECEIVED
JAN 4 1980
SANTA PAULA, CALIFORNIA

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

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. Porter #25, API No. 037-00712, Sec. 28, 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. 8,625' plug 8,560'

2. Complete casing record, including plugs and perforations:

	13 3/8"	cemented 808'
	7"	cemented 5,770'
2,922'	5"	cemented 8,600', top 5,678', WSO on lap
		WSO 8,211', perf'd at intervals 8,484' - 8,280',
		WSO 7,853', perf'd at intervals 8,088' - 7,888'
		cp'd 7,618', 6,593', 6,928', 6,368', 6,930', 6,595', 6,326',
		7,783', 7,782', 7,627' - 7,632', 7,781', WSO 7,781'

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

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

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

or

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

The proposed work is as follows:

1. Move in and rig up. Kill well. Install BOPE and pressure test.
2. Pull tubing. Recover packer from 6,238'. Ran 5" Casing Inspection log.
3. If log shows bad casing, abandon storage zone and convert to observation well.
4. If log shows satisfactory casing, set bridge plug and squeeze WSO holes 7,853' and 7,781' with cement. Shoot four 1/2" holes 7,777'. Pressure test and test WSO.
5. Run Audio Analyzer log. Make production test and run Audio Analyzer log
6. Set production packers. Rerun tubing with down hole safety system.
7. Return well to gas storage service.

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

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

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

(1-78-GSRI-15M)

OPERATOR So Calif Gas
LSE & NO SF 24 P-21
MAP 250

	(1)	(2)	(3)	(4)	(5)	(6)
INTENTION	DRILL	DEEPEN	ALTR CSG	CONVERT TO GAS STORAGE	REWORK GAS STORAGE	alter casing in GS
NOTICE DATED	11-4-49	11-23-61	5-25-62	1-15-73		10-17-78
P-REPORT NUMBER	1-47497	161-1146	162-468	273-44	277-126	278-318
CHECKED BY/DATE						
MAP LETTER DATED		N/C	N/C	N	N/C	N/C
SYMBOL	G					

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEE
NOTICE	11-7-49		11-27-61		5-28-62		1-26-73		4-12-77		11-13-78	
HISTORY	3-4-50		1-2-62		7-2-62		10-26-73		5-17-77		11-23-78	
SUMMARY	3-4-50										—	
IES/ELECTRIC LOG												
DIRECTIONAL SURV												
CORE/SWS DESCRIP	4-4-50											
OTHER												
RECORDS COMPLETE	G		G		G		G		G		JR	

ENGINEERING CHECK

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

CLERICAL CHECK

POSTED TO 121 _____ 170 MAILED _____ FINAL LETTER MAILED _____

RELEASED BOND _____

REMARKS: _____

FORM 103 SUBMIT IN DUPLICATE △ OSP

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
NOV 23 1979
SACRAMENTO, CALIFORNIA

History of Oil or Gas Well

OPERATOR Southern California Gas Co. FIELD Aliso Canyon

Well No. Porter #25 API 037-00712, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date February 12, 1979, 19 Signed PSM/ P. S. Magruder, Jr.

P.O. Box 3249 Terminal Annex
Los Angeles, Ca. 90051 (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.

MWO 99553

Program: Remove production tubing and packers from well. Stop gas migration behind casing by shooting holes at 7,783' and squeezing with cement. Run Audio Analyzer to determine if the squeeze has been successful & repeat if necessary. Rerun production packers, tubing and safety system and return well to gas storage service.

1978

11-30 1st Day. Killed well with 269 bbls. of 78# brine-polymer completion fluid. Moved California Production Service Co. rig #D-4 onto wellsite.

12-1 2nd Day. Rigged up California Production Service Co. rig #D-4. Installed back pressure valve in tubing hanger. Removed xmas tree and installed BOPE and choke manifold.

12-2 3rd Day. Tested blind rams and 2 7/8" pipe rams to 4,000 psi. Tested Hydril bag to 3,000 psi. Tested choke manifold to 4,000 psi with water and nitrogen. Circulated gas from well. Unlanded tubing, unlatched from Otis packer.

12-3 Rig and crew idle.

12-4 4th Day. Circulated gas from well. Pulled out and laid down 53 joints of 2 3/8" Hydril S.F.J. tubing and seals. Made up Otis latch and ran in well.

12-5 5th Day. Circulated well. Latched in and pulled Otis "Permatrieve" packer from 6,243'. Ran 4 1/8" bit and 5" casing scraper to top of packer at 7,825'. Circulated well clean. Pulled up to 2,500' and secured well.

12-6 6th Day. Finished pulling out of well with bit and scraper. Ran Baker model "B" bridge plug which was set at 7,815'. Shot four 1/2" holes at 7,783'. Ran Baker "Fullbore" retainer with 400' of 2 3/8" tubing below retainer. With tubing hung at 7,807', equalized two sacks of sand on top of bridge plug. Pulled ten stands.

12-7 7th Day. Pulled out of well. Ran 400' of 2 3/8" tubing below Baker "Fullbore" retainer. Set retainer at 7,348' but could not break holes down with 2,500 psi. Equalized 30 cu.ft. 10% HCL and 3% HF acid. Set retainer at 7,283'. Holes broke down at 1,600 psi at a rate of 30 cu.ft. per minute. With 2 3/8" tubing hung at 7,783', equalized 30 sacks of class "G" cement mixed with 1% "D65". Pulled up to 7,283' and backscuttled. Set retainer

1978 History of Well Report for Porter #25, Aliso Canyon

12-7 Continued

and squeezed 2 cu.ft. of cement out holes at 7,783' at 2,500 psi final pressure. Pulled 80 stands.

12-8 8th Day. Continued out of well. Made up 4 1/8" Servco mill and 5" casing scraper on six 3 1/8" drill collars. Located top of cement at 7,455'. Drilled out cement from 7,455' to 7,616'. Circulated hole clean. Pulled up into 7" casing.

12-9 9th Day. Drilled out cement from 7,616' to 7,790'.

12-10 Rig and crew idle.

12-11 10th Day. Pulled out of well. Ran Baker "Fullbore" retainer. Pressure tested holes at 7,783' to 2,000 psi for 20 minutes. Pulled out of well. Ran Audio Analyzer Log from 7,780' to 5,800', no gas leak indicated. Ran in well with Baker retrieving tool. Circulated sand from top of bridge plug at 7,815'.

12-12 11th Day. Engaged Baker model "B" bridge plug at 7,815'. Pulled out of well and recovered Baker model "B" bridge plug. Ran Lynes 4-way test tools. Set packer at 7,750'.

12-13 12th Day. Opened Lynes 4-way test tool at 8:00 a.m., took 30 minute initial flow and 30 minute initial shut in. Initial surface pressure of 2,650 psi, stabilized at 1,100 psi. Closed tool at 7:00 p.m. and backscuttled.

12-14 13th Day. Ran Audio Analyzer from 7,640' to 5,600'. Log indicated gas leak. Released Lynes packer and pulled out of well. Ran in with Baker model "B" bridge plug which was set at 7,815'. Pulling out of well.

12-15 14th Day. Finished pulling out of well. Capped bridge plug with 10' of sand and 15' of cement. Top of cement at 7,790'. Ran in with Baker 5" "Fullbore" retainer. Spotted 30 cu.ft. of fresh water at 7,790'. Attempted to break down holes at 7,783' with 2,500 psi - no success. Pulling out of well.

12-16 15th Day. Finished pulling out of well. Shot four 1/2" jet holes at 7,782'. Ran in with Baker "Fullbore" retainer. Attempted to break down holes at 7,782' with no success. Spotted 35 cu.ft. of 15% HCL. Squeezed away at a rate of 14 cu.ft. per minute at 700 psi. Squeezed all of acid away. Left water across holes. Pulled out of well. Ran in with Baker model "K" retainer to 7,700'.

12-17 Rig and crew idle.

12-18 16th Day. Set Baker model "K" retainer at 7,700'. Released setting tool and pulled out of well. Recovered broken piece of model "K" mandrel. Ran back in well and stabbed into model "K" retainer, unable to obtain breakdown with 2,500 psi.

1978 History of Well Report for Porter #25, Aliso Canyon

12-19 17th Day. Pulled out of well with Baker stab-in stinger. Ran in with 4 1/8" flat bottom mill and two junk subs. Milled up Baker model "K" retainer at 7,700'. Cleaned out to 7,798'. Lost 360 bbls of polymer fluid. Pulled out of well. Started back in with Baker model "K" retainer.

12-20 18th Day. Finished running in well with Baker model "K" retainer. Spotted 40 cu.ft. of fresh water at 7,782'. Pulled up to 7,734' and set model "K" retainer. Spotted 40 cu.ft. of 10% HCL and 3% HF acid and broke down at 7,782' at a rate of 20 cu.ft. per minute. Mixed 50 sacks of class "G" cement and squeezed away. Mixed 50 more sacks and squeezed away 42 cu.ft.. Pressure rose to 2,500 psi. Closed tool and backscuttled cement. Pulled out of well with model "K" stinger. Ran in with 4 1/8" junk mill and two junk baskets on eight 3 1/2" drill collars.

12-21 19th Day. Milled up model "K" retainer and cement from 7,734' to 7,793'. Circulated well clean. Pulled out of well. Ran Baker "Fullbore" retainer to top of liner at 5,678'.

12-22 Rig and crew idle.

12-23 Rig and crew idle.

12-24 Rig and crew idle.

12-25 Rig and crew idle.

12-26 20th Day. Set Baker "Fullbore" retainer at 7,700'. Pressure tested holes at 7,782' with 2,500 psi for 20 minutes, OK. Pulled out to 3,481' and ran Audio Analyzer from 7,780' to 5,800'. Pulled out of well. Ran in with 4 1/8" junk mill, two junk baskets on eight 3 1/8" drill collars. Located top of cement plug at 7,796'. Milled up junk and cement to 7,811'. Pulled out of well.

12-27 21st Day. Ran in with Baker model "B" retrieving tool but was unable to latch onto model "B" bridge plug. Ran washover shoe, jars, two junk subs, and eight 3 1/8" drill collars. Milled on junk from 7,809' to 7,810'.

12-28 22nd Day. Ran model "B" bridge plug retrieving tool. Engaged bridge plug at 7,810' but unable to latch onto bridge plug. Ran Cavins "Multi-surge" junk snatcher. Pulled out and recovered three pieces of retrieving tool shoe. Ran back in well with Cavins tool.

12-29 23rd Day. Pulled Cavins tool with no recovery. Ran in with washover shoe, two junk subs, jars and eight 3 1/8" drill collars. Milled on bridge plug from 7,809' to 7,810' and pulled out of well.

12-30 24th Day. Ran in well with third new washover shoe, two junk subs, jars and eight 3 1/8" drill collars. Milled on junk at 7,810' for two hours with no success. Pulled out of well. Ran Fourth washover shoe. Milled from 7,810' to 7,812'. Pulling out of well.

1978 History of Well Report for Porter #25, Aliso Canyon

12-31 Rig and crew idle.

1979

1-1 Rig and crew idle.

1-2 25th Day. Continued out of well with washover shoe. Made up Midway 3 3/4" x 2" overshot. Ran in and latched onto fish at 7,810'. Tripped jars, pulled off fish. Pulled out of well. Made up Midway 3 3/4" x 1 7/8" overshot. Ran in and latched onto fish at 7,810'. Released bridge plug which was pushed three feet down hole. Unable to jar fish up hole. Released overshot and pulled out of 5" liner.

1-3 26th Day. Pulled out of well with overshot. Made up Midway mill shoe #5 and ran in to 7,813'. Milled on retainer for 3 1/2 hours - made 8". Pulled out of well. Made up mill shoe #6 and ran in to 5,553'.

1-4 27th Day. Continued to top of fish at 7,815'. Milled over bridge plug to 7,816' with mill shoe #6. Pulled out of well. Changed mill shoes. Ran in and milled over bridge plug from 7,816' to 7,818'. Pushed bridge plug down to 7,825'. Circulated gas cut mud. Pulled out of 5" liner.

1-5 28th Day. Pulled out of well with mill shoe. Made up Midway 3 3/4" x 1 7/8" overshot and ran in to 7,815'. Circulated three hours, Worked over top of bridge plug at 7,825'. Pulled out of well. Recovered bridge plug.

1-6 29th Day. Made up Lynes tester and ran in with 1,000' of completion fluid cushion. Set packer at 7,750' with tail at 7,777'. Took 10 minute initial flow and 30 minute shut in. Opened to flow at 11:59 a.m. Well stabilized in 15 minutes at 900 psi on tubing and 540 psi on flow line. Closed tool at 5:00 p.m. Backscuttled gas from well.

1-7 Rig and crew idle.

1-8 30th Day. Ran Audio Analyzer from 7,640' to 5,600' inside of tubing while Lynes test tool packer was set at 7,750'. Log indicated bad leak. Pulled out and ran back with Baker "packer plucker" mill shoe, two junk subs, jars and eight 3 1/8" drill collars. Latched into Otis "Permadrill" packer at 7,825'. Milled over and released packer. Lost 120 bbls of polymer completion fluid. Spotted 80 barrels, 300 viscosity pill on bottom at 7,825', pulling out of well.

1-9 31st Day. Continued out of well. Recovered 5" Otis "Permadrill" packer from 7,825'. Ran 5" Baker model "N" bridge plug on wireline which stopped at 7,625'. Ran in with 4 1/8" mill and 5" scraper to 7,892', no tight spot indicated. Pulled out of well. Ran 5" Baker model "N" bridge plug again on wireline. Stopped at 7,625'.

1-10 32nd Day. Ran 5" Baker model "N" bridge plug which was set at 7,820'. Spotted 14' of sand from 7,820' to 7,806'. Spotted 15 cu.ft. of fresh water at 7,797'. Pulled out of well. Shot four 1/2" holes at 7,781'. Ran 5" Baker model "K" retainer to 5,600'.

1979 History of Well Report for Porter #25, Aliso Canyon

1-11 33rd Day. Ran in to 7,785. Spotted 10 cu.ft. of fresh water and 7 cu.ft. of 13% acid (10% HCl and 3% HF). Pulled up and set 5" Baker model "K" retainer at 7,700'. Released from retainer. Spotted 10 cu.ft. of fresh water and 33 cu.ft. of 13% acid (10% HCL and 3% HF). Pumped down tubing to bottom of stinger. Stabbed into model "K" retainer at 7,700', pressure increased to 2,500 psi immediately. Pulled out of well. Ran in with Baker "CC" milling shoe. Milled from 7,700' to 7,701'.

1-12 34th Day. Pulled out of well. Changed "CC" milling shoe. Ran back in to 7,701'. Finished milling 5" Baker model "K" retainer and pushed same down hole to top of sand plug at 7,802'. Pulled out of well. Ran 3 1/8" catch Bowen overshot. Set over fish. Pulled up to 7,782', hit tight spot. Pulled 14,000# over weight of string. Ran back to 7,802'. Set on fish and pulled out with no recovery. Ran back in with 3 1/16" catch Bowen overshot.

1-13 35th Day. Pulled out of well with 3 1/16" catch Bowen overshot. No recovery. Ran in with open end tubing to 7,787'. Spotted 10 cu.ft. of 15% acid (12% HCL and 3% HF) and pulled out of well. Shot four 1/2" holes at 7,781'. Ran 5" Baker model "K" retainer to 7,788'. Spotted 30 cu.ft. of fresh water and 30 cu.ft. of 15% acid (12% HCL and 3% HF). Pulled up to 7,731' and set model "K" retainer. Pumped 10 cu.ft. of fresh water, 115 cu.ft. of class "G" cement with "D-65" through holes at 7,781' at a rate of 30 cu.ft. per minute with 1,400 psi. Cleared holes with 20 cu.ft. of fresh water. Cement in place at 7:30 p.m. Job #2; squeezed away 115 cu.ft. of class "G" cement with "D-65" at a rate of 20 cu.ft. per minute with 1,350 psi. Cleared holes with 20 cu.ft. of fresh water, pulled up to 5,600'.

1-14 Rig and crew idle.

1-15 36th Day. Ran back to 5" Baker model "K" retainer at 7,731'. Displaced 30 cu.ft. of 15% acid (12% HCl and 3% HF). Stabbed into retainer and squeezed 3 cu.ft. of acid through holes at 7,781'. Held 2,500 psi for 3 1/2 hours, then pressure dropped off to -0-. Squeezed away remaining acid at a rate of 20 cu.ft. per minute with 1,900 psi. Mixed 100 sacks of class "G" cement with 1% "D-80". Squeezed away 115 cu.ft. through holes at 7,781' at a rate of 16 cu.ft. per minute with 1,750 psi. Cleared holes with 20 cu. ft. of fresh water. Job #2; mixed 100 sacks of class "G" cement with 1% "D-80". Squeezed away 115 cu.ft. at a rate of 16 cu.ft. per minute with 2,000 psi. Cleared holes with 20 cu.ft. of fresh water. Job #3; the same as job #2. Job #4; mixed 100 sacks of class "G" cement with 1% "D-65". Squeezed away 103 cu.ft. of cement at a rate of 6 cu.ft. per minute, pressure rose to 2,200 psi. Shut pump off, pressure fell off to 1,000 psi. Pulled out of retainer and backscuttled, pulling out of well.

1-16 37th Day. Continued out of well. Ran 4 1/8" flat bottom mill, two junk subs and eight 3 1/8" drill collars. Milled 5" Baker model "K" retainer and cement from 7,731' to 7,802'. Circulated well clean. Pulled up to 5,600'.

1979 History of Well Report for Porter #25, Aliso Canyon

1-17 38th Day. Pulled out of well with 4 1/8" flat bottom mill, two junk subs, and eight 3 1/2" drill collars. Ran 5" Baker "Fullbore" retainer to 7,709'. Holes at 7,781' broke down at a rate of 8 cu.ft. per minute with 2,000 psi. Pulled out of well. Ran 5" Baker model "K" retainer to 7,786'. Spotted 30 cu.ft. of fresh water and pulled up to 7,726', and set retainer. Pulled out of retainer and displaced 10 cu.ft. of water, 115 cu.ft. of class "G" "R.F.C system 5" cement. Stabbed into model "K" retainer at 7,726'. Pumped away 6 cu.ft. of cement through holes at 7,781', pressure rose to 2,500 psi in 20 minutes. Pulled out of retainer and attempted to backscuttle. Pumped away 90 cu.ft. of polymer fluid down annulus with no returns at 1,200 psi. Unable to circulate down tubing. Tubing stuck at this point. Worked tubing loose. Pulling out of well. Laid down 71 joints of 2 7/8" tubing which were cemented up.

1-18 39th Day, Finished pulling out of well laying down 74 joints of 2 7/8" and 71 joints of 2 3/8" tubing full of cement. Ran 5" Baker "Fullbore" retainer. Located leak in 5" casing between 7,627' and 7,632'. Located top of cement at 7,715'.

1-19 40th Day. Pulled out of well. Ran 5" Baker "Fullbore" retainer and 311' of tail to 7,637'. Equalized 50 cu.ft. of fresh water and 25 cu.ft. of class "G" cement with 1% "D-65". Pulled up to 6,738' and attempted to backscuttle. Pumped 80 cu.ft. and returns failed. Pumped 80 cu.ft. down tubing and retainer failed. Closed pipe rams and Braden head squeezed away 54 cu.ft. with 2,200 psi through hole at 7,627'. Pulled out and ran 4 1/2" bit, casing scraper and eight 3 1/2" drill collars.

1-20 41st Day. Tagged cement at 7,482'. Cleaned out cement stringers to 7,722'. Circulated well clean. Pulled out and ran 5" Baker "Fullbore". Set retainer at 6,771', checked annulus with 1,000 psi. Hole at 7,626' to 7,632' started taking fluid at 1,900 psi. Taking 3 cu.ft. per minute with 2,000 psi final pressure. Pulled up to 5,600'.

1-21 Rig and crew idle.

1-22 42nd Day. Set 5" Baker "Fullbore" retainer at 7,269' with 311' of tail to 7,638'. Pressured up annulus to 1,000 psi, held OK. Released retainer and spotted 50 cu.ft. of fresh water. Reset retainer at 7,269' and obtained breakdown at rate of 6 cu.ft. per minute with 2,300 psi. Released retainer and equalized 29 cu.ft. of class "G" cement with 1% "D-65". Pulled up to 6,958' and backscuttled. No cement returned to surface. Set retainer at 6,958' and squeezed away 1 cu.ft. of cement through hole at 7,627' with 2,500 psi. Cement in place at 10:30 a.m. Pulled out and ran in well with 4 1/8" bit, 5" casing scraper and eight 3 1/2" drill collars. Tagged top of cement at 7,400'. Drilled cement from 7,400' to 7,630'. Cleaned out from 7,630' to 7,722' and circulated well clean. Pulled up to 5,600'.

History of Well Report for Porter #25, Aliso Canyon

1979

1-23 43rd Day. Finished pulling out of well. Ran in with 5" Baker "Fullbore" retainer and set same at 7,316'. Tested hole at 7,627' with 2,000 psi for 20 minutes, OK. Pulled out of well. Ran 4 1/8" Servco flat bottom junk mill, two junk subs, and eight 3 1/8" drill collars at 5,600'. Conditioned polymer completion fluid for 3 hours.

1-24 44th Day. Finished running in hole. Milled 5" Baker model "K" retainer and cement from 7,730' to 7,788'. Ran in to 7,799' and circulated well clean. Pulled out and ran in well with 5" Baker "Fullbore" retainer which was set at 7,474'. Tested holes at 7,781' for 20 minutes with 2,500 psi, OK. Pulling out of well.

1-25 45th Day. Pulled out of well. Ran Audio Analyzer from 7,780' to 5,600'. No gas leak indicated. Ran in well with 4 1/8" Servco junk mill, two junk subs, and eight 3 1/8" drill collars. Milled junk from 7,799' to 7,802'. Cleaned sand out from 7,802' to 7,820'. Milled on 5" Baker model "N" bridge plug for 3 hours with no success. Pulling out of well.

1-26 46th Day. Finished pulling out of well. Ran in with new 4 1/8" Servco junk mill, two junk subs, and eight 3 1/8" drill collars. Milled on 5" Baker model "N" retainer from 7,820' to 7,823'. Milled and pushed junk down hole to 8,456'. Milled on junk at 8,456' for two hours. Pulled out. Ran in well with 4 1/8" bit, 5" casing scraper to 5,600'.

1-27 47th Day. Finished running in well to 8,456' with 4 1/8" bit and 5" casing scraper. Circulated well clean. Pulled out. Ran in to 5,600' with Lynes 4-way test tool and suspended operations at 7:00p.m.

1-28 Rig and crew idle.

1-29 48th Day. Ran in well with Lynes tester. Set packer at 7,745' with tail to 7,765'. Took 10 minute Initial Flow and 30 minute Shut in, opened tool to flow at 8:00a.m. Closed tool at 8:00 p.m. Backscuttled gas from tubing. Closed well in.

1-30 49th Day. Ran Audio Analyzer Log from 7,661' to 5,660'. Pulled out and broke down Lynes tester. Ran in open ended to change over from 71# completion fluid to 63# completion fluid. Circulated for 2 hours and pulled up to 2,000'.

1-31 50th Day. Continued out of well. Ran Welex wireline gauge tool (3' x 4.00") which stopped at 7,625'. Pulled up to 1,700', wireline truck engine failed. Repairing Welex wireline truck engine.

2-1 51st Day. Pulled Welex wireline out of well. Made up Midway 4.151" casing swage, Servco 4 1/8" stabilizer, drill collar, Servco stabilizer, bumper sub, and jars on 2 3/8" tubing. Ran in and swaged casing from 7,625' to 7,627'. Pulled out and ran Baker model "D" packer on 2 3/8" tubing. Hydraulic set packer with top at 7,824'. Started out of well.

2-2 52nd Day. Continued out of well. Made up Baker seals. Ran in changing collars and applying Baker seal. Stabbed into Baker packer at 7,824'.

1979 History of Well Report for Porter #25, Aliso Canyon

2-2 Continued

Pressure tested packer and seals with 1,200 psi. Pulled out of well. Rigged up McCullough wireline. Ran in well and found top of Baker packer at 7,823'. Pulled out and ran an Otis "Permatrieve" packer which was set at 6,238'.

2-3 53rd Day. Ran in and stabbed into Otis packer at 6,238'. Pulled 20,000# over weight of tubing to check latch. Pressure tested packer and seals with 1,000 psi for 20 minutes. Pulled out and laid down 2 3/8" tubing. Rigged up and ran 2 3/8" Hydril tubing, hydrotesting tubing to 5,000 psi.

2-4 Rig and crew idle.

2-5 54th Day. Finished running and hydrotesting 2 7/8" tubing to 5,000 psi. Pumped inhibitor down between the two packers, Stabbed into Baker 5" model "D" packer at 7,824' and latched into Otis 5" "Permatrieve" packer at 6,238'. Pulled 20,000# over weight of string to check latch, OK. String weight 43,000# on the hook. Landed tubing with 6,000# on packer. Removed BOPE and installed xmas tree.

2-6 55th Day. Tested xmas tree to 5,000 psi, OK. Changed over to lease water. Released rig at 6:00 p.m.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 278-385

DIVISION OF OIL AND GAS

Report on Operations

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

Santa Paula, Calif.
Dec. 12, 1978

Your operations at well "SFZU" P-25, API No. 037-00712, Sec 28, T3N, R16W S.B.B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 12/2/78. T. E. Adams, representative of the supervisor, was present from 0800 to 1200. There were also present Ed Lancaster, company foreman

Present condition of well: No additions to the casing record since proposal dated 10/17/78.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

b

M. G. MEFFERD
State Oil and Gas Supervisor

By _____
Deputy Supervisor
John L. Hardein

OG109 (6-77-GSBL-15M)

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

No. P 278-318

REPORT ON PROPOSED OPERATIONS

Santa Paula, , California

Nov. 15, 1978

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

Your proposal to alter casing in gas storage well "SFZU" P-25
(Name and number)
, A.P.I. No. 037-00712, Section 28, T. 3N, R. 16W,
S.B. B. & M., Aliso Canyon field, Los Angeles County,
dated 10/17/78, received 11/13/78, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

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

Blanket Bond
MD:b

M. G. MEFFERD
State Oil and Gas Supervisor

By John L. Hardoin
Deputy Supervisor

John L. Hardoin

OG111 (11-76-GSR1-30M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

DIVISION OF OIL AND GAS
RECEIVED
NOV 13 1978
SANTA PAULA, CALIFORNIA

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

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
66	✓	✓

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. PORTER #25, API No. 037-00712, Sec. 28, 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. 8600'

2. Complete casing record, including plugs and perforations:

13 3/8" cemented 808'

7" cemented 5770', WNSO 5755', squeezed , WSO 5751'

2922' 5" cemented 8600', cement plug 8560', top 5678', WSO by D.O.G., WSO 8211' and 7853', squeezed 7618', 6930', 6928;, 6595', 6593', 6370' and 6368'. Perforated 8494'-8452', 8446'-8412', 8397'-8383', 8375'-8363', 8356'-8331', 8321'-8280' and 8274'-8218'. 8088'-8086', 8080'-8074', 8070'-8056', 8026'-8001', 7998'-7982', 7956'-7950', 7926'-7914', and 7894'-7888'.

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

4. Present zone pressure 3500 psi New zone pressure -

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

or

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

The proposed work is as follows:

1. Kill well. Move in and rig up. Install B.O.P.E. and pressure test.
2. Pull tubing. Recover packer. Set bridge plug. Shoot four 1/2" holes at 7783'. Squeeze with cement. Run Audio Analyzer Log to determine gas leakage has stopped.
3. Set packer. Run tubing with down-hole safety system.
4. Return well to gas storage service.

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

Address P.O. Box 3249, 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. (Name) Date 10-17-78
Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

OG107 (8-75—GSRI—15M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T 277-203

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

Santa Paula, Calif.
Aug. 18, 1977

DEAR SIR:

Operations at well No. "SFZU" P-25, API No. 037-00712, Sec. 28, T. 3N, R. 16W, S.B. B. & M. Aliso Canyon Field, in Los Angeles County, were witnessed on 4/13/77. Mr. P.R. Wygle, representative of the supervisor was present from 1000 to 1200. There were also present G. Osburn, foreman

Present condition of well: No additions to the casing record since proposal dated 4/12/77.

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
~~xxx~~
JOHN F. MATTHEWS, JR.
Acting, State Oil and Gas Supervisor

By John L. Hudson Deputy

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAY 17 1977
SANTA PAULA, CALIFORNIA

History of Oil or Gas Well

OPERATOR SOUTHERN CALIFORNIA GAS CO. FIELD ALISO CANYON

Well No. PORTER #25, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date MAY 11, 1977 Signed P. S. Magruder, Jr.

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

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

Date	
4-12-77	Moved in C.P.S. Rig #D-3 to Porter 25.
4-13-77	Finished rigging up C.P.S. Rig #D-3. Using McCullough wire line, ran 1 3/4" chemical cutter to 7823' where tool stopped on closed page ball valve. Tried to pump valve open through 1/4" line. Unable to pressure up line and therefore unable to open safety valve. Started nippling up Class III B.O.P.E.
4-14-77	Finished installing B.O.P.E. Tried to test B.O.P.E. with water. Removed B.O.P.E. Installed back pressure valve in doughnut and reinstalled B.O.P.E.
4-15-77	Finished installing Class III B.O.P.E. Tried to test with water - would not hold. Pulled all B.O.P.E. Installed new RX-type A.P.I. rings, reinstalled B.O.P.E. Tested pipe rams and blind rams with 4000 psi for 20 minutes. Tested Hydril bag with 3000 psi for 20 minutes. . .first using water and then using nitrogen - all O.K. Ran Page shifting tool to 7827'. Jarred down on ball safety valve. Pressured tubing to 1500 psi to lock ball valve in open position. Pulled shifting tool. Ran dummy tool to 8100' indicating ball safety valve is now open.
4-16-77	Pulled both Otis hydraulic packers loose with 75,000#. Circulated hole clean. Pulled and laid down 3 1/2" tubing. Pulled 2 7/8" and 2 3/8" tubing. Removed 1/4" side line and clamps. Picked up 6 1/8" bit, scraper and float sub. Ran in well to 2000'.
4-18-77	Picked up 2 7/8" tubing. Ran in hole to 5678' with 6 1/8" bit and scraper. Pulled out of hole. Rigged up and ran 6" magnet on sand line. Made two runs to 5678' with no recovery. Ran 4" magnet two runs to 8100' with very small amount of junk. Picked up 4 1/8" bit and scraper. Ran in hole to 5678'.

4-19-77 Finished picking up 2 7/8" tubing. Ran in hole to 8101' with 4 1/8" bit and scraper. Circulated hole clean. Pulled out of hole. Picked up Baker packer milling tool, bumper sub and jars. Ran in hole to 2500'.

4-20-77 Finished running in hole to 8100'. Milled through center of packer with retrieving mill head. Milled over Baker Model "D" packer. Pulled out of hole to 4200'.

4-21-77 Finished pulling out of hole with Baker packer retriever. Did not recover packer. Set Johnston 5" 18# bridge plug at 7800'. Pressure tested with rig pump to 1000 psi for 15 minutes - O.K. Changed over from polymer to fresh water treated with surfactant. Pulled out of hole. Picked up Johnston 7" 23# squeeze tool. Ran in hole to 5137'.

4-22-77 Tubing and 23# 7" squeeze tool stopped at 5095'. Pulled out of hole to 4000'. Pressure tested casing with water as follows:

4000' - surface	2600 psi for 60 minutes
3300' - surface	3000 psi for 60 minutes
2400' - surface	3200 psi for 60 minutes
2100' - surface	3400 psi for 60 minutes
1500' - surface	3600 psi for 60 minutes
1000' - surface	4000 psi for 60 minutes

No Leaks Indicated

Pulled out of hole. Picked up 5", 18# squeeze tool. Ran in hole to 5710'. Tested to surface with 2600 psi for one hour - O.K. Tested from 5710' to 7800' and same leaked.

4-23-77 Isolated casing leak at 6370'. Covered bridge plug at 7770' with three sacks of sand. Changed mud system from fresh water to polymer drilling fluid. Cement job #1 - set squeeze tool at 6246', hole at 6370' - cemented with 20 cu.ft. H_2O ahead of 50 sacks Class "G" cement. Followed by 20 cu.ft. H_2O, 86 cu.ft. mud. Closed tool and pumped 47 cu.ft. mud, pressured to 2800 psi. Backscuttled out 43 cu.ft. cement leaving 5 sacks squeezed through leak. Pulled out of liner.

4-24-77 Rig and crew idle.

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SANTA PAULA, CALIFORNIA

4-25-77 Finished pulling out of hole with Johnston squeeze tool. Picked up four 3 1/8" D.C. and Servco junk mill. Ran in hole, milled on junk and cement from 6246' to 6279'. Pulled out of hole. Picked up bit, scraper and junk subs - ran in hole.

4-26-77 Finished running in hole with 4 1/8" bit, junk sub and scraper. Drilled out cement from 6279' to 6381'. Circulated hole clean. Pressure tested with Halliburton from surface to 7800' - 400 psi drop in 55 minutes. Pulled out of hole. Picked up Baker full bore packer. Ran in hole and set full bore at 6403'. Tested to 7800' with 2000 psi - leaked 200 psi in 25 minutes. Tested from 6404' to surface with 2000 psi - leaked 200 psi in 35 minutes. Tested from 6340' to surface with 2000 psi for 38 minutes - O.K. Pulled into 7" casing.

4-27-77 Ran in hole to 7050'. Unable to set full bore. Pulled out of hole. Picked up full bore. Ran in hole to 7050'. Tested casing from 7050' to 7800' with 2600 psi, pressure declined 200 psi in 30 minutes. Ran in to 7360', tested to 7800' with 2600 psi, pressure declined 200 psi in 30 minutes. Ran in to 7670', tried to set full bore - unable to set same. Pulled out of hole. Changed full bore retainer. Ran in hole to top of liner.

4-28-77 Finished running in hole to 7660'. Tested casing as follows:

7660'-7800' with 2600 psi for 60 minutes)
7600'-7800' with 2600 psi for 20 minutes)
7476'-7800' with 2600 psi for 20 minutes)
7355'-7800' with 2600 psi for 32 minutes)
7043'-7800' with 2600 psi for 30 minutes)
6736'-7800' with 2600 psi for 20 minutes)
6432'-7800' with 2600 psi for 30 minutes)
6340'-7800' with 2600 psi for 35 minutes)

Pulled out of hole. Picked up retrieving tool. Ran in hole and tagged sand at 7760'. Circulated the long way and backscuttled at 7800'. Released Johnston bridge plug and pulled out of liner.

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4-29-77 Pulled out of hole. Laid down bridge plug. Ran in hole with 4 1/8" junk mill and casing scraper. Pushed Model "D" packer to 8465', but unable to work deeper. Circulated hole clean. Pulled out of hole.

4-30-77 Ran Otis Permatrieve packer, stopped at 7615'. Pulled out with packer. Picked up 4 1/8" tapered mill. Ran in hole and milled from 7581' to 7621' making several runs through this spot. Ran in hole to 8465'. Pulled out to top of liner.

5- 1-77 Rig and crew idle.

5- 2-77 Pulled out 4 1/8" taper mill. Ran 4 1/8" feeler gauge - stopped at 6039' - unable to work through - pulled out. Ran in with Otis 4 1/16" x 4.60' Permatrieve packer on wireline - worked through tight spot at 6039' and stopped at 7615' - unable to work through - pulled out. Ran in with 4 1/8" tapered mill on 5" casing scraper. Reamed tight spot from 6000' to 6075' and from 7575' to 7650'. Circulated at 8465'.

5- 3-77 Pulled out of hole with taper mill and casing scraper. Re-ran Otis 4 1/16" x 4.60' Permatrieve packer - stopped at 7615' - unable to spud packer through tight spot. Pulled out of hole. Ran in hole with new 4 1/8" tapered mill on three 5" casing scrapers on four drill collars. Reamed through tight spot from 6000'-6075' and from 7575' to 7650'. Circulated at 7871'.

5- 4-77 Finished pulling out tapered mill and three casing scrapers. Made up Otis 4.25' x 3.95" O.D. x 2.55" I.D. TB Permadril packer on 2 3/8" tubing. Ran in and set top of packer at 7825'. Pulled out. Ran collar locator. Located top of Permadril packer at 7825'. Ran in Otis 4.25' x 4.16" O.D. x 2.55" I.D. PW Permatrieve packer and set same at 6243'.

5- 5-77 Pulled tubing out of hole. Made up Otis bottom seal assembly on 2 3/8" 4.7# K-55 Hydril SFJ and hydrotested same at 5000 psi. Made up Camco blast joint and safety flow system and tested same at 5000 psi. Ran dummy plug in KBMG mandrel in place. Ran 20 joints of 2 3/8" 5.7# K-55 8rd and 2 7/8" 6.5# K-55 8rd tubing. Changing collars and using Baker seal on all joints hydrotesting at 5000 psi for one minute.

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5-6-77 Continue running in with production string Hydrotesting tubing at 5000 psi for one minute and changing all collars. Ran Camco 2 3/8" I.P.-5 safety valve mandrel to top of 5" 18# liner. Camco safety flow system would not go in 5" liner. Pulled out and removed Camco safety equipment and ran in with Otis XPS tubing flow safety system and placed RLI mandrel on top of 2 3/8" tubing. Hydrotesting at 5000 psi (RLI mandrel will be in 7" casing above 5" liner).

5-7-77 Continued running 2 7/8" tubing, hydrotested at 5000 psi, spaced out tubing. Mixed five gallons of HIB-100 inhibitor in workover fluid and spotted in 5" liner between packers. Landed tubing string with 6000# on Otis Permatrieve packer at 6243'. Tested J-latch with 20,000# over weight of string - tubing string weight 48,000#. Removed Class III 5000 psi B.O.P.E. Installed Christmas tree. Installed new 2 1/2" master valve. Tested doughnut seals and flange at 5000 psi for 20 minutes. Tested Christmas tree at 5000 psi for 20 minutes. Tested top 7" casing seals at 3500 psi and bled down to 100 psi in 10 minutes. Tested bottom 7" casing seals at 3500 psi and bled down to 3300 psi in 20 minutes.

5-8-77 Rig and crew idle.

5-9-77 Rigged up and pulled dummy valve from RLI mandrel at 5582'. Rigged up and tested top casing seals with 4100 psi for 20 minutes - O.K. Tested middle and bottom seals with 3500 psi for 25 minutes - O.K. Changed over from polymer to lease water. Ran plug in No-Go nipple at 6233'. Tested Otis PW Permatrieve packer with 2000 psi for 25 minutes - O.K. Removed equalizing prong, pulled plug. Released rig at 11:00 P.M.

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GCA/mm

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 277-126

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

Santa Paula, Calif.
Apr. 15, 1977

DEAR SIR:

Your proposal to rework gas storage Well No. (037-00712) "SFZU" P-25, Section 28, 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 F. MATTHEWS, Jr.~~, State Oil and Gas Supervisor

By [signature], Deputy

25476-705 7-74 50M ①D OSP

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS RECEIVED
APR 11 1977
SANTA PAULA, CALIFORNIA

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

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

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
7373	✓	✓

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. PORTER (#25, API No. -,
Sec. 28, 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. 8625'

2. Complete casing record, including plugs and perforations:

13 3/8" cemented 808'

7" cemented 5770', WNSO 5755', squeezed - WSO 5751'

5" cemented 8600', WSO 8211'
Perforated 8218'-8494'

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

4. Present zone pressure 2500 psi New zone pressure -

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

or

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

The proposed work is as follows:

1. Move in, kill well and install B.O.P.E.
2. Recover Otis hydraulic packers.
3. Pressure test casing and perfrom remedial work, as indicated.
4. Set Baker Retrieva-"D" packer at 7850'.
5. Run tubing and safety system. Return to Gas Storage.

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

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

SOUTHERN CALIFORNIA GAS COMPANY (Name of Operator)
By P.S Magruder Jr. by Guy C. Anderson (Name) P.S.Magruder, Jr. (Date)
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

FORM 103 SUBMIT IN DUPLICATE △ OSP

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR Pacific Lighting Service Company FIELD Aliso Canyon

"SFZU" P-25
Well No. Porter 25, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date October 24, 19 73 Signed R. S. Maguder Jr.

P. O. Box 54790, Terminal Annex
Los Angeles, California 90054 (213) 689-3561 Title
(Address) (Telephone Number) (President, Secretary or Agent)

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

Date	
1973	
1-19	Moved in C.P.S. production rig. Sucker rods had been pulled but rod pump was stuck and remained in well. Blew down gas pressure on tubing and casing, unlanded tubing and opened Page tubing drain. Re-landed tubing and filled casing with 110 bbls. brine-polymer work over fluid and attempted to backscuttle through pump and drain at 1500 psi without success. Attempted to circulate through tubing at 1350 psi without success. Installed class III B.O.P.E.
1-20	Tested B.O.P.E. to 2000 psi. Shot one 3/8" hole in tubing at 8380'. Circulated through tubing, separating kill fluid and oil returning through casing, losing approximately 100 bbls. to formation, in skimmings from circulating tank and mixed with oil to flow line. Pulled tubing. Coming out, Page double tubing anchor stuck at 6042' but worked free in one hour. Lost in hole one 5" x 1-3/4" slip segment and button from Page 5" tubing anchor.
1-21	Idle
1-22	Filled hole, took 9 bbls. Ran 7" scraper and 6-1/8" bit to top of 5" liner at 5678'. Ran 5" scraper and 4-1/8" bit which stopped at tight place at 6042'. Ran 4-1/8" swage and worked through partially collapsed 5" casing at 6042' to 6043'.
1-23	Continued working 4-1/8" swage through tight pipe at 6042' until swage worked through freely. Pulled out but lost swage tool in hole. Ran in, found swage tool at 7618'.
1-24	Recovered 4-1/8" swage. Ran 4-1/8" bit and 5" scraper drifted at 4-1/8" and worked through tight spot at 7618' but stopped and could not be worked through tight spot at 8455'
1-25	Ran 3-7/8" bit and 5" scraper set at 3-7/8" O.D. which could not be worked below 8455'. Ran Dresser-Atlas Neutron Lifetime, Density and Cement bond logs.
1-26	Attempted to run 5" Baker Lok-Set bridge plug but plug would not go through tight pipe at 6042'. Ran 4-1/8" swage and worked through tight places at 6042' & 7618'.

1973

1-27 Checked tight 5" casing at 7618' and 6042' with 4-1/8" swage OK after setting overnight. Ran 126' of 2-3/8" O.D. plain end flush joint tubing stinger, went through tight 5" casing at 8455' and backscuttled out sand fill from 8513' to 8550'.

1-28 Idle.

1-29 Set 5" bridge plug at 8160' to plug well to change wellhead. Tested plug and casing with rig pump to 1500 psi but pressure bled off to 1150 psi in 5 minutes. Set plug at 7575' and tested but bled off from 1600 psi to 1250 psi in 75 minutes. Set plug at 6010' and tested at 1825 psi OK. Above tests indicate leaks in 5" casing between 6010' and 8160'. Pulled and re-dressed bridge plug. Reran 5" bridge plug with squeeze packer and pressure tested tubing at 5000 psi to 8160'.

1-30 Set bridge plug at 8160' and packer at 8120' and tested between at 3000 psi OK using B-J pump truck. Set packer at 7663' and tested 5" casing from 7663' to 8160' at 3000 psi OK. Set packer at 7600' and tested 7600' to 8160' and pumped away 5 cu. ft. per minute at 2000 psi. Tested 7" casing and 5" casing from surface to 7600' at 2000 psi which leaked 200 psi in 7 minutes. The tests indicated hole in 5" at 7618', the depth at which the 5" was partially collapsed and a smaller leak between 7600' and surface. Set squeeze packer at 7427' to cement hole at 7618'. Pumped in 20 cu. ft. water, 40 sacks Class "G" cement with 0.2% B-J, Inc. D-19 fluid loss additive and 0.2% D-31 dispersant and 4 cu. ft. water and squeezed out 36 cu. ft. cement through holes at 7618' in stages to a final pressure of 2450 psi. Cement in place 2:40 PM. Calculated top of cement 7518'. Held pressure on cement until 5:00 PM. Set packer at 6060' and tested 5" to calculate top of cement at 7518' at 2200 psi which leaked off 300 psi in 7 minutes. Tested 5" and 7" casing from 6060' to surface which held 2000 psi for 4 minutes, increased pressure to 2200 psi which held 3 minutes then broke down and leaked off 100 psi in 40 minutes. Set packer at 6806', 6494', 6682', 6620', 6557' and 6588' and tested from packer to calculate top of cement at 7518' and determined existence of small leaks in the 5" casing at or near a collar at 6588' and between 6806' and calculated top of cement at 7518'.

1-31 Pulled squeeze packer to 6342' and ran Dresser-Atlas through tubing perforator and shot four 3/8" jet holes at 6593'. Set packer at 6342' and broke down holes at 6593' with 7 cu. ft. per minute at 2000 psi. Pumped in 20 cu. ft. water, 60 sacks class G cement with 0.2% D-19 and 0.2% D-31 and 4 cu. ft. water and squeezed out 60 cu. ft. cement through holes at 6593' at a final pumping pressure of 2200 psi, but leaked off to 1800 psi in 40 minutes. Cement in place 9:40 AM. Calculate top of cement 6513'. Released pressure at 12:00 Noon. Retested 6342' to calculate top of cement at 6513' at 2200 psi which leaked off 100 psi in 10 minutes, indicating an additional leak between 6342' and calculate top of cement at 6513'. Pulled squeeze packer and ran in with 4-1/8" bit and 5" scraper drifted to 4-1/8". Drilled out cement stringers from 6475' to 6489', leaving cement plug from 6489' to squeezed holes at 6593'.

2-1 Pulled bit and scraper. Ran 5" squeeze packer and set successively at 6434', 6310', 6376', 6366', 6355' and at 6310' and 6376' again and tested from packer to top of cement plug at 6489' proving existence of leaks in the 5" casing from above 6310' to 6434'. Pulled packer. Ran 4-1/8" bit and scraper and drilled out cement from 6489' to 6551'.

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2-2 Continued drilling out cement from 6551' to 6599'. Ran on in with 4-1/8" bit and scraper, hit cement stringers at 7470', firm cement from 7590' to 7624'. Ran on in and circulated hole clean from top of sand plug at 8144'.

2-3 Ran Dia-log Caliper survey in 5" casing from 8141' to 5678', indicating no appreciable loss of inside wall metal.

2-4 Idle.

2-5 Made four attempts to run Schlumberger electronic casing inspection log on 5" casing without success. Tool malfunctioned.

2-6 Ran Schlumberger electronic casing inspection log in 5" casing from 7730' to shoe of 7" casing at 5770', indicating more than 90% wall thickness remaining throughout. The log indicated 5" joints to be flush joint, such as Hydril "EU".

2-7 Ran and set 5" bridge plug at 7668' and 5" packer at 7602' and tested 7602' to 7668', including cemented holes at 7618', to 2100 psi for 35 minutes OK. Moved bridge plug to 7602' and set packer at 6806' and tested 6806' to 7602' at 1700 psi which leaked off 100 psi in 50 minutes confirming existence of small hole in 5" casing between 6806' and 7602'. Set packer at 6438' and tested 6438' to 7602', including cemented holes at 6593', to 1700 psi which leaked off at rate of 1-1/2 psi per minute, indicating cemented holes were holding OK and that leak off was at the small hole between 6806' and 7602'. Pulled bridge plug to 6475' and set packer as outlined below to re-confirm leaks in the 5" casing between 6342' and 6513' as reported on 1/31/73 and leaks in the area of 6310' to 6434' as reported on 2/1/73. Set packer and tested 5" casing (1) 6376' to 6475' at 2200 psi for 15 minutes OK; (2) tested 6314' to 6475' at 2000 psi which leaked off to 1900 psi in 5 minutes; (3) tested 6345' to 6475' at 2000 psi which leaked off 40 psi per minute. Also when packer was set at 6314', tested 5" and 7" casing from 6314' to surface at 1500 psi for 25 minutes OK. The above tests showed the tests conducted on 2/1/73, which indicated leaks "from above 6310' to 6434'", to be in error due to a fault in the packer unknown at that time and that the only leak in the 5" between 6342' and 6513' is between 6345' and 6376', probably at a joint at 6363'.

2-8 Moved bridge plug to 7603' to pinpoint leak in 5" casing between 6806' and 7602' as previously determined. Set packer at 7309', 7063', 6938', 6876' and 6907' and tested to 7603' at 2100 psi which showed hole to be in 5" casing between 6907' and 6938', probably at joint at 6923', which leaked off at 10 psi per minute. Pulled packer to 6691'. Ran Dresser-Atlas through tubing gun and shot four 3/8" holes at 6927' to 6928'. Set packer at 6691'. Holes at 6927' to 6928' would not take fluid at 2600 psi, only leaking off from 2600 psi to 1700 psi in 5 minutes. Spotted 200 gallons 15% inhibited HCL in 5" casing from 6968' to 6708'.

2-9 Set packer at 6691' and broke down holes at 6927' with 5 cu. ft. per minute at 2500 psi. Backscuttled from 6998' to circulate out HCL acid. Re-set packer at 6691' and cemented holes at 6927' as follows: Pumped in 20 cu. ft. water, 40 sacks Class "G" cement, 4 cu. ft. water and displaced with 252 cu. ft. mud staging 36 cu. ft. cement out holes at 6927' at a final pump pressure of 2000 psi. Cement in place 9:10 AM. Calculate top of cement at 6827'. Held 2000 psi 30 minutes then tested against cement at 2200 psi OK. Pulled packer. Ran 3-1/2" gun

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2-9 (cont'd) and shot four 0.38" holes at 6368'. Set packer at 6130' and broke down holes at 6368' with 6 cu. ft. per minute at 1700 psi. Cemented holes at 6368 as follows: pumped in, through 3248' 2-3/8" tubing and 2882' 3-1/2" tubing, 20 cu. ft. water 70 sacks Class "G" cement with 0.20% D-19 and 0.20% D-31, 4 cu. ft. water and displaced with 225 cu. ft. mud squeezing out 70 cu. ft. cement through holes at 6368' at a final pump pressure of 1900 psi and a final static pressure of 1600 psi. Calculated top of cement 6268'. Cement in place 4:50 PM. Released pressure at 6:30 PM. Pulled packer.

2-10 Removed B.O.P.E. and tubing head in order to remove existing casing head and weld on new casing head, but shut down at 11:00 AM. Unable to make weld in rain.

2-11 Idle.

2-12 Unlanded 7" casing with 160,000 pounds. Removed existing casing head and welded on new 5000 psi API 13-3/8" casing head by making butt weld in 13-3/8" casing 3" above cellar floor. X-rayed weld OK.

2-13 Relanded original 7" casing with 160,000 pounds. Installed 5000 psi API seal flange and tubing head and tested seals to 3400 psi OK. Ran 4-1/8" bit and scraper, hit cement stringers at 6193', firm cement at 6258' and drilled out cement to 6334'.

2-14 Continued drilling out cement 6334' to 6375', 7' below holes at 6368'. Pressure tested holes at 6368' with rig pump at 1500 psi which bled off to 1210 psi in 50 minutes. Ran on in with 4-1/8" bit and scraper and hit cement at 6720' and drilled out cement to holes at 6927'. Pressure tested complete interval from top of sand at 7583' to surface including the two sets of squeezed holes at 6368' and 6927' at 1500 psi with rig pump which bled off to 1170 psi in 28 minutes. Ran in, tagged top of sand at 7583' and pulled bit.

2-15 Ran 5" packer to test cement jobs at 6927', 6593' and 6363'. Set packer at 5704' and tested 5704' to surface at 1590 psi 20 minutes OK. Set packer at 6425' and tested 6425' to surface at 1520 psi which leaked off to 1250 psi in 5 minutes, indicating holes at 6368' were leaking. Set packer at 6441' and tested 6441' to sand at 7583' at 1500 psi which leaked off to 1395' in 30 minutes, which indicated holes at 6927' and/or 6593' were leaking. Set packer at 6900' and tested holes at 6927' which leaked off from 1975 psi to 1875 psi in 25 minutes. Using Dresser-Atlas 1-11/16" through tubing perforator and Di-Kone link jet, shot 2 holes at 6930'. Set packer at 6683' and broke down holes at 6930' with 3 cu. ft. per minute at 3200 psi. Squeezed holes at 6930' with 25 sacks Class "G" cement at pumping pressure of 3000 psi, which bled off to 1800 psi in 5 minutes, except final stage built up to and held 2000 psi. Calculated top of cement at 6770'.

2-16 Pulled packer from 6683' to 6430' and found tubing plugged. Pulled out and found cement in bottom 90' of 2-3/8" tubing. Ran 7" packer to test 7" casing. The 7" packer (6.200" O.D.) stopped going at 5093', 585' above top of 5" liner. Set packer at 5063' and tested 7" casing to surface at 2200 psi 20 minutes OK. Set packer at 3000' and tested 7" casing to surface at 2550 psi for 20 minutes OK.

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2-16 (cont'd) Set packer at 2002' and tested 7" casing to surface at 3100 psi for 20 minutes OK. Ran 5" packer and tubing plug catcher and checked displacement of 3248' of 2-3/8" tubing and 3435' of 3-1/2" tubing finding displacement to be 16 cu. ft. more than standard due to rod wear. Set packer at 6437' and tested cemented holes at 6593' which leaked off from 1700 psi to 1630 psi in 20 minutes.

2-17 Pulled tubing. Using Dresser-Atlas 3-1/2" Gun and Golden Jets, shot two 1/2" holes at 6595'. Set packer at 6463' and broke down formation at 14 cu. ft. per minute at 3200 psi. Squeezed holes with 100 sacks Class "G" (114 cu.ft. cement), staging to a final pressure of 3000 psi, putting 101 cu. ft. out holes. Calculated top of cement 6523'. Set packer at 6122' and broke down holes at 6368' with 8 cu. ft. per minute at 3200 psi. Squeezed holes at 6368' with 70 sacks Class "G" (80 cu.ft. cement), staging to a final pressure of 3500 psi, putting 60 cu. ft. cement out holes. Calculated top of cement 6168'. Pulled packer and ran 4-1/8" bit to 3300'.

2-18 Idle.

2-19 Ran on in with 4-1/8" bit and 4-1/8" scraper, found top soft cement at 6196' and drilled out cement to 6326'. No cement between 6326' and supposed leak at 6368'. Evidently original squeeze on holes at 6368' on 2-9-73 was OK but break down on 2-17-73 with packer at 6122' was out new holes 6326'. Ran on in and hung bit at 6551' and tested 7" and 5" casing from surface to below 6551' with rig pump at 1520 psi for 20 minutes, OK. Rotated bit and scraper finding cement stringers from 6496' to 6582' and solid cement from 6582' to 6601'. This cement was left in place when squeezing holes at 6595' on 2-17-73. Ran on in and hit top of cement at 6684' from squeeze on holes at 6930' on 2-15-73. Hung bit at 6684' and pressure tested from 6684' to surface at 1360 psi for 20 minutes OK. Drilled out hard cement from 6684' to 6801'.

2-20 Continued drilling out cement 6801' to 6931'. Ran on in to 6962' and pressure tested holes at 6930' from surface at 1300 psi which bled off to 930 psi in 20 minutes. Retrieved bridge plug from 7602'.

2-21 Using Dresser-Atlas 3-1/2" hollow carrier and NCF III 11 gram Golden Jet, shot 4 0.31" holes per foot from 8088'-8086', 8080'-8074', 8070'-8056', 8026'-8001', and 7998'-7982'. Ran Johnston formation test tool on 3248' 2-3/8" and 4619' 3-1/2" tubing. Set packer at 7894' (27' of tools above packer) with tail to 7912', with 1/2" flow bean in tester. Flowed well for clean up period from 2:45 PM to 6:10 PM then shut in at tester. Final rate 2.8 MMCF/day approximately at 578 psi surface flowing pressure on 48/64" surface bean. Produced 3.3 bbls. oil last hour.

2-22 Flow tested S-8 zone from 6 AM to 6 PM with perforations open and test tool set as outlined on 2-21-73. Final flow rate 3252 MCF/day on 3/4" surface bean and 604 psig surface flowing pressure. Produced 9.0 bbls. oil and 15.4 bbls. water in the 12 hour test.

1973

2-23 Pulled test tools. Using Dresser-Atlas 3-1/2" hollow carrier and NCF III 11 gram Golden Jets, perforated four 0.31" holes per foot at 7888'-7894', 7914'-7926' and 7950'-7956'. Ran Johnston tester and bridge plug. Set plug at 7970' and test packer at 7821' with tail to 7846'. Opened tester from 4:18 PM to 6:00 PM for clean up flow period. At 6:00 PM flowing through 1" bean at surface rate was approximately 2300 MCF/day at 635 psi surface pressure.

2-24 Flow tested S-4 zone from 6:05 AM to 6:05 PM with tester set as outlined on 2-23-73. Flow rate at 6:05 PM 2897 MCF/day at 511 psi surface pressure. Fluid produced for the 12 hours was 21.3 bbls. gross, 10.4 bbls. net.

2-25 Idle.

2-26 Pulled tester tool. Moved bridge plug from 7970' to 7872'. Shot four 0.31" holes at 7853'. Ran Johnston tester on 3248' 2-3/8" and 4569' 3-1/2" dry tubing. Set packer at 7817' with tail to 7833'. Tester open at 5:25 PM for one hour for WSO test on holes at 7853'. Had weak diminishing blow for 40 minutes, dead last 20 minutes. Had 10' rise drilling fluid. Charts OK. I.H.P. 3460 psi, I.F.P. 30 psi, F.F.P. 0 psi, F.H.P. 3456 psi witnessed and approved by Peter Wygle of Division of Oil & Gas.

2-27 Ran squeeze packer and moved bridge plug from 7872' to 7061'. Set packer at 6688' and tested cemented holes at 6930' at 2500 psi for 20 minutes, OK. Tested from 6688' to surface at 1300 psi which bled off to 1075 psi in 15 minutes. This test indicated that holes at 6595' or 6368' had broken down since good tests were made on 2-19-73 and that holes at 6930' were OK. (Tests conducted on 2-20-73 indicated holes at 6930' were bad). Set packer at 6564' and tested 6564' to 7061' at 1300 psi 10 minutes OK, showing holes at 6593' were OK. Set packer at 6315' and tested 6315' to 7061' at 1300 psi which leaked to 900 psi in 5 minutes, indicating holes at 6368' and/or 6326' were bad. Tested from 6315' to surface at 1300 psi 20 minutes OK. Packer failed. Pulled packer and retrieved plug from 7061'.

2-28 Ran squeeze packer and bridge plug. Set bridge plug at 6579' and packer at 6564' and tested between at 2500 psi 5 minutes OK. Set packer at 6346' and tested to 6579' at 1300 psi which bled off to 800 psi in 4 minutes, indicating holes at 6368' were leaking. Tested from 6346' to surface at 1300 psi 10 minutes OK. Broke down holes at 6368' with 8 cu. ft. per minute at 2500 psi. Cemented holes at 6368' with 57 cu. ft. Class "G" cement to a final pressure of 3000 psi. Cement in place 2:06 PM. Held 3000 psi 5 minutes, released squeeze tool and backscuttled 37 cu. ft. cement. Calculate 18 cu. ft. out holes at 6368', 2 cu. ft. in 5" casing. Pulled packer.

3-1 Ran 4-1/8" bit and scraper. Drilled out firm cement from 6346' to 6371'. Pressure tested casing from 6579' to surface at 1000 psi 20 minutes OK. Pulled bit.

1973

3-2 Retrieved bridge plugs from 6579' and 8160'. Hole took 120 bbls. after pulling bridge plug at 8160'. Ran Baker Model D production packer on Dresser-Atlas wireline. Could not get below tight spot in 5" liner at 7618'. Pulled out.

3-3 Ran 4-1/8" tapered mill. Milled tight spots in 5" liner at 6047' and 7618'. Mixed 460 bbls. mud. Checked liner to 8163' with mill.

3-4 Idle.

3-5 Ran Johnston squeeze packer and bridge plug in tandem to test milled spots. Set bridge plug at 7720'. Set packer at 7710' and tested bridge plug with 1075 psi for 15 minutes OK. Pulled up and set packer at 7578'. Tested 7578'-7710' with 1035 psi for 25 minutes OK. Retrieved bridge plug and reset same at 6167'. Set packer at 6151' and tested bridge plug with 1350 psi for 15 minutes OK. Pulled up and set packer at 6023'. Tested 6023' to 6167' with 1150 psi for 25 minutes OK. Ran Baker Model "D" on Dresser Atlas wireline. Could not get below tight spot at 7618'. Maximum O.D. Baker packer 3.968", maximum O.D. Johnston packer 3.968", maximum O.D. tapered mill 4.125". Suspect dogleg at 7618'.

3-6 Made up Baker Model "D" on tubing. Measured in and set Model "D" at 8100'. No trouble getting past 7618'. Made up completion string (see tubing detail). Tested 6060' of 1/4" control line and 2-3/8" Page safety valve with 5000+ psi for 15 minutes OK. Started Hydrotesting in hole with tubing.

3-7 Continued in hole with tubing. Made splice at end of spool and tested same with 5000+ psi for 15 minutes OK. Spaced out to land tubing. Tested control line and safety valve through donut with 5000+ psi for 30 minutes OK. Landed tubing with 13,000 lbs. on Model "D" packer. Tore out B.O.P.E. Installed production head. Tested control system and safety valve through head with 5000+ psi for 30 minutes OK. Tested production head through test port with 4575 psi for 15 minutes OK. Tested production head through unibolt with 4500 psi for 15 minutes OK. Rigged up Otis wireline and closed all three sleeves (7792', 7958', 8090'). Set No Go plug in Otis X nipple at 8099'. Pressured tubing to 2300 psi and held for 5 minutes to set 2 Otis Model RH hydraulic packers (packers at 7833' and 7963'). Tested setting of top packer by pressuring up on annulus. Held 750 psi for 10 minutes OK.

1973

TUBING DETAIL

No.Jts.	Item	Length	Depth
	Below K.B.	6.92	
	Donut & 2-7/8" x 3-1/2" EU 8 Thd X-Over	1.00	
	3-1/2" EU 8 Thd pup jt.	2.15	
	3-1/2" EU 8 Thd pup jt.	4.20	
	3-1/2" EU 8 Thd pup jt.	10.00	
	3-1/2" EU 8 Thd pup jt.	10.00	
178	3-1/2" EU 8 Thd J-55 tubing	5538.94	5573.21
	3-1/2" x 2-7/8" EU 8 Thd crossover	1.10	5574.31
1	2-7/8" EU 8 Thd J-55 tubing	31.62	5605.93
	2-7/8" EU 8 Thd Otis X nipple 2-5/16 I.D.	1.00	5606.93
1	2-7/8" EU 8 Thd J-55 tubing	30.35	5637.28
	2-7/8" x 2-3/8" EU 8 Thd crossover	1.10	5638.38
69	2-3/8" EU 8 Thd J-55 tubing	2154.35	7792.73
	2-3/8" EU 8 Thd Otis Sliding Sleeve (closed)	2.80	7795.53
1	2-3/8" EU 8 Thd J-55 tubing	31.12	7826.65
	2-3/8" EU 8 Thd Page Safety Valve (will not close)	3.10	7829.75
	2-3/8" x 5" 18# Otis Hydrostatic set packer w/15,000# shear out	4.05	7833.80
4	2-3/8" EU 8 Thd J-55 tubing	124.40	7958.20
	2-3/8" EU 8 Thd Otis Sliding Sleeve (open)	2.80	7961.00
	2-3/8" EU 8 Thd N-80 tubing pup jt.	2.25	7963.25
	2-3/8" x 5" 18# Otis Hydrostatic set packer w/15,000# shear out	4.05	7967.30
4	2-3/8" EU 8 Thd J-55 tubing	123.07	8090.37
	2-3/8" EU 8 Thd Otis Sliding Sleeve (closed)	2.80	8093.17
	2-3/8" EU 8 Thd N-80 tubing pup jt.	6.00	8099.17
	2-3/8" Otis X nipple 1.875 I.D. & 1.791 No. Go. (plug in place)	1.10	8100.27
	2-3/8" EU 8 Thd Baker Locator Sub. Landed in Model D pkr. @ 8100' w/13,000#	.45	8100.72
	5 sets Baker Seals	4.50	

3-8 Opened sliding sleeves at 7792' and 7958' with Otis wireline unit. Closed safety valve. Unloaded 240 bbls. workover fluid with nitrogen. Closed sleeve at 7792'. Blew down tubing until fluid hit and well came in. Shut well in. Tubing pressure built up to 1176 psi. 2200 psi nitrogen pressure on annulus. Defective safety valve indicated. Made flow line connection. Pressured up on control line. Flowed well. Bled off control line and attempted to bleed off tubing above safety valve. No good. Well continued to flow. Repeated procedure. No good.

3-9 Cycled valve two more times as above with no results 2200 psi still on annulus. Top of Otis packer, sliding sleeve, and squeeze jobs above Otis packer all good. Malfunction definitely in safety valve. Pressured control line and closed sleeve at 7958' with Archer Reed wireline. Bled off control line and checked safety valve with 1-3/4" impression block. Valve wide open. Pressured up tubing to

1973

3-9 (cont'd) 3000 psi with nitrogen in attempt to hydraulic the valve closed. Impression block again showed valve to be wide open. Pressured control line to 4500 psi and opened sleeves at 7792' and 7958'. Closed sleeve at 7792'. Do not believe valve to be locked open as sleeve shifting tool did not see safety valve. Possible that valve equalizing bypass is clogged with well trash and that prolonged flow periods will clean up valve and thus allow it to operate properly. Tore out C.P.S. and moved out.

Final status of downhole equipment:

2-7/8" x 2-5/16" I.D. Otis "X" nipple to seat Udall valve @ 5606'
2-3/8" Otis sliding sleeve (circulating) closed @ 7792'
2-3/8" Page Safety Valve open @ 7827'
2-3/8" Otis sliding sleeve (S-4 production) open @ 7958'
2-3/8" Otis sliding sleeve (S-8 production) closed @ 8090'
2-3/8" x 1.875" I.D. Otis X nipple with No Go plug in place @ 8099'

Approximately 140' workover fluid (1.7 bbl.) left in annulus.

FORM 109

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Operations

No. T 273-158

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

Santa Paula Calif.
March 20, 1973

DEAR SIR:

Operations at well No. "SFZU" P-25, API No. (037) 00712, Sec. 28, T. 3N, R. 16W S.B., B & M. Aliso Canyon Field, in Los Angeles County, were witnessed on Feb. 26, 1973. Mr. P R Wygle, engineer, representative of the supervisor was present from 1900 to 2100. There were also present J. Melton, foreman

Present condition of well: 13 3/8" cem. 808'; 7" cem. 5770', c.p. 5755', perf. 5751' WSO; 5" cem. 5678-8600', perf. 7853' WSO, perf. 8211' WSO, perf (ints) 8225-8494'. T.D. 8625'. Plugged with cem. 8600-8560'.

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

DECISION:

THE 5" SHUT-OFF AT 7853' IS APPROVED.

a
cc: Operator

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

By [signature] Deputy

FORM 111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 273-44

GAS STORAGE

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

Santa Paula Calif.
January 29, 1973

DEAR SIR:

Your (037-00712) proposal to convert to gas storage Well No. "SFZU" P-25, Section 28, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County, dated 1/15/73, received 1/26/73, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. 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.
2. Drilling fluid of proper weight and consistency shall be used to keep the well under control at all times; and a reserve supply of this material shall be kept on hand to meet any emergency. NO CONTAMINATES OR TOXIC MATERIAL SHALL BE USED IN ANY DRILLING FLUID THAT IS TO BE PLACED IN AN UNLINED SUMP.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS the test of the 5" water shut-off at 7850'.

Blanket Bond
ALL:a
cc: Operator

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

By [signature], Deputy

57628-708 11-71 38M ③ OSP

FORM 107

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS
RECEIVED
1973
SANTA PAULA, CALIFORNIA

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

Los Angeles, Calif. January 15, 1973

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. "SFZU" P-25
(Cross out unnecessary words)
, Sec. 28, 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. 8625', Plug 8560'.

2. Complete casing record, including plugs:

13-3/8" cemented 808'
7" cemented 5770'
4 holes 5755' cemented
4 holes 5751' WSOK
5" liner 5678' to 8600', ineffective below 8560'
5" x 7" Lap WSOK
8211' 4 holes WSOK
Jet perforations 2 holes per/foot and bullet perforations 2 holes per foot 8225'-8281', 8309'-8327', 8335-8356', 8367'-8385', 8387'-8397', 8416'-8446' and 8452'-8494'. Re-perforated 2 jet holes per foot 8218'-8274', 8280'-8321', 8331'-8352', 8363'-8371', 8383'-8393' and 8412'-8442'.

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

The proposed work is as follows:

1. Demonstrate WSO at 7850'.

2. Perforate and/or re-perforate in the Sesnon and Frew zones between 7876' and 8560' as required to convert well to a gas storage well.

MAP | MAP | C... | ... | FORMS 120 121

P. O. Box 54790, Terminal Annex
Los Angeles, Ca. 90054
(Address)

(213) 689-3561
(Telephone No.)

Pacific Lighting Service Company
(Name of Operator)

By R. S. Magruder Jr.

FORM 156

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. B. & M.

List of Wells

Sec. 27:
"Fernando Fee" 32 (037-00686) *
"Porter" 12 (037-00701)
" 30 (037-00717)
" 31 (037-00718)
" 32 (037-00719)
"Porter" 36 (037-00723)
" 37 (037-00724)
" 45 (037-00732)

Sec. 28:
"Porter" 4 (037-00699)
" 25 (037-00712)
" 26 (037-00713)
" 34 (037-00721)
" 35 (037-00722)
" 38 (037-00725)
" 39 (037-00726)
"Porter" 40 (037-00727)
" 41 (037-00728)
" 42 (037-00729)
" 43 (037-00730)
" 44 (037-00731)
" 46 (037-00733)
" 47 (037-00734)
"Porter-Sesnon" 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 8-7-68) *
Confirmed by:
New Operator New Status PA , Old Operator New Status PA
Request Designation of Agent No

Remarks:

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

Wm. C. Bailey
Deputy Supervisor

	INITIALS	DATE
Form 121		
New Well Cards		
Well Records		
Electric Logs		
Production Reports		
Map and Book		
Form 148		
Notice to be cancelled		
Bond status		

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

71869-705 5-66 3M ② OSP

Proposed Changes of Well Designation

Old Designation:	New Designation:
Sec. 27:	
"Fernando Fee" 32	"SFZU" FF-32 (037-00686)
"Porter" 12	" P-12 (037-00701)
" 30	" P-30 (037-00717)
" 31	" P-31 (037-00718)
" 32	" P-32 (037-00719)
" 36	" P-36 (037-00723)
" 37	" P-37 (037-00724)
" 45	" P-45 (037-00732)
Sec. 28:	
"Porter" 4	"SFZU" P-4 (037-00699)
" 25	" P-25 (037-00712)
" 26	" P-26 (037-00713)
" 34	" P-34 (037-00721)
" 35	" P-35 (037-00722)
" 38	" P-38 (037-00725)
" 39	" P-39 (037-00726)
" 40	" P-40 (037-00727)
" 41	" P-41 (037-00728)
" 42	" P-42 (037-00729)
" 43	" P-43 (037-00730)
" 44	" P-44 (037-00731)
" 46	" P-46 (037-00733)
" 47	" P-47 (037-00734)
"Porter-Sesnon" 42	" PS-42 (037-00753)
Sec. 34:	
"Fernando Fee" 31	"SFZU" FF-31 (037-00685)
" 33	" FF-33 (037-00687)
" 34	" FF-34 (037-00688)
" 35	" FF-35 (037-00689)
"Mission-Adrian Fee" 3	" MA-3 (037-00693)
" 4	" MA-4 (037-00694)
" 5	" MA-5 (037-00695)

FORM 157

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
~~Agent for~~ Ventura, California 93001

DEAR SIR:

Your ~~request~~ check 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

F. E. KASLINE
~~E. R. MURRAY-AARON~~
State Oil and Gas Supervisor

By Wm. C. Bailey
Deputy Supervisor

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

D.O.G. (14) Inglewood

RECEIVED

JUL 2 1962

INGLEWOOD, CALIFORNIA

OPERATOR TIDEWATER OIL COMPANY FIELD ALISO CANYON

Well No. PORTER No. 25, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date June 29, 1962 Signed J. M. Cadden
J. M. Cadden

P.O. Box #811, Ventura, Calif. (Address) MI 3-2154 (Telephone Number) Title Agent (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.

1962

Date

HISTORY

6/1-3 Moved in, pulled rods and tubing, ran 2 7/8" bailer and found top of fill at 8520'. Ran 3 5/8" jet carrier, stopped at 8453', could not work down. J.P.'d 2 h/ft 8442-8412'; 8393-8383'; 8371-8363'; 8352-8331'; 8321-8280'; 8274-8218' (R.A. log measurements). Put well on production. In 5 hours pumped 5 barrels and stopped.

6/4 Washed back pump. In 18 hours pumped 144 BF; 28%; 104 BO; 40 MCF.

6/5 Pumped 149 BFPD; 11%; 133 BOPD.

6/6 Pumped 138 BFPD; 10%; 124 BOPD; 66 MCF.

6/7 Pumped 146 BFPD; 5%; 139 BOPD; 20.2° gravity; 59 MCF. Fluid level at 4000' (4100'± over pump).

6/8 Pumped 145 BFPD; 11%; 129 BOPD; 64 MCF. Speeded up unit from 7.2 to 8.5 SPM.

6/9 Pumped 145 BFPD; 10%; 130 BOPD; 61 MCF.

6/10 Pumped 144 BFPD; 10%; 130 BOPD; 62 MCF.

6/11 Pumped 136 BFPD; 5.2%; 129 BOPD; 64 MCF.

6/12 Pumped 129 BFPD; 6%; 121 BOPD; 65 MCF.

6/13 Pumped 80 BFPD; 6%; 75 BOPD; showing some sand. Casing pressure 950#, bled off.

6/14 Pumped 127 BFPD; 10.4%; 114 BOPD; 76 MCF.

6/18 Pumped 116 BFPD; 6.0%; 109 BOPD.

Tubing Record

4778' - 3½" 8 RT, EU tbg. (154 jts)
3348' - 2 3/8" EU tbg. (107 jts)
21' - 2 3/8" pump barrel
31' - 2 3/8" poorman's gas anchor
8178' - Overall

T.D. 5860'; De. 8625'

Log: Submitted previously

Zone: Frew

Casing Record

13 3/8" 54.5# c 808'
7" 23# c 5770'
C.P. 5755'
2882'-5" 18# effec. to 8560'
(Shoe cmtd. at 8600')
WSO 4 h's 8211' & 5" x 7" lap *
J.P. & G.P. 2 h/ft 8225-8281'; 8309-8327'; 8335-8356'; 8367-8385'; 8387-8397'; 8416-8446'; 8452-8494'
Reperf. (J.P. 2 h/ft) 8218-8274'; 8280-8321'; 8331-8352'; 8363-8371'; 8383-8393'; 8412-8442'
T.L.H. 5678'
Ineffec. Below Cmt. Pg. at 8560'
40'-5" 18# c 8600'

* Witnessed and approved by D.O.G.

FORM 111

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 162-468

Mr. James M. Cadden
P. O. Box 811
Ventura, California
Agent for TIDEWATER OIL COMPANY

Inglewood Calif.
May 29, 1962

DEAR SIR:

Your proposal to alter casing at Well No. "Porter" 25, Section 28, T. 3 N, R. 16 W, S B B. & M., Aliso Canyon Field, Los Angeles County, dated May 25, 1962, received May 28, 1962, has been examined in conjunction with records filed in this office. Present conditions as shown by the records and the proposal are as follows:

RECORDS IN ADDITION TO, OR AT VARIANCE WITH, THOSE SHOWN IN THE NOTICE:
7" perf. 5751', W.S.O.

THE NOTICE STATES
"The present condition of the well is as follows:
1. Total depth. 5860'; Rd. & Deep. 8625'
2. Complete casing record, including plugs:
13 3/8" 54.5# c 808'; 7" 23# c 5770'; C.P. 5755'; 2882'-5" 18# effec. to 8560' (Shoe Cmtd. at 8600'); WSO 4 holes 8211' and 5" x 7" Lap*; J.P. 2 h/ft and G.P. 2 h/ft 8225'-8281'; 8309-8327'; 8335-8356'; 8367-8375'; 8387-8397'; 8416-8446'; and 8452-8494'
T.L.H. 5678'
Ineffective below cement plug at 8560'
40' - 5" 18# c 8600'

* Witnessed and approved by D.O.G.

3. Presently Pumping (Date) 52 BFPD, 10.2% cut, (Net Oil) 46 BOPD. (Gravity) (Cut) "

PROPOSAL
"The proposed work is as follows: PERFORATE ADDITIONAL FREW - REPERFORATE OLD INTERVALS

1. J.P. 2 h/ft 8218' to 8490' at selected intervals.
2. Return well to production. "

DECISION
THE PROPOSAL IS APPROVED.

JLZ:omh

cc James M. Cadden
Prod. Dept. - Tidewater Oil Co.

#15

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

Blanket Bond

FORM 107

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
D.O.G.
Inglewood
MAY 28 1962
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

Ventura Calif. May 25, 1962

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. Porter No. 25

(Cross out unnecessary words)

, Sec. 28, 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. 5860'; Rd. & Deep. 8625'

2. Complete casing record, including plugs:
13 3/8" 54.5# c 808'; 7" 23# c 5770'; C.P. 5755'; 2882'-5" 18# effec. to 8560' (Shoe Cmtd. at 8600'); WSO 4 holes 8211' and 5" x 7" Lap*; J.P. 2 h/ft and G.P. 2 h/ft 8225-8281'; 8309-8327'; 8335-8356'; 8367-8375'; 8387-8397'; 8416-8446'; and 8452-8494'
T.L.H. 5678'
Ineffective below cement plug at 8560'
40' - 5" 18# c 8600'

* Witnessed and approved by D.O.G.

3. ~~Last produced~~ Presently Pumping 52 BFPD, 10.2% cut, 46 BOPD.
(Date) (Net Oil) (Gravity) (Cut)

The proposed work is as follows: PERFORATE ADDITIONAL FREW - REPERFORATE OLD INTERVALS

1. J.P. 2 h/ft 8218' to 8490' at selected intervals.

2. Return well to production.

MAP | BOOK | CARD | PLAT | FORMS 114 121

TIDEWATER OIL COMPANY
(Name of Operator)

By J. M. Cadden
J. M. Cadden, Agent

ADDRESS ONE COPY OF NOTICE TO DIVISION OF OIL AND GAS IN DISTRICT WHERE WELL(S) LOCATED

DOG Inglewood
(24)

TIDEWATER OIL COMPANY
WESTERN DIVISION

CHANGE OF WELL STATUS REPORT

SECTION	TOWNSHIP	RANGE	B & M	LOCATION
28	3N	16W	S.B.	206.67' S & 4510.46' W from Station #84 (344' East of West Property Line)

DISTRICT	AREA	LEASE & WELL	FIELD
Coastal	Ventura	Porter No. 25	Aliso Canyon

COUNTY AND STATE	OPERATOR	TOC FILE NO.	TOC WORKING INT.
Los Angeles - California	Tidewater Oil Company	-	100%

TYPE OF WELL: [XX] OIL [ ] GAS

TYPE OF COMPLETION: [XX] SINGLE [ ] MULTIPLE

OTHER PRODUCING WELLS ON LEASE OR UNIT: [ ] NO [XX] YES [XX] OIL [ ] GAS

DATE OF CHANGE: Jan. 28, 1962

REASON FOR STATUS CHANGE

DIVISION OF OIL AND GAS
RECEIVED
MAR 9 1962
INGLEWOOD, CALIFORNIA

- [ ] OIL COMPLETION (FIRST FORMATION OIL PRODUCED)
- [ ] GAS COMPLETION
- [XX] RE-COMPLETION
- [ ] INITIAL PRODUCTION
- [ ] RESUMPTION OF PRODUCTION
- [ ] CESSATION OF PRODUCTION
- [ ] IDLE
- [ ] PLUGGED & ABANDONED

METHOD OF COMPLETION

- [XX] PUMP
- [ ] GAS LIFT
- [ ] FLOW
- [ ] INJECTION

WATER____ GAS____

WELL DATA				PRODUCTION TEST DATA								
PRODUCING ZONE	PERFS. (sl,gp,lp)	PRODUCTION INTERVAL FROM	TO	BOPD	GAS MCFPD	CHOKE /64"	TP	CP	TRAP PRESSURE	GOR	CUT	API GRAVITY
Frew	JP	8335'	8494'	75	18	-	65	65	65	249	0.4	20.2°

IF CHANGE OF STATUS IS DUE TO CESSATION OF PRODUCTION, WHAT ARE THE PLANS TO RESTORE PRODUCTION, AND ON WHAT DATE IS PRODUCTION EXPECTED TO BE RESTORED?

REASON FOR PLUG & ABANDONMENT

TOTAL DEPTH: 8625' PLUGGED DEPTH: 8560' GROUND ELEVATION: 2680' POINT OF DEPTH MEASUREMENT 7' FT. ABOVE GROUND

SIZE OF CASING (A.P.I.)	DEPTH OF SHOE	TOP OF CASING	WEIGHT OF CASING	NEW OR SECOND HAND	GRADE	SIZE OF HOLE DRILLED	NUMBER OF SACKS CEMENT	W S O DEPTHS	CASING PACKER DEPTHS (IF ANY)
13 3/8"	808'	Surface	54.5	New	J-55	17 1/4"	550	-	-
7"	5770'	Surface	23#	New	N-80, J-55	11"	500	-	-
5"	8600' *	5678'	18#	New		6 1/4"	-	8600' 5x7" Lap	

JUNK: * 5" Ineffective Below Plug at 8560'

REMARKS: Deepened, recompleted in Frew Zone

SUBMITTED BY	TITLE	DATE
M Berlemi	District Engineer	February 5, 1962

DISTRIBUTION: DISTRICT PRODUCTION MANAGER, DIVISION PRODUCTION MANAGER, DIVISION EXPLORATION MANAGER, PRODUCTION ACCOUNTING, LEASE RECORDS-PRODUCING PROPERTIES, DIVISION OF OIL & GAS (COMPLETIONS, RECOMPLETIONS AND ABANDONMENTS ONLY), CONSERVATION COMMITTEE OF CALIFORNIA OIL PRODUCERS (COMPLETIONS AND RECOMPLETIONS ONLY).

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

History of Oil or Gas Well

f.25

OPERATOR TIDEWATER OIL COMPANY FIELD ALISO CANYON

Well No. PORTER No. 25, Sec. 28, T. 3N, R. 16W, S.B. B. & M.

Date March 7, 19 62 Signed M. Bealessio
M. Bealessio

P. O. Box #811, Ventura, Calif. MI 3-2154 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.

1961
Date

HISTORY

11/27-12/8 Contrator's hoist moved in and rigged up. Pulled rods and tubing. Prepared location, Dropped and dismantled derrick. Drilled rat hole. Installed B.O.P. Ran 4 1/8" bit on 5 joints of 2 3/8" tubing and balance 3 1/2" drill pipe, ran in to 5850' and changed over to Invermul.

12/9 Cleaned out to shoe of 5" liner. Drilled out shoe. Ran string shot and shot liner with 50 gr/ft. Ran washer and washed 5855-5758'. Ran spear and hydraulic jacks; engaged liner, pulled loose with 120,000#, laid down liner.

12/10 to 1/4/62 Drilled 6 1/4" hole from 5860' to 7702'. Mud weight 68; viscosity 127. Ran and set whipstock #1 at 7702', oriented 140° to the left, drilled 4 5/8" hole off whipstock to 7712'. Opened hole to 6 1/4" and drilled 6 1/4" hole from 7712' to 7895'. Cored 6 1/4" hole from 7895' to 7924'. While pulling dropped cone barrel, two drill collars, one stand and one single in hole. Recovered fish. Drilled 6 1/4" hole from 7924' to 8061'. Reduced size of hole to 6 1/8 " and drilled 6 1/8" hole from 8061' to 8625'. Mud weight 68; viscosity 96.

1/5 Ran Induction and Sonic, Gamma Ray logs. Made up and ran 5" liner as follows:

2921.03' - 5" 18# blank - 89 joints
1.25' - Burns hanger
2922.28' - Overall

Centralizers located at 8300, 8230, 8132, 7400, 7170 and 6820'. Landed at 8600'. T.L.H. 5677.72'. Baker insert collar at 8565.68'. With liner hung at 8600' pumped 330 sacks - 118# slurry - Victor Class N cement through 3 1/2" 13.3# R.I.F. drill pipe and 30' of 2 7/8" tubing with down cups. Preceded cement with 10 cu.ft. water and displaced with 518 cu.ft. oil base mud. C.I.P. at 2:08 P.M. Plugs did not bump. MP 3900 psi, FP 3800 psi. Pulled up and backscuttled, no cement returns. Ran bit and scraper to T.L.H., found no cement. Pressured to 1500 psi, held O.K.

1/6 Ran C.C.T. on 5623' of 3 1/2" R.I.F. drill pipe with no cushion and 1/2" bean. Set packer at 5619', tail to 5638'. Opened tool at 1:20 P.M., observed weak blow for 5 minutes, then very hard blow gradually decreasing to medium blow at end of one hour test. Closed tool at 2:25 P.M. Pulled to fluid and backscuttled. Recovered 4216' rise (4066' drilling fluid-150' water). WNSO. IHP 2725, IFP 900, FFP 1500, FHP 2650. Ran full bore cementing tool as above. Set tool at 5608' and broke down splice with 1400 psi at 24 cu.ft./minute rate. Mixed 100 sacks Victor Class N cement, preceded with 20 cu.ft. water and displaced with 247 cu.ft. oil base mud. Closed tool on 103 cu.ft. and squeezed with 135 cu.ft. to clear tool. Displacing pressure 600 psi. Staged in additional 9 cu.ft.

1962 HISTORY

1/6 (Cont'd.) to 1/8 27' cement left in casing. MP 1100, FP 1000. Held 1000 psi for 10 minutes. Bled back 3 cu.ft. Found top of cement at 5667'. Pressured to 2000# O.K. Cleaned out cement from 5667' to 5677'. Ran C.C.T. and set packer at 5618', tail to 5639', no cushion. Opened tool at 8:42 P.M., medium to faint blow for 18 minutes, dead for balance of 1 hour test. Pulled loose at 9:42. Recovered 50' rise (.4 bbls.) WSO on 5" x 7" lap witnessed and approved by D.O.G. Made up 3000' tubing and ran 4 1/8" bit and scraper. Cleaned out cement 5677' to 5682'. Found top of firm cement at 8470'. Cleaned out cement to 8560' - top of cement plug at 8560'. Circulated hole clean.

1/9-11 Ran Neutron log and J.P'd 4 holes at 8211' for WSO. Ran J.C.T. with no cushion and set packer at 8188' with tail to 8205'. Opened tester at 4:05 A.M. Faint blow throughout one hour test. Pulled loose at 5:05 A.M. Recovered 10' rise drilling fluid. WSO witnessed and approved by D.O.G. Ran pipe to 8550'. Changed to lease crude. Ran 3 1/2" and 2 3/8" tubing and swabbed to 3500'. J.P. & G.P. 2 h/ft each from 8494-8452'; 8446-8416'; 8397-8387'; 8375-8367'; 8356-8335'. Ran tubing and landed at 8177'. Released rig at 4:00 P.M.

1/12-15 Contractor moved out.

1/16-18 Set pumping unit. Ran rods and pump. Started pumping at 4:00 P.M. In 4 hours pumped 58 barrels circ. oil. Unit out of balance causing motor to kick out. Rebalanced unit. In 20 hours pumped 80 barrels circ. oil.

1/19 Pumped 22 BFPD; 0.8%; 22 BOPD formation oil.

1/20 In 6 hours pumped 8 BF. Belts off unit at noon. Pump stuck.

1/21 Idle - unit down.

1/22 Installed new belts. In 16 hours pumped 36 BFPD; 0.2%; 36 BOPD.

1/23 Pumped 11 BFPD; 0.6%; 11 BOPD. Preparing to dump oil in annulus to test pump.

1/24 Dumped 40 barrels crude in annulus. Pumped 49 barrels back. Pump O.K. Preparing to pull well and complete perforating program.

1/25 Pumped 11 BFPD; 0.6%; 11 BOPD.

1/26 -28 Moved in hoist, pulled rods and tubing. Dumped 50 barrels crude in well. G.P. amd J.P. 2 h/ft from 8327-8309'; 8281-8225'. Ran tubing and rods. Landed tubing with tubing anchor at 3989', would not go below 4000'. On pump at 4:00 P.M. In 14 hours pumped 83 barrels oil including 50 barrels circulating oil, 33 barrels net oil.

1/29 Pumped 77 BFPD; 2%; 75 BOPD; 18 MCF net.

1/30 Pumped 50 BFPD; 0.4%; 50 BOPD; 20.2° gravity; 18 MCF net.

1/31 Pumped 50 BFPD; 0.1%; 50 BOPD.

2/1 Pumped 56 BFPD; 0.1%; 56 BOPD.

2/2 Pumped 49 BFPD; 0.1%; 49 BOPD.

2/3 Pumped 53 BFPD; 0.1%; 53 BOPD.

2/4 Pumped 50 BFPD; 0.1%; 50 BOPD.

2/5 Dumped 31 barrels fluid oil in casing. Pumped 80 BFPD; 0.2%; 80 BOPD (49 BOPD formation oil).

2/6 Pumped 55 BFPD; 0.1%; 55 BOPD.

3/4 Pumped 47 BFPD; 0.1%; 47 BOPD.

Tubing Record

3984' - 3½", 8 RT, EU tbg. (127 Jts)
5' - 3½" x 7" B.J. tbg. anchor
794' - 3½", 8 RT, EU tbg. (27 jts)
2' - 3½" x 2 3/8" Xover
3346' - 2 3/8" EU tbg. (107 jts)
21' - T.L.E. pump barrel
31' - 2 3/8" Poorman's gas anchor

8183' - Overall

Casing Record

13 3/8" 54.5# c 808'
7" 23# c 5770'
C.P. 5755'
2882'-5" 18# effec. to 8560'
(Shoe at 8600')
WSO 4 h's 8211'; & 5" x 7" Lap *
J.P. & G.P. 2 h/ft 8225-8281';
8309-8327'; 8335-8356'; 8367-8375';
8387-8397'; 8416-8446'; 8452-8494'
T.L.H. 5678'
Ineffec. Below Cmt. Pg. at 8560'
40'-5" 18# L 8600'

T.D. 5860'; DE. 8625'

Zone: Frew

Log: Submitted

* Witnessed and approved by D.O.G.

Core Description - 2-1/2" Reese Conventional Core — January 2, 1962

Porter #25

Depth	Recovery	Description
7895-7924'	3'	Fill
	10'	Oil Sand, grayish-brown, very fine grained, hard, silty, micaceous, grading to occasional hard, sandy, siltstone streaks. Brownish-yellow cut, becoming black in short time.
	2'	Broken pieces of oil sand and occasional shale sliver.
	0'1"	Siltstone, grayish-brown, hard, sandy siltstone.
	Total 15' 1"	

ml

A. C. Hanson

December 22, 1961

FORM 109-A

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Report on Test of Water Shut-off

(FORMATION TESTER)

No. T 162-34

Mr. Mike Bealessio
P. O. Box 811
Ventura, California
Agent for TIDEWATER OIL COMPANY, OPERATOR

Inglewood Calif.
January 16, 1962

DEAR SIR:

Your well No. "Porter" 25, Sec. 28, T. 3 N, R. 16 W, S B B & M. Aliso Canyon Field, in Los Angeles County, was tested for water shut-off on January 9, 1962. Mr. S. Cordova, Engineer, designated by the supervisor was present from 7:00 a.m. to 8:10 a.m. as prescribed by law; there were also present P. Gundelfinger, Engineer and W. B. Bean, Drilling Foreman

Shut-off data: 2932' of 5 in. 18 lb. casing was xx cemented xxxxx at 8600 ft. on January 5, 1962 in 6-1/8 in. hole with 330 ~~xxxxx~~ sacks of cement

calculated to fill behind casing to 5677 ft. below surface.

Casing record of well: 13-3/8" cem. 808'; 7" cem. 5770', c.p. 5755', perf. 5750', W.S.O.; 5" cem. 5677'-8600', perf. 8211', W.S.O.

Present depth 8625 ft. cmt. bridge 8600 ft. to 8560 ft. Cleaned out ~~MUD~~ xxxx ~~xx~~ to 8560 ft. for test. A Johnston tester was run into the hole on 2-3/8 in. ~~drill pipe~~ tubing, with xxxx ft. of water-mud cushion, and packer xx set at 8188 ft. with tailpiece to 8205 ft. Tester valve, with 1/2 in. bean, was open for one hr. and xxxx min. During this interval there was a faint blow declining to faint puffs in 30 minutes.

Mr. Gundelfinger reported: THAT the 5" casing was jet-perforated with four 1/2" holes at 8211'.

THE ENGINEER NOTED:
1. When the tubing was removed, 10' of drilling fluid was found above the tester.
2. The pressure bomb chart indicated that the tester tool functioned properly.

THE 5" SHUT-OFF AT 8211' IS APPROVED.

SC:omh

cc Mike Bealessio
Prod. Dept. - Tidewater Oil Co.

#15

E. R. MURRAY-AARON,
E. H. MUSSER
State Oil and Gas Supervisor

By _____ Deputy

2772 6-59 17M ② SPO

FORM 109-D

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 162-33

Mr. Mike Bealessio
P. O. Box 811
Ventura, California
Agent for TIDEWATER OIL COMPANY, OPERATOR

Inglewood Calif.
January 16, 1962

DEAR SIR:

Operations at well No. "Porter" 25, Sec. 28, T. 3 N, R. 16 W, S B B & M. Aliso Canyon Field, in Los Angeles County, were witnessed on January 7, 1962. Mr. S. Cordova, Engineer, representative of the supervisor was present from 11:20 p.m. to 11:55 p.m. There were also present P. Gundelfinger, Engineer and W. B. Bean, Drilling Foreman

Present condition of well: 13-3/8" cem. 808'; 7" cem. 5770', c.p. 5755', perf. 5750', W.S.O.; 5" cem. 5677'-8600'. T.D. 8625', cem. bridge 8600'-8470'.

The operations were performed for the purpose of demonstrating the effectiveness of the seal between the 7" and 5" casings.

Mr. Gundelfinger reported:

1. The 5" liner was recovered.
2. A 6-1/4" hole was drilled from 5860' to 8061' and a 6-1/8" hole drilled to 8625'.
3. On January 5, 1962, 2932' of 5", 18 lb. casing was cemented at 8600' (top at 5677') with 330 sacks of cement.
4. No cement was found inside the 7" casing, and a test indicated that fluid had access to the well from between the 7" and 5" casings.
5. On January 6, 1962, a cement retainer was set at 5608', and the annulus between the 7" and 5" casings was recemented with 100 sacks of cement of which 98 sacks was squeezed away under a final pressure of 1000 Psi.
6. Cement was drilled out of the 7" casing from 5667' to 5677'.
7. A Cook tester was run into the hole on 3-1/2" drill pipe, with packer set at 5619' and tailpiece to 5639'.
8. The tester valve, with 1/2" bean, was open for one hour. During this interval there was a medium blow declining to no blow in 18 minutes.

THE ENGINEER NOTED:

1. When the drill pipe was removed, 50' of drilling fluid was found above the tester.
2. The pressure bomb chart indicated that the tester tool functioned properly.

THE OPERATIONS AS WITNESSED AND REPORTED ARE APPROVED as indicating that no fluid has access to the well from between the 7" and 5" casings.

SC:cmh

cc Mike Bealessio
Prod. Dept. - Tidewater Oil Co.

E.R.MURRAY-AARON,
E. H. MUSSER
State Oil and Gas Supervisor

By _____ Deputy

83949 1-59 15M ② SPO

FORM 111

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS

No. P 161-1146

Mr. Mike Bealessio
P O Box 811 — Inglewood, Calif.
Ventura California — November 28 1961
Agent for TIDEWATER OIL CO

DEAR SIR:

Your proposal to deepen Well No. "Porter" 25,

Section 28, T. 3 N, R. 16 W, S B B. & M., Aliso Canyon Field, Los Angeles County,

dated Nov. 23, 1961, received Nov. 27, 1961, has been examined in conjunction with records filed in this office.

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

Records in addition to, or at variance with, those shown in the notice:
7" cem. 5770', c.p. 5755', perf. 5750', W.S.O.

THE NOTICE STATES:
"The present condition of the well is as follows:
1. Total depth. 5860'
2. Complete casing record.
13-3/8" 54.5# c 808'
7" 23# c 5770'; C.P. 5755'
128' - 5" 18# L 5855'
Pf: 5758-5855'
2" slots, 12 rows, 6" centers, 80 mesh
T.L.H. 5727'
3. Present producing 15 BFPD: 6 BOPD _____ _____
(Date) (Net Oil) (Gravity) (Cut) "

PROPOSAL:
"The proposed work is as follows:
Deepen to Frew Zone (Abandon Porter Zone)
1. Recover 5" liner.
2. Drill to 8650', cement 2950' of 5" liner. Establish WSO at lap and at 8300'.
3. G.P. 2 H/ft. 8500-8650'. Place on test.
4. J.P. and G.P. 2 H/ft. 8350-8500'.
5. Place well on production."

DECISION:
THE PROPOSAL IS APPROVED PROVIDED THAT THIS DIVISION SHALL BE NOTIFIED TO WITNESS
1. The test, after cleaning out below the top of the liner, to demonstrate that no fluid has access to the well from between the 7" and 5" casings.
2. The test of W.S.O. at 8300'.

DER:es

cc - Mike Bealessio
Prod Dept - c/o Co

Blanket bond

E. H. MUSSER, State Oil and Gas Supervisor

By _____, Deputy

58444 7-57 60M SPO

FORM 107.

DIVISION OF OIL AND GAS
RECEIVED
NOV 27 1961
INGLEWOOD, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

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

Ventura Calif. November 23 1961

DIVISION OF OIL AND GAS

Inglewood, Calif.

MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
			Deepen Blanket	GB	GB

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. Porter #25
(Cross out unnecessary words)

_____, Sec. _____, T. _____, R. _____, _____ B. & M.

Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 5860'

2. Complete casing record.

13-3/8" 54.5# c 808'
7" 23# c 5770'; C.P. 5755'
128' - 5" 18# L 5855'
Pf: 5758-5855'
2" slots, 12 rows, 6" centers, 80 mesh
T.L.H. 5727'

3. ~~Last produced~~ Presently producing 15 BFPD: 6 BOPD
(Date) (Net Oil) (Gravity) (Cut)

The proposed work is as follows: Deepen to Frew Zone (Abandon Porter Zone)

1. Recover 5" liner.
2. Drill to 8650', cement 2950' of 5" liner. Establish WSO at lap and at 8300'.
3. G.P. 2 H/ft. 8500-8650'. Place on test.
4. J.P. and G.P. 2 H/ft. 8350-8500'.
5. Place well on production.

TIDEWATER OIL COMPANY
(Name of Operator)

By M. Bealessio
M. Bealessio, Agent

FORM 100. 7-48
CALIFORNIA STATE PRINTING OFFICE

SUBMIT LOG IN DUPLICATE

FILL IN BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF P. ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

RECEIVED
MAR 4 1950
LOS ANGELES.

WELL SUMMARY REPORT

Operator Tide Water Associated Oil Company Field Aliso Canyon Field

Well No. Porter #25 Sec. 28, T. 3 N, R. 16 W S. B. B. & M.

Location 206.67' S & 4510.46' W from Station #84. Elevation above sea level 2680.44 feet.

All depth measurements taken from top of _____, which is 6.92 feet above ground.

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.

Date 3-1-50 Signed _____

W. E. Parkes (Engineer or Geologist) R. S. Carl (Superintendent) Title Agent (President, Secretary or Agent)

Commenced drilling 11/12/49 Completed drilling 12/13/49 Drilling tools Cable Rotary

Total depth 5860' Plugged depth _____

Junk _____

GEOLOGICAL MARKERS | DEPTH

Commenced producing 1/13/50 (date) Flowing/gas lift/pumping (cross out unnecessary words)

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	111 (14 hrs.)	23.7	0.7	31	-	-
Production after 30 days	51	23.9	0.7		-	-

Casing Record (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforation
13-3/8"	808	0	54.5#	New	Seamless	J-55	17-1/4"	660	
7"	5770	0	23#	New	Seamless	J-55	11"	530	
5"	5855	5727	18#	New	Seamless	J-55	7-5/8"		

Perforations

Size of Casing	From	To	Size of Perforations	Number of Rows	Distance Between Centers	Method of Perforations
5"	5758 ft.	5855 ft.	60 M, 2" slots	12	6"	Pacific underreamed
	ft.	ft.				
	ft.	ft.				
	ft.	ft.				
	ft.	ft.				

Electrical Log Depths 808' - 5855' (Attach Copy of Log)

FORM 103.
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

RECEIVED
MAR 4 1950
LOS ANGELES

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. PORTER #25, Sec. 28, T. 3S, R. 16 W, S. B. B. & M.

Signed J. C. Porter

Date 3-1-50 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

LOCATION: 206.67' South and 4510.46' West from Station #84.
(34' East of west property line.)
ELEVATION: 2680.4# Mat. 2687.36' Derrick floor.

1949

9/20-10/25 Graded road and rig site.
10/26 Graded road and rig site. Contractor drilled 30" hole and set 20" conductor pipe at 21'.
10/27 Cemented 20" conductor pipe at 21' (23' from derrick floor) with ready mix concrete. Dug cellar and started building foundation forms.
10/28 Poured foundation concrete.
10/29-30 Idle.
10/31 Finished pouring foundation concrete. Moved in derrick and sub-base.
11/1 Erected derrick.
11/2 Finished erecting derrick.
11/3 Installed casing racks.
11/4 Finished installing casing racks.
11/5-6 Idle.
11/7 Moved in rotary equipment.
11/8 Moved in rotary equipment and rigged up.
11/9 Rigged up rotary equipment.
11/10-11 Rigged up rotary.
11/12 Spudded 12-1/4" hole at 9:00 P.M. and drilled to 65'.
11/13-16 Drilled 12-1/4" hole from 65' to 1593'.
11/17 Drilled 12-1/4" hole from 1593' to 1882'. Lost slight amount of mud to formation. Regained full circulation with rice hulls in mud.
11/18 Drilled 12-1/4" hole from 1882' to 2037'. Opened 12-1/4" hole to 17-1/4" from surface to 428'.
11/19 Opened 12-1/4" hole to 17-1/4" from 428' to 803'. Reamed 17-1/4" hole from surface to 140'.
11/20 Reamed 17-1/4" hole from 140' to 803'. Ran and cemented 13-3/8", 54.5# Youngstown T & C J-55 casing at 803' with 550 sacks of Colton Construction cement. Treated first and last 150 sacks with quick setting chemical. Bottom 3 joints of casing spot welded. Pressure increased from 75# to 150# when plugs bumped. Lost circulation while displacing last 250 sacks cement. Had no cement returns to surface.

FORM 103.
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

RECEIVED
MAR 4 1950
LOS ANGELES

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. PORTER #25, Sec. 25, T. 3 S, R. 16 W, S. B. B. & M.

Signed J. C. Foster

Date 3-1-50 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

11/21 Rung 1" pipe at 40' on outside of casing and pumped in 110 sacks of cement filling annulus to surface. Installed cellar connections. Located top of cement at 804' and cleaned out cement to 988'.

11/22 Cleaned out hard cement from 988' to 1200', then circulated to 2017'. Drilled 11" hole from 2017' to 2199'.

11/23 Drilled 11" hole from 2199' to 2441'. Lost circulation while drilling at 2441'. Mixed rice hulls and jel and recovered circulation.

11/24-30 Drilled 11" hole from 2441' to 5102'.

12/1 Drilled 11" hole from 5102' to 5411'.

12/2 Drilled 11" hole from 5411' to 5440'. Reduced size of hole and cored 7-5/8" hole from 5440' to 5484'.

12/3 Cored 7-5/8" hole from 5484' to 5530'. Ran Schlumberger electric log at 5520'.

12/4 Cored 7-5/8" hole from 5530' to 5560'. Lost circulation while coring at 5560' but regained. Opened 7-5/8" hole to 11" from 5440' to 5560' and lost circulation.

12/5 Mixed rice hulls and regained circulation. Conditioned mud.

12/6 Cored 7-5/8" hole from 5560' to 5603'. Oil sand streaks of siltstone.

12/7 Cored 7-5/8" hole from 5603' to 5638'. Opened 7-5/8" hole to 11" from 5560' to 5638' and drilled 11" hole to 5663'.

12/8 Drilled 11" hole from 5664' to 5700' and cored 7-5/8" hole to 5725'.

12/9 Cored 7-5/8" hole from 5725' to 5780'.

12/10 Cored 7-5/8" hole from 5780' to 5840'. Ran Schlumberger electric log at 5800'.

12/11 Opened 7-5/8" hole to 11" from 5700' to 5775'. Reamed 11" hole from 5530' to 5775'.

12/12 Cleaned out 7-5/8" hole from 5775' to 5840'. Ran Johnston Formation Tester on 4-1/2" drill pipe with 4 stands of water cushion and set packer at 5775' with hole open to 5840'. Opened tester at 11:20 a.m. Had a strong steady blow decreasing to a light blow at end of one hour test. Gas to surface in approximately 5 minutes. Recovered 713' (9.6 bbls.) of new fluid. Top stand drilling mud with estimated 25% oil. Salinity of water sample 16 g/g. Next 5 stands clean looking oil. Sample 4 stands above tester cut 6.4 mud and 2.0 water. Bottom one stand oily, muddy water with an estimated 20% oil. Water salinity 253 g/g. Pressure bomb charts checked details of test.

12/13 Cored 7-5/8" hole from 5840' to 5860'. Ran Schlumberger electric log at 5860'.

12/14 Ran and cemented 7", 23# Youngstown T&C casing at 5770' with 500 sacks of Victor modified cement. Centralizers on casing as follows: 5760', 5741', 5721', 5696', 5676', 5656' pressure increased from 750# to 950# when plugs bumped. Time 2:10 p.m. International Bulk Method. Casing details as follows: Bottom 1779' is 23# N-80 and balance is 23# J-55.

FORM 103.
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAR 4 1950
LOS ANGELES.

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. PORTER #25, Sec. 25, T. 3 S, R. 16 W, S.B. B. & M.

Signed T. C. Porter

Date 3-1-50 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

12/15-17 Standing cemented.

12/18 Located top of cement at 5730' and cleaned out to 5760'. Ran combination Johnston tester and gun on 2-7/8" drill pipe with no water cushion and shot four 1/2" holes at 5755'. Set packer at 5719' with perforated tail pipe to 5737'. Opened tester at 12:35 p.m. Had a light steady blow for 5 minutes then dead for 1 hour 45 minutes. It was noticed that the weight indicator indicated the packer had gradually slipped so the packer was reset at 2:20 p.m. Had a very hard blow for 5 minutes, then a heading blow with gas and drilling mud to surface in 35 minutes. Well flowed approximately 1 bbl. of drilling mud. Closed tester at 4:20 p.m. Recovered 3013' (17.1 bbls.) salt water which tested 54.7 g/g approximately 2300' above tester. Making up retainer to cement.

12/19 Ran Baker Model K retainer on 3-1/2" tubing and set at 5727'. Applied pressure and formation took fluid at rate of 8 cubic feet per minute with 2,000# pressure. Mixed and displaced 100 sacks Colton Hi-temperature cement through shot holes at 5755'. Final pressure 1900#. Time 12 noon. International Bulk Method.

12/20 Cleaned out cement retainer and cement from 5725' to 5760'.

12/21 Ran Johnston combination gun and tester on 2-7/8" drill pipe with no water cushion and shot 4-1/2" holes at 5751'. Pulled up and set packer at 5719' with perforated tail pipe to 5739'. Opened tester at 9:50 a.m. Had a very light steady blow for one minute then dead for balance of 2 hour 5 minute test. Closed tester at 11:55 a.m. Recovered 30' (0.1 bbls.) new fluid consisting of drilling mud. Salinity of samples at tester 40 g/g. Pressure bomb charts indicated tester open throughout test. Test witnessed and approved by Division of Oil and Gas. Cleaned out cement from 5760' to 5779' and circulated to 5860'.

12/22 Ran Johnston tester on 2-7/8" drill pipe with no water cushion and set packer at 5719'. Opened tester at 9:30 a.m. Hard heading blow for 3 hours, dead 40 minutes then a hard heading blow for 2 hours 40 minutes and dead for balance of 6 hour 40 minute test. Pulled tester at 4:30 p.m. and recovered 5300' (24.1 bbls.). Top 2635' gas cut drilling mud then 93' of gas cut drilling mud with trace of oil then 465' gas cut drilling mud with approximately 25% net oil then 2016' of clean looking oil and bottom 92' muddy water. Water from mud sample 3596' clean looking oil and bottom 92' muddy water. Water from mud sample 3596' above tester tested 41 g/g. Water from mud sample 3131' above tester tested 55 g/g. Water from mud sample 2108' 55 g/g. Oil sample 1550' above tester cut 5% mud. Oil sample 1035' above tester cut 3.0% water and 9.0% mud. Oil sample 713' above tester cut 4.0% water and 8.0% mud. Water sample 30' above tester tested 110 g/g. Water sample at tester tested 110 g/g. Cleaned out to 5860'. Will run liner.

FORM 103.
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAR 4 1950
LOS ANGELES

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. PORTER #25, Sec. 28, T. 3N, R. 16 W, S.B. B. & M.

Signed T. C. Taylor

Date 3-1-50 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	
12/23	Ran bit and cleaned out well to 5860'. Found hole bridged from 5790' to 5820'. Opened to 5830' and filled in from 5830' to 5860'. Ran 128' 5" 15# J-55 flush joint liner including 97' of perforated and landed at 5855'. Top of liner hanger 5727'. Perforations are 80 mesh, 2" slots, 12 rows with 6" centers, and 6° undercut by Pacific. Ran 2" and 3" tubing to 5835' and circulated out mud with oil.
12/24	Ran McCaffrey Taylor pressure washer and washed perforations from 5770' to 5855' with 20 bbls. of Nelson Howard Kem #4 wash chemical. Ran 3" tubing including bottom 145' of 2" and hung at 5795'.
12/25	Circulated out chemical with approximately 265 bbls. of oil. Rigged up and swabbed approximately 100 bbls. of circulating oil.
12/26	Swabbed approximately 160 bbls. all circulating oil. Fluid level at 6 a.m. 12/27/49 4900'.
12/27	Swabbed part time and recovered 45 bbls. gross fluid. Average cut 3.0% water, and 1.5% mud. 22.7 gravity. Fluid level 4900'.
12/28	Tearing out rotary equipment. Well shut in.
12/29	Tearing out rotary equipment. Well shut in.
12/30-1/2	Well Shut in.
1/3	Tearing out sub base and casing racks. Well shut in. Tubing pressure 50#; casing pressure 375#.
1/4	Preparing pump foundation. Well shut in. Tubing pressure 50#; casing pressure 375#.
1/5	Built forms for pump foundation. Tubing pressure 75#; casing pressure 375#.
1/6	Poured foundation concrete for pumping unit. Tubing pressure 75#; casing pressure 375#.
1/7	Idle. Tubing pressure 75#; casing pressure 375#.
1/8	Idle. Tubing pressure 100#; casing pressure 400#.
1/9	Installing pumping unit. Tubing pressure 100#; casing pressure 400#.
1/10	Finished setting pumping unit. Tubing pressure 100#; casing pressure 500#.
1/11	Rigged up hoist.

FORM 103
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL & GAS
RECEIVED
MAR 4 1950
LOS ANGELES, CALIF.

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. PORTER #25, Sec. 28, T. 3 N, R. 16 W, S.B. B. & M.

Signed T. C. Porter

Date 3-1-50 Title Agent
(President, Secretary or Agent)

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Date

1/12 Bled off tubing and casing pressure. Ran rods and pump. Changed Christmas tree.

1/13 Started well pumping at 4:00 P.M. In 14 hours pumped 112 barrels gross fluid; 111 barrels approximate net oil; cut 0.7%; 23.7 gravity; 31 MCF gas; 84" stroke; 17 strokes per minute.

1/14 In 24 hours well pumped 101 barrels gross fluid; 99 barrels approximate net oil; cut 2.0%; 23.2 gravity; 24 MCF gas; 84" stroke; 17 strokes per minute.

1/15 In 24 hours well pumped 83 barrels gross fluid; 82 barrels approximate net oil; cut 1.0%; 23.3 gravity; 84" stroke; 17 strokes per minute.

1/16 In 24 hours well pumped 74 barrels gross fluid; 74 barrels approximate net oil; cut 0.2%; 23.8 gravity; 84" stroke; 17 strokes per minute.

1/17 In 24 hours well pumped 71 barrels gross fluid; 70 barrels approximate net oil; cut 1.5%; 23.6 gravity; 60" stroke; 17 strokes per minute.

1/18 In 24 hours well pumped 70 barrels gross fluid; 69 barrels approximate net oil; cut 1.7%; 23.7 gravity; 60" stroke; 17 strokes per minute.

	Gross Fluid	Net Oil	Cut	Gravity	Stroke	S.P.M.	MCF Gas
1/19	67	66	0.%	23.9	60"	17	41
1/20	41	40	3.0	23.9	60"	9	27
1/21	42	41	3.0	23.9	60"	9	16
1/22	42	41	3.0	23.9	60"	9	18
1/23	66	65	1.8	23.9	84"	9	23
1/24	50	49	2.5	23.9	84"	9	20
1/25	50	49	1.5	23.9	84"	9	18
1/26	59	56	0.7	23.9	84"	9	19
1/27	66	65	0.7	23.9	84"	9	14
1/28	79	78	0.7	23.9	84"	9	20
1/29	62	61	0.7	23.9	84"	9	22
1/30	51	50	0.7	23.9	84"	9	20
1/31	83	82	0.7	23.9	84"	17	26
2/1	72	71	0.7	23.9	84"	17	25
2/2	61	60	0.7	23.9	84"	17	23
2/3-2/6	Shut in						
2/7	124	123	0.7	23.9	84"	17	32
2/8	82	81	0.7	23.9	84"	17	27

FORM 103
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAR 4 1950
LOS ANGELES,

History of Oil or Gas Well

OPERATOR TIDE WATER ASSOCIATED OIL COMPANY FIELD ALISO CANYON

Well No. PORTER #25, Sec. 25, T. 3 S, R. 16 W, S.B. B. & M.

Signed J. C. Foster
P.

Date 3-1-50 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							
2/9	72	71	0.7	23.9	84#	17	26
2/10	83	82	0.7	23.9	84#	17	27
2/11	72	71	0.7	23.9	84#	17	28
2/12	67	66	0.7	23.9	84#	17	29
2/13	46	45	0.7	23.9	84#	17	21
2/14	52	51	0.7	23.9	84#	12	26
2/15	59	58	0.7	23.9	84#	12	20

FORM 101
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL & GAS
RECEIVED
APR 4 1950
LOS ANGELES

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator TIDE WATER ASSOCIATED OIL COMPANY Field ALISO CANYON

Well No. PORTER #25 Sec. 29, T. 3N, R. 16W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO Top of Formation	DEPTH TO Bottom of Formation	Thickness	Drilled or Cored	Recovery	DESCRIPTION
5440'	5460'	20'	Cored	6'-0"	Firm, friable oil stained sandy siltstone. Slight cut and odor. Occasional streaks firm silty oil sand. Fair cut and odor.
5460'	5480'	20'	Cored	20'-0"	Firm to hard oil stained sandy siltstone. Slight cut and odor.
5480'	5500'	20'	Cored	20'-0"	1'-0" Firm medium grained oil stained gr sand. Slight cut and odor. 2'-0" Shell 1'-0" Firm oil stained sandy siltstone. Slight to fair cut and odor. 1'-0" Shell 15'-0" Firm friable oil stained sandy sil stone. Fair cut and odor.
5500'	5520'	20'	Cored	20'-0"	2'-0" Soft silty dark gray oil sand. Slight cut and fair odor. Looks w 1'-0" Firm oil stained sandy siltstone. Fair cut and odor. Good 20° dip a 5503'. 0'-2" Hard oil stained sandy siltstone. Slight cut and odor. 2'-7" Soft silty grayish oil sand. Fair cut and odor. Looks wet. 0'-3" Shell 4'-0" Firm oil stained sandy siltstone. Fair cut and odor. 0'-6" Soft silty grayish oil sand. Fair cut and odor. Looks wet. 8'-0" Firm oil stained sandy siltstone. Fair cut and odor. 0'-6" Firm silty grayish oil sand. Fair cut and odor. Looks wet. 1'-0" Hard oil stained sandy siltstone. Slight cut and odor.
5520'	5540'	20'	Cored	20'-0"	Firm oil stained sandy siltstone. Slight to fair cut and odor.

FORM 101
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

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. PORTER #25 Sec. 25, T. 3N, R. 16W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO Top of Formation	DEPTH TO Bottom of Formation	Thickness	Drilled or Cored	Recovery	DESCRIPTION
Cont'd.					
5540'	5560'	20'	Cored	20'-0"	(Core badly damaged while removing from barrel.) 2'-0" Firm silty grayish oil sand. Fair cut and odor. Looks wet. 0'-2" Shell 12'-10" Firm silty mottled oil sand. Fair to good cut and odor. Portions looked wet and undersaturated. 4'-0" Firm friable silty reddish brown oil sand. Fair to good cut and odor. 1'-0" Firm friable silty reddish brown oil sand. Good cut and odor.
5560'	5580'	20'	Cored	19'-8"	Firm friable well-sorted silty oil sand. Good cut and odor. Gas on mud sheath. 0'-4" of firm silty mottled oil sand.
5580'	5600'	20'	Cored	14'-0"	5'-0" of firm friable silty oil sand. Good cut and odor. 9'-0" of hard gray sandy siltstone. Cored 7-5/8" hole from 5603'-5638'. Opened 7-5/8" hole to 11" from 5560' - 5638' and drilled 11" hole to 5661'
5600'	5620'	20'	Cored		Recovered hard greenish gray sandy siltstone.
5620'	5638'	18'	Cored	17'-0"	Recovered 16' of hard poorly sorted dark gray sand with abundant meggafossils. 1'-0" of soft to firm fine grained poorly sorted gray sand. Looks wet. No cut or odor.
5700'	5720'	20'	Cored	18'-0"	12'-6" Hard dark gray sandy siltstone. 0'-6" Loosely compacted coarse gray sand. No cut or odor. 2'-6" Siltstone as above. 0'-3" Firm, brown, silty to fine gray sand. No cut or odor. 2'-0" Siltstone as above. 0'-3" Firm oil stained sandy siltstone. Slight cut and odor.

FORM 101
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

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. PORTER #25 Sec. 28, T. 3 N, R. 16W, S.B. B. & M.

FORMATIONS PENETRATED BY WELL

DEPTH TO Top of Formation	DEPTH TO Bottom of Formation	Thickness	Drilled or Cored	Recovery	DESCRIPTION
cont'd.					
5720'	5740'	20'	Cored	14'-0"	Firm, dark gray sandy siltstone. Occasional oil staining.
5740'	5760'	20'	Cored	20'	11'-0" of hard dark gray sandy siltstone with occasional oil staining. 9'-0" hard dark gray sandy siltstone. Lightly oil stained. Slight cut and odor.
5760'	5780'	20'	Cored	20'	Hard dark gray sandy siltstone. Lightly oil stained. Very slight cut and odor.
5780'	5800'	20'	Cored	20'	11'-6" Hard dark gray sandy siltstone lightly oil stained. Slight cut and odor. 8'-6" Firm, well sorted, silty, grayish brown oil sand. Faintly mottled and undersaturated. Fair cut and odor.
5800'	5820'	20'	Cored	20'	1'-0" Firm, silty, grayish brown oil sand Fair cut and odor. 0'-6" Hard, dark gray sand siltstone. Oil stained. 6'-6" Firm, silty, grayish brown oil sand Fair cut and odor. 7'-0" Hard, dark gray sandy siltstone. Oil stained. 5'-0" Firm, silty, grayish brown oil sand Fair cut and odor. Good 25° dip at 5816'.
5820'	5840'	20'	Cored	13'	11'-0" Firm, fine to medium grain, poorly sorted, mottled oil sand. Fair cut and odor. 2'-0" Firm, oil stained, dark gray sandy siltstone with slight cut and oder.

FORM 109-A (10-48)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

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

No. T 1-50678

Los Angeles 15, Calif. January 3, 1950

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

121

DEAR SIR:

Your well No. "Porter" 25, Sec. 28, 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 21, 1949. Mr. J. F. Foster, Inspector, designated by the supervisor, was present as prescribed in Secs. 3222 and 3223, Ch. 93, Stat. 1939; there were also present G. Larter, Engineer; R. Ruperts, Drilling Foreman.

Shut-off data: 7 in. 23 lb. casing was re-cemented through perforations at 5755 ft. on December 19, 1949 in 11 in. hole with 100 sacks of cement xxxx of which 5 sacks was left in casing.

Casing record of well: 13-3/8" cem. 808'; 7" cem. 5770'; c.p. 5755'; four 1/2" test holes at 5750', W. S. O.

Present depth 5860 ft. Bridged with cement from 5770 ft. to 5760 ft. Cleaned out to 5760 ft. for test. A pressure of xxx lb. was applied to the inside of casing for xxx min. without loss after cleaning out to xxx ft. A Johnston gun and tester was run into the hole on 2-7/8 in. drill pipe-~~casing~~, with xxx ft. of water-mud cushion, and packer set at 5715 ft. with tailpiece to 5735 ft. Tester valve, with 3/8 in. bean, was opened at 9:50 a.m. and remained open for 2 hr. and 5 min. During this interval there was a very light, steady blow for 1 min., and no blow thereafter.

THE INSPECTOR ARRIVED AT THE WELL AT 1:15 P. M. AND MR. LARTER REPORTED:

1. An 11" rotary hole was drilled from 2168' to 5860'.
2. On December 14, 1949, 7", 23 lb. casing was cemented at 5770' with 500 sacks of cem.
3. The top of the cement was found at 5730'.
4. Cement was drilled out of the 7" casing from 5730'-5760' (equivalent to 5 sacks), and the casing was cleaned out to 5760'.
5. The 7" casing was shot-perforated with four 1/2" holes at 5755' for a test of shut-of
6. The above holes tested wet.
7. On December 19, 1949, a Model K retainer was set at 5727', and the 7", 23 lb. casing was cemented as noted above.
8. Cement was drilled out of the 7" casing from 5727'-5760' (equivalent to 5 sacks), and the casing was cleaned out to 5760'.
9. The 7" casing was shot-perforated with four 1/2" holes at 5750' for this test, and th test was made as noted above.

THE INSPECTOR NOTED:

1. When the drill pipe was removed, 30' of heavy drilling fluid was found in the drill pipe above the tester, equivalent to 0.1 bbl.
2. The recording pressure bomb chart showed that the tester valve was open 2 hr. and 5 min.

The test was completed at 2:00 p.m.

THE WATER SHUT-OFF ABOVE THE PERFORATIONS AT 5750' IS APPROVED.

JFF:OH

F
E&B

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

R. D. BUSH, State Oil and Gas Supervisor

By E. H. Meussen, Deputy

98241 10-48 25M SPO

FORM 109-D

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 1-50581

Los Angeles 15, Calif. December 8, 1949

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

DEAR SIR:

Operations at your well No. "Porter" 25 Sec. 28, T. 3 N., R. 16 W., S.B. B. & M., Aliso Canyon Field, in Los Angeles County, were witnessed by Paul Betts, Inspector, representative of the supervisor, on December 1, 1949. There was also present R. W. Ruperts, Drilling Foreman; G. Hamlet, Driller.

Casing Record 13-3/8" cem. 808'. T.D. 5177'. | Junk xxxxx

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

The inspector arrived at the well at 2:00 p.m. and Mr. Ruperts reported:

1. A 17-1/2" rotary hole was drilled from the surface to 808'.
2. On November 20, 1949, 13-3/8", 54 lb. casing was cemented at 808' with 550 sacks of cement.
3. An additional 110 sacks of cement was pumped into the hole around the 13-3/8" casing through 1" pipe hanging at 40'.
4. A 12-1/4" rotary hole was drilled from 808'-2168'; an 11" rotary hole, 2168'-5177'.

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 2" mud fill-up line with a 2" high pressure Hamer plug into the 13-3/8" casing below the above equipment.

The inspection was completed at 2:15 p.m.

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

PWB:OH

cc- T. L. Wark
Jos. Jensen
Wm. E. Perkes

R. D. BUSH
State Oil and Gas Supervisor

By E. F. Mussen Deputy

16330 10-49 17,500 ② SPO

FORM 111 (1-49)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS

No. P 1-47497

Los Angeles 15, Calif. November 10, 1949

MR. F. C. Foster

Los Nietos Calif.

Agent for TIDE WATER ASSOCIATED OIL COMPANY

DEAR SIR:

Your proposal to drill Well No. "Porter" 25,

Section 28, T. 3 N., R 16 W., S.B. B. & M., Aliso Canyon Field, Los Angeles County,

dated Nov. 4, 1949, received Nov. 7, 1949, 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 206.67 feet S. and 4510.46 feet W. from Station #84
Elevation of ground above sea level 2680.44 feet.
All depth measurements taken from top of derrick floor, which is 6.92 feet above ground.
We estimate that the first productive oil or gas sand should be encountered at a depth of about 5450 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	800'	Cemented
7"	23#	T&C, J-55, N-80	5700'	Cemented
5"	18#	J-55, F. J.	5500'	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. Blowout prevention equipment, sufficient to provide a complete close-in of the well under pressure at any time, shall be installed.
2. 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.

ABH:OH

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

R. D. BUSH
State Oil and Gas Supervisor

By E. H. Musser Deputy

2402 1-49 36,500 SPO

Blanket bond.

FORM 105.
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
NOV 7 1949
LOS ANGELES, CALIFORNIA

7

037-00712

Notice of Intention to Drill New Well

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

Los Nietos, Calif. November 4, 1949

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. ~~"SF20-402"~~ Porter #25, Sec. 28, T. 3 N, R. 16 W, S.B.B. & M., Aliso Canyon Field, Los Angeles County. JLW

Legal description of lease Porter

The well is 206.67 feet ~~XXX~~ S., and 4510.46 feet ~~XXX~~ W. from Station #84
(Give location in distance from section corners or other corners of legal subdivision)

Elevation of ground above sea level 2680.44 feet.

All depth measurements taken from top of derrick floor, which is 6.92 feet above ground.

We estimate that the first productive oil or gas sand should be encountered at a depth of about 5450 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	800'	Cemented
7"	23#	T&C, J-55, N-80	5700'	Cemented
5"	18#	J-55, F.J.	5800'	Landed

MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
18A JLW	JLW	EB	Blanket	EB	EB

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

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, Calif.

TIDE WATER ASSOCIATED OIL COMPANY
(Name of Operator)

Telephone number Whittier 42-043

By T. C. Foster P.
Agent

ADDRESS NOTICE TO DIVISION OF OIL AND GAS IN DISTRICT WHERE WELL IS LOCATED