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 69 F
A.P.I. No. 03724226
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 28, T3N, R16W, SBB&M
Name: Tom McMahon Title: SIMP Project Manager
(President, Secretary, or Agent)
Telephone Number: 714-398-5020
Signature: Thomas A 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)
3/28/2016	Held pre-job safety meeting w/ rig crew. East Field Pressure 1023 psi. Service and start rig and aux equipment. Hold Pre-Job safety meeting with SoCal WSM. Prepare circulating pump & rig for rig move. Complete Journey Management with rig personnel. Prep location. Spot in & rig up equipment.(Pump, Metal plates, Rig Mat, Etc.). Move rig from staging area to Porter 69F. Spot in & rig up rig. Flag guide lines. Secure rig till am.
3/29/2016	HSM W/ crew & SoCal WSM. East side field pressure 1031 psi. Hold pre-job safety meeting with Onyx personnel, rig up gas separator equipment and prepare well for pumping operations. SITP pressure 1147 psi. SICP pressure 1144 psi. Open well, Pumped 50 bbl 8.5 ppg high vis poymer and dissplaced with 43 Bbls of Polymer, Kill well with 475 BBLS of 8.5 ppg 65 Vis Polymer at 3.5 BBLS/Min at 300 psi, got returns. Rig down gas separator. Monitor well for 30 minutes, tubing and casing dead. Install back pressure valve and remove production tree. Nipple up 11" 5M Class III BOP. Installed mud cross & valves. Secured rig and well.
3/30/2016	Held safety meeting filled out JSA. East side field pressure 1016 psi. SITP 20 psi. SICP 30 psi. Rig up and pumped 100 Bbl's at 3.8 BPM at 0 psi. down tubing taking return into tank. Got returns after pumping 35 Bbl's. Finished nipple up class III BOP (valves, check valves, 4" line, choke manifold, kill lines ect.) Function tested BOP. Hold safety meeting with SoCal WSM, Weatherford tester and rig personnel. Pressure test 11" 5M class III BOP as per SoCal procedures; 300 psi low/5000 psi high for 20 minutes each test. Tested good. Rig down Weatherford tester. Secured rig and well.
3/31/2016	Held safety meeting with crew, and SoCal WSM. Filled out JSA. . East field pressure 1029 psi. Held safety meeting with Doby crane personnel. Put together work floor. Picked up and installed work floor on rig. (Work floor chain eyes in the wrong place) Removed work floor. Cut off chain eye. Weld chain eyes in proper place. Reinstalled work floor. (No charge to SoCal) Rig up work floor & tubing equipment. SITP 10 psi. SICP 20 psi. Rig up and pumped 45 Bbl's at 3.0 BPM at 0 psi. down tubing taking return into tank. Got returns after pumping 16 Bbl's. Back out 11 out of 12 locking rams. 1 froze to packing nut (Tried to break locking ram free) Cameron bringing replacement stim in morning 10:00 am. Secure well & rig.
4/1/2016	Held safety meeting with crew, Cameron service hand and SoCal WSM. East side field pressure 1033 psi. SITP 0 psi. SICP 0 psi. Rig up and pumped 45 Bbl's at 3.0 BPM at 0 psi. down tubing taking return into tank. Got returns after pumping 10 Bbl's. Cameron service hand changed out locking ram on well head. Picked up and made up (1) jt. of 2-7/8" N-80 EUE 8rd. tubing with TIW valve to release G-6 packer. Unland tubing hanger at 80K. Released G-6 packer. Broke out and laid down tubing hanger. Pulled out of well with (30) jts. of 2-7/8' N-80 EUE 8rd. tubing (1) 2-7/8" N-80 EUE 8rd. pup sub (1) GLM gas lift mandrel (1) 2-7/8" N-80 EUE 8rd. pup sub (202) jts. of 2-7/8" N-80 EUE 8rd. tubing Laid down (1) 2-7/8" N-80 EUE 8rd. pup sub (1) GLM gas lift mandrel (1) 2-7/8" N-80 EUE 8rd. pup sub (1) jt. 2-7/8" N-80 EUE 8rd. tubing (1) "X" Sliding sleeve (1) jt. 2-7/8" N-80 EUE 8rd. tubing. (1) On/Off tool lift hand release (1) "XX" nipple (1) 2-7/8" N-80 EUE 8rd pup sub (1) 2-7/8" x 4-1/2" x-over (1) HAL 9-5/8" G6 packer (1) 4-1/2" x 2-7/8" X-over (1) 2-7/8" N-80 EUE 8rd. pup sub (1) "XD" Sliding sleeve (1) 2-7/8" N-80 EUE 8rd pup sub (1) "XN" nipple (1) 2-7/8" x 1-1/4" x-over (13) jts. of 1-1/4 Hyd 8rd tubing (1) jts 1-1/4" Hyd 8rd tubing with the bottom 10' perforated. Pump 1.5 Bbls. every 10 stands to fill hole. Picked up and made up (1) 9-5/8" 47# scraper with saw tooth collar (1) 4-1/2" Bumper sub (1) 2-7/8" N-80 EUE 8rd. pup sub. Strapped and ran in well (40) jts. of 2-7/8" N-80 EUE 8rd. tubing. Closed in well. Secure well and rig.

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

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4/2/2016	Held safety meeting with crew, and SoCal WSM. Filled out JSA. . East field pressure 1044 psi. Service rig & equipment. SITP = 0 psi SICP = 0 psi. Open well. Pumped 3 Bbls. down casing to fill hole. Continue to strap tubing and run in well with scraper. Ran in well (192) jts. of 2-7/8" N-80 EUE 8rd tubing. Picked up & drifted (6) jts. of 2-7/8" N-80 EUE 8rd tubing. Tagged liner top at 7,471' Pulled out of well with laid down (4) jts of 2-7/8" N-80 EUE 8rd tubing (234) jts. of 2-7/8" N-80 EUE 8rd tubing. Broke out and laid down (1) 2-7/8" N-80 EUE 8rd pup sub (1) 4-1/2" Bumper sub (1) 9-5/8" 47# scraper. Pump 1.5 Bbls. every 10 stands to fill hole. Strapped (20) Jts of 2-1/16" P-110 CS Hydril tubing. Picked up, drifted & made up & ran in well with (1) 6' x 2-1/16" Mule shoe (20) jts. 2-1/16" P-110 CS Hydril tubing (1) 2 -1/16" x 2-7/8" x-cover (216 jts of 2-7/8" N-80 EUE 8rd tubing. Closed in well. Secured well & rig.
4/4/2016	Held safety meeting with crew, and SoCal WSM. Filled out JSA. . East field pressure 1044 psi. SITP = 0 psi SICP = 0 psi. Open well. Striped on nipple up 11" 5M x 7" 3M x-over spool and 7" 5M circulating head. Ran in well (14) jts. of 2-7/8" N-80 EUE 8rd tubing. Picked up (1) jt. of 2-7/8" N-80 EUE 8rd tubing. Tagged @ 7,866' (12') of fill. Rig up & pumped down casing taking returns out tubing over shaker screens Pumped 130 Bbl's. @ 3.5 BPM @ 400 psi. Cleaned out from 7,866' to 7,878' Circulated clean. Pulled out of well liad down (1) jt. of 2-7/8" N -80 EUE 8rd. tubing. Stood back (230) jts. of 2-7/8" N-80 tubing laid down (1) 2-7/8" x 2-1/16" x-over (20) jts. 2-1/16" CS Hydrill (1) 6' x 2-1/16" CS Hydril Mule shoe. Ran in well with kill string (40) jts of 2-7/8" N-80 EUE 8rd. tubing, Closed in well. Secured rig and well. Perp. location and loggers to log well.
4/5/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1034 psi. SITP= 0psi. SICP= 0psi. Open well. Pulled out of well with (18) jts. of 2-7/8" N-80 EUE 8rd. tubing. Held Blow out drill @ 06:39. Response time (52 sec's.) Discussed with crew nitrogen shut in procedures with crew. SITP= 0 psi. SICP= 0 psi. Open well. Pulled out of well with (22) jts. of 2-7/8" N-80 EUE 8rd. tubing. Pump 1.5 Bbls. every 10 stands to fill hole. Held safety meeting with crew, Western wire line, Scientific Drill & SoCal WSM. Nipple down circulating head & nipple up 7" 3M lubricator flange. Rig up lubricator and ran in well with Gyro survey. Survey well. Rig down lubricator & logger's. Removed 7" 3M x 11" 5M x-over spool. Lower work floor. Held safety meeting with crew, Weatherford and SoCal WSM. Picked up, made up and ran in well with (1) 9-5/8" Lockset Retrievable Bridge plug (1) Retrieving head (1) 4' x 2-7/8" N-80 EUE 8rd. pup sub (50) jts. of 2-7/8" N-80 EUE 8rd tubing. Set RB @ 1,582' (COE) Released RB and pulled up to 1567' and test to 500 psi. and held for 5 min's. (GOOD) Ran in latched on and released RB. Continue to run in well with (184) jts. of 2-7/8" N-80 EUE 8rd. tubing. Picked up (3) jts. of 2-7/8" N-80 EUE 8rd. tubing (1) 6' x 2-7/8" N-80 EUE 8rd. pup sub (1) jt. of 2-7/8" N-80 EUE 8rd. tubing. Tagged top of liner @ 7,471' Pulled up to and set RB. (End of tool) @ 7,466' (COE) @ 7,462' (Top of tool) @ 7,456' Pull out of well laid down (1) jt. of 2-7/8" N-80 EUE 8rd (1) 6' x 2-7/8" N-80 EUE 8rd. pup sub. to 7,416'. Rig up pump hose's and pressure tested to 500 psi. and held for 15 min's. (GOOD) Bled down well. Rig down pump hose's. Pulled out of well laying down (3) jts. of 2-7/8" N-80 EUE 8rd. tubing & stood back (2) jts. 2-7/8" N-80 EUE 8rd. tubing. Rig up & poured 8 sacks of sand down tubing while trickling water down tubing. Pulled out of well with (160) jts. of 2-7/8" N-80 EUE 8rd. tubing. Closed in well. Secured rig & well.
4/6/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1034 psi. SITP= 0 psi. SICP= 0 psi. Open well. Pulled out of well with (74) jts. of 2-7/8" N-80 EUE 8rd. tubing. Broke down and laid down (1) 2-7/8" N-80 EUE 8rd. pup sub and retrieving head. Pump 2 Bbls. every 10 stands to fill hole. Nipple up 11" 5M x 7" 5M x-over spool and 7" 5M shoot flange. Held safety meeting with crew, Baker and SoCal WSM. Rig up logger's. Performed Multi-arm Caliper log. Tagged @ 7,455' Nipple down and picked up 11" 5M x 7" 5M x-over spool. Laid down Caliper log. Picked up 9-5/8" 43.5# peace of casing and tested Caliper tool (GOOD) Laid down peace of 9-5/8" 43.5# casing. Ran in Magnetic flux leakage logging. Nipple up 11" 5M x 7" 5M x-over spool. Perform Magnetic flux leakage log. Tagged @ 7,455' Nipple down 11" 5M x 7" 5M x-over spool. Laid down Magnetic flux leakage tool. Rig down logger's. Ran in well with (20) jts. of 2-7/8" N-80 EUE 8rd. tubing. Closed in well. Secured well & rig.

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Name: Tom McMahon Title: SIMP Project Manager
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4/7/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1031 psi. SITP= 0 psi. SICP= 0 psi. Open well. Pulled out of well with (20) jts. of 2-7/8" N-80 EUE 8rd. tubing. Pump 2 Bbls. every 10 stands to fill hole. Held safety meeting with crew, Schlumberger and SoCal WSM. Rig up loggers Picked up and made up logging tools. Striped on and nipple up 11" 5M x 7" 5M x-over spool with 7" 5M shoot flange and lubricator. Ran on well with Cement bond and Ultrasonic imager logging tools. Tagged @ 7,451'. Logged well. Nipple down and striped off 11" 5M x 7" 5M x-over spool with 7" 5M shoot flange. Laid down logging tools and rig down logger's. Ran in well with (20) jts. of 2-7/8" N-80 EUE 8rd. tubing. Closed in well. Secured well & rig.
4/8/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1042 psi. SITP= 0 psi. SICP= 0 psi. Open well. Pulled out of well with (20) jts. of 2-7/8" N-80 EUE 8rd. tubing. Pump 2 Bbls. every 10 stands to fill hole. Held safety meeting with crew, Weatherford and SoCal WSM. Picked up, made up and ran in well with (1) 9-5/8" ASX-1 packer (1) 6' x 2-7/8" N-80 EUE 8rd. pup sub (28) jts. of 2-7/8" N-80 EUE 8rd. tubing. Set ASX-1 packer (COE @ 903') Rig up and tested to 500 psi. Held for 5 min's. (GOOD) Bled down casing. Released ASX-1 packer and continue to run in well with (82) jts. of 2-7/8" N-80 EUE 8rd. tubing. Picked up (1) 2-7/8" N-80 EUE 8rd. pup sub and (1) jt. of 2-7/8" N-80 EUE 8rd. tubing. Set ASX-1 packer (COE @ 3,507') Pressure test and Record Casing Pressure From 3,507'-7,462' to 2310 psi for 1 hour. Bled off 14 PSI in 1 Hr. Bleed off pressure. Pressure test and Record Casing Pressure From 3,507'-Surface to 3716 psi. for 1 hour. Bled off 17 psi in 1 Hr. Bleed off pressure and Rig down hoses. DOGGR Rep Mark Davis witness Testing. Released ASX-1 packer and pulled out of well and laid down (1) jt. of 2-7/8" N-80 EUE 8rd tubing (1) 10' x 2-7/8" N-80 EUE 8rd pup sub. Stood back (110) jts. of 2-7/8' N-80 EUE 8rd. tubing. Broke out and laid down (1) 6' x 2-7/8" N-80 EUE 8rd. pup sub and (1) 9-5/8" ASX-1 packer. Pump 2 Bbl's every 10 stands to fill hole. Rig down tubing equipment & work floor. Broke out hose's and nipple down 11" 5M Hydrill bag. Closed in well. Secured well and rig.
4/9/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1053 psi. SITP= 0 psi. SICP= 0 psi. Open well. Bled down accumulator and removed accumulator hose's. Nipple down 11" 5M double gate. Set out Hydrill bag and double gate BOP. Tried to remove Tubing Spool and double studded adapter. Installed cross over spool and shooting flange and rig up to pull with rig. Pulled 80K (would not move). Removed studs on double stud adapter. Remove Tubing Spool and double studded adapter. Load out spool and adapter on Cameron truck. Install Weatherford cross over spool's and Class II Double gate. Fill Well. Close and lock Blind Rams. Secure well and rig for weekend.
4/14/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1050 psi. SICP= 0psi. Open well. Nipple down and remove 11" 5M Double gate BOP and x-over spool's. Nipple up 13-5/8" 3M to 11" 5M x-over Double stud adapter, 11" 5M Tubing spool, 11" 5M Double gate and 11" 5M Hydrill bag. Hooked up 4" blow down line, 2" kill line and accumulator hose's. Function tested BOP. (Good) Held safety meeting with Cameron and SoCal WSM. Rig up Cameron and pressure tested Seals on DSA and Tubing spool to 3750 psi. and held for 20 min's and charted. (Good) Rig down Cameron. Rig up work floor and tubing equipment. Land tubing hanger and filled class III BOP. Closed Hydrill bag and tested to 350 psi. (Low) and to 3500 psi. (High) All test held for 20 min's and charted. (Good) Bled down, Open Hydrill bag and removed tubing hanger. Picked up, made up and ran in well with (1) BP retrieving head (1) 6' X 2-7/8" N-80 EUE 8rd. pup sub (234) jts. of 2-7/8" N-80 EUE 8rd tubing. Closed in well. Secured well and rig.

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4/15/2016	Held safety meeting with crew and SoCal WSM. East side field pressure 1052 psi. SITP= 0 psi. SITP.= 0psi. Installed circulating head. Raised work floor up. Picked up and ran in hole with (4) jts. of 2-7/8" N-80 EUE 8rd. tubing and tagged at 7,451' Rig up pump down casing taking returns over shaker screens. Cleaned out from 7,451' to 7,456' Circulated clean with 130 Bbls at 3.6 BPM. Released 9-5/8" ASX-1 packer set at (COE) 7,462' Pulled out of well laying down (4) jts. of 2-7/8" N-80 EUE 8rd tubing. Stood back (234) jts. of 2-7/8" N-80 EUE 8rd. tubing. Broke out and laid down (1) 6' x 2-7/8" N-80 EUE 8rd. pup sub and (1) 9-5/8" ASX-1 packer with retrieving head. Pumped 2 Bbls. to filling hole every (10) stands. Picked up, made up and ran in well with (1) 7-7/8" Rev. Circ. Junk Basket with 8-1/4" head (4-1/2" XH box) (1) 6" x-over sub (4-1/2" XH pin x4-1/2" FH box) (1) 5-13/16" x-over sub (4-1/2" FH pin x 3-1/2" FH box) (1) 4-3/4" x-over sub 3-1/2" FH pin x 2-7/8" EUE 8rd. box) (52) jts. of 2-7/8" N-80 EUE 8rd. tubing. Closed in well. Secured well and rig.
4/16/2016	safety meeting with crew and SoCal WSM. East side field pressure 1052 psi. Ran in well with (182) jts. of 2-7/8" N-80 EUE 8rd. tubing. Picked up (4) jts. of 2-7/8" N-80EUE 8rd. tubing (1) 10'x 2-7/8" N-80 EUE 8rd. pup sub. Rig up & broke circ. Pumped 00 Bbl's @ 4.0 BPM down tubing taking returns from casingover shaker screens. Started circ. @ 7,450' & worked Rev. junk basket down to 7,478' (Topof liner) Rig down hose's. Pulled out of well laying down (1) 10'x 2-7/8" N-80 EUE 8rd pup sub. & (2) jts. of 2-7/8" N-80EUE 8rd. tubing. Stood back (236) jts. of 2-7/8" N-80 EUE 8rd. tubing. Broke out & laid down (1) 4-3/4" x-over sub 3-1/2" FH pin x 2-7/8" EUE 8rd. box) (1) 5-13/16" x-over sub (4-1/2" FH pin x 3-1/2" FH box) (1) 6" x-over sub (4-1/2" XH pin x4-1/2" FH box) (1) 7-7/8" Rev. Circ. Junk Basket with 8-1/4" head (4-1/2" XH box) Filled hole every 10 stands. Picked up, made up and ran in well with (1) 4-1/2" Rev. Circ. Junk Basket with 4-5/8" Mill head (2-7/8" Reg. box) (1) 3-3/4" x-over sub (2-7/8" Reg. pin x 2-7/8" EUE 8rd. box) (50) jts. of 2-7/8" N-80 EUE 8rd. tubing. Held Blow out drill @ 13:40 hrs. Response time (37 sec's.) for fill shut in. Discussed nitrogen shut in procedures with crew. SITP.= 0psi. SICP.= 0 psi. Open well. Continued to run in well with (186) jts. of 2-7/8" N-80 EUE 8rd. tubing. Closed well in. Secured well & rig.
4/18/2016	Held safety meeting with crew, Weatherford tool hand and SoCal WSM. East side field pressure 1055 psi. SITP.= 0 psi. SICP.=0 psi. Open well. Picked up, drifted and ran in well with (3) jts. of 2-7/8" N-80 EUE 8rd. tubing. Installed circ. head. Cont. to picked up, drifted and ran in well with (15) jts. of 2-7/8" N-80 EUE 8rd. tubing. Rig up pump & pumped down casing taking return up tubing. Pumped 20 Bbls @ 4 BPM @ 600 psi. Circ. down from 7,868' to 7,878' Lost circ. pumped 54 Bbls out in to formation. Rig down hose's. Spot in & rig up trailer. Pulled out of well laying down tubing with (39) jts of 2-7/8" N-80 EUE 8rd. tubing. (On stand by) Shutdown rig operation for sound log on Porter 69J. Roustabout charge only to So Cal Gas during logging operations. Continue to pulled out of well laying down tubing with (113) jts of 2-7/8" N-80 EUE 8rd. tubing. Closed well. Secured well & rig.

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Start Date	Ops this Report (DOGGR)
4/19/2016	Held safety meeting with crew, Weatherford tool hand and SoCal WSM. East side field pressure 1055 psi. SITP.= 0psi. SICP.= 0 psi. Open well. Pumped 56 Bbl's. fill casing. Cont. laying down (100) jts. of 2-7/8" N-80 EUE 8rd. tubing. (1) 3-3/4" x-over sub (2-7/8" Reg. pin x 2-7/8" EUE 8rd. box) (1) 4-1/2" Rev. Circ. Junk Basket with 4-5/8" Mill head (2-7/8" Reg. box) Rig down walk off trailer. Pumped 5 Bbls. of kill fluid to fill hole.Move off trailer with 2 7/8" tbg eue & move in trailer with 3 1/2" eue 8rd completion string. Started to change out 2-7/8" pipe rams to 3-1/2" pipe rams on double gate BOP. Rig up walk on pipe trailer. Counted & strapped tubing on trailer. Change out 2-7/8" pipe rams to 3-1/2" pipe rams on double gate BOP. Tested class III BOP to 350 psi. low (Good) 3500 psi. high (Good) All test held for 20 min's each. Picked up, made up and ran in well with (1) 4-1/2" L-80 EUE 8rd. re-entry guide (1) 4-1/2" x 2-7/8" L-80 EUE 8rd. x-over (1) 4-1/2" x 9-5/8" 47# G-6 packer (1) 4-1/2" x 2-7/8" L-80 EUE 8rd. x-over (1) 10' x 2-7/8" 6.5# L-80 EUE 8rd. pup jt. (1) 2-7/8" XN nipple with (2.313" ID & 2.205" no go) with test plug (1) 10' x 2-7/8" 6.5# L-80 EUE 8rd. pup jt. (1) jt. of 2-7/8" 6.5# L-80 EUE 8rd. tubing (1) 2-7/8" sliding sleeve (SSD) (1) jt. of 2-7/8" 6.5# L-80 EUE 8rd. tubing (1) 2-7/8" x 3-1/2" L-80 EUE 8rd. x-over (1) jt. of 3-1/2" 9.3# L-80 EUE 8rd tubing. Picked up, drifted & RIH W/ (2) jts. 3-1/2" 9.3# L-80 EUE 8rd. tubing. Rig up sheaves. Picked up & made up 3-1/2" Bar tools & tested to 5000 psi. W/ 10 sec hold. Strapped, picked, drifted & tested in hole W/ (34) jts. 3-1/2" 9.3# L-80 EUE 8rd. tubing. Closed in well. Secured well & rig.
4/20/2016	Filled out JSA. Held safety meeting with crew, Weatherford, Halliburton, Quality & SoCal WSM. Serviced rig & equipment. East side field pressure 1056 psi. SITP.= 0 psi. SICP.= 0 psi. Open well. Pump 17 Bbls of kill fluid down casing to fill hole. Strap, picked up, drifted & tested in hole W/ (83) jts. 3-1/2" 9.3# L-80 EUE 8rd. All test to 5000 psi. W/ 10 sec. hold. Rig down walk off empty pipe trailer. Latched up and move pipe trailer. Move in & spot tubing trailer. Rig up walk on tubing trailer. Count & strapped top row of tubing. Cont. to strap, picked up, drifted & tested in hole W/ (44) jts. 3-1/2" 9.3# L-80 EUE 8rd. All test to 5000 psi. W/ 10 sec. hold. Closed in well. Secured well & rig.
4/21/2016	Filled out JSA. Held safety meeting with crew, Weatherford, Halliburton, Quality & SoCal WSM. Serviced rig & equipment. East side field pressure 1064 psi. SITP.= 0 psi. SICP.= 0 psi. Open well. Pumped 9 Bbls of 8.5 PPG 56 Vis Polymer to fill well. Cont. to strap, picked up, drifted & tested in hole W/ (71) jts. 3-1/2" 9.3# L-80 EUE 8rd. All test to 5000 psi. W/ 10 sec. hold. Broke out & laid down 3-1/2" Bar tools. Rig down tester sheaves. Picked up, made up (1) 4' x 2-7/8" 6.5# L-80 EUE 8rd pup sub in to tubing hanger. (To many threads showing on pup sub. Broke out pup sub & gaulded threads on pup sub. Sent in tubing hanger to be redressed. Picked up, made up (1) 4' x 2-7/8" 6.5# L-80 EUE 8rd pup sub (1) 2' x 2-7/8" 6.5# L-80 EUE 8rd pup sub (1) 6' x 2-7/8" 6.5# L-80 EUE 8rd pup sub (1) 8' x 2-7/8" 6.5# L-80 EUE 8rd pup sub & plug tested to 5000 psi. W/ 10 sec hold. (Good) Rig down tester. Close in well. Secured well & rig.

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 69 F
A.P.I. No. 03724226
Date: 7/25/2016
Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 28, T3N, R16W, SBB&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)
4/22/2016	Filled out JSA. Held safety meeting with crew, Halliburton, Quality & SoCal WSM. Serviced rig & equipment. East side field pressure 1059 psi. SITP.= 0 psi. SICP.= 0 psi. Open well. Pumped 10 Bbls of 8.5 PPG 56 Vis Polymer to fill well. Picked up & ran in hole W/ (1) 8' x 2-7/8" 6.5# L-80 EUE 8rd pup sub (1) 6' x 2-7/8" 6.5# L-80 EUE 8rd pup sub (1) 2' x 2-7/8" 6.5# L-80 EUE 8rd pup sub (1) 4' x 2-7/8" 6.5# L-80 EUE 8rd pup sub. Picked up, made up & ran in hole W/ (1) 2' x 2-7/8" 6.5# L-80 EUE 8rd pup sub & (1) 9-5/8" tubing hanger. Land tubing hanger. Rig up & pumped (100) Bbl's. of packer fluid down tubing taking returns in to kill tank @ 1.4 BPM @ 0 psi. Rig down pump hose's. Un-land tubing hanger. Pulled up & set 9-5/8" G-6 packer @Top of packer @ 7,415' (COE) 7,418' Wireline Re-entry bell guide @ 7,421'. Land tubing hanger. Set packer in compression W/ 14K on it. XN nipple @ 7,404' Sliding sleeve XD @ 7,363' (Closed) Held safety meeting W/ crew & Western wire line. Rig up & RIH W/ 2.31 PXM plug in XN nipple @ 7,404'. Rig down wire line unit. Rig up pump & pretested tubing to 3000 psi. Held for 5 min's. (Good) Bled down & rig down pump. Rig up PROS to casing. Pressure tested casing to 1037 psi. & held for 1 hr. Casing bled down 0 psi. (Good) Rig up to tubing & pressure tested to 3713 psi. & held for 1 hr. Tubing bled down 59 psi. (Good) All tested charted & witnessed by (DOGGER) Chris Phillips & Randall Morlan. Rig down PROS. Load out tubing equipment & rig down work floor. Close in well. Secure well & rig.Broke out & load out pump hose's & hose's off choke manifold.
4/23/2016	Filled out JSA. Held safety meeting with crew & SoCal WSM. Serviced rig & equipment. East side field pressure 1060 psi. Held safety meeting W/ crew, T&T crane & SoCal gas WSM. SITP.= 0 psi. SICP.= 0psi. Openwell. Nipple down & set out 11" 5M Class III BOP. Removed 2-7/8" 6.5# L-80 EUE 8rd pup sub W/ TIW valve & installed 2-7/8" BPV. Nipple up11" 5M production tree. Held safety meeting W/ crew, Cameron & SoCal gas WSM. R/U Cameron. Tested 11" 5M production flange to 300 psi. (Good) & 4000 psi. (Good) Note. All test held for 20 mins & charted. Rig down Cameron & removed BPV. Drop guide line & rig down moved off. Load up auxiliary equipment W/ crane.

D PARTMENT OF CONSERVAT 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. T216-0114

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
April 14, 2016

Your operations at well **"Porter" 69F**, A.P.I. No. **037-24226**, Sec. **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **4/8/2016**. **Mark Davis**, 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 oo Jon Lum For PAAbel
Patricia A. Abel
District Deputy

MD/tkc
OG109

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

No. T 216-0114
16, 1

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

Operator: So. CAL GAS CO.					Well: "PORTER" 69F
Sec. 28	T. 3N	R. 16W	B.&M. SB	API No.: 037-24226	Field: ALISO CANYON
County: LOS ANGELES					Witnessed/Reviewed on: 4-8-16

MARK DAVIS, representative of the supervisor, was present from 0930 to 1230.

Also present were: WALT KLINGENBERG - SO. CAL GAS

Casing record of the well:

The Internal MIT was performed for the purpose of pressure testing the 9 5/8" casing above 3507' (2) (prior to injecting fluid)

PACKER @ 3507'

☒ The Internal MIT is approved since it indicates that the 9 5/8" casing has mechanical integrity above 3507' at this time..

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

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

CASING
3716#
1131 AM.
3699
LOST 17 PSI

TUBING
2308#
LOST 12 PSI
2296 PSI

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Porter" 69F**

API No. **03724226** SE **28** T: **3N** R.: **16W** , **SB** B. and M.

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

Type of Notice: **Rework** **Date** **3/28/2016** **Report Number:** **P216-0037**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
Casing & Tubing Press	4/8/16	✓		M. Davis

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

other tests pending D.G.

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: _____
(Date and Engineer)

Modflied 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 216-0037

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 04, 2016

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

Your proposal to **Rework** well **"Porter" 69F**, A.P.I. No. **037-24226**, Section **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **3/28/2016**, received **3/29/2016** has been examined in conjunction with records filed in this office. (Lat: **34.314855** Long: **-118.557494** 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.

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

Engineer Kris Gustafson
Office (805) 654-4761

KG/kg

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By for Pat Abel
Patricia A. Abel, *District Deputy*

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

OG111 (revised 6/2011)

NOTE:

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

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

ATTACHMENT 1
TO DOGGR ORDER 1109

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

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

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

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

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

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

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

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

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

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

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

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

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

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

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

Rec'd 03-29-16 DOGGR Ventura

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

FOR DIVISION USE ONLY		
	Forms	
Bond	~~OGD114~~ ✓	OG121 ✓
	CAL WIMS ✓	115 ✓

P216-0037

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 69F, API No. 037-24226,

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: 7950 feet. The effective depth is: 7878' 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: Brian Vlasko	Telephone Number: (714) 655-9506	Signature:	Date: 03/28/16
Individual to contact for technical questions: Brian Vlasko	Telephone Number: (714) 655-9506	E-Mail Address: bvlasko@semprautilities.com	

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

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

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

CRITICAL WELL DEFINITION

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

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

WELL OPERATIONS REQUIRING BONDING

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

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

WORKOVER PROJECT

Porter 69F – Well Inspection

DATE:	March 28, 2016
OPERATOR:	SOUTHERN CALIFORNIA GAS COMPANY
FIELD:	ALISO CANYON
WELL:	Porter 69F
API NUMBER:	037-24226
ELEVATION:	All depths based on original KB, 29' 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 and a gyro survey, 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:	Active
TD:	7980' md / 7881' md PBTD
Special Conditions:	Last tag on 10/18/2004 at 7877'
Casing Record:	13-3/8" 54.5# K-55 ST&C casing cemented at 824' with 371 sks Class G 9-5/8" 47# N-80 LT&C casing cemented at 7980' with 1613 sks Class G (ECP Set @ 7499') 5-1/2" Liner at 7471' – 7878' (Shrouded Wire Wrap Screen from (7638' – 7877') Perfs: 7645' – 7725' (6SPF), 7725' – 7790' (6SPF), 7806' – 7828' (4SPF)
Tubing Record:	See attached tubing detail as run on 10/22/2004

GEOLOGIC MARKERS

UDA	5948'md	-3392'vss	S4	7645'md	-4957'vss
UDA2	6272'md	-3691'vss	S4	7667'md	-4977'vss
MDA	6673'md	-4062'vss	S6	7670'md	-4980'vss
LDA	6820'md	-4198'vss	S8	7724'md	-5030'vss
MP	7268'md	-4606'vss	S10	7744'md	-5048'vss
S1	7550'md	-4868'vss	S12	7807'md	-5106'vss
S2	7591'md	-4906'vss	S14	7821'md	-5119'vss
			Frew	7870'md	-5164'vss

Estimated Field Pressure: 1146 psi on 03/28/2016 (Variable)

Estimated Bottom-hole Temperature: 153°F (as per 11/05/2014 Temperature survey)

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 brine. The tubing volume is approximately 42 bbls and the tubing/casing annulus is approximately 481 bbls. Use HEC polymer as required to minimize lost circulation.

   NOTE: Verify field surface pressure to ensure the proper well control fluid density is used prior to circulating well and for well control during workover operations.

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 at least 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.) Pull back pressure valve from tubing hanger.

6. Pick up a 2-7/8", 6.5#, N-80 joint of tubing with safety valve, unset Halliburton G6 packer with ¼ right hand rotation and straight pull. G6 packer at 7385' and POOH laying-down production tubing and tools. (Note 13 joints of 1-1/4" tubing stinger below G6 packer)

7. Pick-up a 9-5/8", 47# casing scraper on 2-7/8" production string and RIH to top of liner at 7472'. Circulate well clean. POOH.

8. RIH with clean-out assembly for 5-1/2", 17# liner and RIH to clean out bottom of liner at 7878' or as deep as possible. POOH.

9. Make-up and run a 9-5/8", 47# retrievable bridge plug (BP) on 2-7/8" production string. Set at approximately 7462' (10' above liner top), fill hole and pressure test and sand off. POOH and lay down BP retrieving head.

10. Rig-up wireline unit(s) with lubricator as required to run the following logs:

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

11. RIH with a 9-5/8", 47# test packer and run a Pressure Integrity Test on 9-5/8" casing from surface to BP to a minimum 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. Pick-up retrieving head for BP and RIH to top of sand. Circulate out sand. Release BP at approximately 7462', circulate with weighted brine as required to control well. POOH and laying down 2-7/8" production string and BP.

14. RIH with new completion string as follows (packer to be set at or above BP testing depth):

a.) 4-1/2" L-80 EUE 8RD wireline re-entry guide
b.) 4-1/2" 12.6# x 2-7/8" 6.5# EUE 8RD L-80 crossover sub
c.) 4-1/2" 12.6# x 9-5/8" 47# EUE 8RD L-80 production packer
d.) 4-1/2" 12.6# x 2-7/8" 6.5# EUE 8RD L-80 crossover sub
e.) 10' pup joint 2-7/8" 6.5# L-80 EUE 8RD L-80 tubing

f.) 2-7/8" 6.5# L-80 EUE 8RD XN no-go nipple (2.313" ID, 2.205" no go)
g.) 10' pup joint 2-7/8" 6.5# L-80 EUE 8RD L-80 tubing
h.) Full joint 2-7/8" 6.5# L-80 EUE 8RD tubing
i.) 2-7/8" 6.5# EUE 8RD L-80 sliding sleeve
j.) Full joint 2-7/8" 6.5# EUE 8RD L-80 tubing
k.) 2-7/8" 6.5# EUE 8RD Pin x 3-1/2" 9.3# EUE 8RD Box Crossover pup joint
l.) 3-1/2" 9.3# L-80 EUE 8RD tubing to surface
m.) 3-1/2" 9.3# EUE 8RD Pin x 2-7/8" 6.5# EUE 8RD Box Crossover pup joint
n.) Pup joints 2-7/8" 6.5# L-80 EUE 8RD tubing for space-out
o.) 4' 2-7/8" 6.5# L-80 EUE 8RD fatigue nipple (pin x pin)
m.) Tubing hanger

Notes: 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 2-7/8" XN profile.

17. Notify DOGGR to witness pressure tests of annulus to 1000 psi and tubing to 3625 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

23. Per Gas Company Standard 182.0170, pressure test the tubing and casing well circulation 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.

24. Reinstall the hydro-tested laterals.

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

26. Release well to operations.

Rec'd 03-29-16 DOGGR Ventura

EXTERNAL CORROSION PROTECTION

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

Tubing Detail as run 10/22/2004

Quantity	Item	Length	Depth
1	KB	28	28
1	Tubing Hanger	1	28
30	2-7/8", EUE 8rd tbg.	938	29
1	2-7/8", EUE 8rd, pup jt.	4	967
1	GLM gas lift mandrel w/ dum	7	971
1	2-7/8", EUE 8rd, pup jt.	2	978
202	2-7/8", EUE 8rd tbg.	6315	980
1	2-7/8", EUE 8rd, pup jt.	5	7295
1	GLM gas lift mandrel w/ dum	6	7300
1	2-7/8", EUE 8rd, pup jt.	2	7306
1	2-7/8", EUE 8rd, 1 jt.	31	7308
1	"X" Sliding Sleeve 3-3/4"	3	7339
1	2-7/8", EUE 8rd, 1 jt.	33	7342
1	On/Off tool, left release, 8in	2	7375
1	"XX" nipple. 2.313" ID, 3-1/4"	1	7377
1	2-7/8", EUE 8rd, pup jt.	6	7378
1	2-7/8" x 4-1/2" x-over	1	7384
1	HAL 9-5/8" G6 Packer	6	7385
1	4-1/2" x 2-7/8" xover	1	7391
1	2-7/8", EUE 8rd, pup jt.	6	7392
1	"XD" Sliding sleeve (dwn shift) 2.313", 3-3/4"	3	7398
1	2-7/8", EUE 8rd, pup jt.	11	7401
1	"XN" nipple 2.313" ID, 2.205" no-go	1	7412
1	2-7/8" x 1-1/4" x-over	1	7413
13	1-1/4" tubing tail	410	7414
1	1-1/4" tubing tail (bottom 10' perforated)	30	7824
			7854

Casing Pressure Test Schedule

Well: Porter 69F											
		External Casing Backup Pressure			Pressure Test Net Burst Pressure @ Depth				Tubing Leak Net Burst Pressure @		
Depth (TVD)	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	1	2	3	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				7462			
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		
7462	5840	0.00	0	3298	-			5548	4301		
				0.442 psi/ft int. grad.					0.091 psi/ft int. grad.		

Rec'd 03-29-16 DOGGR Ventura

Well
Porter 69F

API #: 04-037-24226-00
Sec 28, T3N, R16W

Operator: So. California Gas Co.

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

Ground Elevation: 2366' asl
Datum to Ground: 29' KB

Spud Date: 10/7/2001
Completion Date: 10/29/2001

Junk: None

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

17-1/2" Hole
(to 860')

Surface Casing
13-3/8", 54.5#, K-55
0' - 824'

CMT'D w/ 371 SKS,
14 BBLS Returns to Surface

824'

Tubing
2-7/8" 0' - 7413'
1-1/4" 7413' - 7854'

971' GLM (w/ Dummy)

Production Casing
9-5/8", 47#, N-80
0' - 7980'

CMT'D w/ 1613 SKS,
130 BBLS Returns to Surface

12-1/4" Hole

7300' GLM (w/ Dummy)

7339' "X" Sliding Sleeve

7375' On Off Tool, Bored Out (left hand release)

7377' "X" Nipple

7384' X-Over 2-7/8" x 4-1/2"
7385' Halliburton G-6 PCKR
7391' X-Over 4-1/2" x 2-7/8"
7398' "XD" Sliding Sleeve (opens down)
7412' "XN" No-Go Nipple
7413' X-Over 2-7/8" x 1-1/4"

7471' Baker F-1 PCKR

7498' - 7518' 9-5/8" ECP

Inner Liner
5-1/2", 17#, P-110
7471' - 7878'

9-5/8" Perfs:
7645' - 7725'
Six (6) 5/8" HPF (5/30/2002)
7725' - 7790'
Six (6) 5/8" HPF (5/16/2002)
7806' - 7828'
Four (4) HPF (7/28/2004)

7645'

Inner Liner Perfs:
7639' - 7839' 0.012" Ga. WWS
7839' - 7877' 0.012" Ga. Semi Slots

Gravel Packed (Vol. Not Reported)

Top of Zone Markers		
UDA1	5948'	(-3392')
MDA	6673'	(-4062')
LDA	6820'	(-4198')
MP	7268'	(-4607')
S1	7550'	(-4869')
S4	7645'	(-4957')
S4	7667'	(-4977')
S8	7724'	(-5030')
FREW	7870'	(-5164')

7828'

7878'

7844 - 7854' TBG Spiral Perf'd w/ 3/8" Drilled Holes
7854' Tail

PBTD 7881'

TD 7986'
TD VSS (-5271')
Directionally Drilled: Yes (TD is 1568' E, 376' N of Surf, 7670' TVD)

7980'

Prepared by: CAM (3/28/2016)

InterAct

Well
Porter 69F

API #: 04-037-24226-00
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: 2366' asl
Datum to Ground: 29' KB

Spud Date: 10/7/2001
Completion Date: 10/29/2001

Junk: None

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

17-1/2" Hole
(to 860')

Surface Casing
13-3/8", 54.5#, K-55
0' - 824'

CMT'D w/ 371 SKS,
14 BBLS Returns to Surface

824'

Tubing
2-7/8" 0' - 7413'
1-1/4" 7413' - 7854'

TEST 3500' to Surface - 3625 psi
TEST 3500' to 7462 - 2250 psi

9-5/8" Test Packer

Production Casing
9-5/8", 47#, N-80
0' - 7980'

CMT'D w/ 1613 SKS,
130 BBLS Returns to Surface

12-1/4" Hole

Inner Liner
5-1/2", 17#, P-110
7471' - 7878'

9-5/8" Perfs:
7645' - 7725'
Six (6) 5/8" HPF (5/30/2002)
7725' - 7790'
Six (6) 5/8" HPF (5/16/2002)
7806' - 7828'
Four (4) HPF (7/28/2004)

7645'

7828'

7878'

PBTD 7881'

TD 7986'
TD VSS (-5271')

7980'

Directionally Drilled: Yes (TD is 1568' E, 376' N of Surf, 7670' TVD)

7462' 9-5/8" Retrievable Bridge Plug

7471' Baker F-1 PCKR

7498' - 7518' 9-5/8" ECP

Inner Liner Perfs:
7639' - 7839' 0.012" Ga. WWS
7839' - 7877' 0.012" Ga. Semi Slots

Gravel Packed (Vol. Not Reported)

Top of Zone Markers		
UDA1	5948'	(-3392')
MDA	6673'	(-4062')
LDA	6820'	(-4198')
MP	7268'	(-4607')
S1	7550'	(-4869')
S4	7645'	(-4957')
S4	7667'	(-4977')
S8	7724'	(-5030')
FREW	7870'	(-5164')

Prepared by: CAM (3/28/2016)

InterAct

OPERATOR So. CA Gas Co. A.P.I. 037- 24226

WELL NO. "Porter" 69F SECTION 28, T. 3 N, R. 16 W

MAP

INTENTION	Drill		REWORK			
NOTICE DATED	6-28-01		06/16/2004			
P-REPORT NUMBER	201-165		P204-124			
CHECKED BY/DATE						
MAP LETTER DATED	7-6-01	8-31-02				
SYMBOL	⊖	⊖g	XC/C			

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	6-28-01				07/14/04							
HISTORY	7-26-02				1-5-05							
SUMMARY	7-26-02											
E-LOG w/ DENSITY	2-11-02											
MUD LOG												
DIPMETER	/											
DIRECTIONAL	7-26-02											
CORE/SWS												
CBL GAMMA/CCL					8-16-04							
CALIPER/GAMMA	2-11-02											
PERF MEMO	6-4-02											
NUCLEAR FLUID DENS.					1-5-05							
CBL/GAMMARAY					1-5-05							

ENGINEERING CHECK

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

RECORD'S COMPLETE _____ _____ gm 2-24-05 _____ _____ _____

FINAL LETTER OK _____

MAILED _____

INJECTION BOOK _____ REMARKS: _____ RELEASED BOND _____

IDLE WELL LIST _____

SURFACE INSP. CARD _____

OK TO RELEASE FROM CONFIDENTIAL _____

ABANDONED-REMOVED FROM E.D.P. _____

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

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 69 F
A.P.I. No. 037-24226

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec 28, T3N, R16W, SBB&M

Mike Dozier (Person Submitting Report)
Title: Technical Specialist (President, Secretary, or Agent)

Date: 01/03/2005

Signature: Michael L Dozier

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300
Telephone Number: 818-701-3235

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. DOGGR
07/20/2004	Spotted rig and equipment.
07/21/2004	Rigged up Spicer slickline and set F stop at 7400' shot (2) 3/8" holes at 7400', removed F stop and rigged down wireline.
07/22/2004	Rigged up and pumped 70 bbls. hi-vis polymer, displaced with 44 bbls. 9.2 KCL water and killed well with 491 bbls. KCL water. Nippled up class III BOP.
07/23/2004	Rigged up Weatherford test pump and tested pipe rams to 5000 psi. for 20 minutes, tested Hydril to 3000 psi. for 20 minutes. Tested blind rams to 5000 psi. for 20 minutes. BOPE test witnessed and approved by Steve Mulqueen, DOGGR. Worked pipe and released packer with 120,000 lbs.
07/26/2004	Pulled out of well with production tubing, laid down packer and TCP guns. Made up 9-5/8" postive casing scraper with bumper sub measured in well to 7409'.
07/27/2004	Picked up 2-7/8" tubing and tagged fill at 7756'. Rigged up and cleaned out heavy drilling mud to 7881'. Circulated clean and pulled out of well to 3000'.
07/28/2004	Pulled out of well with 9-5/8" casing scraper. Rigged up Schlumberger wireline. Made up CBL with CCL and gamma ray tools, ran in well tagged at 7881'. Ran CBL from 7880' to surface. Made up a 4" perforating gun and ran in well to 7817' and shot 4 hpf. from 7828' to 7817'. Pulled out of well. Made up a 4" perforating guns and ran in well to 7808' and shot 4 hpf. from 7817' to 7806'. Rigged down loggers. Ran in well with kill string.
07/29/2004	Pulled out of well with kill string. Made up Weatherford pin point injection tool and ran in well to 7337. Set tool and tested to 2000 psi.
07/30/2004	Rigged up Halliburton. set tool and tested to 5000 psi. Unset tool and ran in well to 7866' set tool and blank tested to 2000 psi. Pulled to 7828', washed perfs from 7828' to 7806 and from 7790' to 7645'. Rigged down Halliburton and pulled out of well to 7583'.
08/02/2004	Continued pulling out of well. Made up mule shoe and ran in well with tubing to 7626'.
08/03/2004	Continued running is well and tagged at 7880'. Displace 70 barrel weighted polymer pill. Pulled out to 6940' and changed well over to filtered KCL water. Pulled out of well.
08/04/2004	Continued pulling out of well to kill string.
08/05/2004	Rig on Standby waiting for refabricated liner.
08/09/2004	Pulled out of well. Picked up and ran 5-1/2" shrouded wire wraped screen liner on 2-7/8" tubing. Tagged at 7881'. Hung liner on 2-7/8" tubing with bottom at 7878', top of landing nipple at 7472.23' and screen from 7791.82' to 7638.54'.
08/10/2004	Nippled down BOPE. Nippled up tree and. Rigged down.
10/12/2004	Move in, rig up Key rig # 447.
10/13/2004	Pressured up tubing to 2200 psi. Bled casing pressure down and established circulation. Changed well fluid over to 9.6 ppg. KCL and killed well. Nippled down tree and nippled up BOPE. Tested pipe rams to 5000 psi., blind rams to 5000 psi. and bag to 3000 psi. Unable to complete test due to leaks in the choke manifold.
10/14/2004	Tested pipe rams, tested blind rams, BOPE test approved by Mark Dain CADOGGR. Released form liner setting tool and pulled out of well. . Unable to kill well. Shut in well.
10/15/2004	Attempted to kill well.
10/16/2004	Pumped 70 bbs. down tubing, filled well and ran in well to 7020'. Changed well fluid over with 530 bbls. of 10 ppg. fluid. Pulled out of well, laid down tools. Ran in well to 3100'.
10/18/2004	Pulled out of well. Rigged up Schlumberger loggers. Ran in well and tagged at 7877', no fill. Ran gravel pack density log in 5-1/2". Pulled logging tools out of well. Made up 7-1/2" shoe and ran in well with 237 joints of 2-7/8" tubing.
10/19/2004	Continued running in well and tagged at 7478'. Set down 2000 lbs. and reverse circulated 2 tubing volumes. Pulled off, rotated pipe and set back down at 7478' and circulated one tubing volume. Pulled out of well with no sand over shakers.
10/20/2004	Rig shut down due to mechanical problems.

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

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 69 F
A.P.I. No. 037-24226

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 28, T3N, R16W, SBB&M

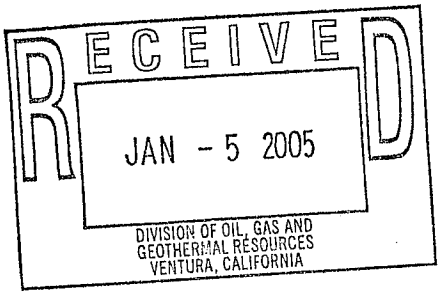
Mike Dozier Title: Technical Specialist
(Person Submitting Report) (President, Secretary, or Agent)

Date: 01/03/2005 Signature:

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number: 818-701-3235

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. DOGGR
10/21/2004	Pulled out of well with kill string. Picked up Baker F-1 packer, seal assembly and test cups. Ran in well and tagged at 7478'. Filled back side, stabbed seals and filled tubing. Attempt to test seals failed. Disengauged from polished bore, engauged seal assembly again and tested to 800 psi. OK. Picked up to string weight and dropped ball. Pressured up to 1400 psi., set packer, pulled 14,000 lbs. for anchor test, OK. Sheared screws and stabbed test cups. Unable to test cups, Pulled out of well.
10/22/2004	Continued pulling out of well with tubing. Laid down packer setting tool, found bottom cup damaged. Picked up 20' of 1-1/4" tubing with the bottom 10' spiral perferated with 3/8" drilled holes and 13 joints of 1-1/4" tubing, 1-1/4" x 2-7/8" x-over, "XN" nipple, 10', 2-7/8" pup, "X" profile sliding sleeve, pup joint, 9-5/8" G-6 packer, pup joint, "X" nipple, on / off tool with left hand release, one joint, "X" profile sliding sleeve, one joint, pup joint, gas lift mandrel, pup joint, 202 joints of 2-7/8" tubing, stopped at 7463'.
10/25/2004	Continued running in well. Picked up tubing hanger and set packer at 7393.02' with 12,000 lbs. compression, tubing tail is at 7854'. Tested casing annulus to 1500 psi. for 20 minutes, OK. Nippled down BOPE, nippled up tree. Shaffer Oil Tool tested tree to 5000 psi. OK. Rigged down, moved out.
10/26/2004	Rigged up Spicer Wireline. Ran in and opened sleeve at 7339'. Changed well fluid over to 8.5 ppg. KCL. Continued moving out.



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

No. **T204-244**

Report on Operations

James D. Mansdeorfer, Agent
SOUTHERN CALIFORNIA GAS COMAPNY
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
November 18, 2004

Your operations at well **"Porter" 69F,** API No. **037-24226,** Sec. **28**, T. **3N**, R.**16W**, S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **10-14-2004**. **Mark Davis,** representative of the supervisor, was present from **0945** to **1130**. There were also present **Manny Armentia.**

Present condition of well: **13 3/8" cem 824'; 9 5/8" cem 7980', perfs 7645'-77909'. TD 7993'. ED 7850'.**

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

DECISION:

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

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

API No. 03724226 D ON OF OIL, GAS, AND GEOTHERMAL RES RCES T 2N-24W

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator SO. CAL. GAS CO. Well "PORTER" 69F Sec 28 T. 3N R. 16W
Field ALISO CANYON County LOS ANGELES Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	10-14-04	M. DAVIS	(0945 to 1130)		
2nd			(to)		

Contractor KEY Rig # 447 Contractor's Rep. & Title MANNY ARMENTIA
Casing record of well: 13⅜" CEM 824'; 9⅝" CEM 7980', PERFS 7645'-7790', TD 7993', EO 7850'.

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☒
DECISION: The blowout prevention equipment and its installation on the 9⅝" " casing are approved.

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

REQUIRED BOPE CLASS: III 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

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	—	SHAFFER		11"	5K	TEST PUMP & PRESSURE CHARTS
Rd	2⅞"	SHAFFER		11"	5K	
Rd	CSO					

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press
					10-14	3K
					10-14	5K
					10-14	5K
					10-14	5K
					10-14	5K
TOTAL:					10-14	5K

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3000 psi
Total Rated Pump Output gpm Fluid Level ½
Distance from Well Bore 60 ft.

	Accum. Manufacturer	Capacity	Precharge
1	KOOMEY	80 gal.	900 psi
2		gal.	psi

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

EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid
☒ N_2 Cylinders	1	L= "	1850	gal.
☒ Other:	2	L= "	1950	gal.
ELEC.	3	L= "	2000	gal.
	4	L= "	2000	gal.
	5	L= "		gal.
	6	L= "		gal.
	TOTAL:			ga

AUXILIARY EQUIPMENT

				Connections: Weld	Flange	Thread	
	Fill-up Line						
☒	Kill Line						
☒	Control Valve(s)	4			X		5K
☒	Check Valve(s)	2			X		5K
☒	Aux. Pump Connect.				X		5K
☒	Choke Line		2"		X		5K
☒	Control Valve(s)	5			X		5K
☒	Pressure Gauge				X		
☒	Adjustable Choke(s)	2	2"		X		5K
☒	Bleed Line		2"		X		
	Upper Kelly Cock						
	Lower Kelly Cock						
	Standpipe Valve						
	Standpipe Press. Gau.						
☒	Pipe Safety Valve		2⅝"				5K
☒	Internal Preventer		2⅝"				5K

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

Hole Fluid Type	Weight	Storage Pits (Type & Size)
H2O GOODOLS.		BAKER TANKS

REMARKS AND DEFICIENCIES:

OGD9 (3/98)

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

No. **T204-138**

Report on Operations

James D. Mansdorfer, Agent
SOUTHERN CALIFORNIA GAS COMPANY
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
August 6, 2004

Your operations at well **"Porter" 69F,** API No. **037-24226,** Sec. **28**, T. **3N**, R.**16W**, S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **07-23-2004**. **Steve Mulqueen,** representative of the supervisor, was present from **0900** to **1000**. There were also present **Richard Jackson.**

Present condition of well: **13 3/8" cem 824'; 9 5/8" cem 7980', perfs 7645'-7790'. TD 7993'.**

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

DECISION:

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

DEFICIENCIES: One nitrogen hose at accumulator unit is cracked & leaks when pressured. (CORRECTED ON JULY 24, 2004)

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

API No. 037-24226 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 2N-13W

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator SOUTHERN CALIFORNIA GAS CO. Well "Porter" 69F Sec. 28 T. 3N R. 16W
Field ALISO CANYON County LOS ANGELES Spud Date

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	7-23-04	S. MULQUEEN	(0900 to 1000)	RICHARD JACKSON	ENGINEER
2nd			(to)		

Contractor Rig # Contractor's Rep. & Title PAT CABAR
Casing record of well: 13 3/8" cem 824'; 9 5/8" cem 7980', perfs 7645'-7790. TD 7993'.

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 **REQUIRED BOPE CLASS:** III 5M
Hole size: " fr. ' to ', " to ' & " to '

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	—	HYDRIL	GK	11	5000	
RD	2 7/8	SHAFFER	LWS	11	5000	
RD	CSO	"	"	11	5000	

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
WITNESSED	LAST	2			7-23	2500
PRESSURE	TEST				7-23	5000
USED	PRESSURE PUMP & CHART				7-23	5000

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3000 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore 55 ft.

	Accum. Manufacturer	Capacity	Precharge
1	KOOMEY	80 gal.	1500 psi
2		gal.	psi

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

EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid
X N_2 Cylinders	1	L= "	2600	gal.
Other:	2	L= "	2500	gal.
	3	L= "	2500	gal.
	(4)	L= "	2200	gal.
	5	L= "		gal.
	6	L= "		gal.
	TOTAL:			ga

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

AUXILIARY EQUIPMENT

					Connections: Weld	Flange	Thread	
	Fill-up Line							
X	Kill Line		2	5000		✓		5000
X	Control Valve(s)	2		"		✓		5000
X	Check Valve(s)	1		"		✓		5000
X	Aux. Pump Connect.		OK	"		✓		5000
X	Choke Line		2 3/8	"	OK -	✓	✓	5000
X	Control Valve(s)	"		"	OK -	✓	✓	5000
X	Pressure Gauge					✓		
X	Adjustable Choke(s)	2	3	"		✓		—
X	Bleed Line		2 -	OK	OK	-	✓	
	Upper Kelly Cock							—
	Lower Kelly Cock							—
	Standpipe Valve							—
	Standpipe Press. Gau.							
X	Pipe Safety Valve		2 3/8	5000				5000
	Internal Preventer							—

Hole Fluid Type	Weight	Storage Pits (Type & Size)
9.2 #/g BRINE		750

REMARKS AND DEFICIENCIES:
1. ONE NITROGEN HOSE AT ACCUMULATOR IS CRACKED & LEAKS WHEN PRESSURED
(CORRECTED 7-24-04)

OGD9 (3/98)

MIKE VOLKMAR / S. MULQUEEN
7-30-04, 1630

3 VALVES ON BACK SIDE OF MANIFOLD ARE 2" THREADED ALL OTHER VALVES ARE 3" FLANGED.

S. MULQUEEN

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

No. P204-124

PERMIT TO CONDUCT WELL OPERATIONS

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

Gas Storage

James D. Mansdorfer, Agent
Southern California Gas Company
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
July 20, 2004

Your proposal to rework well "Porter" 69F,
A.P.I. No. 037-24226 Sec. 28, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon pool
Los Angeles County, dated 06/16/2004 received 07/14/2004 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 III 5M requirements shall be installed and maintained in operating conditions at all times.
2. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface condition in order to prevent blowouts.
3. Wire line operations are conducted through at least a 5M lubricator.
4. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
5. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To tests the installed blowout prevention equipment prior to commencing downhole operations.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

Hal Bopp, State Oil and Gas Supervisor

By _____
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.

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

NOTICE OF INTENTION TO REWORK / REDRILL WELL

P204-124

C.E.Q.A. INFORMATION (when redrilling or deepening only)			
Exempt ☐	Neg. Dec. ☐	E.I.R. ☐	Document not required by local jurisdiction ☐
Class _____	S.C.H. No.	S.C.H. No.	
See Reverse Side			

FOR DIVISION USE ONLY			
	Forms		EDP Well File
Bond	OGD114 ✓	OGD121 ✓	
1,000,000	111 ✓	115 ✓	

This notice and an indemnity or cash bond must be filed, and approval given, before the rework/redrill 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 canceled.

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

rework/redrill (Circle one) well Porter 69F (Well designation) API No. 037-24226

Sec. Sec 28, T. 3N 16W SBB&M. Aliso Canyon Field

Los Angeles, County.

GS

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
See attached program
13-3/8 casing cemented at 760'
9-5/8" casing cemented at 7980'.

2. The total depth is: 7986' feet. The effective depth is: 7850' feet.

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

4. Present zone pressure: Storage zone - variable psi. Anticipated/existing new zone pressure: same psi.

5. Last produced: 6-04 (Date) _____ (Oil, B/D) _____ (Water, B/D) _____ (Gas, Mcf/D)

(or)

Last injected: _____ (Date) _____ (Water, B/D) _____ (Gas, Mcf/D) 2660 (Surface pressure, psig)

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

The proposed work is as follows: *(A complete program is preferred and may be attached.)*
Remove tubing
Run new 5" wire wrapped screen.
Frac stimulate.
Place drive on adapter
Rerun tubing.

RECEIVED
JUL 14 2004
DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

For redrilling or deepening: _____ (Proposed bottom-hole coordinates) _____ (Estimated true vertical depth)

The division must be notified if changes to this plan become necessary.

Name of Operator	Telephone Number	
Southern California Gas Company	818 701 3251	
Address	**City**	**Zip Code**
9400 Oakdale Av	Chatsworth	91313
Name of Person Filing Notice	**Signature**	**Date**
Richard Jackson	7/14/04	6-16-2004

File In Duplicate

OG107 (7/97/GSR/SM)

COMPLETION/STIMULATION PROGRAM

(Single stage frac)

18 December 2002

Porter 69F

DATE: 16 September 2003

Revisions: **28 June 2004RJ**

OPERATOR: **Southern California Gas Company**

FIELD: **Aliso Canyon**

WELL: **Porter 69F** **API# 037-24226**

CONTRACTOR: **Torch Rig #21**

OBJECTIVE: **Frac Stimulate and Complete well with Gravel Packed Liner**

ACCOUNT: **GWO 95675 IO 300285591**

ELEVATION: **Take all measurements from the original KB = 29' above GL.**

PRESENT CONDITIONS:

P-69F: existing perfs - phase 1 = S-8 & S-10 (No flow)

7725 7790 65

phase 2 = S-4 & S-6 (OK)

7645 7725 80

Original completion in this well consisted of perforating and placing on production in the above intervals. The single stage frac. treatment will be performed with all current perforations open to frac.

Casing:

28' - 760'	13-3/8"	54.5#	K-55	Cemented
27' - 7980'	9-5/8"	47#	N-80	Cemented
E.D. – 7850'				ECP 7498 – 7518'
7645'-7790'				Perforated 6 HPF (TVDTP=7356')
				S-4 through S-10

Tubing:

7550' approx.	2-7/8"	6.5#	N-80	EUE 8R

Packer

Halliburton G-6	9-5/8"	Top at 7535'

Group List: Actual

Conductor

Des	OD	Wt.	Grd	ID	Top (MD)	Btm (MD)	Len	Top (TVD)
Casing Joints	20	94.00	K-55	19.124	29	69	40.0	29

Surface casing

Des	OD	Wt.	Grd	ID	Top (MD)	Btm (MD)	Len	Top (TVD)
	13 3/8				28	29	1.0	28
Csg head housing	13 3/8				29	798	768.5	29
Surface casing	13 3/8	54.50	K-55	12.615	798	799	1.4	797
Float Collar	13 3/8				799	823	24.1	799
Surface casing	13 3/8	54.50	K-55	12.615	823	824	1.0	823
Float Shoe	13 3/8							

Production Casing

Des	OD	Wt.	Grd	ID	Top (MD)	Btm (MD)	Len	Top (TVD)
Tbg head housing	9 5/8				27	28	1.0	27
Casing Hanger	9 5/8			8.681	28	29	1.0	28
Production casing	9 5/8	47.00	N-80	8.681	29	7,498	7468.6	29
External Casing Packer	9 5/8			8.681	7,498	7,518	20.3	7,219
Production casing	9 5/8	47.00	N-80	8.681	7,518	7,883	365.5	7,236
Float Collar	9 5/8	47.00	N-80	8.681	7,883	7,884	1.0	7,576
Production casing	9 5/8	47.00	N-80	8.681	7,884	7,979	94.6	7,577
Float Shoe	9 5/8	47.00	N-80	8.681	7,979	7,980	1.0	7,663

Tubing - Production

Des	OD	ID	Top (MD)	Btm (MD)	Len
Tubing hanger	7 1/16	2.441	27	28	0.6
Tubing pup joint	4.630	2.441	28	34	6.1
Tubing pup joint	4.630	2.441	34	40	6.0
Tubing pup joint	2 7/8	2.441	40	46	6.0
Tubing pup joint	2 7/8	2.441	46	54	8.0
Production tubing	2 7/8	2.441	54	7,494	7440.4
Radioactive marker	2 7/8	2.441	7,494	7,498	4.2
Production tubing	2 7/8	2.441	7,498	7,530	31.6
Tubing pup joint	2 7/8	2.441	7,530	7,534	4.0
Cross Over	4 3/4	2.441	7,534	7,535	1.1
Packer	8 3/8	4.000	7,535	7,541	5.3
Cross Over	4 3/4	2.441	7,541	7,542	1.2
Production tubing	2 7/8	2.441	7,542	7,573	31.5
TCP Gun Fluid Isolation Sub	3.880	2.250	7,573	7,575	1.4
Production tubing	2 7/8	2.441	7,575	7,637	62.8
Cross Over	2 7/8	1.991	7,637	7,638	0.4
TCP Gun Firing Head	3 3/8	1.562	7,638	7,643	5.0
Wirewrap Screen	4 5/8		7,643	7,645	2.3
TCP Gun Assembly	4 5/8		7,645	7,725	80.0
Bull Plug	4 5/8		7,725	7,726	2.8

Perforations

Des	Int (MD)	Date	Top (TVD)	Com
Perforated	7,645-7,725	5/30/2002	7,356	TCP/4 5/8-inch/6-spf/RDX DP/.43EHD/30"Pen
Perforated	7,725-7,790	5/16/2002	7,430	4-5/8" Vannguns RDX DP

Formations

Des	Top (MD)	Top (TVD)
MP	7,268	7,006
S1	7,550	7,268
S2	7,591	7,306
S4	7,645	7,356
S6	7,670	7,379
S8	7,724	7,429
S10	7,744	7,448
S12	7,807	7,506
S14	7,821	7,519
Frew	7,870	7,554

Note: BOP requirements in 224.05 should be fully implemented. Class III should be followed. Reservoir is at high inventory and pressures should be monitored regularly.

Aliso Canyon is a Title V Facility: Check with Staff environmental specialist to assure all permits and procedures are properly recorded.

Work in this program will not require approval from CaDOGGR a courtesy notice will be filed.

WELL WORK PROGRAM Porter69F

Pre rig:

Well kill procedure will use fluids which will provide a 500psi minimum overbalance at all open intervals in the well bore.

1) Remove instrumentation. Remove laterals and install companion flanges and valves for killing well.

2) Set 500 barrel closed top tank and fill with 3% KCl water. Treat all water with ucarcide, 5 gallons per 100 barrels. Set 2 additional frac tanks as required providing storage capacity for Frac procedure. Tanks to be fitted with 4" suction manifold and with 3" circulating line to back of tank. Consult HES frac supervisor for location and manifolding.

3) Move in pump with 100b circulating tank, shaker and mixer. Well crew to provide labor for killing well and installing kill equipment.

4) Rig up Spicer Wireline with full lubricator and run in well with tubing punch. Perforate 1) ½" equalizing hole at approximately 7400'. Avoid radioactive marker. (Spicer (661) 322-4260 or 303-9145).

(Note: Annulus is filled with 3% KCl water. Use caution until equalized)

1) Fill 500 barrel closed top tank with 3% KCl water and sufficient KCl or Sodium Chloride for adequate fluid weight to obtain 500psi overbalance.

   a) Treat all water with ucarcide, 5 gallons per 100 barrels. Set Port-a-feed on location with drum of ucarcide.

   b) Connect pump to tubing and vent casing through choke manifold to Gas Co. system. Notify Aliso Operations prior to venting any gas to system.

2) Kill well per schedule: Maintain 500psi overbalance throughout kill.

   a) Dead head 80 barrels of polymer KCl/salt water down tubing to provide required overbalance. Use approx. 2#/barrel HEC polymer to achieve 60 sec minimum viscosity. Check wellhead pressure prior to pumping and calculate gradient using TVD=7356'. Weight as required.

   b) Pump down casing and vent tubing bubble before starting kill schedule.

   c) Vent gas through choke to Gas Co. system.

Rig work:

1) Move in Torch #21 - light work over rig capable of 300,000#. Rig up.
2) Set 2-7/8" LH Shaffer BPV. Install Weatherford Class III BOPE directly on 11"-5000psi flange. Fit BOPE with 2-7/8" pipe rams and CSO. BOPE must have connection and valve below the blind rams. Fit with 5000psi valve.
3) Test BOPE system per Co. job instruction. Test to 5000psi. Notify DOGGR to witness testing.
4) Install 1 jt of 2-7/8" N-80 tubing in tubing hanger with Safety valve in top. Unland and work RH torque in tubing to get ¼ turn at packer. Pick up to equalize across packer. (4000# above string weight) Continue picking up to automatically "J" to running position. Allow element to relax then work up and down until free. Pull out of well with packer and TCP assembly. Lay down all tubing accessories. Call HES to handle radioactive marker sub and to redress packer.
5) Run 9-5/8" –47# positive scraper on 2-7/8" tubing to top of cement. Reverse circulate clean.
6) Using full lubricator, run CBL as directed by field engineer.
   a) Perforate interval from 7806-28' with premium charges in 4" carrier.
   b) Rig down loggers.
7) Make up opposed cup wash tool with 10' cup spacing and run in well.
8) Test tubing to maximum working pressure against closed tool. Wash perforations to assure holes are open. Use high rate from frac pump as required. Record: pressure vs. rate and plot to determine frac of formation. Wash all perforations at rate above frac pressure. Wait as directed at specified depths to observe closure pressure. Observe annulus for flow.

Note: Perforations from 7790 to 7725' would not flow when originally perforated. If Perforations can not be broken down, Re-perforate the interval and all intervals where perforations are not effective. Approval from DOGGR will be required for re-perforating.

9) Run in well with Shrouded 5-1/2" Liner on 2-7/8" tubing per attached completion program. Use caution to avoid ECP 7498 – 7518'.
10) Land tubing in hanger with Blast joint under hanger and run in hold downs. Close BOPE (pipe rams for back-up to tubing hanger) and tie tubing to choke manifold for returns and BH pressure monitoring.
11) Release Rig for preparation of P69H
12) Halliburton to perform frac procedure per attached program.
13) At completion of pumping, with sand in place, pump additionally into casing in 5-10cf increments. Clean up well to circulation port above liner. Hold pressure as required to keep sand in place.
14) **Shut well in until rig is available.**

15) Move in rig and Open well. Kill as required.

16) Open BOPE and back out studs. Un-land and release from liner. Pull out of well.

17) Run Gravel Pack evaluation log. Top off with over the top tools as required.

18) Run in 9-5/8" X 5-1/2" adapter with hold down and latch on to liner. Set adapter / hold down. Test latch with 20,000# over pull. Test seal of adapter to 1500psi. Release from liner hold down and pull out of well.

19) Set 9-5/8" X 2-7/8" HES packer (redressed from well) approximately 20' above of top of liner on completion tubing as follows:

   a) HES packer

   b) 2-7/8" N-80 X 6' pup joint

   c) LH Release On/off tool with XN profile

   d) 1 joint of 2-7/8" EUE 8R N-80 tubing

   e) HES XD sliding sleeve (closed)

   f) 2-7/8" EUE 8R N-80 tubing as required. Install Gas lift Mandrel 1000' below static fluid level. Load with dummy valve.

20) Set packer.

   a) Land tubing in 10,000# compression.

   b) Test packer to 1500psi for 20 minutes.

21) Install BPV and remove BOPE. Install tree and test to 5000psi. Remove BPV.

22) Release rig.

Post rig:

23) Clean location and replace laterals and controls. Inspect probes and replace as required.

24) Open sliding sleeve, install orifice valve (if required) and unload well.

25) Initially flow well up tubing through test trap at high rate to remove as much fluid as possible to avoid potential salt precipitation. Monitor for sand/proppant production.

26) Test well frequently to evaluate rate and sand production.

Richard Jackson 17 September 2003

Approved: JDM

RECEIVED
JUL 25 2002
By

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

WELL SUMMARY REPORT

API NO. 037- 24226

Operator	Well				
Southern California Gas Company	Porter 69 F				
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)
868' South and 3363' West from Station 84

California Coordinates (if known):

Elevation of ground above sea level: 2366'

Was the well directionally drilled? ■ Yes ☐ No If yes, show coordinates at total depth.
7340' TVD, 327.00' N and 1430' E

Commenced drilling (date)	Total depth (1st hole)	(2nd)	(3rd)	Depth measurements taken from top of:
10/7/01	7993'			☐ Derrick Floor ☐ Rotary Table ■ Kelly Bushing
Completed drilling (date) 10/24/01				Which is 29 feet above ground

Commenced production/injection (date)

Present effective depth: 7850'

Production mode: ■ Flowing ☐ Pumping ☐ Gas lift

Junk: None

Name of production/injection zone(s)
Upper Sesnon
Lower sesnon

GEOLOGICAL MARKERS	DEPTH
MP	7268'
S4	7647'
Frew	7870'

Formation and age at total depth: Frew / Eocene

Base of fresh water:

	Clean Oil (bbl per day)	API Gravity (clean oil)	Percent Water (including emulsion)	Gas (Mcf per day)	Tubing Pressure	Casing Pressure
Initial Production				Gas Storage	2400 psi.	2400 psi.
Production After 30 days						

CASING AND CEMENTING RECORD (Present Hole)

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New (N) or Used (U)	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (If through perforations)	Top(s) of Cement in Annulus
13 3/8"	30' KB	824' KB	54.5 #	N-80 SMLS	N	17 1/2"	371 sks.	Shoe	Surface
9 5/8"	30' KB	7980' KB	47 #	N-80 SMLS	N	12 1/4"	1613 sks.	Shoe	Surface

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

7645' - 7790', 5/8" holes, six holes per foot, gun perforated.

Logs/surveys run? ■ Yes ☐ No If yes, list type(s) and depth(s).

Wellbore deviation survey 72' to TD. Platform Express array from approximately 823' to 7985'.

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	
Mike Dozier	Technical Specialist	
Address	**City/State**	**Zip Code**
P. O. Box 2300, M.L. SC 9365	Chatsworth, CA	91313-2300
Telephone Number	**Signature**	**Date**
818.701.3235	Mike Dozier	July 5, 2002

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SUBMIT IN DUPLICATE

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

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 69 F
A.P.I. No. 037-24226

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec 28, T3N, R16W, SBB&M

Mike Dozier
(Person Submitting Report)
Title:
(President, Secretary, or Agent)

Date: 7/11/2002
Signature: Mike Dozier

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300
Telephone Number: (818) 701-3235

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 Rpt
10/7/2001	Spudded a 17 1/2" hole @ 08:30 a.m. Drilled to 640'.
10/8/2001	Drilled from 640' to 860'. Circulated and conditioned mud to run 13-3/8" casing.
10/9/2001	Ran 20 joints of 13-3/8" 54.5 #, STC, K-55, casing. Shoe set @ 824.37' and float collar @ 800.00'. Precede cement with 36 bbls fresh water. Lead: 203 sacks w/ 65-35 poz cement with 6% gel w/ 2% CaCl, .25 pps. cellophane. Tail: 168 sacks, G, w/ 0.25 pps. cellophane, 3% CaCl, 185 sacks excess G with 2% CaCl. Good returns through out cement job. 14 bbls. cement returns. Cement in place @ 23:00.
10/10/2001	Cut off 13-3/8" casing, installed slip on weld 13-3/8" casing head. X - rayed well head OK. Nippled up BOP.
10/11/2001	Nippled up BOP. Tested blind rams and 13-3/8" casing to 1500 psi. Tested 5" pipe rams and choke manifold to 2500 psi. Tested annular preventer to 1500 psi. Tested upper and lower kelly cocks. All tests OK, witnessed by Anneliese Anderle CADOGGR.
10/12/2001	Installed wear bushing. Made up directional drilling assembly. Drilled a 12-1/4" hole from 824' to 1148'.
10/13/2001	Drilled from 1148' to 2329' .
10/14/2001	Drilled from 2329' to 3251'.
10/15/2001	Drilled from 3251' to 3651'.
10/16/2001	Drilled from 3651' to 4459'.
10/17/2001	Drilled from 4366' to 5485'.
10/18/2001	Drilled from 5485' to 6170'.
10/19/2001	Drilled from 6170' to 6935'.
10/20/2001	Drilled from 6935' to 7216'.
10/21/2001	Drilled from 7216' to 7387'. Pulling tight, 50K over, back reamed from 7387' to 7100'. Heavy clays and wall cake in returns. Circulated and back reamed to 5718' free @ this depth. Ran in hole and drilled from 7387' to 7613'.
10/22/2001	Drilled from 7613' to 7910'. No tight hole above 7820'.
10/23/2001	Pulled out of well and layed down directional tools. Bit was 7/8" out of guage. Made up locked drilling assembly. Ran in well and reamed from 3200' to 6000' and 7539' to 7910'.
10/24/2001	Directionally drilled from 7958' to TD at 7986'. Ran Platform Express array, induction, SP, ML density, neutron gamma ray.
10/25/2001	Ran 9-5/8" 47#, N-80, 8RD casing.
10/26/2001	Ran 9-5/8", N-80, EUE, 8RD casing to 7984'. Cemented well, lead: 826 sacks class G cement + 1.25% bwoc R-3 + 0.2% bwoc CD-32 + 0.2% bwoc FL-62 + gals /100 sack FP-6L + 1.75% bwoc sodium metasilicate + 10% bwoc MPA-1+ 134% fresh water. # 1 tail slurry: 508 sacks class cement + 0.5% bwoc R-3+0.4%bwoc /FL-63 + 0.5% bwoc CD-32 + 2gals/ 100 sack FP-6L = 0.3% bwoc sodium metasilicate + 43.5% freah water. Number 2 tail slurry - 279 sacks G cement + 1.5 BA-86l + 0.5% bwoc R-3 0.4% bwoc FL-63 + 0.5% bwoc CD-32 + gals /100 sacks FP-6L + 0.3% bwoc sodium metasilicate + 30.3% freash water. Cement in place @ 20:40. Displaced cement with 587 bbls. of mud. Set ECP @ 7499.63' @ 21:00. Good circulation through out cement job. Approximately 130 bbls. cement returns to surface 12.00 ppg. Landed casing on slips with 275K on slips. Cut off 9-5/8" casing.
10/27/2001	Nippled up BOP, change pipe rams to 5", test door seals 500 psi. Made up 9-5/8" scraper. Ran in well tagged @ 7850'. Changed well over to 3% KCL water. Pulled out of well. Nippled down BOP.
10/29/2001	Nipple down BOP. Released rig @ 10:00 a.m.

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

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Porter 69 F
A.P.I. No. 037-24226

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 28, T3N, R16W, SBB&M

Mike Dozier (Person Submitting Report) Title: (President, Secretary, or Agent)

Date: 7/11/2002

Signature: Mike Dozier

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number: (818) 701-3235

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 Rpt
5/28/2002	Removed tree and tested BOPE to 5000 psi. OK. CADOGGR, Steve MulQueen waived witnessing the test. Pulled out of well with tubing and perforating guns. Verified all shots fired. Ran in well with 2000' of 2-7/8" tubing for kill string.
5/29/2002	Pulled kill string out of well. Picked up perforating guns and ran in well to 7733'. Correlated guns on depth with top shot at 7645' and bottom shot at 7725'. Spaced out well and landed tubing on donut with 12,000 lbs. compression on packer.
5/30/2002	Nippled down BOPE, nippled up tree. Tested tree to 5000 psi. OK. Dropped bar @ 11:18 a.m., guns fired @ 11:19, fluid to surface in 4 1/2 minutes. Perforated six, 5/8" spf. from 7725' to 7645'. Tubing pressure rose to 2400 psi., recovered 16 bbls. of fluid to tank, shut in well. Rigged down, moved out.

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

HISTORY OF OIL OR GAS WELL

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Start Date	Ops This Rpt
5/15/2002	Made up 4-5/8" perforating guns, RDX DP, 65' loaded, 4-5/8" safety spacer, 3-3/8" model IIID fireing head, two joints of 2-7/8" tubing, 2-7/8" bar pressure vent, one joint of 2-7/8" tubing, 9-5/8" 47# G-6 packer, one 2-7/8" pup joint, one joint of 2-7/8" tubing, R / A tag. Measured and picked up 246 joints of 2-7/8" N-80 6.5# tubing. Shut in well till am.
5/16/2002	Ran depth control log. Placed R/A tag on depth @ 7574.68'. Set G-6 packer @ 7615' with 16K compression . Tubing up weight, 50K down weight, 32K. Installed wellhead and tested tree to 5000 psi. OK. With R/A tag @ 7574.68' and 5/8"shots from 7725' to 7790', droped bar @ 11: 45 to fire guns. Unable to tell if guns fired, tubing and casing dead. Rigged up wire line and recovered drop bar. Bar showed that it hit the fireing head. Bar was recovered from 7691' wire line measurement. Pressured tested 9-5/8" annulus to 500 psi. OK. Estimated fluid level 5300'. Filled tubing 29 bbls. No fluid entry into tubing. Pressured tested tubing to 2500 psi. 0.760 graident. Leaked off slow 9-5/8" annulus built up 400 psi. Bled off tubing and casing annulus. Left 9-5/8" casing open, pressured up tubing to 2500 psi. bled off to 1800 psi. in 15 minutes with returns back to annulus. Packer leaking @ 7615'. Bled off well and close all valves on well head. Rigged down, moved out.

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

WELL SUMMARY REPORT

API NO. 037- 24226

Operator	Well				
Southern California Gas Company	Porter 69 F				
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)
868' South and 3363' West from Station 84

Elevation of ground above sea level
2366'

California Coordinates (if known):

Was the well directionally drilled? ■ Yes ☐ No If yes, show coordinates at total depth.
7340' TVD, 327.00' N and 1430' E

Commenced drilling (date)	Total depth (1st hole)	(2nd)	(3rd)
10/7/01	7993'		
Completed drilling (date) 10/24/01			

Depth measurements taken from top of: ☐ Derrick Floor ☐ Rotary Table ■ Kelly Bushing
Which is 29 feet above ground

Commenced production/injection (date)

Present effective depth 7850'

Production mode: ■ Flowing ☐ Pumping ☐ Gas lift

Junk
None

Name of production/injection zone(s)
Upper Sesnon
Lower sesnon

GEOLOGICAL MARKERS	DEPTH
MP	7268'
S4	7647'
Frew	7870'

Formation and age at total depth: Frew / Eocene

Base of fresh water

	Clean Oil (bbl per day)	API Gravity (clean oil)	Percent Water (including emulsion)	Gas (Mcf per day)	Tubing Pressure	Casing Pressure
Initial Production				Gas Storage	2400 psi.	2400 psi.
Production After 30 days						

CASING AND CEMENTING RECORD (Present Hole)

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New (N) or Used (U)	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (if through perforations)	Top(s) of Cement in Annulus
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PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforations, and method.)

7645' - 7790', 5/8" holes, six holes per foot, gun perforated.

Logs/surveys run? ■ Yes ☐ No If yes, list type(s) and depth(s).

Wellbore deviation survey 72' to TD. Platform Express array from approximately 823' to 7985'.

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	
Mike Dozier	Technical Specialist	
Address	**City/State**	**Zip Code**
P. O. Box 2300, M.L. SC 9365	Chatsworth, CA	91313-2300
Telephone Number	**Signature**	**Date**
818.701.3235	Mike Dozier	July 5. 2002

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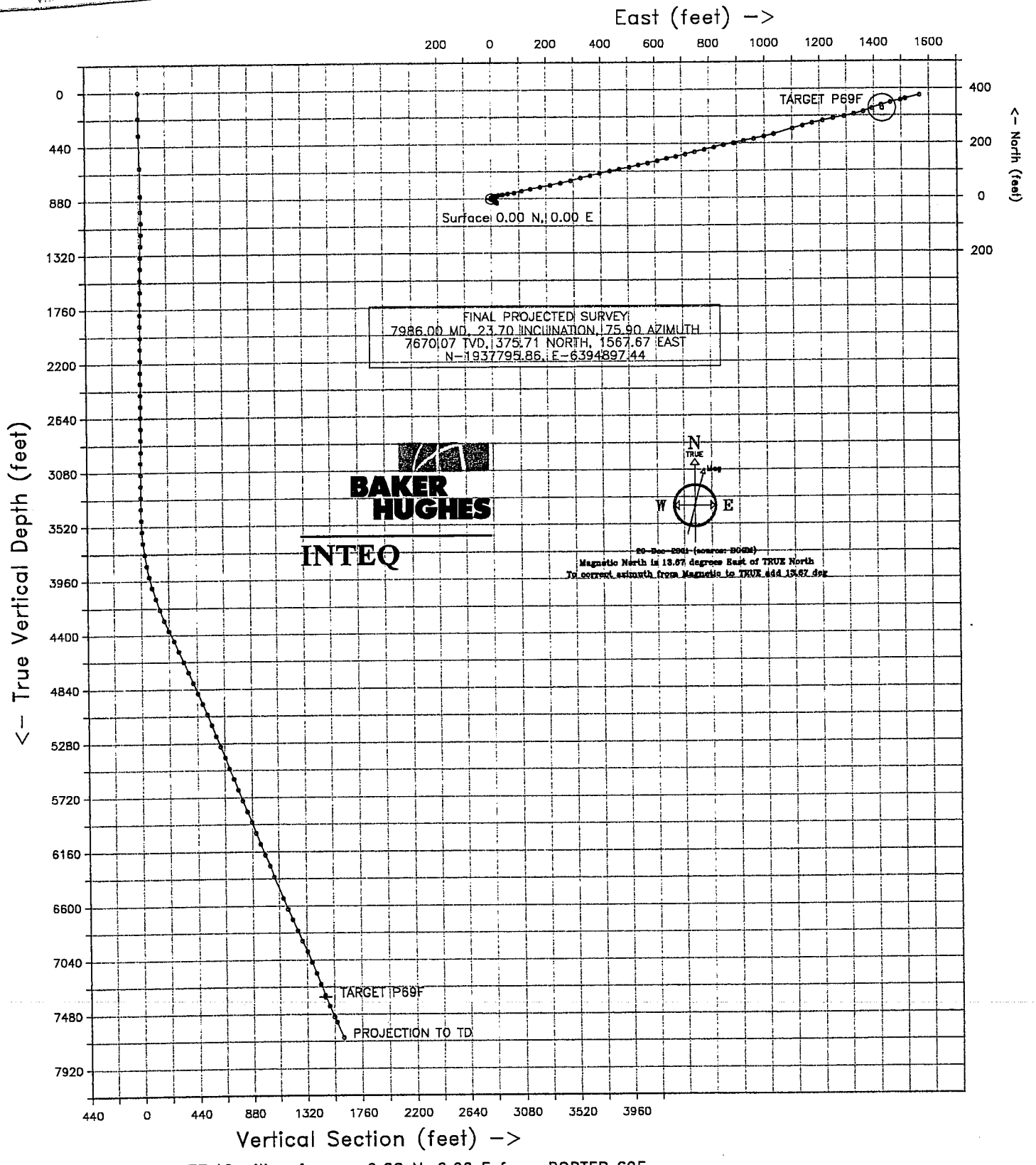
SUBMIT IN DUPLICATE

THE GAS COMPANY

Structure : PORTER LEASE Well : PORTER 69F
Field : ALISO CANYON Location : CALIFORNIA



THE GAS COMPANY
PORTER LEASE

PORTER 69F
PORTER 69F
ALISO CANYON
CALIFORNIA

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

by
Baker Hughes INTEQ

Your ref : PORTER 69F MWD
Our ref : svy22683
License :

Date printed : 16-Jan-2002
Date created : 16-Oct-2001
Last revised : 5-Nov-2001

Field is centred on n34 15 58.360,w118 32 55.220,-117
Structure is centred on n34 15 58.360,w118 32 55.22

Slot location is n34 18 53.460,w118 33 26.955
Slot Grid coordinates are N 1937428.730, E 6393327.810
Slot local coordinates are 17701.41 N 2661.98 W

Projection type: lambert, NAD83 - California V (0405), Spheroid: NAD 83

Reference North is True North

THE GAS COMPANY
PORTER LEASE,PORTER 69F
ALISO CANYON,CALIFORNIA

SURVEY LISTING Page 1
Your ref : PORTER 69F MWD
Last revised : 5-Nov-2001

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	GRID COORDS Easting	Northing
0.00	0.00	0.00	0.00	0.00N	0.00E	0.00	0.00	6393327.81	1937428.73
210.00	0.75	98.00	209.99	0.19S	1.36E	0.36	1.28	6393329.17	1937428.53
344.00	1.25	84.00	343.97	0.16S	3.68E	0.41	3.55	6393331.49	1937428.55
611.00	2.50	129.00	610.84	3.52S	11.11E	0.69	10.04	6393338.90	1937425.15
839.00	2.75	146.00	838.60	11.19S	18.03E	0.36	15.08	6393345.78	1937417.45
964.00	1.80	137.40	963.50	15.12S	21.03E	0.81	17.14	6393348.76	1937413.50
1057.00	0.50	156.70	1056.48	16.56S	22.18E	1.44	17.93	6393349.90	1937412.05
1149.00	1.10	305.50	1148.48	16.42S	21.62E	1.68	17.42	6393349.34	1937412.19
1241.00	2.20	304.80	1240.44	14.90S	19.45E	1.20	15.64	6393347.18	1937413.73
1335.00	2.20	308.30	1334.37	12.75S	16.56E	0.14	13.30	6393344.30	1937415.89
1428.00	2.00	312.70	1427.31	10.54S	13.96E	0.28	11.26	6393341.72	1937418.11
1522.00	1.90	317.80	1521.25	8.28S	11.71E	0.21	9.57	6393339.48	1937420.39
1616.00	2.30	318.50	1615.19	5.71S	9.41E	0.43	7.90	6393337.19	1937422.97
1709.00	2.30	315.30	1708.11	2.99S	6.87E	0.14	6.03	6393334.66	1937425.71
1800.00	1.00	309.30	1799.07	1.19S	4.97E	1.44	4.58	6393332.77	1937427.52
1894.00	0.40	322.00	1893.07	0.41S	4.13E	0.66	3.93	6393331.94	1937428.30
1988.00	0.40	1.40	1987.06	0.18N	3.94E	0.29	3.88	6393331.75	1937428.89
2082.00	0.50	8.40	2081.06	0.91N	4.00E	0.12	4.11	6393331.82	1937429.62
2174.00	0.30	12.30	2173.06	1.55N	4.11E	0.22	4.35	6393331.93	1937430.25
2269.00	0.40	21.10	2268.06	2.10N	4.29E	0.12	4.65	6393332.11	1937430.80
2359.00	0.50	57.60	2358.05	2.60N	4.73E	0.33	5.19	6393332.55	1937431.31
2451.00	0.30	24.90	2450.05	3.03N	5.17E	0.32	5.72	6393333.00	1937431.74
2545.00	0.30	7.30	2544.05	3.50N	5.31E	0.10	5.95	6393333.13	1937432.20
2634.00	0.30	172.30	2633.05	3.50N	5.37E	0.67	6.01	6393333.20	1937432.20
2725.00	0.70	214.50	2724.05	2.81N	5.08E	0.57	5.58	6393332.91	1937431.51
2819.00	0.70	216.50	2818.04	1.87N	4.42E	0.03	4.72	6393332.24	1937430.58
2913.00	0.90	220.80	2912.03	0.85N	3.59E	0.22	3.69	6393331.41	1937429.56
3004.00	1.10	234.10	3003.02	0.20S	2.42E	0.34	2.31	6393330.23	1937428.52
3098.00	1.00	267.90	3097.00	0.76S	0.87E	0.66	0.68	6393328.67	1937427.97
3191.00	0.80	323.80	3189.99	0.27S	0.33W	0.93	-0.38	6393327.48	1937428.47
3285.00	1.20	353.00	3283.98	1.24N	0.83W	0.68	-0.54	6393326.98	1937429.98
3377.00	1.80	9.80	3375.95	3.62N	0.71W	0.80	0.12	6393327.12	1937432.35
3469.00	2.50	51.60	3467.89	6.29N	1.11E	1.81	2.49	6393328.96	1937435.02
3561.00	4.30	72.40	3559.72	8.58N	5.97E	2.34	7.74	6393333.83	1937437.28
3655.00	6.50	76.30	3653.30	10.91N	14.50E	2.37	16.57	6393342.37	1937439.56
3747.00	8.40	78.00	3744.52	13.54N	26.14E	2.08	28.50	6393354.02	1937442.12
3841.00	10.80	79.80	3837.20	16.53N	41.52E	2.57	44.16	6393369.42	1937445.03
3933.00	13.10	81.50	3927.20	19.59N	60.32E	2.53	63.17	6393388.23	1937447.99
4025.00	16.10	80.00	4016.22	23.35N	83.20E	3.29	86.31	6393411.13	1937451.62
4119.00	19.30	77.00	4105.76	29.11N	111.18E	3.54	114.87	6393439.14	1937457.23
4212.00	21.60	78.00	4192.89	36.13N	142.90E	2.50	147.36	6393470.90	1937464.07
4306.00	23.30	80.80	4279.77	42.70N	178.18E	2.14	183.21	6393506.21	1937470.45
4399.00	23.80	77.70	4365.02	49.64N	214.67E	1.44	220.34	6393542.74	1937477.19
4491.00	24.50	76.30	4448.97	58.11N	251.34E	0.98	257.97	6393579.46	1937485.46
4583.00	24.40	76.60	4532.72	67.03N	288.36E	0.17	296.05	6393616.52	1937494.18
4677.00	23.50	76.60	4618.63	75.87N	325.48E	0.96	334.20	6393653.69	1937502.82
4770.00	23.40	76.60	4703.95	84.45N	361.48E	0.11	371.21	6393689.73	1937511.20
4863.00	23.30	77.30	4789.33	92.77N	397.39E	0.32	408.07	6393725.68	1937519.33
4956.00	23.50	77.70	4874.68	100.77N	433.45E	0.27	445.01	6393761.78	1937527.12
5048.00	24.10	79.40	4958.86	108.13N	469.83E	0.99	482.12	6393798.21	1937534.29

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from PORTER 69F and TVD from rotary table (2399.45 Ft above mean sea level).
Bottom hole distance is 1612.07 on azimuth 76.52 degrees from wellhead.
Vertical section is from wellhead on azimuth 77.12 degrees.
Grid is lambert, NAD83 - California V (0405).
Grid coordinates in FEET and computed using the NAD 83 spheroid
Presented by Baker Hughes INTEQ

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	GRID COORDS Easting	Northing
5141.00	22.30	77.70	5044.34	115.38N	505.74E	2.06	518.74	6393834.15	1937541.34
5235.00	21.50	77.00	5131.55	123.06N	539.95E	0.90	553.80	6393868.40	1937548.83
5330.00	22.10	77.30	5219.76	130.90N	574.35E	0.64	589.07	6393902.84	1937556.49
5425.00	22.50	77.60	5307.65	138.73N	609.53E	0.44	625.12	6393938.07	1937564.13
5520.00	22.90	77.70	5395.29	146.57N	645.35E	0.42	661.78	6393973.92	1937571.77
5614.00	21.60	77.00	5482.29	154.36N	680.08E	1.41	697.37	6394008.69	1937579.37
5708.00	21.60	75.90	5569.69	162.47N	713.71E	0.43	731.97	6394042.37	1937587.29
5803.00	22.20	76.30	5657.84	170.98N	748.11E	0.65	767.40	6394076.81	1937595.62
5899.00	22.50	77.00	5746.62	179.41N	783.63E	0.42	803.90	6394112.37	1937603.85
5993.00	23.00	77.00	5833.31	187.58N	819.05E	0.53	840.25	6394147.84	1937611.83
6088.00	22.00	77.30	5921.08	195.67N	854.49E	1.06	876.61	6394183.32	1937619.73
6183.00	22.10	78.40	6009.13	203.18N	889.36E	0.45	912.27	6394218.22	1937627.04
6279.00	22.70	78.40	6097.89	210.53N	925.19E	0.62	948.84	6394254.10	1937634.20
6375.00	23.10	78.70	6186.32	217.95N	961.80E	0.43	986.19	6394290.75	1937641.42
6471.00	22.70	77.60	6274.75	225.62N	998.36E	0.61	1023.54	6394327.35	1937648.88
6567.00	21.80	74.20	6363.61	234.45N	1033.61E	1.64	1059.86	6394362.64	1937657.52
6755.00	22.60	73.50	6537.67	254.21N	1101.84E	0.45	1130.78	6394430.97	1937676.91
6850.00	23.40	73.80	6625.12	264.66N	1137.45E	0.85	1167.83	6394466.64	1937687.17
6945.00	23.70	76.30	6712.21	274.45N	1174.12E	1.10	1205.75	6394503.36	1937696.75
7042.00	24.50	78.40	6800.75	283.11N	1212.76E	1.21	1245.36	6394542.05	1937705.20
7136.00	25.50	79.10	6885.95	290.85N	1251.73E	1.11	1285.06	6394581.05	1937712.73
7231.00	24.70	79.40	6971.97	298.37N	1291.32E	0.85	1325.34	6394620.68	1937720.04
7327.00	21.50	75.90	7060.27	306.35N	1328.11E	3.63	1362.98	6394657.51	1937727.81
7423.00	21.10	72.70	7149.71	315.77N	1361.67E	1.28	1397.79	6394691.12	1937737.05
7518.00	21.50	69.30	7238.23	327.01N	1394.28E	1.37	1432.09	6394723.79	1937748.11
7614.00	21.50	72.00	7327.55	338.67N	1427.47E	1.03	1467.04	6394757.04	1937759.59
7709.00	22.10	75.20	7415.76	348.61N	1461.30E	1.40	1502.24	6394790.93	1937769.35
7805.00	23.40	75.60	7504.29	357.97N	1497.23E	1.36	1539.35	6394826.91	1937778.50
7850.00	23.70	75.90	7545.54	362.39N	1514.66E	0.72	1557.33	6394844.36	1937782.83
7986.00	23.70	75.90	7670.07	375.71N	1567.67E	0.00	1611.98	6394897.44	1937795.86

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from PORTER 69F and TVD from rotary table (2399.45 Ft above mean sea level).
Bottom hole distance is 1612.07 on azimuth 76.52 degrees from wellhead.
Vertical section is from wellhead on azimuth 77.12 degrees.
Grid is lambert, NAD83 - California V (0405).
Grid coordinates in FEET and computed using the NAD 83 spheroid
Presented by Baker Hughes INTEQ

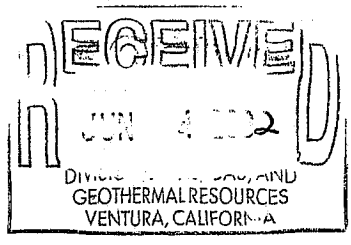
Comments in wellpath

MD	TVD	Rectangular Coords.		Comment
7986.00	7670.07	375.71N	1567.67E	PROJECTION TO TD

Targets associated with this wellpath

Target name	Geographic Location	T.V.D.	Rectangular Coordinates		Revised
TARGET P69F		7340.00	327.00N	1430.00E	16-Aug-2001

Perforating intervals Aliso canyon			
WELL NAME	TOP DEPTH	BOTTOM DEPTH	SHOT DENSITY / SIZE
Fernando Fee 38 A	7175'	7185'	12 spf – 1"
"	7195'	7212'	12 spf – 1"
"	7222'	7242'	12 spf – 1"
"	7247'	7345'	12 spf – 1"
"			
Fernando Fee 38 B	7035'	7100'	6 spf – 0.43"
Fernando Fee 38 C	7160'	7230'	6 spf – 0.43"
Porter 69 F	7645'	7790'	6 spf – 0.43"
Porter 69 G	7820'	7900'	6 spf – 0.43"
Porter 69 H	7605'	7670'	6 spf – 0.43"
"	7704'	7762'	6 spf – 0.43"
"	7785'	7850'	6 spf – 0.43"
Porter 69 J	7920'	8000'	6 spf – 0.43"
Porter 69 K	7975'	8050'	6 spf – 0.43"



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

No. **T201-208**

Report on Operations

James D. Mansdorfer, Agent
SOUTHERN CALIFORNIA GAS COMPANY
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
October 30, 2001

Your operations at well **"Porter" 69F,** API No. **037-24226,** Sec. **28,** T. **3N,** R.**16W,** S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **10-11-2001. Anne Anderle,** representative of the supervisor, was present from **2230** to **0600**. There were also present **Jim Dayton.**

Present condition of well: **13 3/8" cem 824' (drilling).**

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

10/12/01

API No. 037-24226 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES 9 T 2N-20W

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator Southern Cal Gas Well Porter 69 F Sec. 28 T. 3N R. 16W
Field Aliso Canyon County Los Angeles Spud Date 10-7-01

VISITS: Date 2001 | Engineer | Time | Operator's Rep. | Title
1st 10-11 To 10-12 | Anneliese Anderle | (2230 to 0600) | Jim Dayton | DRILLING SUPR.
2nd 10-12-01 | " | " | (0130 to 1130) | | |
Contractor NABORS Rig # 37 Contractor's Rep. & Title BILL Thompson Tool Pusher
Casing record of well: 13 3/8" CEM 824' (DRILLING).

OPERATION: Testing (Inspecting) the blowout prevention equipment and installation. Critical well? Y ____ N X
DECISION: The blowout prevention equipment and its installation on the 13 3/8 " casing are approved.

Proposed Well Opns: _____ . MACP: _____ psi
Hole size: _____ " fr. _____ ' to _____ ' , _____ " to _____ ' & _____ " to _____ '
REQUIRED BOPE CLASS: III 85M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus
13 3/8	54.5	K 55	824		LEAD 202 cf "G" 4 0/0 BWOC TAIL 852 cf 1054 cf	800	RETURNS

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
Hd	—	SHAFFER		13 5/8	5K	
Rd	5	"		"		
Rd	CSO	LA 80 M		"		

TEST DATA

Gal. to Close	Recovery Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
					10-12	3500
					10-12	1500

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 11000 psi
Total Rated Pump Output _____ gpm Fluid Level _____
Distance From Well Bore 120 ft.

	Accum. Manufacturer	Capacity	Precharge
1	KOOMEY	160 gal.	1000 psi
2		gal.	psi

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

EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid
6 N_2 Cylinders	1	L= "	2250	gal.
Other:	2	L= "	2125	gal.
	3	L= "	2300	gal.
	4	L= "	2300	gal.
	5	L= "	2300	gal.
	6	L= "	2300	gal.
		TOTAL:		gal.

HOLE FLUID MONITORING EQUIPMENT

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

TOTAL:

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
X Fill-up Line							
X Kill Line		2			X		2000
X Control Valve(s)	3				X		2600
✓ Check Valve(s)	1				X		2000
X Aux. Pump Connect.							2500
X Choke Line		4		X	X		2500
X Control Valve(s)	12				X		2000
X Pressure Gauge						X	
X Adjustable Choke(s)	2	3					—
X Bleed Line		3		X			
X Upper Kelly Cock							
— Lower Kelly Cock							—
X Standpipe Valve							2500
✓ Standpipe Press. Gauge							
X Pipe Safety Valve		5"	7K				2500
X Internal Preventer			7K				

Hole Fluid Type	Weight	Storage Pits (Type & Size)
DRILL FLUID	9.6	532

REMARKS AND DEFICIENCIES:

CHOKE PRESSURE GAGE READING 3000 VS 2900 TEST PRESSURE

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

No. P201-165

PERMIT TO CONDUCT WELL OPERATIONS

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

Gas Storage Project

James D. Mansdorfer, Agent
Southern California Gas Company
9400 Oakdale Ave.
Chatsworth, CA. 91313

Ventura, California
July 3, 2001

Your proposal to drill well "Porter" 69F,
A.P.I. No. 037-24226 Sec. 28, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon-Frew pool
Los Angeles County, dated 06-28-2001 received 06-28-2001 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

Drilling Operations

1. Blowout prevention equipment conforming to DOGGR Class IIIB 5M equipment on the 13-3/8" casing and maintained in operating condition at all times during drilling.
2. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface condition in order to prevent blowouts.
3. An approved blowout prevention and control plan shall be available during the proposed operations.
4. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
5. 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 tests
6. The spacing provisions of Section 3606 shall apply.
7. A subsurface directional survey is made and a plat of such survey is filled with this office within 15 days of completion of the well.
8. This office shall be consulted before sidetracking the well or running any additional casing.
9. This office shall be consulted before initiating any changes or additions to this proposed operation, or operations are to be suspended.
10. **THIS DIVISION SHALL BE NOTIFIED:**
    a. To witness a pressure test of the blowout prevention equipment prior to drilling out of the shoe of the 13-3/8" casing. Prior to notifying the Division engineer to witness the test, the blind rams must be tested. Information on the blind rams test must be entered on the tour sheet along with the signature of the person is charge

Continued on Page 2

SAF:sf
Super Blanket Bond

Engineer Steven A. Fields

Phone (805) 654-4761

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

By _____
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.

Southern California Gas Company
July 3, 2001
P201-165

Completion Operations

1. Blowout prevention equipment conforming to DOGGR Class II 5M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. Wire line operations are conducted through at least a 5M lubricator.
4. Requirements specified in our approval of the Gas Storage project dated July 26, 1989 shall apply.
5. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations. WAIVED

Note: The Division recommends, as a minimum, that carbon monoxide monitoring equipment and a vent line be installed and maintained operational during all extensive perforating operations.

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

P201-165

NOTICE OF INTENTION TO DRILL NEW WELL

C.E.Q.A. INFORMATION			
EXEMPT ☒ CLASS I	NEG. DEC. ☐ S.C.H. NO.	E.I.R. ☐ S.C.H. NO.	DOCUMENT NOT REQUIRED BY LOCAL JURISDICTION ☐
See Reverse Side			

FOR DIVISION USE ONLY					
MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
254	7-6-01		Inc.	✓	✓

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to commence drilling well Porter 69 F, well type Gas Storage, API No. 037-24226 (Assigned by Division),

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

Legal description of mineral-right lease, consisting of _____ acres (attach map or plat to scale), is as follows:
(See attached base map)

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

Location of well _____ feet _____ (Direction) along section ☐ / property ☐ (Check one) line and _____ feet _____ (Direction)

at right angles to said line from the _____ corner of section ☐ / property ☐ (Check one) _____ or

868' South and 3363' West from Station 84

Is this a critical well according to the definition on the next page of this form? Yes ☐ No ☒

If well is to be directionally drilled, show proposed coordinates (from surface location) and true vertical depth at total drilled depth:
326 feet North (Direction) and 1534 feet East (Direction) Estimated true vertical depth 7612'. Elevation of ground above sea level 2366 feet. All depth measurements taken from top of KB (Derrick Floor, Rotary Table, or Kelly Bushing) that is 24 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES API	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	CALCULATED FILL BEHIND CASING (Linear Feet)
13-3/8"	54.5 lb/ft	K55 ST&C	Surface	800	800	800
9-5/8"	47 lb/ft	N80 LT&C	Surface	7946	7946	7946

(A complete drilling program is preferred and may be submitted in lieu of the above program.)

Intended zone(s) of completion Sesnon, Frew (Name, depth, and expected pressure) Estimated total depth 7946 (Feet)

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

Name of Operator	Type of Organization (Corporation, Partnership, Individual, etc.)	
Southern California Gas Company	Corporation	
Address: 9400 Oakdale Avenue	City: Chatsworth	Zip Code: 91313
Telephone Number: 818-701-3251 / Name of Person Filing Notice: Dan Neville	Signature: Dan Neville	Date: 6/28/01

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

OG105 (5/98)

Information for compliance with the California Environmental Quality Act of 1970 (C.E.Q.A.).

If an environmental document has been prepared by the lead agency, please submit a copy of the document with this notice *or* supply the following information:

Lead Agency: _____

Lead Agency Contact Person: _____

Address: _____

_____

Phone: ( ) _____

FOR DIVISION USE ONLY
District review of environmental document (if applicable)? Yes ☐ No ☐
Remarks: _____
_____
_____

CRITICAL WELL

As defined in the California Administrative Code, 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 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.

Exceptions or additions to this definition may be established by the supervisor upon his own judgment or upon written request of an operator. This written request shall contain justification for such an exception.

California Public Utilities Commission

505 Van Ness Avenue, San Francisco, CA 94102

News Release

MEDIA CONTACT: Kyle DeVine
213-576-7050 kyl@cpuc.ca.gov

June 28, 2001

CPUC -522
A.01-04-007;A00-04-031

CPUC MAKES MORE NATURAL GAS AVAILABLE

The California Public Utilities Commission (CPUC) today approved Southern California Gas' (SoCal Gas) request to reclassify and withdraw cushion gas (natural gas that is needed to maintain the storage pressure necessary to allow stored gas to be withdrawn) from three of its underground natural gas storage fields in Montebello and Aliso Canyon in Los Angeles County, and La Goleta in Santa Barbara County.

This will make approximately 41 billion cubic feet (Bcf) of additional natural gas available to California consumers over the next five years. Making this gas available helps California meet its demand from in-state resources and reduces the need to import expensive natural gas from other states.

One Bcf is enough natural gas to supply about 17,500 homes for a year.

SoCal Gas will close its Montebello gas storage facility after all the gas has been withdrawn from it and parts have been salvaged or sold. The Montebello facility is very small compared to SoCal Gas' other facilities. It occasionally delivers 100 to 200 MMcfd (million cubic feet per day) of gas for a couple days during the year compared to Aliso Canyon which can deliver more that 1,000 MMcfd.

Montebello has not been used for four years and keeping it operating would cost more than its benefit to Southern California gas users. In addition to the benefits of using the cushion gas, ratepayers will see a $44 million reduction in their bills resulting from the closure of the Montebello facility. About 24 Bcf of cushion gas can be drawn from the ground.

SoCal Gas plans to redesign its La Goleta and Aliso Canyon natural gas storage fields. It plans to drill new wells and rework several existing wells so that the utility can store the same amount of gas with less cushion gas. About 7 Bcf of cushion gas will be made available for sale from each of these fields (14 Bcf in total).

The costs of natural gas prices received at the southern California border soared last winter from an average of $2.41\Dth (decatherm, or 10 therms) in December 1999 to $13.82\Dth in December 2000.

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