SoCalGas-9

Exhibits to Prepared Reply Testimony of L. William Abel (March 20, 2020) (March 20, 2020)

I.19-06-016

ALJs: Hecht/Poirier

Date Served: March 12, 2021

Ex. III- 1

L. William Abel, P.E.

(Revised 27-March-2017)

Competencies:

Corporate President/Managing Director – Founded ABEL Engineering/Well Control Co. in 1984 and operated same by providing consulting, engineering and well control services worldwide for firefighting, capping, relief well operations and high risk toxic gas handling projects. Changed business from corporation to a limited liability partnership June-2012 for reporting reasons (ABEL Engineering LLP).

Managing director of ABEL HPSN Services, LLC and ABEL IP, LLC. Which were formed in 2014 for the purposes of bring ABEL patents into the market place. These businesses are currently in a start up phase.

Special Well Control and Engineering Projects
Kuwait Oil Well Fires - Controlled 41 well fires with one team in 71 days.
Created Well Control Management Systems and developed over 250 Blowout Contingency Plans for worldwide operations.
Taught Drilling Practices Courses for Preston L. Moore, Inc.
Taught Advanced Well Control Seminars for Pemex, TOTAL, Mobil Oil, UNOCAL, EXPRO, NAM, etc.
Taught a Special Snubbing School for Mobil Oil Co. and created a Manual for the Mobile Oil Snubbing and Coil Tubing Course.
Managed a 5-rig Drilling Company for 2 years.
Have been involved in complex Well Control Operations worldwide spanning 28 years; managed Well Control Projects in India, Bangladesh, Indonesia, Republic of China, Angola, Nigeria, Congo, Venezuela, Argentina, Texas, Oklahoma, Kansas, Louisiana, Mexico, Canada, United Kingdom, Norway and Germany.
MPD operation HTHP environment (10,550 psi 408F BHT with H2S and CO2)
Hi-pressure freeze thru multiple strings (surface pressure 8500 psi) tropic conditions.

Rig Site Supervision – Deep High-pressure Gas Wells, Well Control, Relief Well Drilling, Deep Wells in Oklahoma, Texas and Louisiana. Worked in Tunisia supervising a deep frontier wildcat. Also worked as Drilling Superintendent for Aramco in Saudi Arabia on H_2S wells in deep Kuff exploration program. MPD operations in S. Sumatra for HTHP operations.

Publications – Twenty-nine technical publications in trade journals primarily on specialized well control operations and project management for well control operations.

Technical Training:

Advanced Well Control, HAZOP
Computer Skills – Word processing, Data Bases, Spread Sheets, Visio, Project Management

Basics:

Bachelor of Science Civil Engineering	Texas Tech University	1967-1971
Master of Business Administration	Southern Methodist University	1971-1974

Passport: USA no. 135389617 issued in Houston, 23Feb06 expires 22Feb16
Registered Professional Engineer – Texas (#40719)
Married with 2 sons (born 1982/1984). DOB: 17 June 1949
Member of Society of Petroleum Engineers, IADC, Society of Professional Engineers, Nat. Society of Civil Engineers, ASCE, TIPRO and St. Luke's United Methodist Church.

EXPERIENCE

Managing Director, ABEL Engineering LLP/ Abel HPSN Services, LLC

2012 – Present Responsible for company operations that focus on drilling engineering and completion operations worldwide. The prime objective is to provide technology and experience for well operations with a focus on well control operations. Principle engineer for well control tasks: relief well drilling, dynamic two-phase flow modeling, blowout contingency planning, risk management and the project management of well control incidents. Advancement of the patented processes of the High Pressure Shooting Nipple (HPSN^{tm}) Tool for pressure control operations, and ALCS^{tm} a subsea capping operations.

President, ABEL Engineering/Well Control Co.

1984 – Jun-12 (see mergers WWCI /IWC) Responsible for company operations that focus on drilling engineering and completion operations worldwide. The prime objective is to provide technology and experience for well operations with a focus on well control operations. Principle engineer for well control tasks: relief well drilling, dynamic two-phase flow modeling, blowout contingency planning, risk management and the project management of well control incidents including firefighting and capping operations. HTHP MPD operations in S. Sumatra for 10,600 psi BHP, 410F, H2S, CO2 reservoir.

President, ABEL Engineering/Well Control Co.(Cont….)

Responsible for all Engineering tasks for the Company, including Relief Well and Intervention Operations. Company focuses on preventive and remedial tasks for well control operations which include Blowout Contingency Planning, Relief Wells, Snubbing Operations, H_2S operations, training services, consultant to Lloyds of London. Engineering services include dynamic two-phase flow modeling, drilling engineering, and project management. Drilled 8 relief wells, planned and engineered capping and kill operations and lead a firefighting team in Kuwait that capped and killed 41 wells in Kuwait in a 71 day period. Total well control experience includes over 100 wells.

President, Action Professional Engineering APRO

July 00-April 01 Responsible for the company operations which consist of five (5) profit centers: Based on its collective backgrounds and talents, and having proved the TSN technique, in Phase II, APRO will compete in five business divisions: Drilling Contracting (both conventional and using TNSTM), Well Control and Firefighting, Engineering and Well Site Services for underbalanced drilling projects, Push Pull System (under development) and rig manufacturing (for internal use and outside sale). The company started began operations in July of 2000 with a single built for purpose underbalanced drilling rig the TNS-1.

President, IWC Engineering Service Inc.

Aug95 to July96 Responsible for all engineering tasks for the company, including relief well and intervention operations. Company focuses on preventive and remedial tasks for well control operations which include Blowout Contingency Planning, dynamic two-phase flow modeling, drilling engineering, etc.

V.P. Engineering, Wild Well Control, Inc.

May93-July95 Responsible for all engineering tasks for the company, including relief well and intervention operations. Company focuses on preventive and remedial tasks for well control operations which include Blowout Contingency Planning, dynamic two-phase flow modeling, drilling engineering, etc. Participated in 43 well control operations and relief wells in this time frame.

Operations Manager, Funk Exploration, Inc.

1982-1983 Managed a $350m drilling and completion project where 245 wells were drilled in two years. Had responsibility for drilling work-over, completion and purchasing where 35 men were employed.

Drilling Engineer / Drilling Co. Operations Manager, Grace Shursen & Moore Associates

1981-1982 Supervised construction of $15m drilling rig project. Managed the turnkey drilling operations for the company. Worked as consultant for relief well projects (Apache Key 1-11) and dynamic kill operations (Canada, USA, etc.). Taught Drilling Practices Seminars in 5 countries.

Drilling Superintendent / Drilling Engineer Arabian American Oil Co

1977-1981 Drilling superintendent for offshore (jack up) drilling operations for deep high pressure gas exploration wells, development drilling projects. Has responsibility for 5 jack up operations. Worked on 3 blowouts, two offshore and one onshore, with large volumes of H2S present. Drilling engineer for offshore drilling operations, designed casing, cement program, bit selection, bid packages, etc. Performed tests of exploration wells and provided engineering support for field operations.

Civil Engineer, M. W. Kellogg Co., Houston, Texas

1974-1977 Civil design of petrochemical facilities. Interfaced with project group. Did dynamic analysis of compressor foundations, steel and concrete design for $1B facility projects.

Project Engineer, Texas Power & Light Co., Dallas, Texas

1972-1974 Designed and built high voltage transmission lines, which involved the bid specification and purchase packages for material. Special project was complete design of a family of transmission towers for 345kv line. Did all foundation work for transmission and substation work for $300m construction project.

SUMMARY OF PUBLICATIONS and US PATENTS
by L. William Abel, P.E.

US Patents and International

US Patents Awarded for The HPSN Tool ™ is a patented device as shown below:
Method Patent “Method for Rapid Installation of a Smaller Diameter Pressure Control Device Useable on Blowout Preventers” U.S. Patent Numbers 7,383,887 and ,267,179
Device Patent “High Pressure Adaptor Assembly for Use on Blowout Preventers” U.S. Patent Numbers 7,334,634 and 7,464,751
Device Patent “Locking Mechanism with Visible Status Indication” application US Patent 9,416,894 B2 foreign patents applied for UAE, Saudi, Oman, UK, Norway and Australia.
USA patent of ABEL LMRP Capping System a method for rapid containment and intervention of a subsea well blowout, Application number US 9,004.175 B2 issued 14-April-2015. Patent pending international patents in Norway, Greenland, Europe, Brazil.

Publications by L. William Abel

1. “Capping stack technology moves forward”, Thomas Macrae, L. William Abel, Offshore, November 2014.
2. “LWD/MWD proximity techniques offer accelerated relief well operations”, L. William Abel and James N. Towle, World Oil, Jan 2003.
3. “Cooperatives: The Regional Approach for Well Control Operations”, L. William Abel, World Oil, May 1996.
4. “Planning a Dynamic Kill”, Journal of Petroleum Technology, Technology Today Services, April 1996.
5. 7-Part Series on Well Control Topics, “H_2S, Capping, Project Management, etc.”, Oil & Gas Journal, 1995.
6. "Capping-Friendly Platform Design", David Barnett & L.W. Abel, Offshore, 1995.
7. "Blowout Contingency Planning: For Multi-National Operations", IADC-SPE, Well Control Conference for Asia/Pacific Regions, 10 pages, Singapore, 1-2 December 1994.
8. "Post Capping Kill Comparisons", IADC-SPE, European Well Control Conference, 12 pages, Stavanger, Norway, June 1994.
9. "Blowout Contingency Planning: Risk Management Techniques", Oil &Gas Journal, 6 pages, June 7, 1993.
10. "Blowout Contingency Planning: Preparing for the Worst-Case Event", IADC-SPE, European Well Control Conference, 51 pages, Paris, France, 3-5 June 1993.
11. "Non-Technical Well Control", Lloyd's of London Training School, 193 pages, 1989.

12. "Wild Well Control Techniques", VI Congress of Latin American Oil Producers, June 1988.
13. "Lessons of Kuwait", Abel Engineering/Well Control Co., 13 pages, 1992
14. "Blowout Contingency Planning", Abel Engineering/Well Control Co., 19 pages, 1991.
15. "Hands-On Basic Well Control", Abel Engineering/Well Control Co., 128 pages, 1990.
16. "Casing Design", ARAMCO Drilling Manual, 1979.

L. William Abel, et al.

17. "Cooperatives: The Regional Approach to Well Control", L. William Abel, SPE, ABEL Engineering Co. and Jerry L. Winchester, SPE, Halliburton Energy Services, Inc., presented 12-14 May 1996, Aberdeen, Scotland Orleans, La. IADC Well Control Conference.
18. "Comparison of Steady State and Transient Analysis Dynamic Kill Models for Prediction of Pumping Requirements", IADC/SPE 35120, L. William Abel, SPE, ABEL Engineering Co. and Donald W. Shackelford, SPE, Halliburton Energy Services, Inc., presented 12-14 March 1996, New Orleans, La. IADC/SPE conference.
19. "Fire Fighting and Blowout Control", L. William Abel, et al, ABEL Engineering (Gulf Publishing), Published Textbook, 540 pages, January 1994.
20. "Guidelines for Snubbing", Mobil Training Course, 1987.
21. "Coil Tubing Operations Guideline", Mobil Training Course, 1989.
22. "Advanced Well Control Techniques", Mobil Training Course, 1,000 pages, 1990.

L. William Abel & Robert Franklin

23. "Snubbing & Stripping Operations", ABEL Engineering/Well Control Co., 275 pages, 1989.
24. "Safer Snubbing Depends on Proper Pre-job Calculations", World Oil, October 1988.
25. "Well Control Factors to Consider When Snubbing", World Oil, November 1988.
26. "Well Control Equipment for Safer Snubbing", World Oil, December 1988.
27. "Guidelines for Safer Snubbing", World Oil, January 1989.

L. William Abel & Gary D. Oberlender

28. "Full-Scale Rig Test Applies 1.2 million lb. Hook Load", Drilling, June/July 1986.
29. "Full-Scale Structural Testing of Deep Drilling Masts", SPE Paper #5429, Offshore Technology Conference, 1987.

Marvin Lisnitzer, Donald C. Chang & L. William Abel

30. "The Design of Support Structures for Elevated Centrifugal Machinery", Sixth Turbomachinery Symposium, Texas A&M, 1977.

Ex. III- 2

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 Field Aliso Canyon County Los Angeles
Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.
A.P.I. No. 03700776 Name Todd Van de Putte Title Drilling Manager
(Person submitting report) (President, Secretary, or Agent)
Date 11/21/2016
(Month, day, year)
Signature Todd R Van de Putte
Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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)
10/23/2015	10/23/15 (late afternoon): Ops notified/Storage Engineering of a well that was possibly leaking at the SS-25 site. Ops had been on injection that afternoon and they were shutting in. The ops noticed that SS-25 sounded like it was still flowing after being shut-in after injection and they noticed a gas odor on the east side of the well pad along the road at the location. The SS-25 well had no anomalous pressure readings tubing/casing or surface casing prior to that day. No wells in the vicinity of the SS-25 wellsite or the other two wells on the SS-25 site (SS-25A and SS-25B) are currently or were showing elevated surface casing pressures or any unusual pressures from the previous days. 10/23/15 (evening) Met with Ops and Storage Engineering to discuss a plan of attack. The initial plan was to gather the equipment, Halliburton pump truck and brine to plan on killing the well. All of that equipment ultimately arrived on location by 11:00am today (10/24/15).
10/24/2015	Well Kill Activity (today): The plan was to pump a polymer pill down the tubing to kill the reservoir and then perform a standard brine well kill. The well currently has an old disabled Camco subsurface safety valve system in the 2-7/8" tubing string place and a Gas lift mandrel above it in the tubing string. Current Kill Job summary: SS-25 Well Pressures Prior to Kill: 11-3/4" surface casing: 140 psig / 7" production casing: 290 psig / 2-7/8" completion tubing: 1700 psig Activity during the well kill: Pumped 11 bbl of 10 ppg XC polymer pill down the 2-7/8" tubing. The tubing pressured up to 3500 psig surface pressure. Shut down the pump. The 7" casing pressure remained at 290 psig surface pressure indicating no communication between the 2-7/8" tubing and the 7" casing annulus. Decided to perform a "Pump and Bleed" kill procedure on the 7" production casing annulus to fill the tubing/casing annulus. Began pumping @ 3 bbl/min w/ the casing pressure at 290 psig. Pressure on the 7" casing began to drop with 45 bbl of 8.6 ppg brine away. The pressure on the 7" production casing dropped to 250 psig surface pressure. Increased the pump rate to 4 bbl/min. Inspected the wellhead – noise and vibration stopped. Inspected the well location looking for any brine communication to the surface (none seen). Continued to pump and at 89 bbl of brine pumped into the annulus and additional gas flow was noted in cracks in the ground. Immediately shut the pump down – Monitored well pressures and the location. SS-25 Well Pressures After Kill Attempt (10-24-15-Monitoring): Time 11-3/4" 7" 2-7/8" 4pm 398 psig 280 psig 100 psig 4:30pm 401 psig 296 psig 140 psig 5pm 306 psig 185 psig 5:30pm 307 psig 200 psig We currently have the Baker tank, and the Halliburton pump truck parked next to the remote kill header on the location. At this time, It appears that we had a wellhead seal leak and/or a very shallow 7" production casing leak.

RESOURCES AGENCY OF CALIFORNIA
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HISTORY OF OIL OR GAS WELL

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.
A.P.I. No. 03700776 Name Todd Van de Putte Title Drilling Manager
(Person submitting report) (President, Secretary, or Agent)
Date 11/21/2016
(Month, day, year)
Signature Todd Van de Putte
Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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10/25/2015	Monitor surface gas leaks in cellar and surrounding surface area. Survey site with Boot and Coots representatives. Meet with Gas Company engineering, Boot & Coots representatives, and support contractors to discuss work plan.
10/26/2015	7" x 11-3/4" annulus pressure: 428 psi. Dug out around wellhead to expose casing valve. Closed ball valve. Removed gauge and bushing from ball valve. Install ball valve. Made up 602 iron from wellhead to test seperator. Check pressures on 25A, 25B. 25A WH Pressure: 0 psi. 25B WH Pressure: 40 psi. Flow 25 7"x11" annulus through seperator. Tubing Pressure: 680 psi, 7" casing: 419 psi. 11-3/4" casing: 413 psi. Opened up to 23/64" on choke. Tubing: 446 psi. 7" casing: 416 psi, 11-3/4" casing: 404 psi. Shut down and secure location
10/27/2015	Check Pressures. 11-3/4" casing: 325 psi, 7" casing: 307 psi, Tubing: 34 psi. Rig up to flow 7" casing to seperator. Spot slick line unit and generator. Continue isolating kill lines and with draw lines to 25. Opened orbitz valve on with draw line. 7" casing dropped 260 psi to 15 psi. Monitor well. 11-3/4" casing: 308 psi, 7" casing: 16 psi, Tubing: 78 psi. Bleed 11-3/4" casing through seperator. Choke: 275 psi. Opened choke from 11/64 to 23/64. Choke: 300 psi, 7" casing: 21 psi, Tubing: 75 psi. Close choke. 11-3/4" Casing: 310 psi, 7" Casing: 25 psi, Tubing: 78 psi. Continue to RU wireline. RU Halliburton HT400 Pump truck. Shut down and secure location
10/28/2015	RU Western Wireline (lubricator, winch, Class 1 DIV III). MU and RIH w/ 1-5/8" sample bailer. Tag @ 467'. Fluid seen @ 300'. POOH. Pump 9.5 bbls to fill kill line using Halliburton pump truck. Pump 4 bbls of 8.6 ppg 7% KCl down wellbore. Shut down. Tubing kill Pressure: 2146 psi, Pump truck pressure: 2199 psi, Surface Casing Pressure: 186 psi. Bleed off tubing pressure to 635 psi. MU and RIH w/ 1-5/8" sample bailer. Re tag @ 437'. POOH and rig down lubricator.
10/29/2015	Spot Crane. RU Crane. Crane assist w/ RD of lubricator and A-Frame. Install swab 2-9/16" swab valve. RU lubricator hung by crane. RIH w/ wireline (spanx, sample bailer). Tag @ 36'. POOH. Check sample. No sample. RIH w/ 2nd attempt. Tag @ 34'. POOH. RD lubricator and wireline.
10/30/2015	Spot Onyx equipment. Rig down laterals, SSV on SS 25 w/ Crane. Install tubing with draw valve, piping. Install Swab valve on SS 25 tree. Install secondary swab valve, DSA on SS 25 tree.Stop operations and secure location.
10/31/2015	RU Halliburton pump truck. Pump 30 bbls 9.8 ppg polymer pill followed by 178 bbls 10.8 ppg polymer down tubing of SS 25A. Stop pump truck, bleed off 8-5/8" annulus of SS 25A. Close tubing kill valve, open casing kill valve. Pump 205 bbls 10.8 ppg brine down casing annulus. Shut down pump truck. Shut in SS 25A. Stop operations and secure location.
11/1/2015	Open Kill line tubing of SS 25B. Pump brine down tubing of SS 25B. Shut down pump truck. Spot Guard Shack at SS 25 pad. RD and move out 40 ton crane. Move in, spot and rig up 110 ton crane on SS 25 pad. Stop operations and secure location.
11/2/2015	RU Choke Manifold. RU SS 25 Surface Casing to Onyx Seperator 1440 Unit (Vertical). RU panic line from Choke manifold. RU SS 25 7" production return line to choke manifold. Move in and Spot Coil Tubing Spool, Control Pak, Injector, BOPE, Power Pak, Hydraulic Pak, Injector Head, Tool Pin, Manilift. Shut down operations and secure location
11/3/2015	Nipple up CT to gooseneck. Connect all hydraulic lines. Nipple up Riser, Nipple up DSA, Nipple up BOP, Nipple up stripper. Shut down and secure location.
11/4/2015	Pull tested coil tubing w/ 15k lbs. Filled CT w/ 19.5 bbls, 10.8 CaCl2. Tested reel to 300 psi low, 8000 psi high. 10 min each. Good. Filled stack. Troubleshoot leak in kill line. Tested choke to 300 psi low, 4000 psi high. 5 min each. Observed leak from adapter flange to choke manifold. Tightened flange. Test both BSR's to 300 psi low, 4000 psi high. Good. Make up Jet Nozzle (1.69") to Coil Tubing. NU injector. Tested BOP's to 300 psi low, 4000 psi high. Test choke manifold valves to 300 psi low, 4000 psi high. Troubleshoot leak in choke manifold. ND injector Shut down and secure location.

RESOURCES AGENCY OF CALIFORNIA
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HISTORY OF OIL OR GAS WELL

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.
A.P.I. No. 03700776 Name Todd Van de Putte (Person submitting report) Title Drilling Manager (President, Secretary, or Agent)
Date 11/21/2016 (Month, day, year) Signature
Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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Start Date	Ops this Report (DOGGR)
11/5/2015	Continue troubleshoot choke manifold. Greased valve #2 on manifold. Pressure tested choke manifold - 300 psi low, 4000 psi high. Valve #2 not holding. Changed out valve #2. Shell test choke manifold - 300 psi low, 4000 psi high. Test #2 valve - 300 psi low, 4000 psi high. Test good. NU injector. Test lower and upper pipe rams - 300 psi low, 4000 psi high. Test good. Test stripper - 300 psi low, 4000 psi high. Test good. ND injector and stand back. Shut down and secure location.
11/6/2015	Greased Rotac valves on kill line. Made up wash BHA on coil tubing. NU injector. Tested stripper and outside Rotac Valve- 300 psi low, 4000 psi high. Test Good. Test BPV- 300 psi low, 4000 psi high. Test good. Broke circulation in riser @ 1 bpm. Maintained 2800 psi back pressure on choke. Held BOP drill. RIH to swab valve. Pump 3 bbls glycol, diplace reel volume w/ 10/8 ppg CaCl2. Apply 3000 psi on riser. Open swab valve. Pressure stabilized @ 2700 psi. Begin wash down @ 3/4 bpm, maintain 2900 w/ choke. Pump pressure -6500 psi. Tag @ 20'. Wash down to 53'. Pump 5 bbls glycol. Displace. Shut down for 10 min. Pressure decrease to 2800 psi. Continue wash down, At 482', choke pressure decreased to 1200 psi. Unable to maintain back pressure. Lost returns. Experience drag. Continue to pump w/o returns. Pulled coil tubing into riser. Pump down tubing head outlet @ 2 bpm, 41 psi. Pump polymer pill @ 4 bpm. Pump pressure 100 psi. Pumped total 62 bbls. Gas at surface increased. Polymer seen at surface cracks around cellar. Shut down pump. Evacuate personnel. Flow 7" and 11-3/4" gas to open top tank. Shut down and secure location.
11/7/2015	Removed mushroom from stripper. Spotted slickline unit and RU. Made up 4-1/16" 15M x Bowen X-Over on Stripper. MU 2.30" gauge ring. NU lubricator. Test lubricator- 300 psi low, 4000 psi high. Good. Equlized swab valve with 1250 psi. Opened swab valve and RIH. Estimated FL @ 3750'. Tagged nipple profile @ 8425'. POOH. L/D lubricator. Shut down operations and secure loctaion.
11/8/2015	Began MU slickline tools. Tool string: Spinner, ITL CL, Temperature, Pressure, GR. NU lubricator. Pressure tested lubricator - 300 psi low, 4000 psi high. Good. Equalized swab valve w/ 1500 psi. Opened swab valve. RIH @ 50 fpm. Tagged at 8425'. POOH @ 100 fph. L/D lubricator. Shut down operations and secure location.
11/9/2015	RU E-line. SDI began preparing to run gyro. Decision to run noise/temp log. MU noise/temp tools. NU lubricator. Pressure tested - 300 psi low, 4000 psi high. Good. Equalized swab valve w/ 1500 psi. Open Swab valve. RIH. POOH w/ noise/temp tools. Pulled into lubricator. Secured well. Bleed off pressure. Changed out noise/temp tools. RIH and log temperature down to 8435'. Log noise out of hole. Secure well. Bleed off pressure. L/D tools. L/D lubricator. Stop operations and secure location.
11/10/2015	SDI prepared to run gyro. RU and NU lubricator. Pressure test - 300 psi low, 4000 psi high. Good. Equalize swab valve w/ 1500 psi. Open swab valve. RIH w/ gyro. Attempted to orient gyro. Unsuccessful. POOH. Tested gyro. Cut 300 ft of e-line. MU gyro. Stab lubricator. Pressure test - 300 psi low, 4000 psi high. Good. RIH. Could not orient gyro. Well temp and vibrations affecting tool. POOH. L/D tools. L/D lubricator. R/D SDI. Stop operations and secure location
11/11/2015	Drained riser to vac truck. ND CT BOP's. ND riser and 4-1/16" 10M gate valve. Installed 2-9/16" 5M gate valve on swab valve. Installed 2-9/16" 5M x Bowen adapter flange. Pressure tested - 300 psi low, 5000 psi high. Good. Ordered out 2 Baker 5 setting tools to set 2-7/8" EZSV. Back loaded slickline unit and sent to staging area. Back loaded lateral lines from well 25. Pulling 10.8 ppg CaCl2 from baker tank. Flowed 11-3/4" casing for 5 minutes on 32/64 choke. Continue removing equipment from location in preparation for kill. Discuss kill plan w/ Boots Coots. Stop operations and secure location. Will be getting 2 x 2-7/8" EZSV's from Longview, TX. Bridge Plugs conversion kits being machined in Ventura, CA.
11/12/2015	2 x 2-7/8" EZSV's arrived on location. Stabbed lubricator. Pressure test - 300 psi low, 4000 psi high. Test Good. L/D lubricator. MU 2-7/8" EZSV. Pressure Test lubricator - 400 psi low, 4000 psi high. Test Good. Equalized swab valve w/ 1500 psi. Opened swab valve. Set EZSV at 8393'. POOH. Stop operations and secure location.

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Start Date	Ops this Report (DOGGR)
11/13/2015	Discussed perforating and pumping kill. Installed target 90 on wellhead flowline. Stabbed lubricator. Pressure tested - 300 psi low, 4000 psi high. Test Good. Equalized swab valve w/ 1200 psi. Opened swab valve. Tubing Pressure - 1201 psi. Pumped 6 bbls CaCl2. RIH w/ tubing punch. Tagged EZSV at 8402'. Perforated tubing 8387'-8391'. POOH. L/D lubricator. Pumped 10 bbls 9.4 polymer pill. Began displacing w/ 9.4 ppg CaCl2. After displacing tubing volumed, open choke on 7" casing. Pump rate at 6 bpm. After 80 bbls displaced, observed increased gas flow and liquid at surface cracks. Continued pumping 8 bpm. After 185 bbls pumped, pony motor went down. Pumps offline. Brought pumps back online at 7 bpm. After 693 bbls pumpd, brine, oil and gas flowing from surface cracks. Displaced 10 bbls of 9.4 ppg polymer into tubing. Shut down. Lined up to pump down 2-7/8" x 7" annulus. Pumped junk shot. After 5 bbls pumped, observed brine from cracks. Continue pumping junk shots. Shut down. Secured location.
11/14/2015	Bled well SS 25 7" annulus from 245 psi to 200 psi. Bled gas. Shut in and monitored. Cleaned location and equipment. Discussed pumping barite pill w/ Boots and Coots. B&C created program for pumping barite pill. Performed pilot tests w/ chemicals for 18.0 ppg pill. Samples proved pumpable w/ good setting times. MI and RU Halliburton batch mixer. Sucked out well 25 cellar. Filled baker tank w/ 500 bbls 9.4 ppg brine. Modified pump line to pump junk shots down 7" annulus. Shut down operations and secure location.
11/15/2015	Began moving chemicals for barite pill to pad. Pump 9.4 ppg CaCl2. Stage pumps to 8 bpm after 50 bbls. After 75 bbls pumped, gas at cracks increased followed by oil and brine. Pumped 19 bbls of 18.0 ppg barite pill. Began displacing w/ 9.4 ppg CaCl2 at 8 bpm. After displacing 50 bbls pump pressure 1250 psi. Shut down. Monitored well. Flow at surface cracks stopped briefly then began gas flow. Shut down operations and secure location.
11/16/2015	High winds blowing towards equipment. Wait for LEL readings to decrease before starting. Cleaned e-line unit in preparation for logging operations. Transported barite pill materials to pad 25. Boots & Coots prepared barite pill program and submitted for review. Continued cleaning equipment and location.Shut down. Secure location.
11/17/2015	High winds blowing towards equipment. Decision was made to wait for LEL levels to decrease before starting operations. Boots & Coots escorted Halliburton and T&T crane personnel to wellsite to inspect equipment. Boots & Coots escorted DOGGR representatives to well for afternoon survey. Decision was made to end operations for day. Secure location.
11/18/2015	High winds blowing towards equipment. Mix 35 bbls 18.0 ppg barite pill. Pump 9.4 ppg CaCl2 down tubing. Staged pumps to 5 bpm. After 50 bbls, shut down. Perforations clear. Well unloaded tubing. Pump 9.4 ppg CaCl2. After 45 bbls, gas increased at surface. Brine and oil from fissures. Pumped 230 bbls. Pump 35 bbls 18.0 ppg barite pill. Displaced w/ 50 bbls. Shut down pumps. Spotted slickline unit. Shut down operations. Secure location.
11/19/2015	High winds blowing towards equipment. Began rigging down batch mixer and pump truck at SS 25. Moved out batch mixer. Began making up 2-7/8" pump line from SS-1 to SS-25. Prepared SS-1 for equipment. Completed pump line. Installed night cap w/ pressure gauge on SS -25. Trouble shoot manifold tubing pressuer gauge. Moved 2-500 bbl baker tanks, batch mixer, Halliburton Elite pump truck to SS-1. Shut down and secure location.
11/20/2015	High winds blowing towards equipment. Placed barrier across road to pad 25 to prevent vehicles from entering. Modified manifold on well 25 to allow flowing 2-7/8" tubing to withdraw line. Moved in 2-7/8" pump line to well 25. Continue preparing SS-1 site for pumping operations. Filled one 500 bbl baker tank. Shut down and secure location.
11/21/2015	High winds blowing towards equipment. RU Batch mixer and Pump Truck at SS-1. Reconfigured pump line at SS 25 to pressure test lubricator at SS 25A, SS 25B wells. Installed uni-bolt adapters on SS 25A, SS 25B. Completed 2-7/8" pump line tie in at SS 25. Moved out pump truck from 25 pad. Sent to decon. Removed pump line from CT reel. Moved out man lift. Sent to decon. Repositioned pump truck at SS-1. Pressure tested 2-7/8" pump line. 300 psi low, 4000 psi high. Low test good. Trouble shoot leaks. Tightened 2-7/8" connections. Moved in and RU 40T crane at SS 25. Shut down operations and secure location.

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 Field Aliso Canyon County Los Angeles

Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.

A.P.I. No. 03700776 Name Todd Van de Putte (Person submitting report) Title Drilling Manager (President, Secretary, or Agent)

Date 11/21/2016 (Month, day, year)

Signature Todd V-dP

Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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Start Date	Ops this Report (DOGGR)
11/22/2015	Began RU slickline to run tubing plugs in SS 25A, 25B. SS 25B - RIH w/ 2.3" gauge ring to 8372'. POOH. RIH w/ PX plug and set at 8372'. SS 25A- RIH w/ 2.8" gauge ring to 8144'. POOH. RIH w/ PX plug and set at 8144'. POOH. RIH w/ prong. Prong did not set. POOH. Test 2-7/8" pump line. 300 psi low, 5000 psi high. Test good. L/D lubricator. Repositioned grease pack unit. Shut down operations and secure location.
11/23/2015	RU slickline on SS 25A. RIH w/ prong. Set in PX plug at 8144'. POOH. RD and L/D lubricator. Moved in second Halliburton pump truck to SS-1 and RU. Back loaded slickline unit and equipment. Sent to decon. Back loaded injector, guide, control cab, power pack, generator, and tool house. Sent to decon. RD 40T crane and moved out. Survey crew surveyed surface coordinates for SS-25. Installed anchor chains on SS-25. Moved in Nitrogen truck and blow out CT. Back loaded reel and sent to decon. Pressure tested second Halliburton pump truck line. 300 psi low, 5000 psi high. Test good. Anchored 2-7/8" pump line. Secure 2-7/8" pump line at pad 25 w/ concrete blocks. RD 110T crane and moved out. Prepare location for kill. Shut down and secure location.
11/24/2015	Prepared for pumping operations. Mixed 50 bbls GEO Zan polymer pill loaded w/ LCM. Mixed 35 bbls 18.0 ppg barite pill. Pumped 50 bbls GEO Zan pill. Began pumping fresh water at 5 BPM. After 60 bbls pumped, increased to 8 BPM. After 80 bbls pumped, increased to 10 BPM. Gas from crater increased after 90 bbls pumped. After 135 bbls pumped, increased to 13 BPM. Opened 7" choke after 850 bbls pumped. 7" casing decreased from 160 psi to 8 psi. Pumped 950 bbls water. Pumped 35 bbls barite pill. Displaced out of tubing w/ 56 bbls. Shut down. Monitor well. Tubing pressure increased to 76 psi. 7" - 188 psi, 11-3/4"-27 psi. Recovered 700 bbls of fluid from location.
11/25/2015	Pumped 50 bbl GEO Zan pill loaded w/ LCM. Displaced w/ fresh water down tubing w/ 56 bbls. After 60 bbls pumped, increased rate to 13 bpm. After 140 bbls pumped, gas activity increased at surface. After 700 bbls pump water flow from surface increased. Continue pumping 13 bpm. Pumped 960 bbls of water. Pumped 100 bbls GEO Zan pill loaded w/ LCM. Began displacing w/ 9.4 ppg $CaCl_2$ at 4 bpm. After 20 bbls of displacement, slowed pump rate to 2 bpm. After 40 bbls, slowed pump rate to 1 bpm. After displacing 56 bbls, shut down. 2-7/8" - 0 psi, 7" - 0 psi, 11-3/4" - 27 psi. Flowine from 7" casing and tubing head broke. Nipple on well head broke. Pump line to 7" casing head broke. Fabricated valve extension handles for tubing head valve and 7" casing valves. Closed tubing head valve and 7" casing valves. Shut down and secure location.
11/26/2015	Pilot tested Sodium Silicate delivered to location. Installed cables around wellhead to stabalize. Shut down and secure location.
11/27/2015	Moved in backhoe, cleared area for crane. Delivered 320 track hoe to pad 25. Began clearing around well 25. Moved in man lift. Installed hand wheel on crown valve. Tightened hand wheel on tree wing valve. Installed pressure gauge on night cap. Checked tubing pressure -1600 psi. Removed whip check from 2-1/16" 5M x 1502 adaptar flange. Shut down and secure location.
11/28/2015	Made up 50' of 2" 5M co-flex hose. Sent surface safety relief valve for bench testing. Shut down and secure location.
11/29/2015	Installed culvert on NW corner of Pad 25. Replaced block valve in withdraw line. Dug out and exposed pump in manifold. Installed additional line to secure well 25. Moved in and RU 100T crane. Repositioned E-line equipment and cleaned. Steam cleaned hydraulic choke manifold and test seperators. MU noise/temp tools. RD and MO 100T crane. Excavated around concrete pad. Exposed wash out. Function tested, shell tested, and block and bleed tested 2-1/16" 5M safety valve. Test good. Installed relief valve on production line. Shut down and secure location.
11/30/2015	Moved in and RU 100T crane. Stabbed lubricator. RIH w/ noise/temp tools. Logged temperature to 8390'. Logged noise out of hole. L/D lubricator. RD and MO 100T crane. Continue RU to flow to well 25 tubing to 25B production line. Shut down and secure location.
12/1/2015	Move in and RU 100T crane. Made up SDI Gyro.Tubing pressure - 1510 psi. Stabbed lubricator. RIH w/ gyro. Unable to initialize gyro. POOH and L/D lubricator and gyro. RD 100T crane and move out. Shut down and secure location.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
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HISTORY OF OIL OR GAS WELL

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.
A.P.I. No. 03700776 Name Todd Van de Putte (Person submitting report) Title Drilling Manager (President, Secretary, or Agent)
Date 11/21/2016 (Month, day, year) Signature
Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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12/2/2015	Move in 100T crane and RU. PU and RU lubricator, gyro on SS 25B. RIH w/ gyro. Unable to get initialize gyro. POOH and L/D lubricator and gyro. RD and MO 100T crane. Removed choke line from 7" casing valve. Tubing pressure - 1551 psi. Shut down and secure location.
12/3/2015	MI an RU 100T crane. Removed 2-1/16" 5Mx1502 adapter flange from tree assembly outlet valve. Installed 2-1/16" 5M SSV. Installed 2" 5M co-flex tee. RU choke line to choke manifold. Secure w/ concrete blocks. Purge withdraw line. RU to monitor tubing pressure. Installed control lines to SSV. Observed leak from needle valve. Removed SSV manual overide. RDMO 110T crane. 2-7/8" tubing - 1554 psi. Shut down and secure location.
12/4/2015	2-7/8" Tbg Press - 1552 psi. MIRU 110T crane. Tied onto pump in manifold and pulled from crater. Removed pump line from wireline pump in sub. Removed pump line from tree. Moved pump iron from SS1 to SS25 pad. RDMO 110 T crane. Shut down and secure location.
12/5/2015	Monitor LEL's. Moved skid steer to SS-1. Made up pump in manifold. MIRU 100T crane. Unable to start manlift. RDMO 100T crane. 2-7/8" Tbg Press-1535 psi. Shut down and secure location.
12/6/2015	2-7/8" Tbg Press-1535 psi. MIRU 100T crane. Back loaded K-Rail, Personnel basket, empty pallets. Installed pump lines to wireline side entry sub and tree assembly outlet. Filled 2-7/8" pump line w/ frest water. Test line. 300 psi low for 5 min, 5000 psi high for 10 min. Good. RD lubricator. Back loaded lubricator, grease unit, tool basket. 2-7/8" Tbg Press-1536 psi. Shut down and secure location.
12/7/2015	2-7/8" Tbg Press-1526 psi. Opened withdraw line and apply 490 psi to SSV. Pressure test choke line. 485 psi for 5 min. Good. Test choke line w/ well pressure. 1525 psi. Good. Begin flowing tubing to withdraw line on 1/2" choke. Tbg Pressure decreased to 815 psi. Closed choke. Tbg Pressure increased to 1511 psi. Opened choke. Flowed tubing on 1/2" choke. FTP - 1394 psi. Shut down and secure location.
12/8/2015	FTP - 1448 psi. Opened choke to 7/8". FTP- 1438 psi. Opened choke to 1". FTP - 1440 psi. Opened choke to 1-3/8". FTP - 1441 psi. Opened choke fully 1-1/2". FTP - 1443 psi. Continue clearing site. FTP-1457 psi. Shut down and secure location.
12/9/2015	FTP - 1501 psi. MIRU 100T crane. FTP decreased to 590 psi. Closed Hydraulic choke. Tbg press stabilized at 1500 psi. Off load stove pipe. Line up to flow tubing through test separator. Flow tubing through test separator on 33/64. Continue removing dirt from site. Close Hydraulic choke. Line up to flow directly to withdraw line. Open tbg to withdraw line on 1/2" choke. FTP-722 psi. Pick up vent tube and adjust slings. Shut down and secure location.
12/10/2015	2-7/8" Tbg Press-1463 psi. MIRU 100T crane. Unable to remove grading. Modify grapple. Unable to remove grading. RDMO 100T crane. 2-7/8" Tbg Press-1463 psi.Shut down and secure location.
12/11/2015	MIRU 100T crane. Offload wireline equipment and spot gyro on SS 25B. RU E-Line equipment. 2-7/8" Tbg Press - 1438 psi. Close Hydraulic choke. RDMO 100T crane. 2-7/8" Tbg Press-1467 psi. Close SSV. Shut down and secure location.
12/12/2015	2-7/8" Tbg Press-1521 psi (shut in). Begin flowing tbg on 5/8" choke. FTP decrease to 717 psi, then begin increase. 2-7/8" tbg press-1403 psi. Shut down and secure location.
12/13/2015	MIRU 100T crane. RU lubricator on SS 25B. RIH w/ gyro. POOH and L/D gyro. L/D lubricator. RD E-Line. RDMO 100T crane. 2 -7/8" Tbg Press - 1328 psi. Closed choke. Closed SSV. Close gate valve upstream of choke. 2-7/8" Tbg Press-1450 psi. Shut down and secure location.
12/14/2015	Clean location. Move well anchor to east side of site. Winds 50+ mph. Shut down and secure location.
12/15/2015	Break flanges on header lines. Drag 2nd pump line down to site. Remove header lines and racks. Bleed 2" line from test unit to 11". Break same and remove sections to install bridge. MU valve to new pump line and line to hydro test. Hydro test. 315 psi low for 5 min, 5256 psi high for 10 min. Good. Shut down and secure location.
12/16/2015	DOGGR arrive on site. Operations shut down for inspection. Re-install stabilizing line of wellhead to east and west side of tree. Shut down and secure location.

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HISTORY OF OIL OR GAS WELL

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Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.
A.P.I. No. 03700776 Name Todd Van de Putte Title Drilling Manager
(Person submitting report) (President, Secretary, or Agent)
Date 11/21/2016
(Month, day, year)
Signature
Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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12/17/2015	Undo pump lines. Close in upper crown valve and bleed off line, remove line. Remove all pump lines on manifold. Reposition 2-7/8" pump lines. RD lubricator. Remove pump iron hangin in cellar. Stop operations to take gas samples for LA County HAZMAT and Fire Departments. Wait on OSHA, no show. Suspend operations due to small aircraft (Cesna 172) doing fly-bys very close to location. Flour Eng and AE Eng representatives arrive and stand by until plane leaves. Shut down and secure location.
12/18/2015	Stage junk shot manifold to SS25 site. Modified surface csg stinger sub for Wellhead "A". Retest both pump lines from location. 300 psi low, 5000 psi high. Good. Continue cleaning location. Retighten chains supporting tree west to east. Shut down and secure location.
12/19/2015	MIRU 220T Hydraulic crane w/ 200' stick. 1/2 bridge arrives and position. 2nd 1/2 bridge arrives and assembled. Pull test w/ crane. Move bridge and straddle well 25. No issues. Install additional grading onto bridge around tree to conceal oil to fall back down. RDMO crane. Shut down and secure operations.
12/20/2015	2-7/8" Tbg Press-1328 psi. Function test SSV. MI HOWCO pump iron and tie into wireline pump-in tee. MIRU 100T crane. RU wireline. Spot gas/safe safe mono-conductor wireline unit. RIH w/ gauge run. Unsuccessful. POOH. Shut down and secure location.
12/21/2015	2-7/8" Tbg Press-1285 psi. Est BHP-1551 psi. MIRU crane and wireline. RU Lubricator and test 400 psi low, 4000 psi high. RIH w/ 2.133" Gauge ring. Tag at +/- 100'. POOH and L/D wireline. RU on 25B. RIH w/ rotating magnet. Confirm 25B is not interferring w/ WellSpot/Gradient Runs, seeing 25. POOH w/ rotating magnet. Install grading on bridge for coalescing purposes. MI slick line equipment and glycol on location. RDMO crane. Reconfigure pump tie in lines to glycol ine. Pump 1 bbl of glycol into well. No "sealing" ice plug. Shut down and secure location.
12/22/2015	2-7/8 Tbg Press-1215 psi. Pump 1.5 bbl glycol at 7 gpm. 2-7/8" Tbg Press-1140 psi. Close wellhead, bleed off lines and remove chem injection pump. Begin pump line test 400 psi low, 5000 psi high. Begin kill w/ 300 bbls of all WBM (15.1 ppg) at 5 BPM. 40 bbls pumped. Pump truck - 150 psi. Tubing-13 psi. 70 bbls pumped. Pump Truck - 200 psi. 300 bbls pumped. Pumps off. Slow rate to 1/2 BPM. Shut down due to rocking of wellhead and unloading mud at surface. Tubing Pressure -248 psi. TEE broke due to wellhead movement. Close Low Torque bale on pump line to isolate manifold. Shut down and secure location
12/23/2015	Check Tbg Press at chemical pump - 750 psi. Unable to access valve on tree of injection tee. Isolate HOWCO pump line at well and attempt to bleed off. Unsuccessful. Close valve on tree by taking off handle and closing w/ wrench. Bleed F/800 psi T/600 psi on tee pump line manifold. Check all lines on SS 25 and confirm bled off. Disconnect chemical inj line from pump manifold. Kill power to site and disconnect E-Line. Reconfigure power. Move out E-line equipment. Shut down and secure location.
12/24/2015	Pull grating skid from north end of bridge. Clear mud and debris off of bridge from norh and east side of bridge. Clean north bridge walk. MIRU crane. Load out all reamining Wireline eq. Remove skid grating from south end of bridge. Wait on California OSHA for permission to continue to work. Clear mud off of Xmas tree and haul off grating platforms. Shut down and secure location.
12/25/2015	Clean grating skid. Cover with steel mesh (mist extractor). Clean mud and debris off. Clean second grating of mud. Install and strap down full length 2/ SS316 mist extractor mesh. Shut down and secure location.
12/26/2015	Wire mesh collected some oil over day. Strong winds. Shut down and secure location.
12/27/2015	Winds not favorable for work. Take AECOM to site. Clear site of all personnel. Shut down and secure location.
12/28/2015	Clear mud and debris from south and west side of bridge walkway. Close inside valve on choke side of treee. Run 3/4" wirerope guide line under south end of bridge. Place mist mesh on south end of bridge. RD choke manifold and separator equipment. Remove damaged pump line.Remove lower pump line, pump swings, tees. RD all flow iron to test equipment. OSHA and DOGGR site visit. Remove test Separator. Shut down and secure location.

OG103 (6/97/GSR/5M) **SUBMIT IN DUPLICATE**

RESOURCES AGENCY OF CALIFORNIA
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HISTORY OF OIL OR GAS WELL

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles

Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.

A.P.I. No. 03700776 Name Todd Van de Putte (Person submitting report) Title Drilling Manager (President, Secretary, or Agent)

Date 11/21/2016 (Month, day, year) Signature

Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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Start Date	Ops this Report (DOGGR)
12/29/2015	Move pump line over to east side of pad. Re-tension wellhead north guide line to dead man. Clear mud and debris from NE side of crater. Clear debris from North and West side. Move out closed top baker tank. OSHA on Site - Stop operations. Load mud and debris to roll-off boxes. OSHA return to site - Stop operations. Shut down and secure location.
12/30/2015	Clear debris from south and west end of crater. Skid Weatherford choke manifold for pickup. Remove all kill lines to well from SS 1. NU flang on flange of co-flex hose on tubing.Make pressure line to lower injection tee. Open valve and begin recording tubing pressure - 1051 psi. Continue clean up of location and prepare site for sandbags ahead of rain. Move in Vacuum truck. Remove fluids from production tanks. Continue to clear mud from location and debris from west side of location. Spot sand bags. Load out and remove HOWCO pump iron. Remove junk shot manifold. Bring up straw barriers for rain runoff. Shut down and secure location.
12/31/2015	Strong winds from north. Wait on wind to subside. DOGGR rep on site. Winds unfavorable. Shut down and secure location.
1/1/2016	Tubing Pressure - 1022 psi. Strong winds from North. Move in 60' tray w/ 8" mesh mist extractor (33') pads and spot on location. Layout sandbags as per GeoTech instructions. Prepare slope for upcoming rain. Shut down and secure location.
1/2/2016	Strong winds blowing out of North. Continue to lay sand bags down to prevent water runoff. Begin installing fiber tube/barriers to prevent deterioration of slope. Double layer sand bags on north end of pad. Strong winds preventing mist tray from being set. Shut down and secure location.
1/3/2016	Move in and Spot Crane. Trouble with safety shut down switches on 110 ton crane. Rig down and move out crane. Move in and spot 40 ton crane. Moved 60'x6' mist tray across East side of crater next to well bridge. Grounded mist tray to ground rod. Released crane. Continue to prepare location for rain. Measure for head sheild on SS 25A, SS 25B with AECOM engineer. Shut down and secure location.
1/4/2016	Tubing Pressure - 959 psi. Load out remaining HAL pump iron. Shut down and secure location.
1/5/2016	Heavy rain and thick fog. Minimal visibility. Skim water with vac trucks. Monitor rain. Shut down and secure location.
1/6/2016	Tubing Pressure (R bunker) - 908 psi. Section on east side of crater sloughed off. Re-Route NOX line closer proximity to wellhead. Vac trucks skim water and oil. Heavy rain sets in. Monitor rain and location. Shut down and secure location.
1/7/2016	SITP - 884 psi. Move in 70T crane and spot on SE side of pad. Remove pressure line monitor from wellhead. Move in collection pad "Tray 2" and spot on east side of "Tray 1". Completely cover east side of crater w/ mist trays. Reconnect tubing pressure lines at 881 psi. Clean up on west side of bridge for west side collection tray down to concrete slab. Crane down. Repair crane and remove from site. GeoSenTec rep on site and inspected fiber rolls and sand bags. Approve drainage location. CalOSHA on site. Shut down and secure location.
1/8/2016	SITP - 870 psi. Observe section of concrete slab on south side is now hanging down into crater. DOGGR & OSHA on site and inspect SS 25. CalOSHA set up air monitoring for BTEX (Benzene, Toluene, Ethylene, Xylene). Set up parrallel monitors. Verify all ground wires. SITP - 846 psi. Take gas samples near wellhead. Shut down and secure location.
1/9/2016	SITP - 838 psi. Cement slab on south end moved a few inches further north. B&C attend Pre-Construction meeting of gas capture system. State Legislature officials on site at SS 1. Continue monitoring pressure and well conditions. Paving operation ongoing at entry SS 25. Shut down and secure location.
1/10/2016	Dress up area on SW side of bridge to accommodate Tray #3. SITP=800 psi. Shut down and secure location.
1/11/2016	Moderate to strong winds from NNE. SITP = 787 psi. Prepare north end of site for Tray #3. Fill in low spot on NE corner of pad in preparation for rain runoff. Shut down and secure location.
1/12/2016	Strong winds out of north. SITP: 755 psi. Shut down and secure location.

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1/13/2016	Slight winds from WNW. SITP: 743 psi. Move in crane and heat sheild on stinger truck. Set up same. PU and move heat shield over SS 25A, SS 25B. Move out crane and stinger truck. Repair drainage along side of SS 25 access road. Shut down and secure location.
1/14/2016	Wind moderately strong from NNW. Check temperature of gas flow at bottom of crater w/ thermal gun. 54 deg F. SITP: 722 psi. Temp gun read directly at source of flow 67-69 deg F. Move in Wireline equipment. Shut down and secure location.
1/15/2016	SITP: 716 psi. Move in 70T crane. RU same. RU slick line unit. Pressure test lubricator. 400 psi low, 4000 psi high for 5 min. Good. Pump 1 bbl glycol. RIH w/ 25' of 1.87" tool string and 1.25" memory pressure and temperature tool. Tag and sit down at 8382' (8370' WLM). POOH. RD slick line unit. Move out same. RD crane. Move out same. Shut down and secure location.
1/16/2016	Wind from NNW. SITP: 691 psi. Move in crane. RU same. Move in wireline unit. RU same. RIH w/ rate gyro. Collect directional information in and out of wellbore. POOH w/ gyro tool. RD wireline unit. Move out same. RD crane. Move out same. Shut down and secure location.
1/17/2016	Moderate strong winds from NNW. SITP: 658 psi. SoCal Union representative on site for inspection. US Senate representatives on Site at SS 1. Shut down and secure location.
1/18/2016	SITP: 667 psi. Close site due to poor visibility (fog). Secure location
1/19/2016	SITP: 638 psi. US State Congressmen and City Government officials on Site at SS1. Shut down and secure location.
1/20/2016	SITP: 619 psi. Asphalt slab on north end is showing signs of sagging. Crack developing along west side and separation from bridge can be seen. Remove tool trailer, choke panel and N2 bottle rack. Remove air compressors (2). Move in additional baker tank for any returns for kill job. Shut down and secure location.
1/21/2016	SITP: 597 psi. Winds not favorable for crane work. Remove tools and safety cones from site. Discuss wireline work. Shut down and secure location.
1/22/2016	SITP: 607 psi. Estimated 15-20 bbls oil accummulation in bottom of crater. Use skid steer to spread dirt on south end of pad. Move in air compressor. Move in wireline unit and unload stinger crane. Spot E-L equipment. RU wireline unit. Stab lubricator. Test lubricator 400 psi low, 4000 psi high. Good. RIH w/ 24 finger tubing caliber. On bottom, began loggin tubing. POOH w/ E-line. L/D tools, lubricator. Shut down and secure location.
1/23/2016	SITP: 591 psi. Move in crane. PU and MU E-line unit. RU Lubricator. Pressure test lubricator 400 psi low, 4000 psi high. Good. RIH w/ pressure/temperature logging tools at 60 fpm. On bottom w/ E-line tools. POOH w/ wireline. L/D tools. L/D lubricator. Release crane. Run guy wire cables to secure tree. Put cable on west side and north side. Shut down and secure location.
1/24/2016	SITP: 585 psi. Prepare too and cables to make additional guidelines to tree. Affix 2 additional 3/4" wire rope lines to tree. Total of 8 guy wires secured to anchors. Bleed off pressure and remove pressure sensor. Move in crane and make up 2" 1502 iron to injection tree. Install 2" tee, lo-torque valves and pressure sensor. Open valve on injection tree to pressure sensor. Shut down and secure location.
1/25/2016	SITP: 573 psi. Prepping baker tanks and choke manifold. Hook up lines to choke manifold and baker tank. Use skid steer to place cement blocks on flowlines. Shut down and secure location.
1/26/2016	Very high winds for day. Monitor wellsite. Shut down and secure location.
1/27/2016	SITP: 555 psi. Strong winds from north. Wireline company hook up antenna. Monitor location. Shut down and secure location.

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 Field Aliso Canyon County Los Angeles

Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.

A.P.I. No. 03700776 Name Todd Van de Putte Title Drilling Manager

(Person submitting report) (President, Secretary, or Agent)

Date 11/21/2016

(Month, day, year)

Signature Todd Van de Putte

Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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)
1/28/2016	SITP: 582 psi. Move sand bags as needed to reconfigure mist extractor trays. Wireline company test pressure/temperature data transmitter system. Anchor lines to baker tanks. Set roll off bins for mist extractor pads. Unload second roll off bin. Work on drainage. Shut down and secure location.
1/29/2016	SITP: 569 psi. Strong winds from north. Monitor wind and location. Stage crane on site. Rig up crane. Remove both trays from east side of crater bridge. Remove all de-mister pads from trays and place in roll off bins. Rig down crane. Move out same. Haul off 1st roll off bin. Stinger crane on site. Load out tray 1. Shut down and secure location.
1/30/2016	SITP: 583 psi. Move in crane and rig up counter weights. Close in tubing valve, bleed off flowline and disconnect from X-mas Tree. Pick up north end of bridge and place cribbing underneath. Pick up 60' skid (tray 2) and place under north end of bridge for additional footprint support. Pick up bridge and remove cribbing and set bridge on skid. Release crane. Re-tighten guidelines as needed. Place rope barrier around crater. Run ground wire from bridge to skid (tray 2). Place safety cones around bridge and crater. Shut down and secure location.
1/31/2016	Heavy fog. Heavy rain and wind picking up. Monitor drainage. Sand bags diverting rain. Shut down and secure location.
2/1/2016	Strong wind from NW. SITP: 588 psi. Monitor well. Shut down and secure location.
2/2/2016	Strong winds from north. SITP: 590 psi. Blade confirming point of install Gas Chromatograph. Wireline company finish installation of data streaming equipment. Reconfigure needle valve tree on flow line to accepth Blade's chromatograph. Shut down and secure location.
2/3/2016	STIP: 581 psi. Strong winds from north. Monitor wellsite. Shut down and secure location.Monitor overnight.
2/4/2016	SITP: 583 psi. Strong winds from north. Barricade around crater. Blade Energy on site to gather gas samples from tubing flow line. Extreme strong winds. Shut down and secure location. Monitor overnight.
2/5/2016	SITP: 603 psi. Strong winds from north. Capture gas sampling. Shut down and secure location. Monitor overnight.
2/6/2016	SITP: 585 psi. Wind strong from north. Shut down and secure location. Monitor overnight.
2/7/2016	SITP: 609 psi. Strong winds from north. Shut down for night and secure location. Monitor overnight.
2/8/2016	SITP: 622 psi. Strong winds from north. Shut down and secure location. Monitor overnight.
2/9/2016	SITP: 599 psi. Strong winds from north. 125 lbs ABC wheeled fire extinguisher delivered to site. Place next to shed over SS 25B. Shut down and secure location. Monitor overnight.
2/10/2016	SITP: 613 psi. Strong winds from north. No visible changes in crater. Shut down and secure location. Monitor overnight.
2/11/2016	SITP: 615 psi. Moderate winds from north. Start mill operation on relief well. Relief well went to full losses. SITP dropped to 590 psi initially then began to climb. SITP: 660 psi. 2 min later SITP: 721. Crater went quiet. 10 min later, SITP: 933 psi, well quiet. 5 min later, SITP: 1060 psi. Relief well closed annular and pumped down kill line at 2 bpm. SITP: 1378 psi. SITP: 1409 psi. SITP: 1424 psi. Shut down pumping on relief well and observe reaction. SITP: 1366 psi. Resume milling operations on relief well. SITP: 1374 psi. SITP: 1385 psi. OSHA "Red Tagged" bridge on SS 25 location. Well static, no flow, no activity in crater. Secure site and shut down operations. OSHA reps at SS 25 at 17:50 (dark at 17:33). Removed OSHA red tag from bridge. Monitor overnight.
2/12/2016	Strong winds from north. SITP: 1335 psi. Relief well run stinger in SS 25 well. SITP: 1351 psi. Relief well tag bottom with stinger (8809' relative to relive well depth). Well/crater static. SITP 1319 psi at 12:30. Wait on CPUC before beginnig dirt work to place anchor for handrails. Finish setting K-rail anchor. Shut down and secure location. Monitor overnight.

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 Field Aliso Canyon County Los Angeles
Well Standard Sesnon 25 Sec 28 3N 16W S.B.B.M.
A.P.I. No. 03700776 Name Todd Van de Putte (Person submitting report) Title Drilling Manager (President, Secretary, or Agent)
Date 11/21/2016 (Month, day, year)
Signature Todd Van de Putte
Address PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number 818-701-3339

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)
2/13/2016	SITP: 1322 psi. Wellhead and crater static. CPUC reps on site. Run handrail (5/8" cable) from k-rail anchor to bridge center upright and tighten with turnbuckles. SITP: 1339 psi at 10:00 hrs. Relief well at mill window. Relief well - Close annular and Pressure up to 66 psi, No reaction at SS 25. SITP: 1337 psi. Relief well pressure up to 140 psi. Little reaction at SS 25. SITP: 1340 psi. SITP: 1377 psi at 11:00 hrs. SITP: 1291 psi at 15:30 hrs. Shut down and secure location. Monitor overnight.
2/14/2016	Strong winds from north. Wellhead and crater stable and static. SITP: 1277 psi. Prepare to bleed tubing during relief well cementing job. install gauge in choke manifold. Open lo-torque to choke manifold. Relief well - set cement retainer in 7" liner. Pump cement. SS 25 - SITP: 1380 psi. Bleed tubing as instructed by cement team on relief well. Relief well - cement in place. SS 25 - close lo-torque to choke manifold. SITP: 1365 psi. OSHA and LACFD on site to inspect bridge hand rails. OSHA led group up hill and edge of 10' shear bank of unconsolidated class C soil. Boots & Coots pointed out to OSHA that it was unsafe place to observe from. SITP: 1333 psi at 12:00 hrs. Wireline company reps on site to discuss wireline work. Bring crane to site and rig up. Wireline equipment on site, unload and spot. SITP: 1321 psi at 13:30 hrs. Rig up e-line lubricator. SITP: 1314 psi at 13:30 hrs. Shut down and secure location. Monitor overnight.
2/15/2016	Strong winds from north. Crater static and stable, no flow. SITP: 1248 psi. Crane on site. No communication with relief well (relief well spotting cement). Bleed pressure off of tee and connect echo-meter to shoot fluid level. First, second, third echometer shoots fluid level @ 2443'. Secure site and shut down for night. SITP: 1236 psi @ 13:30 hrs.
2/16/2016	SITP: 1185 psi. Spot crane. RU lubricator. RIH w/ noise/temp log. Tag cement in tubing @ 8203'. POOH w/ log. Bleed off lubricator. Attempt to RIH w/ CBL. RD CBL and add additional sinker bars. Secure location and shut down.
2/17/2016	SITP: 1107 psi. Lube and bleed 11 bbls into well. SITP: 100 psi @ 9:45 am. M/U lubricator and RIH w/ CBL. CBL indicates top of cement at 7620'. Logout and began bleeding remaining pressure. Swab out tools for perf gun. RIH w/ tubing punch guns. Punch tubing 8005'-8006' w/ 4 spf. POOH. Pressure test per DOGGR. Held 1000 psi. Test good. RD and load out test equipment. Boots and Coots released.

Ex. III- 3

7047 W. Greens Rd.
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	26-Oct-2015	**Well Name and Number:**	Standard Senson 25	Report #	2
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
General Daily Expense		D. Clayton / J. Kopecky / D. Walzel	3		
Hotel		D. Clayton / J. Kopecky / D. Walzel	3		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:30	7:00	Traveled from hotel to Aliso Canyon Storage Facility.
7:00	8:00	Attended morning meeting. Discussed fabricating A-Frame for slick line operations, sourcing intrinsically safe slick line unit,
		wellhead integrity, greasing and testing casing valves, and where to spot equipment on location.
8:00	8:30	Traveled to Standard Senson 25 wellsite. Performed site assessment. Gas activity was observed to be unchanged.
8:30	10:15	Observed 7" x 11-3/4" annulus pressure to be 428 psi. Dug out around wellhead to expose casing valve. Closed ball valve.
		Removed gauge and bushing from ball valve.
10:15	12:30	Operations were shut down for safety meeting and operational update.
12:30	14:00	Installed ball valve. Made up 602 iron from wellhead to test separator.
14:00	15:30	Checked wellhead pressures on 25A and 25B. 25A wellhead pressure 0 psi. 25B wellhead pressure 40 psi.
15:30	16:45	Began flowing well 25 7" x 11" annulus through test separator on 16/64" choke. 2-7/8" - 680 psi. 2-7/8" x 7" - 419 psi.
		7" x 11-3/4" - 413 psi.
16:45	17:00	Opened choke to 23/64" choke. 2-7/8" - 446 psi, 2-7/8" x 7" - 416 psi, 7" x 11-3/4" - 404 psi. Gas rate 8 Mscf/day. Temp - 48F.
		Shut down. Secured well.
17:00	18:30	Attended end of the day meeting. A slick line unit has been sourced. A total of 1,000 bbls of 10.0 ppg KCl was delivered to
		location. Sourced Halliburton HT400. Customer requested B&C HSE specialist. Mike Baggett will travel to location tomorrow.
		Welder sourced materials and will begin fabricating A-Frame.
18:30	19:00	Traveled to hotel.

Projected Operations

Rig up to flow 2-3/8" x 7" annulus to test separator. Spot slick line unit and HT400 pump truck.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.5	1				
Danny Walzel	11.5	1				
James Kopecky	11.5	1				
					Total Man-hours for Noted Date:	37.5

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Date:	27-Oct-2015	**Well Name and Number:**	Standard Senson 25	Report #	3
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Airfare		Mike Baggett	1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:45	7:15	Traveled from hotel to location. Inspected slick line unit.
7:15	8:30	Performed site assessment. Discussed the day's operations with SCGC representatives. 7" x 11-3/4" - 325 psi. 2-7/8" x 7" -
		307 psi. 2-7/8" - 34 psi.
8:30	10:15	Rigged up to flow 2-7/8" x 7" annulus to test separator.
10:15	11:15	Spot slick line unit and generator.
11:15	13:30	Continued isolating kill lines and with draw lines to well 25.
13:30	14:45	Opened orbitz valve on with draw line. 2-7/8" x 7" annulus pressure decreased from 260 psi to 15 psi. Monitored well.
14:45	15:00	7" x 11-3/4" - 308 psi. 2-7/8" x 7" - 16 psi. 2-7/8" - 78 psi. Began bleeding 7" x 11-3/4" annulus through test separator on 11/64
		choke. Choke pressure 275 psi. Gas rate 3 Mcf/day.
15:00	15:30	Opened choke to 23/64. Choke pressure 300 psi. 2-7/8" x 7" - 21 psi. 2-7/8" 75 psi. Closed choke. 7" x 11-3/4" - 310 psi.
		2-7/8" x 7" - 25 psi. 2-7/8" - 78 psi. Mike Baggett arrived on location. Met with SCGC safety representatives.
15:30	14:00	Secured well.
14:00	17:30	Continued rigging up slick line unit. Met with welder and slick line crew to discuss required modifications to A-Frame.
		Rigged up Halliburton HT400 pump truck.
17:30	18:00	Departed location. Traveled to hotel.

Projected Operations

Attempt to run in the hole with sinker bars.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.25	1				
Danny Walzel	10.25	1				
James Kopecky	10.25	1				
Mike Baggett	2	7				
					Total Man-hours for Noted Date:	42.75

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HALLIBURTON
BOOTS & COOTS SERVICES

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Date:	25-Oct-2015	**Well Name and Number:**	Standard Senson 25	Report #	1
Customer Name:	Southern Califonia Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gs		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
General Daily Expense		D. Clayton / J. Kopeckey / D. Walzel	3		
Hotel		D. Clayton / J. Kopeckey / D. Walzel	3		
Airfare		D. Clayton / J. Kopeckey / D. Walzel	3		
Rental Car			1		
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
8:30	9:30	Boots & Coots personel travel to Bush Intercontinental Airport Houston, Texas.
9:30	11:45	Check in, board plane.
11:45	13:45	Fly from Houston, Texas to Los Angeles, CA.
13:45	13:15	Get rental car.
13:15	14:00	Drive from LAX to Aliso Canyon Storage Facility.
14:00	18:30	Met with Southern California Gas Company representatives. Traveled to Standard Senson 25 wellsite. Performed site assessment. Observed gas broaches to surface through several fissures on well pad. Discussed operations prior to broaching with client representatives. Was informed client attempted to pump down tubing and could not. Attempted to lube and bleed the 2-3/8" x 7" annulus. Pressure increased to 3,200 psi when broaches occurred. Operations were discontinued. Began sourcing slick line unit, frac tanks for kill fluid, dual pump truck, and additional pump iron.
18:30	19:00	Traveled to hotel.

Projected Operations

Rig up to flow 7" x 11-3/4" and 2-7/8" x 7" annulus to test seperator. Run diagnostic logs.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	4.5	6				
Danny Walzel	4.5	6				
James Kopecky	4.5	6				
					Total Man-hours for Noted Date:	31.5

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Date:	28-Oct-2015	Well Name and Number:	Standard Senson 25 / Report # 4
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	[redacted]
Well Control Specialist	4	James Kopecky	1	[redacted]	[redacted]
Sr. Well Control Engineer	4	Danny Walzel	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
Hotel		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
				[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
				[redacted]	[redacted]
				[redacted]	[redacted]
				[redacted]	[redacted]
		Estimated Daily Total		[redacted]	[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:45	7:15	Traveled from hotel to location.
7:15	7:45	Attended morning safety/operations meeting.
7:45	8:00	Performed site assessment. Gas flow from fissures on well pad appear to have decreased.
8:00	9:30	Checked pressures on 25 well. 7" x 11-3/4" - 325 psi. 2-7/8" x 7" - 128 psi. 2-7/8" - 170 psi. Bled tubing pressure to 86 psi.
9:30	11:30	Closed all casing valves. Installed A-Frame on well. Continued rigging up slick line. (10:00) Checked pressure on
		2-7/8" x 7" annulus - 134 psi. Bled to 124 psi.
11:30	12:15	Made up 1-5/8" sample bailer. Stabbed lubricator. Opened up well. 2-7/8" x 7" - 109 psi. 2-7/8" - 87 psi. RIH with sample bailer
		Sat down hard at 467 ft. Pulled out of the hole. Inspected sample bailer. Observed polymer on tool. Tool temperature 47 deg F.
		Fluid level - 300 ft.
12:15	12:45	Lunch.
12:45	14:15	Shot fluid levels on 7" x 11-3/4" and 2-7/8" x 7" annulus. 7" x 11-3/4" - 43 ft. 2-7/8" x 7" - 164 ft.
14:15	15:30	Lined up Halliburton to pump 8.7 ppg Flozane down tubing.
15:30	16:15	Filled kill line with 9.5 bbls. Pumped 3.1 bbls. Pump pressure increased to 350 psi. Monitored 5 minutes. Pressure increased
		to 377 psi. Pumped 0.2 bbls. Tubing pressure 500 psi. Monitored for 5 minutes. Tubing pressure increased to 525 psi.
		Pumped 0.5 bbls. Tubing pressure increased to 776 psi. Monitored for 5 minutes. Tubing pressure increased to 801 psi.
		Pumped 0.1 bbls. Tubing pressure 998 psi. Monitored for 5 minutes. Tubing pressure increased to 1,027 psi. Pumped 0.1 bbls.
		Tubing pressure 1,220 psi. Monitored for 5 minutes. Tubing pressure increased to 1,337 psi. Pumped 0.1 bbls. Tubing pressure
		1,480 psi. Monitored for 5 minutes. Tubing pressure 1,603 psi.
16:15	17:00	Tubing pressure 1,824 psi. Bled to 1,790 psi. Continued monitoring well. (16:50) Tubing pressure 2,400 psi. Closed tubing
		head valve. Tubing pressure remained constant. Pressure on pump truck increased to 2,595 psi. Suspect communication with
		field injection lines. Made up 1-5/8" sample bailer.
17:00	17:30	Ran in hole with sample bailer. Tagged hard at 467 ft. Pulled out of the hole. Secured well.
17:30	18:00	Attended end of the day meeting.
18:00	18:30	Travel to hotel.

Projected Operations

Rig down A-Frame. Move in crane. Run in the hole with additional weight bars and attempt to work through obstruction. Source coiled tubing unit.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.75	1				
Danny Walzel	10.75	1				
James Kopecky	10.75	1				
Mike Baggett	10.75	1				
					Total Man-hours for Noted Date:	47

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Date:	29-Oct-2015	Well Name and Number:	Standard Senson 25	Report #	5
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site. Surface casing pressure fluctuates between 505 psi and 770 psi.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:30	7:00	Traveled from hotel to location.
7:00	7:30	Attended morning safety/operations meeting.
7:30	8:15	Performed site assessment. Observed ice on fissures around cellar. Fissures appeared to have made fluid overnight. Checked
		pressures on SS 25. 2-7/8" - 429 psi. 2-7/8" x 7" - 353 psi. 7" x 11-3/4" - 505 psi.
8:15	8:30	7" x 11-3/4" pressure - 515 psi. Flowed annulus for fifteen minutes. Shut in. Casing pressure 509 psi.
8:30	9:30	Moved in and rigged up crane. Laid down lubricator. Removed A-Frame from well. 2-7/8"- 360 psi. 2-7/8" x 7" - 420 psi.
		7" x 11-3/4" - 560 psi. Checked pressures on 25B. 2-7/8" - 2,450 psi. 2-7/8" x 7" - 2,450 psi. 7" x 11-3/4" - 44 psi.
9:30	10:30	Western wireline added sinker bar and lubricator.
10:30	10:45	Shot fluid levels on SS 25.
10:45	11:00	Bled 2-7/8" x 7" annulus f/ 456 psi t/ 440 psi.
11:00	12:00	Installed 2-9/16" 5M upper master valve. 2-7/8" - 375 psi. 2-7/8" x 7" - 462 psi. 7" x 11-3/4" - 591 psi.
12:00	12:30	Held PJSM to discuss slick line operations.
12:30	13:15	Made up 1.625" sample bailer. Stabbed lubricator. RIH. Sat down at 37 ft. POOH. Tool temperature 59 deg F. 2-7/8" - 54 psi.
13:15	13:45	Stabbed lubricator. RIH with 1.625" sample bailer. Sat down at 37 ft. POOH. Tool temperature - 19 deg F. Observed ice
		in sample bailer. Rigged down slick line.
13:45	14:15	Met with HALCO representatives to discuss coiled tubing operations. A coiled tubing unit is being mobilized from Houma, LA.
14:15	15:30	Blew down with draw and kill lines from 450 psi to 50 psi. Discussed removing lines to isolate SS 25 from facility lines.
15:30	16:00	Attended end of the day meeting. Coiled tubing unit will take 2 days to arrive at location. Will remove lateral lines from SS 25.
		Will move Halliburton pump truck closer to SS 25. SCGC will continue running diagnostics on nearby wells.
16:00	18:00	Continued monitoring pressures. (16:30) 2-7/8" - 51 psi. 7" - 685 psi. 11-3/4" 731 psi. (17:00) 2-7/8" - 55 psi. 7" - 634 psi.
		11-3/4" - 697 psi. (17:30) 2-7/8" - Shut in. 7" - 631 psi. 11-3/4" - 770 psi.
18:00	18:30	Traveled to hotel.

Projected Operations

Remove lateral lines from SS 25. Rig up CT. Wash through hydrates. Attempt to kill well with 10.8 ppg CaCl2.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	1				
Danny Walzel	11	1				
James Kopecky	11	1				
Mike Baggett	11	1				
					Total Man-hours for Noted Date:	48

7047 W. Greens Rd.
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Date:	30-Oct-2015	**Well Name and Number:**	Standard Senson 25	Report # 6
Customer Name:	Southern California Gas Company	**County:**	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:**	California	
		Country:	USA	
AFE #:		**Well Location:**	Aliso Canyon Storage Facility	
Customer Representative:		**Well Type:**	Gas	
Report Generated By:	Danny Walzel	**Job Type:**	Well Control	
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A	

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Danny Clayton	1		
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site. Surface casing pressure fluctuated between 750 psi and 830 psi.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:30	7:00	Traveled from hotel to location.
7:00	7:30	Attended morning safety/operations meeting.
7:30	8:15	Performed site assessment. Gas flow from fissures has decreased. Checked pressures on 25 well. 2-7/8" - Shut in. 7" - 614 psi. 11-3/4" - 823 psi.
8:15	11:45	Isolated wells 25A and 25B from injection and withdraw lines. Blew down lines from 250 psi to 0 psi. Met with Weatherford representative to discuss equipment requirements for coiled tubing operations. (10:50) Well 25 11-3/4" casing pressure decreased from 830 psi to 750 psi.
11:45	12:30	Removed tubing kill lateral from well 25.
12:30	13:00	Lunch
13:00	15:00	Removed kill and withdraw laterals from 7" casing spool and with draw line from tubing head. Removed 3-1/8" 5M manumatic valve from 7" casing head. Removed 2-1/6" 5M manumatic from tubing head. Installed 2-1/16" 5M valve on same. Installed 3-1/8" 5M 2" LP companion flanges with 2" tapped bull plugs with needles valve on 7" annulus casing valves. Installed 2-1/16" 5M 2" LP companion flanges with 2" tapped bull plugs with needle valves on tubing head casing valves. Installed tapped flanges w/ 2" LP needle valves on kill and with draw lines.
15:00	16:00	Nippled up 2-9/16" 5M x 4-1/16" 10M DSA, 4-1/16" 10M Gate Valve, and 4-1/16 10M x 4-1/16" 15M DSA on upper master valve. Installed Rotemount transducers on well 25 7" casing outlet valve and 11-3/4" casing outlet valve. 7" - 585 psi. 11-3/4" - 770 psi.
16:00	17:30	Well 25A: Bled 8-5/8" casing from 920 psi to 700 psi. Shut in. Well 25: 7" - 584 psi. 11-3/4" - 771 psi.
17:30	18:00	Traveled to hotel.

Projected Operations

Kill 25A & 25B. Rig up on well 25 to pump and flow from casing annuli and tubing. Prepare for coiled tubing operations.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.5	1				
Danny Walzel	10.5	1				
James Kopecky	10.5	1				
Mike Baggett	10.5	1				
					Total Man-hours for Noted Date:	46

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BOOTS & COOTS SERVICES

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Date:	31-Oct-2015	**Well Name and Number:**	Standard Senson 25	Report #	7
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:30	7:15	Traveled from hotel to location.
7:15	7:30	Attended morning safety/operations meeting. Performed site assessment. Well 25: Tbg - Shut in. 7" - 574 psi. 11-3/4" - 716 psi.
7:30	9:30	Checked surface casing pressure on 25A - 52 psi. Removed slick line equipment from Pad 25. Spotted hydraulic choke manifold.
9:30	11:00	Removed companion flanges from tubing head outlet valves. Installed 2-1/16" x 1502 thread half adapter flanges on same.
		Removed companion flange from 7" casing outlet valve. Installed 3-1/8" 5M x 1502 thread half adapter flange. Installed 1" plug
		valve.
11:00	12:30	Lined up on 25A tubing. 25A tubing pressure 2,600 psi. 8-5/8" - 940 psi. Well 25: 7" - 576 psi. 11-3/4" - 737 psi.
		Pumped 30 bbls 8.7 ppg polymer pill. Displaced with 152 bbls 8.5 ppg KCl. Shut down. Tubing pressure 550 psi. 8-5/8" casing
		889 psi. Well 25: 7" - 578 psi. 11-3/4" - 749 psi. Well 25A: Bled 8-5/8" casing from 889 psi to 770 psi. Shut in.
12:30	13:00	Lunch.
13:00	13:30	Removed gauges and 3-1/8" 5M companion flange from 7" casing outlet valve. Installed 3-1/8" 5M x 1502 thread half adapter
		flange. Installed 1" plug valve and gauges.
13:30	14:00	Well 25A: Bled 8-5/8" casing pressure from 770 psi to 0 psi.
14:00	15:45	Filled 25A 2-7/8" x 8-5/8" annulus with 205 bbl 8.5 KCl. Left 50 psi on annulus and 600 psi on 2-7/8" tubing.
15:45	16:30	Met with welder to discuss fabricating valve extension handle to operate wellhead ball valves. Well 25: 2-7/8" - Shut in.
		2-7/8" x 7" - 584 psi. 7" x 11-3/4" - 727 psi.
16:30	17:00	Traveled to hotel.

Projected Operations

Kill 25B. Rig up on well 25 to pump and flow from casing annuli and tubing. Prepare for coiled tubing operations.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	9.25	1			
Danny Walzel	9.25	1			
James Kopecky	9.25	1			
Mike Baggett	9.25	1			
				Total Man-hours for Noted Date:	41

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Date:	1-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	8
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:30	7:15	Traveled from hotel to location.
7:15	7:30	Attended morning safety/operations meeting.
7:30	7:45	Performed site assessment. Well 25: 2-7/8" - Shut in. 7" - 676 psi. 11-3/4" - 690 psi.
7:45	8:30	Met with Halliburton Coiled Tubing Supervisor. Discussed well situation and where to spot coiled tubing equipment.
8:30	11:15	Rigged up on 25B. Tubing pressure - 2,500 psi. 8-5/8" - 2,440 psi. Pumped 30 bbls 8.7 ppg polymer pill down tubing. Pumped
		387 bbls 8.5 ppg KCl. Shut down. Tubing pressure 0 psi. 8-5/8" - 0 psi.
11:15	11:45	Well 25: Installed valve extension handle on outer well head casing valve.
11:45	12:30	Lunch.
12:30	12:45	Well 25B: Tubing Pressure - 0 psi. 8-5/8" - 0 psi. 13-3/8" - 42 psi. Well 25 A: 2-7/8" - 1,000 psi. 8-5/8" - 140 psi.
		13-3/8" - 0 psi. Well 25: 2-7/8" - Shut in. 7" - 694 psi. 11-3/4" - 679 psi.
12:45	14:30	Prepared location for coiled tubing equipment. Met with Halliburton and Onyx. Discussed rig up requirements for well 25. Onyx
		is going to fabricate 602 x 1502 cross overs for return lines. Rigged down and moved out 40T crane.
14:30	16:00	Moved in and rigged up 110T crane. Coiled tubing reel arrived at Aliso Canyon Storage Facility.
16:00	16:30	Attended end of the day meeting.
16:30	17:00	Traveled to hotel.

Projected Operations

Rig up on well 25 to pump and flow from casing annuli and tubing. Prepare for coiled tubing operations.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	9.25	1.25			
Danny Walzel	9.25	1.25			
James Kopecky	9.25	1.25			
Mike Baggett	9.25	1.25			
				Total Man-hours for Noted Date:	42

7047 W. Greens Rd. **Houston, TX. 77066** **281-931-8884**	*This is an estimate only for the date listed on this sheet. This is not an invoice.*

Date:	2-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	9
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	[redacted]
Well Control Specialist	4	James Kopecky	1	[redacted]	[redacted]
Sr. Well Control Engineer	4	Danny Walzel	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
Hotel		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
				[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
				[redacted]	[redacted]
				[redacted]	[redacted]
				[redacted]	[redacted]
		Estimated Daily Total		[redacted]	[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
6:30	7:15	Traveled from hotel to location.
7:15	7:45	Morning safety/operations meeting. Performed site assessment. Well 25: 2-7/8" - Shut in. 7" - 686 psi. 11-3/4" - 663 psi.
7:45	10:45	Rigged up return line from 7" annulus to choke manifold. Installed panic line.
10:45	12:00	Offloaded and spotted 1.5" coiled tubing reel.
12:00	13:15	Offloaded cab and injector. Well 25: 2-7/8" - Shut in. 7" - 682 psi. 11-3/4" - 638 psi.
13:15	14:30	Offloaded coiled tubing power pack, hydraulic tank, and stripper .
14:30	15:45	Offloaded coiled tubing BOP stack, goose neck, generator, and two hose baskets.
15:45	17:00	(16:10) Well 25: 11-3/4" pressure decreased to 284 psi. 7" decreased to 659 psi. Offloaded tool house and hose baskets.
		Moved man lift to pad 25.
17:00	17:30	Attended end of the day meeting.
17:30	18:00	Traveled to hotel.

Projected Operations

Rig up coiled tubing. Wash through hydrates. Kill well 25.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.25	1.25				
Danny Walzel	10.25	1.25				
James Kopecky	10.25	1.25				
Mike Baggett	10.25	1.25				
					Total Man-hours for Noted Date:	46

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HALLIBURTON
BOOTS & COOTS SERVICES

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Date:	3-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	10
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA. 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL levels at well 25 cellar were 100%. LEL levels 25 ft from well 25 were 14%.
		Well 25: 2-7/8" shut in. 7" - 626 psi. 11-3/4" - 599 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	7:15	Took LEL readings around well 25. LEL levels at cellar were 100%. LEL levels 25 ft from well 25 were 0 - 6%.
7:15	12:00	Spotted coiled tubing control cab, reel, and generator. Began rigging up. Installed line from tubing head to choke line.
		Spotted HT400 pump truck.
12:00	12:30	Lunch.
12:30	17:00	Continued rigging up coiled tubing unit. (13:00) Well 25: 2-7/8" - Shut in. 7" - 645 psi. 11-3/4" - 623 psi. Spotted MI/Swaco
		choke panel. Rigged up and function tested. Function tested BOP's. Nippled up 4-1/16" 10M riser. Nippled up BOP's.
		Installed kill lines. Dressed coiled tubing and installed connector. Delivered 490 bbls of 10.8 ppg CaCl2 to location.
17:00	17:30	Attended end of the day meeting. Will pull test and pressure test in the morning.
17:30	18:00	Traveled to hotel.

Projected Operations

Pull test. Pressure test. Wash through hydrates. Kill well 25.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.5	0.75				
Danny Walzel	11.5	0.75				
James Kopecky	11.5	0.75				
Mike Baggett	11.5	0.75				
					Total Man-hours for Noted Date:	49

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Date:	4-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	11
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA. 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar - 44%. LEL 25 ft from well 25 0 - 5%. 2-7/8" - Shut in. 7" - 512 psi.
		11-3/4" - 555 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:15	Pull tested coil tubing with 15k lbs.
8:15	9:00	Filled coil tubing with 19.5 bbls 10.8 ppg CaCl2.
9:00	13:00	Held PJSM to discuss pressure testing operations. Tested reel to 300/8,000 psi for 10 minutes each test. Test good.
		Filled stack. Trouble shoot leak in kill line. Tested choke line to 300/4,000 psi 5 minutes/test. Change out two lo-torq valves.
		Continued pressure testing choke line. Observed leak from adapter flange on choke manifold. Tightened flange. Tested both
		BSR's to 300 psi low/4,000 psi high. Tests good.
13:00	14:00	Made up wash assembly BHA.
14:00	17:30	Stabbed injector. Tested BOP's to 300 psi low and 4,000 psi high. Tested choke manifold valves to 300 psi low and 4,000 psi
		high. Trouble shoot leak in choke manifold. Secured well for the night. Well 25: Tbg - Shut in. 7" - 523 psi. 11-3/4" - 488 psi.
17:30	18:00	Attended end of the day meeting.
18:00	18:15	Traveled to hotel.

Projected Operations

Complete pressure testing. Wash through hydrates. Kill well 25.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.5	0.75				
Danny Walzel	11.5	0.75				
James Kopecky	11.5	0.75				
Mike Baggett	11.5	0.75				
					Total Man-hours for Noted Date:	49

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	5-Nov-2015	**Well Name and Number:**	Standard Senson 25 — Report # 12
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar - 25%. LEL 25 ft from well 25 0 - 6%. 2-7/8" - Shut in. 7" - 551 psi.
		11-3/4" - 467 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	7:30	Discussed yesterday's pressure testing. Will continue trouble shooting choke manifold and retest coil tubing BOP's
7:30	8:00	Greased valve #2 on choke manifold.
8:00	11:15	Pressure tested choke manifold valves to 300 psi low and 4,000 psi high. Valve #2 did not test.
11:15	13:30	Pressure tested lower BSR's to 300 psi low and 4,000 psi high. Changed out valve #2.
13:30	15:00	Shell tested choke manifold to 300 psi low and 4,000 psi high. Test good. Tested valve #2 to 300 psi low and 4,000 psi high.
		Test good. 11-3/4" - 515 psi.
15:00	18:00	Made up wash assembly BHA. Stabbed injector. Tested lower and upper pipe rams to 300 psi low and 4,000 psi high. Tests
		good. Tested stripper to 300 psi low and 4,000 psi high. Test good. Removed injector and stood back. Secured well.
18:00	18:30	Traveled to hotel.

Projected Operations

Complete pressure testing. Wash through hydrates. Kill well 25.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	12	0.75			
Danny Walzel	12	0.75			
James Kopecky	12	0.75			
Mike Baggett	12	0.75			
				Total Man-hours for Noted Date:	51

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	6-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	13
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar - 44%. LEL 25 ft from well 25 0%. 2-7/8" - Shut in. 7" - 560 psi.
		11-3/4" - 460 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:30	Greased Rotac valves on kill line. Made up wash assembly BHA. Stabbed injector. Tested stripper and outside Rotac valve to
		300 psi low and 4,000 psi high. Test good. Tested BPV 300 psi low and 4,000 psi high. Test good. Broke circulation in riser
		at 1 bpm. Maintained 2,800 psi back pressure with choke.
8:30	9:00	Held BOP drill with essential personnel.
9:00	10:00	Ran in hole to swab valve. Pumped 3 bbls of glycol and displaced out of the reel with 19 bbls 10.8 ppg CaCl2.
10:00	16:00	Held PJSM. Applied 3,000 psi on riser. Opened swab valve. Pressure stabilized at 2,700 psi. Began washing down at 3/4 bpm
		maintaining 2,900 psi with choke. Pump pressure 6,500 psi. Tagged up at 20 ft. Washed down to 53 ft. Pumped 5 bbls glycol.
		Displaced out of the coil with 19 bbls of 10.8 ppg CaCl2. Shut down. Applied 3,300 psi pressure. Waited 10 minutes. Pressure
		decreased to 2,800 psi. Continued washing down at 3/4 bpm holding 2,800 psi back pressure. Found bottom of hydrate plug
		at 188 ft. Continued washing down. At 482 ft choke pressure decreased to 1,200 psi. Unable to maintain back pressure. Lost
		returns. Experienced drag. Continued pumping without returns. Pulled coil tubing up into riser. Began pumping down tubing
		tubing head outlet. At 2 bpm PP - 41 psi. At 4 bpm PP - 120 psi. Continued pumping down tubing at 1 bpm waiting on polymer
		pill.
16:00	17:30	Began pumping polymer pill 4 bpm. Pump pressure 100 psi. Pumped total of 62 bbls. Gas activity from fissures increased.
		Observed polymer from fissures around cellar. Shut down pumping operations. Tubing pressure 0 psi. Evacuated personnel.
		11-3/4" - 64 psi. 7" - 305 psi. Flowed gas from 7" and 11-3/4" annulus to open top tank. Activity from fissures appeared to
		decrease. Shut in well. 7" - 262 psi. 11-3/4" - 71 psi.
17:30	18:00	Attended end of the day meeting. Discussed running caliper tool on slick line to determine restriction at 482 ft.
		Pumped approxiamtely 200 bbls without returns.
18:00	18:15	Traveled to hotel.

Projected Operations

Kill well 25.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	12	0.75				
Danny Walzel	12	0.75				
James Kopecky	12	0.75				
Mike Baggett	12	0.75				
					Total Man-hours for Noted Date:	51

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	7-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	14
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA. 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar - 54%. LEL 25 ft from well 25 49%. 2-7/8" - 940 psi. 7" - 229 psi. 11-3/4" - 60 psi. Could not start equipment due LEL levels.
6:30	7:00	Attended morning operations meeting. Discussed bleeding off tubing. Discussed removing mushroom from stripper to rig up slickline.
7:00	8:45	Installed gauge on tubing. Tubing pressure 1,100 psi.
8:45	9:30	Monitored well.
9:30	10:00	Tubing pressure 1,146 psi. 7" - 228 psi. 11-3/4" - 59 psi. Bled tubing to 1,110 psi. Bled gas and fluid. Shut in. 7" - 228 psi. 11-3/4" - 59 psi. After 10 minutes tubing pressure increased to 1,161 psi.
10:00	10:30	Tubing pressure 1,170 psi. 7" - 231 psi. 11-3/4" - 60 psi. Bled tubing to 1,070 psi. Bled gas and fluid. Shut in. 7" - 231 psi. 11-3/4" - 60 psi. After 10 minutes tubing pressure increased to 1,226 psi.
10:30	11:00	Attempted to shoot fluid levels. Could not detect fluid levels due to well noise.
11:00	14:00	Start equipment. Removed mushroom from stipper. Spotted slickline unit and rigged up. (11:45) 2-7/8" - 1298 psi. 7" - 222. 11-3/4" 60 psi. (13:45) 2-7/8" - 1,407 psi. 7" - 227 psi. 11-3/4" - 60 psi.
14:00	15:00	Made up 4-1/16" 15M x Bowen X-over on stripper.
15:00	17:00	Made up 2.30" gauge ring. Stabbed lubricator. Tested lubricator to 300 psi low and 4,000 psi high. Test good. Equalized swab valve with 1,250 psi. Opened swab valve and ran in hole. Estimated fluid level - 3,750 ft. Tagged nipple profile 8,425 ft. Pulled out of the hole. Secured well. Laid down lubricator. 2-7/8" - 1584 psi. 7" - 217 psi. 11-3/4" - 60 psi.
17:00	17:30	Traveled to hotel.

Projected Operations

Run production logging tool (CCL, Temp, Spinner). Run tubing caliper.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.75				
Danny Walzel	11	0.75				
James Kopecky	11	0.75				
Mike Baggett	11	0.75				
					Total Man-hours for Noted Date:	47

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HALLIBURTON BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	8-Nov-2015	Well Name and Number:	Standard Senson 25 — Report # 15
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar - 100%. LEL 25 ft from well 25 35 - 75%. 2-7/8" - 1,660 psi. 7" - 218 psi.
		11-3/4" - 65 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:15	Continued monitoring LEL levels. Commenced operations.
8:15	11:15	Began making up slickline tools. Tool string: Spinner, ITL CL, Temperature, Pressure, and GR. Stabbed lubricator.
		2-7/8" - 1,681 psi. 7" - 192 psi. 11-3/4" - 62 psi.
11:15	14:15	Pressure tested lubricator to 300/4,000 psi. Test good. Equalized swab valve with 1,500 psi. Opened swab valve RIH at 50 fpm.
		sat down at 8,425 ft. (13:15) 2-7/8" - 1,615 psi. 7" - 212 psi. 11-3/4" - 65 psi.
14:15	15:45	Pulled out of the hole at 100 fpm. In lubricator. Secured well.
15:45	16:00	Laid down lubricator. Down load data. Began preparing logs. Shut down for the night.

Projected Operations

Run gyro and tubing caliper.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	12	0.75			
Danny Walzel	12	0.75			
James Kopecky	12	0.75			
Mike Baggett	12	0.75			
				Total Man-hours for Noted Date:	51

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Date:	9-Nov-2015	Well Name and Number:	Standard Senson 25 — Report # 16
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar - 100%. LEL 25 ft from well 25 35 - 75% (North side of pad). LEL around equipment 0%. 2-7/8" - 1,620 psi. 7" - 215 psi. 11-3/4" - 66 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	10:30	Rigged up e-line. SDI began preparing to run gyro.
10:30	11:15	Decision was made to run/noise temp. Made up noise/temp tools.
11:15	12:15	Stabbed lubricator. Tested to 300/4,000 psi. Test good. Equalized swab valve with 1,500 psi. Opened swab valve. RIH. Pulled out of hole to check noise/temp tools.
12:15	13:15	Pulled into lubricator. Secured well. 2-7/8" - 1,585 psi. 7" - 216 psi. 11-3/4" - 69 psi. Changed out noise/temp tools.
13:15	18:00	Stabbed lubricator. Tested to 300/4,000 psi. Test good. Equalized swab valve with 1,500 psi. Opened swab valve. RIH. Logged temperature down to 8,435 ft. Log noise out of the hole. Secured well. Laid down lubricator. 2-7/8" - 1,585 psi. 7" - 218 psi. 11-3/4" - 69 psi.
18:00	18:30	Attended end of the day meeting.
18:30	18:45	Traveled to hotel.

Projected Operations

Run gyro and tubing caliper.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	12.5	0.5			
Danny Walzel	12.5	0.5			
James Kopecky	12.5	0.5			
Mike Baggett	12.5	0.5			
				Total Man-hours for Noted Date:	52

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Date:	10-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	17
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Danny Clayton	1		
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. LEL at Well 25 cellar: 75 - 100%. LEL 25 ft from well 25 25 - 75%. 2-7/8" - 1,624 psi. 7" - 211 psi.
		11-3/4" - 70 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	9:30	SDI prepared to run gyro.
9:30	12:00	Stabbed lubricator. Tested lubricator to 300/4,000 psi. Test good. Equalized swab valve with 1,500 psi. Opened swab valve.
		RIH. Attempted to orient gyro. Unsuccessful. Pulled out of the hole.
12:00	14:00	Tested gyro. Cut 300 feet of e-line. Made up gyro.
14:00	16:00	Stabbed lubricator. Tested lubricator to 300/4,000 psi. Test good. RIH. Could not orient gyro. Well temperature and vibrations
		affecting tool. Pulled out of the hole.
16:00	17:00	Secured well. Laid down lubricator. Rigged down SDI.
17:00	17:45	Attended end of the day meeting. Located 2-7/8" EZSV in Longview, Texas.
17:45	18:00	Traveled to hotel.

Projected Operations

Prepare for kill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.75	0.5				
Danny Walzel	11.75	0.5				
James Kopecky	11.75	0.5				
Mike Baggett	11.75	0.5				
					Total Man-hours for Noted Date:	49

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	11-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	18
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA. 91326	**State:**	California		
		Country:	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Danny Clayton	1		
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Took LEL readings. Cleared location to begin work. 2-7/8" - 1,705 psi. 7" - 227 psi. 11-3/4" - 75 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	12:00	Drained riser to vac truck. Nippled down coil tubing BOP's. Nippled down riser and 4-1/16" 10M gate valve. Installed 2-9/16" 5M gate valve on swab valve. Installed 2-9/16" 5M x Bowen adapter flange. Tested to 300 psi low and 5,000 psi high. Test good. Talked with Western Wireline representative. Ordered out 2 Baker 5 setting tools to set 2-7/8" EZSV. Halliburton is flying 2 2-7/8" EZSV's from Longview, Texas and setting sleeves from Utah. Tools will arrive tonight. Bridge Plug conversion kits are being machined in Ventura, California.
12:00	15:00	Back loaded slickline unit and sent to staging area. Back loaded lateral lines from well 25. Pulling 10.8 ppg CaCl2 from frac tank. Will cut to 9.4 ppg.
15:00	15:30	2-7/8" - 1,707 psi. 7" - 229 psi. 11-3/4" - 85 psi. Flowed 11-3/4" casing for 5 minutes on 32/64 choke. Flowing casing pressure 69 psi. Shut in. 11-3/4" - 85 psi. Flowed 7" casing on 28/64 choke for 15 minutes. Flowing casing pressure - 200 psi. Shut in 7" casing pressure 220 psi. 2-7/8" - 1,703 psi. 7" - 220 psi. 11-3/4" - 84 psi.
15:30	17:00	Continued removing equipment from location in preparation for kill. Discussed kill plan with SCGC representative.
17:00	17:30	Traveled to hotel.

Projected Operations

Set EZSV in tubing. Perforate tubing. Kill well.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5			
Danny Walzel	11	0.5			
James Kopecky	11	0.5			
Mike Baggett	11	0.5			
				Total Man-hours for Noted Date:	46

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	12-Nov-2015	Well Name and Number:	Standard Senson 25 — Report # 19
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Danny Clayton	1		
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Took LEL readings. Cleared location to begin work. 2-7/8" - 1,737 psi. 7" - 240 psi.
		11-3/4" - 108 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	11:15	Two 2-7/8" EZSV's arrived on location. Baker 5 setting tool arrived on location. Stabbed lubricator. Tested to 300/4,000 psi
		with HAL pump. Test good. Laid down lubricator. Made up 2-7/8" EZSV. Tested lubricator to 400/4,000 psi. Test good.
11:15	15:00	Equalized swab valve with 1,500 psi. Opened swab valve. RIH. Set EZSV at 8,393 ft. Pulled out of hole.
15:00	15:30	2-7/8" - 1,694 psi. 7" - 245 psi. 11-3/4" - 105 psi. Bled tubing to 1,195 psi. Shut in. 2-7/8" - 1,195 psi. 7" - 245 psi. 11-3/4" -
		105 psi.
15:30	16:00	Attended end of the day meeting. Discussed perforating tubing and kill plan.
16:00	16:30	Traveled to hotel.

Projected Operations

Perforate tubing. Kill well.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10	0.75				
Danny Walzel	10	0.75				
James Kopecky	10	0.75				
Mike Baggett	10	0.75				
					Total Man-hours for Noted Date:	43

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Date:	13-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	20
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA. 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Took LEL readings. Cleared location to begin work. 2-7/8" - 1,202 psi. 7" - 229 psi. 11-3/4" - 89 psi.
6:30	7:00	Attended morning safety/operations meeting. Discussed perforating tubing and pumping kill.
7:00	9:00	Installed targeted 90 on wellhead flowline. Stabbed lubricator. Tested to 300/4,000 psi. Test good. Equalized swab valve with 1,200 psi. Opened swab valve. Tubing pressure 1,201 psi. Pumped 6 bbls of 10.8 ppg CaCl2. 2-7/8" - 908 psi. 7" - 229 psi. 11-3/4" - 90 psi.
9:00	11:15	RIH with tubing punch. Tagged EZSV at 8,402 ft. Perforated tubing 8,387 ft to 8,391 ft. Pulled out of hole. Laid down lubricator.
11:15	14:00	2-7/8" - 1,526 psi. 7" - 253 psi. 11-3/4" - 89 psi. Held PJSM. Pumped 10 9.4 ppg polymer pill. Began displacing with 9.4 ppg CaCl2. After displacing tubing volume opened choke on 7" casing. Pump rate 6 bpm. PP - 166 psi. After 80 bbls displaced observed increased gas flow and liquid from fissures. Pump rate 8.0 bpm. PP - 1,500 psi. Continued pumping at 8.0 bpm. After 185 bbls pumped. Pump pressure - 1,400 psi. Pony motor went down. 7" - 45 psi. 11-3/4" - 45 psi. Pumps offline. Brought pumps online at 7 bpm. Pump pressure 0 psi. After 210 bbs pumped. Pump pressure 203 psi. After 320 bbls pumped PP - 634 psi. Brine, oil, and gas flowing from fissures on pad. After 693 bbls pumped 10 bbls 9.4 ppg polymer pill. Displaced into tubing with 3 bbls. Shut down. Tubing pressure 0 psi. 7" - 192 psi. 11-3/4" - 92 psi.
14:00	17:00	Lined up to pump down 2-7/8" x 7" annulus. Pumped junk shot. After 5 bbls pumped observed brine from fissures. Continued pumping junk shots. Shut down. 2-7/8" - 278 psi. 7" - 293 psi. 11-3/4" - 42 psi.
17:00	17:45	Attended end of the day meeting. Discussed pumping junk shot to plug hole in 7" casing and pumping barite pill out of perfs in tubing.
17:45	18:00	Traveled to hotel.

Projected Operations

Pump barite pill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.75	0.5			
Danny Walzel	11.75	0.5			
James Kopecky	11.75	0.5			
Mike Baggett	11.75	0.5			
				Total Man-hours for Noted Date:	49

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Date:	14-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	21
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Took LEL readings. Cleared location to begin work. 2-7/8" - 1,610 psi. 7" - 245 psi. 11-34" - 35 psi.
6:30	7:30	Checked pressures on Well 25A: 2-7/8" - 680 psi. 8-5/8" - 80 psi. Checked pressures on Well 25B: 2-7/8" - 2,375 psi.
		8-5/8" - 1,500 psi.
7:30	8:30	Bled Well 25 7" annulus from 245 psi to 200 psi. Bled gas. Shut in and monitored.
8:30	16:30	Cleaned location and equipment. Discussed pumping barite pill with SCGC representatives. Created program for pumping
		barite pill. Gave to SCGC for review. Performed pilot tests with chemicals for 18.0 ppg pill. Samples proved to be pumpable
		with good settling times. (15:15) Well 25: 2-7/8" - 1.690 psi. 7" - 213 psi. 11-3/4" - 32 psi. Moved in and rigged up HAL
		batch mixer. Sucked out Well 25 cellar. 11-3/4" casing valve is covered with silt. Ordered out Super Sucker.
16:30	18:00	Filled frac tank on Pad 25 with 500 bbls 9.4 ppg brine. Modified pump line to pump junk shots down 7" annulus.
18:00	18:15	Traveled to hotel.

Projected Operations

Pump barite pill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10	0.5				
Danny Walzel	10	0.5				
James Kopecky	12	0.5				
Mike Baggett	12	0.5				
					Total Man-hours for Noted Date:	46

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Date:	15-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	22
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Took LEL readings. Cleared location to begin work. 2-7/8" - 1,607 psi. 7" - 217 psi. 11-34" - 32 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	7:45	Cleaned location.
7:45	10:30	Began moving chemicals for barite pill to pad 25. Began mixing 22 bbl 18.0 ppg barite pill. Held PJSM.
10:30	11:15	Began pumping 9.4 ppg CaCl2. Initial pump pressure - 1,645 psi. Staged pumps up to 5 bpm. After 50 bbls pumped PP - 83 psi.
		Increased pump rate to 8 bpm. After 75 bbls pumped PP - 1,305 psi. Gas rate from fissures increased followed by oil and brine.
		After 170 bbls pumped PP - 1,550 psi. Pumped 19 bbls 18.0 ppg barite pill. Began displacing with 9.4 ppg CaCl2 at 8.0 bpm.
		PP - 220 psi. After displacing 35 bbls PP - 1,367 psi. After displacing 45 bbls PP - 1,500 psi. After displacing 50 bbls pump
		pressure 1,250 psi. (11:15) Shut down. 2-7/8" - 0 psi. 7" - 107 psi. 11-3/4" - 22 psi.
11;15	14:00	Monitored well. Flow from fissures stopped briefly and then began flow gas. (12:20) 2-7/8" began increasing. 7" - 205 psi.
		11-3/4" - 35 psi. (13:00) 2-7/8" - 220 psi. 7" - 190 psi. 11-3/4" - 38 psi. (14:00) 2-7/8" - 600 psi. 7" - 190 psi. 11-3/4" - 40 psi.
		(15:00) 2-7/8" - 980 psi. 7" - 220 psi. 11-3/4"- 39 psi. (16:00) 2-7/8" - 1159 psi. 7" - 251 psi. 11-3/4" - 37 psi.
14:00	14:30	Attended end of the day meeting. Discussed pumping another barite pill. Will pump 35 bbl 18.0 ppg barite pill.
14:30	14:45	Traveled to hotel.

Projected Operations

Pump barite pill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.5	0.5			
Danny Walzel	10.5	0.5			
James Kopecky	10.5	0.5			
Mike Baggett	10.5	0.5			
				Total Man-hours for Noted Date:	44

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Date:	16-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	23
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 ft from well 0 to 100%. LEL around equipment 0 - 75%. 2-7/8" - 1,688 psi. 7" - 218 psi. 11-3/4" - 33 psi.
6:30	7:00	Attended morning safety/operations meeting. Will wait for LEL readings to decrease before starting equipment.
7:00	13:00	Continued monitoring LEL's around location. Cleaned e-line unit in preparation for logging operations. Filled batch mixer with 22
		bbls fresh water. Transported barite pill materials to pad 25. Prepared barite pill program and submitted to SCGC for review.
		Continued cleaning equipment and location.
13:00	13:30	Operations were shut down for the day due to LEL levels. Assisted with DOGGR afternoon survey. 2-7/8" - 1,696 psi. 7" - 211
		psi. 11-3/4" - 33 psi.
13:30	13:45	Traveled to hotel.

Projected Operations

Pump barite pill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	7.5	0.5				
Danny Walzel	7.5	0.5				
James Kopecky	7.5	0.5				
Mike Baggett	7.5	0.5				
					Total Man-hours for Noted Date:	32

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Date:	17-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	24
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 ft from well 0 to 100% LEL around equipment 0 - 77%. Winds out of the North 40 - 50 mph.
		2-7/8" - 1668 psi. 7" - 204 psi. 11-3/4" - 35 psi.
6:30	7:00	Attended morning safety/operations meeting. Decision was made to wait for LEL levels to subside before starting equipment.
7:00	11:00	Escorted HAL and T&T crane personnel to wellsite to inspect equipment.
11:00	14:00	Talked with B&C Houston about relief well trajectories. Provided surface locations and Well 25 survey data.
14:00	14:30	Escorted DOGGR representatives to Well 25 for afternoon survey. Decision was made to end operations for the day due to LEL
		levels. 2-7/8" - 1,688 psi. 7" - 209 psi. 11-3/4" - 32 psi. Secured location. Placed absorbent boom across access road.
14:30	15:00	Attended end of the day meeting with state agency representatives and SCGC.
15:00	15:15	Traveled to hotel.

Projected Operations

Pump barite pill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	9	0.5				
Danny Walzel	9	0.5				
James Kopecky	9	0.5				
Mike Baggett	9	0.5				
					Total Man-hours for Noted Date:	38

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Date:	19-Nov-2015	**Well Name and Number:**	Standard Senson 25 — Report # 26
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	[redacted]
Well Control Specialist	4	James Kopecky	1	[redacted]	[redacted]
Sr. Well Control Engineer	4	Danny Walzel	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
				[redacted]	[redacted]
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
Hotel		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
				[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
				[redacted]	[redacted]
				[redacted]	[redacted]
Estimated Daily Total				[redacted]	[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 feet from well - 0 to 100%. LEL level around equipment 0 - 65%. 2-7/8" - 138 psi. 7" - 210 psi. 11-3/4" - 28 psi.
6:30	7:00	Attended morning safety/operations meeting. Discussed cleaning equipment and moving equipment to SS-1.
7:00	13:00	Began rigging down batch mixer and pump truck. Cleaned equipment. Moved out batch mixer for cleaning. Began making up
		2-7/8" pump line from SS-1 to SS-25. Prepared SS-1 for equipment. Completed pump line.
13:00	14:00	Installed night cap with pressure gauge on SS-25. Tubing pressure 1,600 psi. Trouble shoot manifold tubing pressure gauge.
14:00	17:00	Moved 2 500 bbls frac tanks, batch mixer and HAL Elite pump truck to SS-1 Continued cleaning equipment at SS-25.
17:00	17:15	Traveled to hotel.

Projected Operations

Continue moving equipment to SS-1.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5			
Danny Walzel	11	0.5			
James Kopecky	11	0.5			
Mike Baggett	11	0.5			
				Total Man-hours for Noted Date:	46

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Date:	18-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report # 25
Customer Name:	Southern California Gas Company	**County:**	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA. 91326	**State:**	California	
		Country:	USA	
AFE #:		**Well Location:**	Aliso Canyon Storage Facility	
Customer Representative:		**Well Type:**	Gas	
Report Generated By:	Danny Walzel	**Job Type:**	Well Control	
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A	

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
Well Control Engineer	1	**NO CHARGE**	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 feet from well - 0 to 100%. LEL level around equipment 0 - 100%. 2-7/8" - 1,597 psi. 7" - 199 psi. 11-3/4" - 34 psi.
6:30	7:00	Attended morning safety/operations meeting. Discussed pumping barite pill.
7:00	8:00	Identified location north of well pad 25 to spot pump, frac tanks, and batch mixer. Began preparing location for equipment.
8:00	9:00	Continued monitoring LEL around well pad 25.
9:00	10:00	Began mixing 35 bbls 18.0 ppg barite pill. Began pumping 9.4 ppg CaCl2 down tubing. Began pumping at 0.5 bpm. Pump
		pressure - 1,650 psi. Staged pumps to 5 bpm. After 50 bbls pump pressure - 65 psi. Shut down. Perforations clear. Well
		unloaded tubing.
10:00	10:15	Held PJSM.
10:15	11:00	Began pumping 9.4 ppg CaCl2. Staged pumps up to 6.0 bpm. PP - 125 psi. At 45 bbls pumped gas increased from fissure.
		Observed brine and oil from fissure. After 65 bbls pumped increased pump rate to 8 bpm. PP - 225 psi. At 70 bbls pumped PP
		increased to 987 psi. After 100 bbls pumped PP - 1,116 psi. After 130 bbls pumped increased pump rate to 9.0 bpm. PP -
		1,838 psi. At 230 bbls pump PP - 1,830 psi. Winds began shifting out of the North. Pumped 35 bbl 18.0 ppg barite pill. Displaced
		with 13 bbls at 8.0 bpm. PP - 1,333 psi. Pumped 17 bbls at 6.0 bpm. Pump pressure 123 psi. Pumped 10 bbls at 4 bpm.
		PP - 74 psi. Pumped 10 bbls at 1 bpm. PP - 68 psi. Total volume displaced 50 bbls. Shut down. Pump pressure 0 psi.
11:00	16:30	Monitored well. 2-7/8" - 36 psi. 7" - 190 psi. 11-3/4" - 48 psi. (11:30) 2-7/8" 45 psi. 7" - 175 psi. 11-3/4" - 40 psi. (12:30)
		2-7/8" - 80 psi. 7" - 150 psi. 11-3/4" - 40 psi. (13:30) 2-7/8" - 90 psi. 7" - 220 psi. 11-3/4" - 40 psi. (14:30) 2-7/8" - 100 psi.
		7" - 240 psi. 11-3/4" - 34 psi. (15:30) 2-7/8" - 108 psi. 7" - 265 psi. 11-3/4" - 38 psi. (16:30) 2-7/8" - 110 psi. 7" - 241 psi.
		11-3/4" - 32 psi.
16:30	17:30	Spotted slickline unit. Cleaned equipment. Work continued on secondary pumping location.
17:30	17:45	Traveled to hotel.
		B&C Houston prepared preliminary relief well plots and submitted to SCGC.

Projected Operations

Prepare secondary location.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.5	0.5				
Danny Walzel	11.5	0.5				
James Kopecky	11.5	0.5				
Mike Baggett	11.5	0.5				
					Total Man-hours for Noted Date:	48

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Date:	20-Nov-2015	Well Name and Number:	Standard Senson 25 — Report # 27
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA. 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 feet from well - 0 to 100%. LEL level around equipment 0 - 100%. 2-7/8" - 1,630 psi. 7" - 208 psi. 11-3/4" - 26 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	7:30	Placed barrier across road to pad 25 to prevent vehicles from entering. High LEL reading across road.
7:30	11:30	Modified manifold on well 25 to allow flowing 2-7/8" tubing to withdraw line.
11:30	12:00	Escorted ER team to pad 25 for assessment.
12:00	13:00	Checked pressure on Well 25A: 2-7/8" - 620 psi. 8-5/8" - 43 psi. Checked pressure on well 25B: 2-7/8" - 2,300 psi. 8-5/8" -
		1,850 psi.
13:00	17:00	Moved in 2-7/8" pump line to well 25. Continued preparing SS-1 site for pumping operations. Filled one 500 bbl frac tank with 9.4
		ppg CaCl2. Filled one 500 bbl frac tank with fresh water. Spotted additional 500 bbl frac tank. Will fill with fresh water.
		GEO Zan polymer arrived. Continued working on kill program.
17:00	17:15	Traveled to hotel.

Projected Operations

Prepare for kill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5			
Danny Walzel	11	0.5			
James Kopecky	11	0.5			
Mike Baggett	11	0.5			
				Total Man-hours for Noted Date:	46

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Date:	21-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	28
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA. 91326	State: Country:	California USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Danny Clayton	1		
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
Well Control Engineer	1	John Hatteberg / Travel	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B. / J.H.	5		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Hotel		J.H.	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 feet from well - 0 to 100%. LEL level around equipment 0 - 52%. 2-7/8" - 1,628 psi. 7" - 204 psi. 11-3/4" - 29 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:30	Rigged up Batch Mixer and Pump Truck at SS-1. Reconfigured pump line at SS 25 to pressure test lubricator at SS 25A and
		SS 25B wells.
8:30	9:30	Installed uni-bolt adapters on SS 25A and SS 25B. Completed 2-7/8" pump line tie in at SS 25.
9:30	11:30	Moved out pump truck from 25 pad. Sent to decon. Removed pump line from CT reel. Moved out man lift. Sent to decon.
11:30	12:30	Lunch.
12:30	16:30	Repositioned Pump Truck at SS-1. Tested 2-7/8" pump line to 300/4,000 psi. High test failed. Trouble shoot leaks. Tightened
		2-7/8" connections. Moved in and rigged up 40T crane at SS 25. 2-7/8" - 1,661 psi. 7" - 194 psi. 11-3/4" - 26 psi.
16:30	17:00	Attended end of the day meeting.
17:00	17:15	Traveled to hotel.
		(12:00) John Hatteberg arrived at LAX. (15:00) Arrived at hotel. Reviewed survey data. Submitted discussion points to SCGC.
		Danny Walzel and John Hatteberg will meet at SCGC Chatsworth office at 08:00 to discuss operations to date.

Projected Operations

Prepare for kill. Move in and rig up second HT400 at SS-1. Set tubing plugs in SS 25A and SS 25B. Run Gyro surveys.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5				
Danny Walzel	11	0.5				
James Kopecky	11	0.5				
Mike Baggett	11	0.5				
John Hatteberg		8				
					Total Man-hours for Noted Date:	54

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	22-Nov-2015	**Well Name and Number:**	Standard Senson 25 — Report # 29
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
Well Control Engineer	1	John Hatteberg / Travel	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B. / J.H.	5	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Hotel		J.H.	1	
Rental Car			1	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 feet from well - 0 to 100%. LEL level around equipment 0 - 49%. 2-7/8" - 1,628 psi. 7" - 204 psi. 11-3/4" - 29 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	9:00	Monitor LEL levels. Began rigging up slickline to run tubing plugs in SS 25A and SS 25B. Danny Walzel and John Hatteberg
		met Alan Gosse and SCGC representatives at Chatsworth office to discuss relief well planning.
9:00	13:00	Well 25B: RIH with 2.3" gauge ring to 8,372 ft. Pulled out of the hole. Ran in the hole with PX plug and set at 8,372 ft. Ran and
		set prong.
13:00	16:15	Well 25A: RIH with 2.8" gauge ring to 8,144 ft. Pulled out of the hole. Ran in the hole with PX plug and set at 8,144 ft. Pulled
		out of the hole. Ran in the hole with prong. Prong did not set in PX plug. Pulled out of the hole. Tested 2-7/8" pump line to
		300/,5000 psi. Test good.
16:15	17:30	Laid down lubricator. Repositioned Grease Pack Unit. Will re-run prong in the morning. 2-7/8" - 1,646 psi. 7" - 199 psi.
		11-3/4" - 25 psi.
17:30	17:45	Traveled to hotel.
		John Hatteberg continued reviewing survey data. Entered data into compass. Ran anti-collision against SS 25 and relief well.
		Determined which wells need to be re-surveyed. Began relief well plan.

Projected Operations

Prepare for kill. Move in and rig up second HT400 at SS-1. Set prong in SS 25A. Prepare relief well plan.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.5	0.5			
Danny Walzel	11.5	0.5			
James Kopecky	11.5	0.5			
Mike Baggett	11.5	0.5			
John Hatteberg	11.5	0.5			
				Total Man-hours for Noted Date:	60

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Date:	23-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	30
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
Well Control Engineer	2	John Hatteberg / Clients Office	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B. / J.H.	5	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Hotel		J.H.	1	
Rental Car			1	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the South East. Took LEL readings. LEL level at the cellar - 100%.
		LEL level 25 feet from well - 0 to 24%. LEL level around equipment 0%. 2-7/8" - 1,624 psi. 7" - 202 psi. 11-3/4" - 29 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:30	Rigged up slickline on well SS 25A. RIH with prong. Set in PX plug at 8,144 ft. Pulled into lubricator. Bled tubing from 580 psi
		to 560 psi. Rigged down slickline. Moved in second HAL Elite pump truck to SS-1 and rigged up.
8:30	14:00	Back loaded slickline unit and equipment. Sent to decon. Back loaded injector, guide, control cab, power pack, generator, and
		tool house. Sent to decon. Rigged down 40T crane and moved out. Survey crew took surveyed surface coordinates for SS-25.
		Installed anchor chains around Well 25. Left loose.
		Moved in nitrogen truck and blew out coil tubing. Back loaded reel and sent to decon.
14:00	14:30	Pressure tested second HAL Elite pump line to 300/5,000 psi. Test good.
14:30	16:00	Anchored 2-7/8" pump line. Secured 2-7/8" pump line at pad 25 with concrete blocks.
16:00	17:00	Rigged down 100T crane and moved out. Prepared location for kill.
17:00	17:15	Traveled to hotel.
		John Hatteberg continued working on the data base, relief well directional plan. Discussed forward operations.

Projected Operations

Pump kill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5			
Danny Walzel	11	0.5			
James Kopecky	11	0.5			
Mike Baggett	11	0.5			
John Hatteberg	11	0.5			
				Total Man-hours for Noted Date:	57.5

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Date:	24-Nov-2015	**Well Name and Number:**	Standard Senson 25 — Report # 31
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
Well Control Engineer	2	John Hatteberg / Clients Office	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B. / J.H.	5	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Hotel		J.H.	1	
Rental Car			1	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the South East. Took LEL readings. Cleared location for personnel.
		2-7/8" - 1,638 psi. 7" - 199 psi. 11-3/4" - 26 psi.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:45	Prepared for pumping operations. Held PJSM.
8:45	9:45	Mixed 50 bbls GEO Zan polymer pill loaded with LCM. Mixed 35 bbls 18.0 ppg barite pill.
9:45	11:45	Pumped 50 bbl GEO Zan pill. Began pumping fresh water. Began pumping fresh water at 5 BPM. Pump pressure 1,944 psi.
		After 60 bbls pumped PP - 355 psi. Increased pump rate to 8 BPM. PP - 1,670 psi. After 80 bbls pumped increased pump rate to
		10 BPM. PP - 2,774 psi. Gas from crater increased after 90 bbls pumped. After 135 bbls pumped increased rate to 12 BPM.
		PP - 3,502 psi. Increased pump rate to 13 BPM. PP - 4,167 psi. Opened 7" choke after 850 bbls pump. 7" casing pressure
		decreased from 160 psi to 8 psi. Pumped 950 bbls water. PP - 4,067 psi. Pumped 35 bbls barite pill. Displaced out of the tubing
		with 56 bbls. Shut down. Pump pressure 0 psi.
11:45	13:00	Monitored well.
13:00	17:15	Tubing pressure increased to 76 psi. 7" - 188 psi. 11-3/4" - 27 psi. (17:15) 2-7/8" - 1,311 psi. 7" - 155 psi. 11-3/4" - 26 psi.
		At time of report recovered 700 bbls of fluid from location.
17:15	17:30	Traveled to hotel.
		John Hatteberg continued planning relief well. Updated SHL's of offset wells and target well, corrected all well elevations, made
		wall plot and anti collision report. Began working on final presentation.

Projected Operations

Pump kill.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.25	0.5			
Danny Walzel	11.25	0.5			
James Kopecky	11.25	0.5			
Mike Baggett	11.25	0.5			
John Hatteberg	11.25	0.5			
				Total Man-hours for Noted Date:	58.75

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	25-Nov-2015	**Well Name and Number:**	Standard Senson 25	Report #	32
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
Well Control Engineer	2	John Hatteberg / Clients Office	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B. / J.H.	5		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Hotel		J.H.	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel to begin work. 2-7/8" - 1,651 psi. 7" - 199 psi. 11-3/4" - 25 psi.
6:30	7:00	Attended morning operations/safety meeting.
7:00	8:00	Prepared for pumping operations. 2-7/8" - 1,643 psi. 7" - 200 psi. 11-3/4" - 25 psi.
8:00	11:00	Pumped 50 bbl GEO Zan pill loaded with LCM. Displaced with fresh water down tubing with 56 bbls at 5 BPM. IPP - 1,760 psi. FPP - 280 psi. Increased pump rate to 12 bpm. PP - 3,496 psi. After 60 bbls pumped increased pump rate to 13 bpm. PP - 4,173 psi. After 140 bbls pumped gas activity increased from crater. 7" - 40 psi. After 700 bbls pump water flow from crater increased. Continued pumping at 13 BPM. PP - 4,164 psi. Pumped 960 bbls of water. 7" - 17 psi. 11-3/4" - 27 psi. Pumped 100 bbls GEO Zan pill loaded with LCM. Began displacing with 9.4 ppg CaCl2 at 4 bpm. PP - 89. After 20 bbls of displacement slowed pump rate to 2 BPM. PP - 20 psi. After displacing 40 bbls slowed pump to 1 bpm. PP - 0 psi. After displacing 56 bbls shut down. 2-7/8" - 0 psi. 7" - 0 psi. 11-3/4" - 27 psi.
11:00	16:00	Flowline from 7" and tubing head broke. Nipple on well head broke. Pump line to 7" casing head broke. Fabricated valve extension handles for tubing head valve and 7" casing valves.
16:00	17:00	Closed tubing head valve and 7" casing valves.
17:00	17:30	Attended end of day meeting.
17:30	17:45	Traveled to hotel.
		John Hatteberg continued working on relief well plan and presentation. Gave presentation to SCGC. Will travel to Houston tomorrow.

Projected Operations

Secure well head. Clean location.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.5	0.5				
Danny Walzel	11.5	0.5				
James Kopecky	11.5	0.5				
Mike Baggett	11.5	0.5				
John Hatteberg	11.5	0.5				
					Total Man-hours for Noted Date:	60

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	27-Nov-2015	Well Name and Number:	Standard Senson 25	Report #	34
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel to begin work.
6:30	7:00	Attended morning operations/safety meeting.
7:00	12:00	Met with crane operator and discussed location to spot 100T crane. Moved in backhoe and cleared area for crane.
12:00	12:30	Lunch.
12:30	16:45	Delivered 320 track hoe to pad 25. Began clearing around well 25. Moved in man lift. Installed hand wheel on crown valve.
		Tightened hand wheel on tree wing valve. Installed pressure gauge on night cap. Checked tubing pressure. Tubing pressure
		1,600 psi. Removed whip check from 2-1/16" 5M x 1502 adapter flange.
16:45	17:15	Attended end of the day meeting.
17:15	17:30	Traveled to hotel.

Projected Operations

Rig up to flow tubing to withdraw line. Run noise/temp. Attempt to run gyro.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.25	0.5			
Danny Walzel	11.25	0.5			
James Kopecky	11.25	0.5			
Mike Baggett	11.25	0.5			
				Total Man-hours for Noted Date:	47

7047 W. Greens Rd.
Houston, TX. 77066
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Date:	28-Nov-2015	Well Name and Number:	Standard Senson 25 / Report # 35
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. LEL's too high to run equipment.
6:30	7:00	Attended morning operations/safety meeting.
7:00	13:30	Monitored LEL's. Met with Onyx and Weatherford. Ordered out hoses for hydraulic choke. Identified rig up to flow tubing through hydraulic choke to test separator with the option to flow to withdraw line or open top tank. Identified rig up to flow 7" casing through secondary test separator to open top tank. Made up 50 ft of 2" 5M co-flex hose. Met with SCGC representatives to discuss rig up to flow tubing to withdraw line. Discussed installing surface safety valve on tree assembly. Discussed re-installing relief valve on withdraw line. Located relief valve for withdraw line. Relief valve will be bench tested. Located surface safety valve that was removed from SS 25. Sent for bench testing.
13:30	16:00	Winds out of the North East. Moved in track hoe and backhoe. Excavated around SS 25. Cleaned east side of location. Performed site work.
16:00	16:15	Attended end of the day meeting.
16:15	16:30	Traveled to hotel.

Projected Operations

Rig up to flow tubing to withdraw line. Run noise/temp. Attempt to run gyro.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.25	0.5				
Danny Walzel	10.25	0.5				
James Kopecky	10.25	0.5				
Mike Baggett	10.25	0.5				
					Total Man-hours for Noted Date:	43

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	29-Nov-2015	**Well Name and Number:**	Standard Senson 25 — Report # 37
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. LEL's too high to run equipment.
6:30	7:00	Attended morning operations/safety meeting.
7:00	12:30	Continued monitoring LEL's. Installed culvert on NW corner of Pad 25. Discussed rigging up to flow Well 25 tubing to Well 25B withdraw line. Met with SCGC personnel to discuss required equipment. Replaced block valve in withdraw line. Dug out and exposed pump in manifold. Installed additional line to secure Well 25.
12:30	16:30	Moved in man lift. Moved in and rigged up 100T crane. Repositioned E-line equipment and cleaned. Steam cleaned hydraulic choke manifold and test separators. Made up noise/temp tools. Rigged down and moved out 100T crane. Moved in back hoe. Excavated around concrete pad south of well 25. Exposed wash out. Backfilled. Located grease fittings for 2-1/16" 5M safety valve. Function tested, shell tested, and block and bleed tested to 400/5,000 psi. Tests good. Sent safety valve to welder. Instructed how to tack weld ring gaskets in place. Inspected adapter flanges to rig up to Well 25 production line. Installed relief valve on production line.
16:30	16:45	Attended end of the day meeting.
16:45	17:00	Traveled to hotel.

Projected Operations

Rig up to flow tubing to withdraw line. Run noise/temp. Attempt to run gyro.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.75	0.5			
Danny Walzel	10.75	0.5			
James Kopecky	10.75	0.5			
Mike Baggett	10.75	0.5			
				Total Man-hours for Noted Date:	45

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Date:	30-Nov-2015	Well Name and Number:	Standard Senson 25 — Report # 37
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. LEL's too high to run equipment.
6:30	7:00	Attended morning operations/safety meeting.
7:00	10:00	Continued monitoring LEL's. Moved in man lift. Moved in and rigged up 100T crane. Stabbed lubricator. Ran in hole with
		noise/temp tools.
10:00	15:30	Logged temperature to 8,390 ft. Logged noise out of the hole.
15:30	16:30	Laid down lubricator. Rigged down and moved out 100T crane. Moved out man lift.
		Continued rigging up to flow Well 25 tubing to Well 25B production line.
16:30	17:00	Attended end of the day meeting.
17:00	17:15	Traveled to hotel.

Projected Operations

Rig up to flow tubing to withdraw line. Attempt to run gyro.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5				
Danny Walzel	11	0.5				
James Kopecky	11	0.5				
Mike Baggett	11	0.5				
					Total Man-hours for Noted Date:	46

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	1-Dec-2015	Well Name and Number:	Standard Senson 25	Report #	38
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. LEL's too high to run equipment.
6:30	7:00	Attended morning operations/safety meeting.
7:00	8:30	Continued monitoring LEL's.
8:30	10:00	Moved in man lift. Moved in and rigged up 100T crane. Inspected diverter system on relief well. Recommended installing 8" diverter line.
10:00	11:00	Made up SDI gyro. Checked tubing pressure - 1,510 psi. Stabbed lubricator. Ran in the hole with gyro.
11:00	14:30	Attempted to initialize gyro in stations to 6,000 ft. Unable to initialize.
14:30	15:00	Pulled into lubricator.
15:00	15:30	Monitored LEL's before starting man lift and crane.
15:30	16:00	Laid down lubricator and gyro. Tubing pressure 1,510 psi.
16:00	16:30	Rigged down and moved out 100T crane. Moved out man lift.
16:30	16:45	Attended end of day meeting.
16:45	17:00	Traveled to hotel.

Projected Operations

Rig up to flow tubing to 25B withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.75	0.5				
Danny Walzel	10.75	0.5				
James Kopecky	10.75	0.5				
Mike Baggett	10.75	0.5				
					Total Man-hours for Noted Date:	45

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	2-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report #	39
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	[redacted]
Well Control Specialist	4	James Kopecky	1	[redacted]	[redacted]
Sr. Well Control Engineer	4	Danny Walzel	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
Well Control Engineer	1	Arash Haghshenas/Houston	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg / NO CHARGE	0	[redacted]	[redacted]
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
Hotel		D.C./ D.W. / J.K. / M.B.	4	[redacted]	[redacted]
				[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
Rental Car			1	[redacted]	[redacted]
				[redacted]	[redacted]
				[redacted]	[redacted]
		Estimated Daily Total		[redacted]	[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. LEL's too high to run equipment.
6:30	7:00	Attended morning operations/safety meeting.
7:00	10:15	Continued monitoring LEL's. Performed site work at NW corner of Pad 25 to allow drainage to culvert.
10:15	11:00	Moved in man lift. Moved in 100T crane and rigged up.
11:00	13:30	Picked up lubricator and gyro. Stabbed lubricator on SS 25B. Attempted to run in the hole. Unsuccessful. Laid down lubricator.
13:30	16:30	Rigged down and moved out 100T crane. Moved in excavator. Removed choke line from 7" casing valve. Cleaned off concrete pad south of SS 25. Rigged up to monitor tubing pressure. Tubing pressure - 1,551 psi. Moved out excavator. Moved out man lift.
16:30	17:00	Attended end of the day meeting.
17:00	17:15	Traveled to hotel.
		Arash Haghshenas: Set up initial model for dynamic kill for relief well. Began running simulations.

Projected Operations

Rig up to flow tubing to 25B withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5				
Danny Walzel	11	0.5				
James Kopecky	11	0.5				
Mike Baggett	11	0.5				
					Total Man-hours for Noted Date:	46

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	4-Dec-2015	Well Name and Number:	Standard Senson 25	Report #	41
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA. 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
Well Control Engineer	1	Arash Haghshenas/Houston	1		
Sr. Well Control Specialist	4	Richard Hatteberg / NO CHARGE	0		
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4		
Hotel		D.C./ D.W. / J.K. / M.B.	4		
Rental Car			1		
Rental Car			1		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for work. 2-7/8" tubing pressure - 1,552 psi.
6:30	7:00	Attended morning safety / operations meeting.
7:00	9:00	Moved in man lift. Moved in and rigged up 100T crane. Attended meeting with DOGGR and SCGC.
9:00	12:00	Tied onto pump in manifold and pulled from crater. Closed swab valve. Bled off pressure above swab valve. Removed pump line from wireline pump in sub. Removed pump line from tree assembly outlet valve. Sent pump iron to decon to be cleaned and inspec inspected. Inspected rig up of diverter system on relief well. Reviewed magna flux report. Diverter system consists of two 8" diverter lines.
12:00	12:30	Lunch
12:30	16:30	Winds out of the NW. LEL's too high to run man lift. Moved pump iron from SS 1 to SS 25 pad. Monitored LEL's. Moved man basket to SS 25 pad. Opened swab valve to monitor tubing pressure. 2-7/8 - 1,456 psi. Rigged down and moved out 100T crane.
16:30	17:00	Attended end of the day meeting.
17:00	17:15	Traveled to hotel.
		Arash Haghshenas: Continued working on dynamic kill for relief well. Built model for 7" liner and 5" x 3-1/2" drillstring.
		Plan to spud relief well tonight.

Projected Operations

Flow SS 25 tubing to SS 25B withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	11	0.5			
Danny Walzel	11	0.5			
James Kopecky	11	0.5			
Mike Baggett	11	0.5			
Richard Hatteberg	11	0.5			
				Total Man-hours for Noted Date:	57.5

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	3-Dec-2015	Well Name and Number:	Standard Senson 25	Report #	40
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
Well Control Engineer	1	Arash Haghshenas/Houston	1	
Sr. Well Control Specialist	4	Richard Hatteberg / NO CHARGE	0	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for work. 2-7/8" tubing pressure - 1,561 psi.
6:30	7:00	Attended morning safety / operations meeting.
7:00	12:00	Moved in man lift. Moved in and rigged up 100T crane. Removed 2-1/16" 5M x 1502 thread half adapter flange from tree
		assembly outlet valve. Installed 2-1/16" 5M surface safety valve. Installed 2" 5M co-flex hose.
12:00	16:45	Rigged up choke line to choke manifold. Secured with concrete blocks. SCGC purged withdraw line to Pad 25. Pressurized
		line to 500 psi. Spotted conex office. Rigged up to monitor tubing pressure. Installed control lines to SSV. Attempted to
		pressure test pump lines. Observed leak from needle valve. Opened inside manual gate valve on tree assembly. Removed
		SSV manual override. Left SSV in closed position. Rigged down and moved out 110T crane. Moved out man lift. 2-7/8": 1,554 psi.
16:45	17:15	Attended end of the day meeting.
17:15	17:30	Traveled to hotel.
		Observed installation of diverter lines at relief well. Discussed securing lines.
		Arash Haghshenas: Continued running dynamic kill scenarios for relief well. Set up model with 7" contingency liner.

Projected Operations

Flow SS 25 tubing to SS 25B withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	11.25	0.5				
Danny Walzel	11.25	0.5				
James Kopecky	11.25	0.5				
Mike Baggett	11.25	0.5				
Richard Hatteberg	11.25	0.5				
					Total Man-hours for Noted Date:	58.75

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	5-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 42
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Control Specialist	4	Richard Hatteberg / NO CHARGE	0	
General Daily Expense		D.C./ D.W. / J.K. / M.B.	4	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Estimated Daily Total				

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds out of the North. Took LEL readings. LEL's too high to start equipment on South side of location.
6:30	7:00	Attended morning safety/operations meeting.
7:00	8:00	Continued monitoring LEL's.
8:00	8:45	Moved skid steer to SS-1 and entered Pad 25 from the North.
8:45	12:30	Cleared East side of location. Exposed 2-7/8" pump line. Met with welder. Welder will build bridge to place over hydraulic lines and SSV control line. Discussed lengthening valve extension handles. Made up pump in manifold.
12:30	14:30	Began clearing West and North side of location.
14:30	13:00	Moved in and rigged up 100T crane.
13:00	13:45	Unable to start manlift. Trouble shoot. Requested additional manlift.
13:45	16:15	Rigged down and moved out 100T crane. 2-7/8" - 1,535 psi.
16:15	16:30	Attended end of the day meeting.
		Relief Well: Drilled to +/- 360 feet.

Projected Operations

Flow SS 25 tubing to SS 25B withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton	10.25	0.5			
Danny Walzel	10.25	0.5			
James Kopecky	10.25	0.5			
Mike Baggett	10.25	0.5			
Richard Hatteberg	10.25	0.5			
				Total Man-hours for Noted Date:	53.75

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Date:	7-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 44
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	1	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
HSE Specialist	1	Mike Patton / In Transit	1		
Well Control Specialist	1	Travis Martel / In Transit	1		
General Daily Expense		D.W. / J.K. / M.B. / R.H. / M.P. / T.M	6		
Hotel		R.H. / D.W. / T.M. / M.B. / M.P.	5		
Air Fare		Travis Martel	1		
Air Fare		Mike Patton	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
Well Control Engineer		Arash Haghshenas / Houston	1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds out of the North. Took LEL readings. LEL's too high to start equipment on South side of Pad 25. 2-7/8" - 1,526 psi.
6:30	7:00	Attended morning safety / operations meeting.
7:00	7:45	Opened withdraw line and applied 490 psi to SSV. Inspected choke line for leaks. Pressure after 5 minutes 485 psi.
7:45	8:00	Closed gate valve upstream of choke and hydraulic choke. Tested choke line with well pressure of 1,525 psi. Test good.
8:00	8:30	Cycled SSV. Time to close - 14 sec. Time to open - 14 sec.
8:30	9:30	Met with SCGC representatives and discussed opening well to withdraw line.
9:30	10:30	Began flowing tubing to withdraw line on 1/2" choke. Tubing pressure decreased to 815 psi. Initial rate 11 MMscf/day.
10:30	17:00	(10:30) FTP - 805 psi. Gas rate 5-7 MMscf/day. (11:15) Facility began decreasing gas rate out of facility. (12:00) FTP - 936 psi. (13:00) FTP - 1,096 psi. (14:00) FTP - 1,340 psi. (15:00) FTP - 1,438 psi. (15:10) Closed choke. Tubing pressure increased to 1,511 psi. Estimated gas rate from tubing 2 MMscf/day. Opened choke. Flowed tubing on 1/2" choke. (16:00) FTP - 1,370 psi. (17:00) FTP - 1,394 psi. James Kopecky will stay on location to monitor well overnight.
17:00	17:15	Attended end of the day meeting.
17:15	17:30	Traveled to hotel.
		Relief Well: Drilled to 362 ft. Pump Cement plug #3. Waiting on cement.
		Met with welder and welded on pad eyes on 1 joint of 13-3/8" casing. Fabricated guide for temporary vent tube. Discussed fabricating stinger for 2" wellhead outlet.
		Arash Haghshenas: Prepared final kill analysis for relief well. Prepared Final Report.

Projected Operations

Flow SS 25 tubing to withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11	0.5	Travis Martel		7
Danny Walzel	11	0.5			
James Kopecky	18	0.5			
Mike Baggett	11	0.5			
Mike Patton		12			

Total Man-hours for Noted Date:	72

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Date:	6-Dec-2015	Well Name and Number:	Standard Senson 25	Report #	43
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	1	Danny Clayton / In Transit	1	[redacted]	
Well Control Specialist	4	James Kopecky	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Control Specialist	4	Richard Hatteberg	1		
Airfare		Richard Hatteberg	1		
General Daily Expense		D.C./ D.W. / J.K. / M.B. / R.H.	5		
Hotel		R.H. / D.W. / J.K. / M.B.	4		
HSE Specialist		Mike Patton / In Transit / No Charge	0		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds out of the North. Took LEL readings. LEL's too high to start equipment on South side of Pad 25. 2-7/8" - 1,535 psi.
6:30	7:00	Attended morning safety / operations meeting.
7:00	7:30	Monitored LEL's. Richard Hatteberg attended meeting with SCGC and DOGGR.
7:30	9:00	Moved in skid steer and continued clearing north and west side of location.
9:00	12:45	Winds out of the South. Moved in and rigged up 100T crane. Back loaded K-Rail, personnel basket, and empty pallets. Installed battery in man lift and moved out. Moved in man lift to the NE of SS 25. Installed pump lines to wireline side entry sub and tree assembly outlet.
12:45	13:30	Lunch
13:30	14:30	Filled 2-7/8" pump line with fresh water. Tested pump line and 1502 pump iron to 300 psi for 5 minutes and 5,000 psi for 10 minutes. Test good.
14:30	16:30	Rigged down lubricator. Back loaded lubricator, grease unit, and tool basket. Sent to decon for cleaning. 2-7/8" - 1,536 psi.
16:30	17:00	Attended end of the day meeting.
17:00	17:15	Traveled to hotel.
		Relief Well: Drilled to 362 ft. Experienced lost circulation. Pumped cement last night. Currently pumping second cement job.

Projected Operations

Flow SS 25 tubing to withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Danny Clayton		7			
Danny Walzel	11	0.5			
James Kopecky	11	0.5			
Mike Baggett	11	0.5			
Richard Hatteberg	11	0.5			
				Total Man-hours for Noted Date:	53

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Date:	8-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 45
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]
Well Control Specialist	4	James Kopecky	1	[redacted]
Sr. Well Control Engineer	4	Danny Walzel	1	[redacted]
HSE Specialist	1	Mike Baggett / In Transit	1	[redacted]
HSE Specialist	4	Mike Patton	1	[redacted]
Well Control Specialist	4	Travis Martel	1	[redacted]
General Daily Expense		D.W. / J.K. / M.B. / R.H. / M.P. / T.M.	6	[redacted]
Hotel		R.H. / D.W. / T.M. / M.P.	4	[redacted]
				[redacted]
Equipment	1	Plugging Injection Manifold / Standby	1	[redacted]
Rental Car			1	[redacted]
Rental Car			1	[redacted]
Rental Car			1	[redacted]
				[redacted]
		Estimated Daily Total		[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds out of the North. Took LEL readings. LEL's too high to start equipment on South side of Pad 25. FTP - 1,448 psi. Estimated gas rate from tubing 2 MMscf/day.
6:30	7:00	Attended morning safety / operations meeting.
7:00	9:00	Continued monitoring LEL's. Took measurements on mockup well head for fabrication of stinger assembly for 2" wellhead outlet.
9:00	9:30	Opened choke to 7/8". FTP - 1,438 psi. Estimated gas rate 5.5 MMscf/day. Opened choke to 1". FTP - 1,440 psi. No increase of gas rate observed. Opened choke to 1 3/8". FTP - 1,441 psi. No increase of gas rate observed. Opened choke fully to 1 1/2". FTP - 1,443 psi. No increase of gas rate observed.
9:30	14:00	Continued flowing tubing on 1 1/2" choke. FTP - 1,443 psi.
14:00	16:00	Moved in skid steer and continued clearing pad 25. FTP - 1,457 psi.
16:00	16:15	Attended end of the day meeting. Travis Martel remained on location to monitor SS 25 through the night.
16:15	16:30	Traveled to hotel.
		Trucking plugging injection manifold from Houston, Texas.
		Relief Well: Drilling ahead at 450 ft.

Projected Operations

Flow SS 25 tubing to withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10.25	0.5	Travis Martel	18	0.5
Danny Walzel	10.25	0.5			
James Kopecky	8	0.5			
Mike Baggett		7			
Mike Patton	10.25	0.5			
				Total Man-hours for Noted Date:	**66.25**

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Date:	9-Dec-2015	Well Name and Number:	Standard Senson 25 | Report # 46
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Danny Walzel	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Patton	1	
General Daily Expense		D.W. / R.H. / M.P. / T.M.	4	
Hotel		R.H. / D.W. / T.M. / M.P.	4	
Equipment	1	Plugging Injection Manifold / Standby	1	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel and equipment.
6:30	7:00	Attended morning safety / operations meeting.
7:00	8:45	FTP - 1,501 psi. Moved in and rigged up 100T crane.
8:45	9:15	FTP decreased to 590 psi.
9:15	10:30	Closed hydraulic choke. Tubing pressure stabilized at 1,500 psi in 15 minutes. Monitored well. Met with SCGC production
		representative to discuss drop in FTP. Moved in skid steer and roll off bins and loaded with contaminated dirt. Off loaded
		stove pipe. Discussed with welder fabricating grapple for pulling grating from crater.
10:30	16:15	Lined up to flow tubing through test separator. Began flowing tubing through test separator on 33/64 choke. Initial gas rate 6.8
		MMscf/day. (10:45) FTP decreased to 1,083 psi. and began increasing. (11:45) FTP - 1,436 psi. Gas rate 2.8 MMscf/day.
		(13:45) FTP - 1,442 psi. Gas rate 2.0 MMscf/day. Continued flowing well through test separator.
16:15	17:00	Continued removing dirt from location. FTP - 1,436 psi. Closed hydraulic choke. Lined up to flow directly to withdraw line.
		Opened tubing to withdraw line on 1/2" choke. FTP - 722 psi. Picked up vent tube and adjusted slings.
17:00	17:15	Attended end of the day meeting.
17:15	17:30	Traveled to hotel.
		Relief Well: Meet with company man and discussed rig up of choke manifold and installation of panic line. Drilling ahead at 847
		ft.
		(12:00) Plugging manifold arrived on location.
		Travis Martel working nights.

Projected Operations

Flow SS 25 tubing to withdraw line. Install vent tube in crater. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.25	0.5				
Danny Walzel	11.25	0.5				
Mike Patton	11.25					
Travis Martel	8	0.25				
					Total Man-hours for Noted Date:	43

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Date:	10-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report #	47
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Danny Walzel	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Patton	1		
Sr. Well Control Engineer	1	Jim LaGrone / In Transit	1		
Sr. Well Control Engineer	1	Rolly Gomez / In Transit	1		
General Daily Expense		D.W. / R.H. / M.P. / T.M./ J.L / R.G	6		
Hotel		R.H. / D.W. / T.M. / M.P. / J.L. / R.G	6		
Airfare		Jim LaGrone / Rolly Gomez	2		
Equipment	1	Plugging Injection Manifold / Standby	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel and equipment.
6:30	7:00	Attended morning / safety meeting.
7:00	8:00	2-7/8" - 1,463 psi. Moved in and rigged up 100T crane.
8:00	8:15	Held PJSM. Discussed operations for removing grating from crater and installation of stove pipe.
8:15	9:30	Picked up grapple and attempted to remove grating. Unsuccessful.
9:30	10:30	Modified grapple.
10:30	12:00	Attemped to remove grating from crater. Unsuccessful.
12:00	12:30	Rigged down and moved out 100T crane.
12:30	16:30	Continued removing contaminated dirt from location. 2-4/7" - 1,463 psi.
16:30	17:00	Attended end of the day meeting.
17:00	17:15	Traveled to hotel.
		Relief Well: Drilling ahead at 1,159 ft.
		Travis Martel working nights.

Projected Operations

Flow SS 25 tubing to withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11	0.5	Rolly Gomez		7
Danny Walzel	11	0.5			
Mike Patton	11	0.5			
Travis Martel	12	0.5			
Jim LaGrone		7			
				Total Man-hours for Noted Date:	61

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Date:	11-Dec-2015	Well Name and Number:	Standard Senson 25	Report #	48
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Danny Walzel	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Richard Hatteberg	1		
Well Control Specialist	4	Travis Martel	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Patton	1		
Sr. Well Control Engineer	4	Jim LaGrone	1		
Sr. Well Control Engineer	4	Rolly Gomez	1		
General Daily Expense		D.W. / R.H. / M.P. / T.M./ J.L / R.G	6		
Hotel		R.H. / D.W. / T.M. / M.P. / J.L. / R.G	6		
Equipment	1	Plugging Injection Manifold / Standby	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel and equipment.
6:30	7:00	Attended morning / safety meeting.
7:00	7:45	Moved in and rigged up 100T crane.
7:45	9:30	Offloaded Western Wireline equipment and spotted to run gyro on SS 25B.
9:30	10:30	Continued removing contaminated dirt from location.
10:30	11:30	Met with AEComm and discussed options for inspecting crater. Richard Hatteberg traveled to machine shop to inspect stinger assembly for wellhead outlet.
11:30	12:00	Lunch
12:00	15:00	Began rigging up E-line equipment.
15:00	16:45	Met with SCGC to discuss options and procedure for next pump job. (15:15) 2-7/8" - 1,438 psi. Closed hydraulic choke.
16:45	17:30	Rigged down and moved out 100T crane. 2-7/8" - 1,467 psi. Closed SSV.
17:30	17:45	Traveled to hotel.
		Relief Well: Drilled surface hole to 1,229 ft. Running surface casing.

Projected Operations

Flow SS 25 tubing to withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5		Rolly Gomez	11.5	0.5
Danny Walzel	11.5	0.5				
Mike Patton	11.5	0.5				
Travis Martel	18	0.5				
Jim LaGrone	11.5	0.5				
					Total Man-hours for Noted Date:	78.5

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Date:	12-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 49
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Patton	1		
Sr. Well Control Engineer	4	Jim LaGrone	1		
Sr. Well Control Engineer	4	Rolly Gomez	1		
General Daily Expense		D.W. / R.H. / M.P. / T.M./ J.L / R.G.	6		
Hotel		R.H. / D.W. / T.M. / M.P. / J.L. / R.G	6		
Equipment	1	Plugging Injection Manifold / Standby	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Winds predominately out of the North. LEL's too high to run equipment.
6:30	7:00	Attended morning operations / safety meeting.
7:00	10:30	Tubing pressure- 1,521 psi (Shut in). Attended meetings with government agencies.
10:30	11:00	2-7/8" - 1,503 psi. Began flowing tubing on 5/8" choke. FTP decreased to 717 psi and began increasing.
11:00	17:00	Continued monitoring LEL's, too high to run equipment. Continued flowing tubing to withdraw line. Met with welder and discussed design of bridge to span crater. Sourced materials and welders. Meet with company man at relief well and inspected pipe to be used for panic line and pipe to be used down stream of the choke. Repositioned air compressor. Jim LaGrone and Rolly Gomez prepared plan for next pump job. 2-7/8" - 1,403 psi.
17:00	17:15	Attended end of the day meeting.
17:15	17:30	Traveled to hotel.
		Travis Martel remained on location for the night.
		Relief Well: Drilled surface hole to 1,229 ft. Cemented surface casing. Preparing for top job.

Projected Operations

Flow SS 25 tubing to withdraw line. Run Gyro on SS 25B.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11	0.5	Rolly Gomez	11	0.5
Danny Walzel	11	0.5			
Mike Patton	11	0.5			
Travis Martel	18	0.25			
Jim LaGrone	11	0.5			
				Total Man-hours for Noted Date:	75.75

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Date:	13-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 50
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
Sr. Well Control Engineer	4	Danny Walzel	1		
HSE Specialist	4	Mike Patton	1		
Sr. Well Control Engineer	4	Jim LaGrone	1		
Sr. Well Control Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	1	Danny Clayton / In Transit	1		
Sr. Well Control Specialist	1	Bud Curtis / In Transit	1		
General Daily Expense		D.W./R.H./M.P./T.M./J.L/R.G./D.C./B.C.	8		
Hotel		R.H./D.W./T.M./M.P./J.L./R.G./B.C./D.C.	8		
Airfare		D.C./B.C.	2		
Equipment	1	Plugging Injection Manifold / Standby	1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
Rental Car			1		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel and equipment.
6:30	7:00	Attended morning safety / operations meeting.
7:00	8:45	Moved in and rigged up 100T crane. Prepared to run gyro on SS 25B. 2-7/8" FTP - 1,386 psi.
8:45	13:30	Stabbed lubricator. Ran in the hole with gyro. Pulled into lubricator. SS 25 FTP - 1,390 psi.
13:30	14:30	Laid down lubricator. Rigged down e-line. Rigged down and moved out 100T crane.
14:30	16:00	Inspected bridge for SS 25. Went to relief well. Inspected rig up of panic line and lines down stream of the chokes.
16:00	16:30	Positioned track hoe and skid steer on north side of pad 25.
16:30	17:00	2-7/8" - 1,328 psi. Closed choke. Closed SSV. Closed gate valve upstream of the choke. 2-7/8" - 1,450 psi.
17:00	17:15	Attended end of the day meeting.
17:15	17:30	Traveled to hotel.
		Relief Well: Nippling up BOP's.

Projected Operations

Flow SS 25 tubing to withdraw line.

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.25	0.5	Rolly Gomez	11.25	0.5
Danny Walzel	11.25	0.5	Danny Clayton		7
Mike Patton	11.25	0.5	Bud Curtis		7
Travis Martel	11.25	0.5			
Jim LaGrone	11.25	0.5			
				Total Man-hours for Noted Date:	**84.5**

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Date:	14-Dec-2015	Well Name and Number:	Standard Senson 25	Report #	51
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Senson 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
Sr. Well Control Engineer	1	Danny Walzel (Transit)	1	
HSE Specialist	4	Mike Patton	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Airfair		Walzel	1	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Operations meeting with Dept Of O&G Regulator
		+50 mph wind from the north, no wireline operations
7:30		Clean location for installation of bridge w/ Track Hoe
		Move well anchor line from north side to east side.
17:00		Depart Location
		Continue Fab'g bridge - 90% complete, will mob in the morning
		Finished laying 2nd 2-7/8" pump line (+- 950 ft)
		Move in mud plant, began offloading pre-mixed 15# WBM
		Walzel in route to Houston

Projected Operations

Cut 2-7/8" tubing

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5	Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5	Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5			
Bud Curtis	11.5	0.5			
Mike Patton	11.5	0.5			

Total Man-hours for Noted Date:	84

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Date:	15-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report #	52
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	1	Mike Baggett	1		
HSE Specialist	4	Mike Patton	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		8		
Hotel			8		
Airfair		Baggett	1		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:15		Operations meeting
7:00		Move to location, break flanges on header lines. Drag 2nd pump line down to pad.
		Remove header lines and racks to facilitate installing bridge
		Bleed 2" line from test unit to 11" for any trapped pressure.
		Break same and remove sections to install bridge, north side of location clean
11:30		Lunch
12:30		Make up valve to new pump line and line to hydro test
14:30		Hydro test line 315 psi for 5 min low test, 5256 psi for 10 min high test.
		Wind blowing to the south, unable to clean south side of location.
17:30		Depart Location
		Attend Drill Well on Paper meeting & discuss ranging program
		Mike Patton departed location, Mike Baggett arrived at LAX
		John Hatteberg and Wayne Courville arrive location, will be carried on separate DOR

Projected Operations

Cut 2-7/8" tubing if wind allows

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5		Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5		Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5				
Bud Curtis	11.5	0.5				
Mike Patton	11.5	0.5				
					Total Man-hours for Noted Date:	**84**

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Boots & Coots
A HALLIBURTON SERVICE

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Date:	15-Dec-2015	**Well Name and Number:**	Porter #39A	Report #	1
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California		
	Northridge, CA 91326	**Country:**	USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Esign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	2	John Hatteberg	1	[redacted]	
Well Control Engineer	2	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Airfair		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
5:30	9:30	John and Wayne departed Houston to travel LAX
9:30	13:30	John and Wayne travel to location from LAX, meet with B&C personnel on S25
14:00	15:30	Attend DWOP that included B&C, SoCalGasCo, Wireline, Rig and Sperry personnel to discuss ranging operations, logistics and well control
18:00	18:30	Travel to hotel

Projected Operations

Travel from Houston to Relief Well Location, attend DWOP

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	15-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Brad Hendrix	4					
Chad Hopkins	4					
					Total Man-hours for Noted Date:	8

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Date:	16-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 53
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:**	California
		Country:	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
HSE Specialist	1	Mike Patton	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Computer Modeling	1	Arash Haghshenas	1		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
Estimated Daily Total					

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:35		Operations Mtg w/all service companies and Dept of Oil & Gas
		Move to location. Clean eqpt and maintenance.
		Reposition chain from west side to clean mud and debris from west side of location. Can't get to southside due to north wind
11:30		Lunch
12:00		Winds become calmer and turning to the west. Western Wireline inspects its E-Line unit
		Regulators arrive on site to access well (Dept of Oil & Gas). Operations shut down for insection
13:30		Re-install stabilizing line of wellhead to east and west side of tree. Clean Swaco gauges
		Took Man-Rider to de-contamination site for cleaning.
		Start and check air compressor
17:00		Depart for hotel
		LaGrone & Gomez attend meeting for Regulators (Dept of Oil & Gas, US EPA, Ca. OSHA; Sandia, Berkley, & Lawrence-Livermore Labs)
		to discuss pumping plan on target well and ranging concepts of relief well
		Bridge was revamped for larger span. Mud mixing plant complete. Receiving mud, should receive all by Thursday.

Projected Operations

Cut 2-7/8" tubing if wind allows

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5		Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5		Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5				
Bud Curtis	11.5	0.5				
Mike Baggett	11.5	0.5				
					Total Man-hours for Noted Date:	84

7047 W. Greens Rd. **Houston, TX. 77066** **281-931-8884**	Boots & Coots A HALLIBURTON SERVICE		*This is an estimate only for the date listed on this sheet. This is not an invoice.*
Date:	16-Dec-2015	**Well Name and Number:**	Porter #39A — Report # 2
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California
	Northridge, CA 91326	**Country:**	USA
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well
Lease - Well #:	Porter 39A	**Rig No:**	Esign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	2	John Hatteberg	1	[redacted]	
Well Control Engineer	2	Wayne Courville	1	[redacted]	
General Daily Expenses		JH/WC	2	[redacted]	
Hotel		JH/WC	2	[redacted]	
Rental Car		JH/WC	1	[redacted]	
				[redacted]	
				[redacted]	
		Estimated Daily Total		[redacted]	

Well Summary

Hour	Hour	Activity on Site
5:10	5:30	Departed hotel for P39A location
6:30	7:30	Attended SS25 morning pre job meeting
8:30	9:30	Prepared email relating to running the 9-5/8" deeper due to lower expected LOT results
13:30	16:30	Rig walkthrough, pit volume available 1350 bbl, 42 bbl trip tank, 42 bbls pill tank, can make mud up to 100 bbl/hr, 400 bbls of mud available offsite, no flare on top of separator. Discussed with SoCalGasCo, will rig up 8" flare while runing 9-5/8" casing. Relief well at 1907.0' MD/1811.0' TVD, 37° inc., 309° azi. as of 15:45 Continued working on relief well supplemental plan
16:30	16:50	Departed location for hotel
20:00	20:00	Relief well at 2002.0' MD/1886.8'TVD, 38° inc., 309° azi.

Projected Operations

Attended morning pre job meeting, examined 9-5/8" casing setting depth, suggested flar line rig up on separator

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	16-Dec-15

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	11				
Wayne Courville	11				
				Total Man-hours for Noted Date:	22

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Date:	17-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report #	54
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:**	California		
		Country:	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	[redacted]
Well Control Specialist	4	Travis Martel	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
Sr. Well Conrol Engineer	4	Jim LaGrone	1	[redacted]	[redacted]
Sr. Well Conrol Engineer	4	Rolly Gomez	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Bud Curtis	1	[redacted]	[redacted]
General Daily Expense	1		7	[redacted]	[redacted]
Hotel			7	[redacted]	[redacted]
				[redacted]	[redacted]
Equipment		Junk Shot Manifold Stby	1	[redacted]	[redacted]
Rental Cars			3	[redacted]	[redacted]
		Estimated Daily Total		[redacted]	[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:45		Arrive on SS25 location. Check LEL and wind direction. Move in crane. Held Tool Box safety mtg. Used man basket
		and take 2 personnel to tree. Used long reach track hoe to assist and undo pump lines.
		Close in upper crown valve and bleed off line, remove line. Insure that wing valve on north side is shut-in and bleed off/remove line
		Remove all pump lines on manifold. Reposition 2-7/8" pump lines from Location 1. Built new dirt bridge over pump lines.
		Break down wireline lubricator. Remove pump iron hanging in cellar. Load out same to decontamination site. Send wireline eqpt to DECON
11:30		Lunch in shifts while wireline is loaded out for DECON
12:45		Stop operations to take gas samples for LA COUNTY HAZMAT AND FIRE DEPARTMENTS
13:00		WAIT ON OSHA, NO SHOW
13:30		Commence operations on cleaning south side of wellbore
14:35		SUSPEND OPERATIONS DUE TO SMALL AIRCRAFT (Cesna 172) DOING FLY-BYS VERY CLOSE TO LOCATION
14:50		Flour Eng and AE Eng representatives arrive and stand by until plane leaves
14:55		B&C takes representatives to inspect well and are looking at ideas to capture the gas coming out of the crater (Operations stopped)
15:00		Clean on east and south side of location, preparation for bridge
16:30		Secure site for evening
17:30		Travel to Hotel
		LaGrone, Gomez, Richard meet w/ Flour Eng on building a Sombrero & installing mist extractors
		LaGrone, Gomes, Richard meet w/ California OSHA and discuss safety issues with placing bridge and kill plan
		LaGrone, Richard, Clayton meet w/ Jim Fox, Shackelford and SOCAL staff on alternatives and Contingencies

Projected Operations

Install bridge across crater

Approvals

Signature Customer Representative	Print Name	Date

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5		Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5		Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5				
Bud Curtis	11.5	0.5				
Mike Baggett	11.5	0.5				
					Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	17-Dec-2015	**Well Name and Number:**	Porter #39A	Report #	3
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California		
	Northridge, CA 91326	**Country:**	USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Esign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	2	John Hatteberg	1	[redacted]	
Well Control Engineer	2	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
5:20	5:40	Departed hotel for P39A location
6:30	7:30	Attended SS25 morning pre job meeting
7:30	9:30	Performed a drilling rig well control walkthrough
10:00	10:30	Discussed extreme losses procedure with Geo Drilling Fluids representative.
13:30	15:30	Worked on RW Special Operations Report
15:30	16:30	Discussed extreme losses procedure with Geo Drilling Fluids representative.
16:30	17:00	Departed P39A location for hotel
0:00		Relief well drilling at 2,603' MD, 40.03° inc, 307.87° azi, 2349.08' TVD

Projected Operations

Attended morning pre job meeting, worked on lost circulation document and special operations report

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	16-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	11					
Wayne Courville	11					
					Total Man-hours for Noted Date:	22

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Date:	18-Dec-2015	Well Name and Number:	Standard Senson 25 — Report # 55
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Senson 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend morning Ops meeting
6:45		Arrive on SS25 well and check LEL and wind direction, blowing from the NNW. Unable to clear debris due to strong northernly winds
		Tools taken to DECON to be cleaned. Stage junk shot manifold to SS25 site. Modified surface casing stinger sub for wellhead "A"
		Retest both pump lines from Location 1 to 300 psi LOW and 5000 psi HIGH. Good Test
12:30		Lunch
13:15		On SS25 site, check LEL's and wind direction. Move dirt to fill low places on east side. Clean remaining debris from east side
		and crater. Retighten chaines supporting tree west to east
16:00		Depart location
		Bridge is 100 % complete. As assembled, picked up for Center of Gravity (Total Weight = 15,000 lbf). Took apart the two 50 ft
		sections for transport up the hill to location. Installed pad eyes for section lift. Will be delivered to location @ 09:00 tomorrow
		B&C attend overview and troubleshooting session of options available to kill the target well from surface.

Projected Operations

Install bridge across crater

Approvals

Signature Customer Representative	Print Name	Date

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5	Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5	Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5			
Bud Curtis	11.5	0.5			
Mike Baggett	11.5	0.5			
				Total Man-hours for Noted Date:	84

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	18-Dec-2015	**Well Name and Number:**	Porter #39A	Report #	4
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	**Region:** **Country:**	California USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	2	John Hatteberg	1	[redacted]	
Well Control Engineer	2	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
5:20	5:35	Departed hotel for P39A location
6:30	7:30	Attended SS25 morning pre job meeting
7:30	11:15	Worked on supplemental operations report, discussed desired TCP gun configuration with Western Wireline representative: -5°, 0°, +5° alignment, 10' guns, ultra deep penetration. Two guns will be built after Christmas break.
12:15	14:00	Performed detailed rig audit of Ensign #587 drilling rig.
14:00	16:00	Received severe losses procedure from mud company representative
16:00	17:00	Discussed TCP gun options with Sperry and Western Wireline representatives. Will need to use Scientific Gyro to orient TCP guns.
17:30	17:45	Departed P39A location for hotel

Projected Operations

Attended morning pre job meeting, worked on lost circulation document and special operations report

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	17-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	12					
Wayne Courville	12					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	19-Dec-2015	Well Name and Number:	Standard Senson 25	Report # 56
Customer Name:	Southern California Gas Company	County:	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California	
	Northridge, CA, 91326	Country:	USA	
AFE #:		Well Location:	Aliso Canyon Storage Facility	
Customer Representative:		Well Type:	Gas	
Report Generated By:	Jim LaGrone	Job Type:	Well Control	
Lease - Well #:	Standard Senson 25	Rig No:	N/A	

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Morning Operations Mtg including Oil/Gas Regulators
6:45		Arrive on location and monitor gas and slight wind direction from the south
		Complete all dirt work to accept bridge (bury 7" kill/choke lines), which is finished down the hill
8:40		Move in 220T hydraulic crane w/ 200 ft stick.
9:40		Tool box safety meeting
10:25		1/2 of bridge arrives and position
11:00		2nd 1/2 of bridge arrives and is assembled and pull tested w/ crane
11:30		Move bridge and "straddle" Well 25. No issues. Job went smooth. Bridge was weight @ 15,000 lbm
		Remove slings from BOX of bridge
12:30		Lunch
13:00		Install additional grating onto bridge around tree to congeal oil to fall back into crater and keep out of air
14:00		Rig down crane and remov from location
15:00		Shut down operatons due to wind and rain
		Attend meeting with California O&G regulators discussing merits/risks of cutting tubing prior to jet cuttin tubing
		James Bottoms w/ Western Wireline (Bakersfield) in group meeting to discuss issues around cutting tubing while it is in 10-15 M#
		compression.
17:30		Leave location and head to hotel.

Projected Operations

Rig up for spinning magnet survey on Well 25B. This will negate the magnetic vector of a 2 nd well in the drill path. Last gyro showed well be 10 feet farther away than anticipated. Magnectic field could be corrupted w/o procedure

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5		Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5		Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5				
Bud Curtis	11.5	0.5				
Mike Baggett	11.5	0.5				
					Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	19-Dec-2015	**Well Name and Number:**	Porter #39A	Report #	5
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	**Region:** **Country:**	California USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	2	John Hatteberg	1	[redacted]	
Well Control Engineer	2	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
5:30	5:40	Departed hotel for P39A location
6:30	7:30	Attended SS25 morning pre job meeting
7:30	9:00	Worked on rig audit report
9:00	12:00	Continued work on relief well supplemental operations document, reviewed and discussed new SHL that were recently resurveyed, decision made to stick to previous resurveyed locations as thos closely match SoCalGas database SHL surveys
12:00	13:00	Move to point to observe work on SS #25 bridge
14:00	17:30	Continued work on relief well supplemental operations document, forwarded it to senior B&C personnel for review
17:30	17:45	Departed P39A location for hotel

Projected Operations

Attended morning pre job meeting, worked on lost circulation document and special operations report, sourced TCP guns

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	19-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	12					
Wayne Courville	12					
					Total Man-hours for Noted Date:	

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SoCalGas-9.0080

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	20-Dec-2015	**Well Name and Number:**	Standard Senson 25 — Report # 57
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:**	California
		Country:	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
Houston Engineering Support	1	Arash Haghshenas	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Morning Operations meeting
6:45		Arrive on SS25 pad, check LEL and wind direction. Check Tbg Pressure of SS25=1318 psig
7:00		Function tested SSV (manumatic) valve off of casing valve twice (OK)
8:00		Move in HOWCO pump iron and tie into wireline pump-in tee. Drive in ground rod and ground Hatteberg's crossing
10:00		Move in 100T crane and set up for wireline. Ground same to bridge & earth
11:00		Spot gas/safe safe mono-condutor wireline unite
12:00		Lunch
12:35		Cont. RU W/L.
		Unable to run gauge ring and be off location prior to end of daylight
13:30		Leave W/L unit, drive crane down hill to DeCon area. All ready to RIH first thing in morning
		Secure well w/ turnbuckles on north side. Wellhead is stable and secure
		Cover wireline unit w/ plastic
14:00		Perorm general housekeeping. Operations suspended for evening
15:00		Inspetion of grating section to place over bridge for access and droplet collection
		Appears to be assiting in droplet coalesce size
		Relief well appears to be 2 ft from target on high side, running 4" gradient tool to determine exact distance to target.

Projected Operations

May not require spinning magnet survey of 25B (now displaced 10 ft further). Found target well 2 ft away and will run gradient tool (4") to discern exact distance this evening. Prepare for tubing cut on target well for kill

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5	Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5	Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5			
Bud Curtis	11.5	0.5			
Mike Baggett	11.5	0.5			
				Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	20-Dec-2015	**Well Name and Number:**	Porter #39A — Report # 6
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California
	Northridge, CA 91326	**Country:**	USA
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
5:30	5:40	Departed hotel for P39A location
6:30	7:30	Attended SS25 morning pre job meeting, RW TD'd at 3806'/3371' MD/TVD at 06:30 RW stopped due to magnetic interference detected on the MWD surveys Discussed RW forward plan (which all changed after ranging) After ranging to relog 13 3/8" surface casing with USIT & CBL log Cleanout run and gamma ray log at same time Run casing 10' off bottom and cement RW began POOH
9:00	10:45	Finished POOH drill string, began breaking down BHA
10:45	12:45	Held pre-job safey meeting before running WellSpot run on wireline for RR#1, ran the same
12:45	13:30	Wireline could not get deeper than 2920' MD, came out of hole to run sinker bar on end of wireline
13:30	15:00	Ran RR#1 to bottom to range, could only get 26' off bottom setting the WellSpot ranging point 40' behind TD of well (3766'MD)
15:00	17:00	Initial RR#1 information shows there is a well 2' edge-to-edge highside from the relief well (at 3766'MD). Discussed contigencies of plugging back and side tracking and shallowest possible depth to run casing.
17:00	0:00	Re-ran Wellspot with 4" tool to confirm ranging findings. Comm error detected, ranging tools were pulled out of the hole. Ran a 3rd wellspot atempt, and ranged at 3766'MD. Sperry rigged down wireline and begain interpretation of data. B&C departed location at 17:30 to hotel in preparation for 7pm meeting (which was later pushed to the next day).

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	20-Dec-15

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	12				
Wayne Courville	12				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	21-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report #	58
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:**	California		
		Country:	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Morning Operations meeting, wind from the south
6:40		Tubing Pressure on SS25 is 1285 psi, est BHP is 1551 psi or 3.5 ppg equivalent
7:00		Move in crane & wireline eqpt
7:30		Place cment blocks on choke line
8:30		RU lubricator and test 400# low, 4000# high. Equalize to 1300#, open crown valve and RIH w/ 2.133" Gauge ring
9:30		Tag up @ +/-100 ft. POH & remove lubricator. Rig up on 25B (offset well on same pad close to well 25 downhole)
		for spinning magnet survey. Results showed 25B is NOT interferring with Wellspot/Gradient Runs, but actually seeing 25
14:30		Finish out of hole w/ rotating magnet, 2000# on 25B
15:00		Install additional grating on bridge for coalescing purposes (grating is knocking down the oil mist)
16:00		Move slick line eqpt and glycol pump onto location. Release crane from wellsite
16:30		Reconfigure pump tie in lines to glycol line. Equalize w/ 2000 psi and pump 1 bbl of glycol into well. No "sealing" ice plug
17:15		Leave location
		Target well is 13 ft away at TD and 18 deg left of high side

Projected Operations

Will rig up to pump 300 bbl of 15 ppg mud down tubing, the middle 100 bbl will be laced w/ diatomacious earth and nutplug. If on losses, will maintain losses 1/4-1/2 BPM of 15 ppg

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5	Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5	Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5			
Bud Curtis	11.5	0.5			
Mike Baggett	11.5	0.5			
				Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	21-Dec-2015	**Well Name and Number:**	Porter #39A	Report #	7
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California		
	Northridge, CA 91326	**Country:**	USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	Jon Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
1:00	3:00	Rigged up wireline, ran USIT and CBL on 13 3/8" surface casing
5:40	6:00	Departed hotel for P#39A location
6:30	7:00	Forward SS#25 operations meeting
7:00	7:45	Held P#39A relief well forward operations meeting, hole has 26' of fill on bottom, discussed ranging report #1 (attached), what is assumed to be the target well is 19' +/- 10' away highside of the relief well. Taking into acount the fill, the bottom of the relief well hole is estimated to be 13' +/- 10' away. Discussed forward plan, need to set cement plug on bottom then run and cement 9 5/8" casing to ~3684' MD/3250' TVD. This will allow the relief well to kick off right below casing and allow it enough room (for the bridle) to drill out and run WellSpot. SoCalGas still expects us to achieve FIT at the 9 5/8" casing shoe of 13.5 ppg. This should allow the relief well to drill to the 7" casing setting depth of ~8,130' TVD and withstand full hole evacuation pressure on the 9 5/8" casing shoe. Will also run the RMRS assembly in the P#39A and wireline in the SS#25B well to confirm that target well spotted on the WellSpot run is not the SS#25B well.
7:45	11:15	Picked up BHA with bit, motor and RMRS sub and ran to bottom
11:15	16:30	Finished ranging using the RMRS, POOH with same (RMRS ranging report attached), received new forward drilling plan from Sperry and entered it into Compass. Also received caprock depth clarification from Hilary.
16:30	0:00	Departed P#39A location for hotel. Picked up gamma ray logging sub (ran on DP) and logged the hole from the shoe to 3,038' MD (continued to TD next day)

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	21-Dec-15

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	11				
Wayne Courville	11				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	22-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report # 59
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
Houston Engineering Support	1	Arash Haghshenas (arrived)	0	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Morning Operations meeting, wind from the south/west variable w/ lots of fog, frequently can't see kill location
7:10		Arrive and site check wind and LEL. Clear location for Western Wireline to pump glycol. Tubing pressure is 1215 psi
		Equalize across crown valve, open same. Pump 1.5 bbl of glycol @ 7 gpm. Tubing pressure dropped to 1140 psi
8:00		Close wellhead, bleed off lines and remove chem injection pump. Call HOWCO and inform SS 25 ready for pump line test pressure
9:00		Site safety meeting
9:10		Begin Pump Line test 400 psi Hi/ 5000 psi low. While bleeding back from 5M# high @ 1200 psi, chicksan o-ring leaking on location
		Change out loop/bale
9:50		Repeat test 400/5000 with 5/10 min test, respectively. All OK
10:10		Began kill w/ 300 bbl of all WBM at 15.1 ppg at 5 BPM (100 bbl of mud, 100 bbl mud w/ 125#/bbl mud & 30 ppb Nutplug, 100 bbl of mud)
10:15		Pumping at 5 BPM thru entire job. 40 bbl gone, 150 psi on pump, 13 psi on wellhead
10:20		60 bbls pumped 200 psi
10:22		70 bbs gone, 200 psi, mud/oil mist in crater
11:05		300 bbl gone, pumps off, slow rate via low torgque to 1/2 BPM (max pressure 400 psi, min 120 psi, flat lined at 260 psi on last 60 bbl)
11:20		shut down all pumping due to rocking of wellehad and unloading mud from crater, very little formation. Similar as before
		but w/ much less fluid (mud) to surface due to 15# mud weight
13:28		Tubing pressure rose from zero to 248 psi, well contiuing to unload dehydrated/clabbarded mud
14:00		Pump line to top TEE broke off due to movement of wellehad. Close LowTorque bale on pump line to isolate manifold. Monitor well
14:30		Gather sample of mud ejected from crater. Well began to settle down, clabbard mud still being ejected
15:30		Secure well site and Demob all personnel

Projected Operations

Secure well: Tighten lines and add additional and wait on weather for wireline evaluation

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5	Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5	Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5			
Bud Curtis	11.5	0.5			
Mike Baggett	11.5	0.5			
				Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	22-Dec-2015	Well Name and Number:	Porter #39A	Report #	8
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	Jon Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH/WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	2:30	Continued gamma ray logging run to 3,806' MD
4:00	7:00	POOH with gamma ray logging BHA, departed hotel for SS#25 location, held morning meeting at 06:30 hrs
8:30	13:00	RIH with open ended 5" drill pipe, set cement plug on bottom of hole, POOH same. Estimated top of cement at 3,606' MD. Wayne and John were at the SS#25 location for the kill attempt.
13:00	0:00	POOH with 5" drill pipe. Waited on cement. Made up 12 1/4" bit and drilled plug from 3,628' MD to 3,690' MD. Departed P#39A location for hotel at 17:30.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	22-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	12					
Wayne Courville	12					
					Total Man-hours for Noted Date:	

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281-931-8884

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	23-Dec-2015	**Well Name and Number:**	Standard Senson 25	Report # 60
Customer Name:	Southern California Gas Company	**County:**	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California	
	Northridge, CA, 91326	**Country:**	USA	
AFE #:		**Well Location:**	Aliso Canyon Storage Facility	
Customer Representative:		**Well Type:**	Gas	
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control	
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A	

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas (arrived)	0		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Morning Operations meeting, high wind from the north
7:10		Arrive on site and check wind and LEL's. Access to determine best way to clear debris. Crater has grown 5 ft wider and 12 ft to the north
		Later inspection showed south side of crater had large and deep hole due to 11-3/4" casing outlet. Mark safety zone on surface.
7:30		Check tbg pressure at chemical pump, 750 psi. Attempt to close valve on tree of injection tee. Grating had moved and restricted
		valve access. Isolate HOWCO pump line at well and attemp to bleed off. Couldn't bleed off, valve possible cut out
8:30		Close valve on tree by taking off handle and closing with wrench. Bleed from 800 psi to 600 psi on Tee pump line manifold.
9:00		Decide to bleed pump line at Location 1 (where HOWCO cmt trucks are)
9:50		Line up valves on Location 1, bleed same.
10:00		Check all lines on SS25 and confirm they are bled off
10:30		Clear Western Wireline to demob eqpt
11:30		Disconnect chemical inj line from pump manifold
12:30		Lunch
13:00		Wind not favorable to bring crane down to load out quipment
14:00		Continue to rig down eqpt. Kill power to site and disconnect electric wireline unit. Reconfigure power to Location 9 site down hill.
15:15		Hook T&T tractor to electric line float and remove from site
15:30		Secure and clear site of all peronnel

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5	Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5	Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5			
Bud Curtis	11.5	0.5			
Mike Baggett	11.5	0.5			
				Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	23-Dec-2015	Well Name and Number:	Porter #39A — Report # 9
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	Jon Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC			
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	12:00	Waited on cement plug 6 hours to continue hardening. Polished top of cement plug from 3,690' MD to 3,700' MD. POOH with 12 1/4" bit in preparation for casing run.
12:00	21:00	Ran 9 5/8" casing, shoe ran to 3,682' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	23-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	12					
Wayne Courville	12					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	24-Dec-2015	**Well Name and Number:**	Standard Sesnon 25 | Report # 61
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas	0		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Morning Operations Mtg
7:00		Check wellsite for LEL's. Bring in eqpt operator to clear debris. Strong wind from the north
7:30		Pull grating skid from north end of bridge. Clear mud & debris off of bride from north and east side of bridge. Clean north bridge walk
9:30		Pull up hydraulic hoses and steel line for pressure sensor and SSV
10:30		Move in crane after wind stalled. Load out all remain W/L equipment
		Continue clearing mud off of bridge from east side of bridge. Remove skid grating from south end of bridge
11:50		Lunch
12:30		WO California OSHA for permission to return to work
13:40		Return to site, wind from the West, OK given from Cal OSHA
14:00		Flour eng visit site to access gas recovery. Continue cleaning mud (dehydrated and sticky/heavy) and debris from south and east side
		of bridge. Clear mud off of Xmas tree and haul off grating platforms for cleaning
		Haul off VOC bin full of debris
16:00		Secure site and demob site of all peronel
		Merry Xmas to all, and to all a good night

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Approvals

Signature Customer Representative	Print Name	Date

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	11.5	0.5		Jim LaGrone	11.5	0.5
Travis Martel	11.5	0.5		Rolly Gomez	11.5	0.5
Danny Clayton	11.5	0.5				
Bud Curtis	11.5	0.5				
Mike Beggett	11.5	0.5				
					Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	24-Dec-2015	Well Name and Number:	Porter #39A / Report # 10
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California
		Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC			
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	2:00	Tested lines to 3,000 psi. Pumped 9 5/8" cement job. 60 bbls of 10.5 ppg spacer, 210 bbls of 13.5 ppg class C "LEAD" and 57 bbls of 14.8 ppg class C "TAIL" cement.
2:00	10:00	Washed out stack, flow lines, shaker manifold. Waited on cement. Departed hotel for location at 5:50 hrs.
10:00	0:00	Lifted BOP stack, set 9 5/8" casing slips, cut 9 5/8" casing with pnuematic cutter, nippled down BOP stack and set tubing head, began nippling up BOP. Begain welding and installing 8" flare line off of separator, installed 8" mud leg from separator to shaker possum belly. Departed P#39A location for hotel at 14:30 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	24-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	8.5					
Wayne Courville	8.5					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	25-Dec-2015	**Well Name and Number:**	Standard Sesnon 25 — Report # 62
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
Houston Engineering Support	1	Arash Haghshenas	0	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Morning Operations Mtg
6:45		Arrive on site and check wind and LEL levels. Strong wind from the north. Clean grating skid on north side of well. Cover with
		steel mesh (mist extractor) to catch oil droplets/mist in gas flow. Clean mud and debis off of NW side. Clean second grating of mud
		Install and strap down full length w/ SS316 mist extractor mesh. Wind unfavorable to work on south side w/ crane
14:00		Secure site and travel to hotel

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	8	0.5		Jim LaGrone	8	0.5
Travis Martel	8	0.5		Rolly Gomez	8	0.5
Danny Clayton	8	0.5				
Bud Curtis	8	0.5				
Mike Beggett	8	0.5				
					Total Man-hours for Noted Date:	59.5

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Well Control Prevention Services
Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	25-Dec-2015	Well Name and Number:	Porter #39A	Report #	11
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC			
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	14:00	Continued nippling up BOP, Traveled hotel for location at 0600 hrs.
14:00	0:00	Began testing BOPs, choke line valves, kill line valves, standpipe, departed location for hotel at 1430 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	25-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	8.5					
Wayne Courville	8.5					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	26-Nov-2015	**Well Name and Number:**	Standard Senson 25 / Report # 33
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Danny Walzel	**Job Type:**	Well Control
Lease - Well #:	Standard Senson 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]
Well Control Specialist	4	James Kopecky	1	
Sr. Well Control Engineer	4	Danny Walzel	1	
HSE Specialist	4	Mike Baggett	1	
Well Control Engineer	1	John Hatteberg/Transit	1	
General Daily Expense		D.C./ D.W. / J.K. / M.B. / J.H.	5	
Hotel		D.C./ D.W. / J.K. / M.B.	4	
Rental Car			1	
Rental Car			1	
Rental Car			1	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:45	6:00	Traveled from hotel to location.
6:00	6:30	Performed site assessment. Cleared location for personnel to begin work.
6:30	7:00	Attended morning operations/safety meeting.
7:00	15:45	Pilot tested Sodium Silicate delivered to location. Installed cables around wellhead to stabilize. Performed site work.
15:45	16:00	Attended end of the day meeting.
16:00	16:15	Traveled to hotel.
		John Hatteberg traveled to Houston, Texas.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	Danny Walzel	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Danny Clayton	10	0.5				
Danny Walzel	10	0.5				
James Kopecky	10	0.5				
Mike Baggett	10	0.5				
John Hatteberg		6				
					Total Man-hours for Noted Date:	48

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	26-Dec-2015	Well Name and Number:	Standard Sesnon 25 — Report # 63
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]
Well Control Specialist	4	Travis Martel	1	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]
Sr. Well Conrol Engineer	4	Jim LaGrone	1	[redacted]
Sr. Well Conrol Engineer	4	Rolly Gomez	1	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]
Sr. Well Control Specialist	4	Bud Curtis	1	[redacted]
Houston Engineering Support	1	Arash Haghshenas	1	[redacted]
General Daily Expense	1		7	[redacted]
Hotel			7	[redacted]
Equipment		Junk Shot Manifold Stby	1	[redacted]
Rental Cars			3	[redacted]
		Estimated Daily Total		[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend morning operations meeting
7:00		Arrive on SS25 wellsite. Check wind and LEL. Wind from NNE at high velocity. Wire mesh on north end of bridge collected
		some oil over the day. Coflex hose to choke manifold has been damaged where it comes off of tee
		Design frame to hold wire mesh mist pad trays (1' x 6' x 8"). Take skid steer to decon site for cleanup. Perform general
		housekeeping on site. Wind is not favorable for crane work of any kind.
12:00		Secure site and leave location.

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	6	0.5		Jim LaGrone	6	0.5
Travis Martel	6	0.5		Rolly Gomez	6	0.5
Danny Clayton	6	0.5				
Bud Curtis	6	0.5				
Mike Beggett	6	0.5				
					Total Man-hours for Noted Date:	45.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	26-Dec-2015	Well Name and Number:	Porter #39A	Report #	12
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	5:30	Continued BOP testing. Test HCR valve, FOSV, inside mudcross, test annular 300 psi low/3600 psi high, test all rams (300 psi low/5000 psi high).
6:00	7:00	Departed hotel for location. Attended SS#25 6:30 morning meeting.
7:00	12:30	Downtime to repair accumulator 4 way valve leak, perform choke drill. Attended P#39A 7:30 morning meeting.
12:30	18:00	Made up bit, RIH to 3,551' MD tag cement. drilled out cement and shoe track from 3,551' MD to 3,682' MD. Departed P#39A location at 15:00 for hotel.
18:00	21:00	Continued drilling from 3,682' MD to 3,700' MD. Circulated buttoms up, performed flow check and pulled out of hole.
21:30	0:00	Picked up directional tools and began running to bottom.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	26-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	9					
Wayne Courville	9					
					Total Man-hours for Noted Date:	

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	27-Dec-2015	Well Name and Number:	Porter #39A	Report #	13
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1		
Well Control Engineer	3	Wayne Courville	1		
Well control Engineer	1	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	10:00	Ran in hole with 8-1/2" bit on directional BHA. Drilled from 3,700' MD to 3,750' MD, 90% sliding. Observed 100% formation at 3,750'. Pumped high viscosity sweep and circulated hole clean. Departed hotel for location at 0600 hrs. Attended SS#25 morning meeting at 0630 hrs. Attended P#39A meeting at 0730 hrs.
10:00	12:00	Pulled out of the hole to 3,675' MD. Performed the FIT test to 13.5 ppg EMW, pressured 9.0 ppg mud to 775 psi. Assumed 3,750' MD (3,316' TVD) FIT calculation point.
12:30	22:00	Pulled out of the hole and laid down directional BHA. Made up gryo BHA and ran in hole to TD. Took gyro survey shots between 3,592' MD and 3,750' MD. Departed P#39A location at 1530 hrs for hotel.
22:00	0:00	Pulled out of hole from 3,750' MD with gryo BHA. Laid down same.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	27-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	9.5					
Wayne Courville	9.5					
					Total Man-hours for Noted Date:	

7047 W. Greens Rd.
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281-931-8884

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Date:	27-Dec-2015	**Well Name and Number:**	Standard Sesnon 25 — Report # 64
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	2	Richard Hatteberg	1	[redacted]	
Well Control Specialist	2	Travis Martel	1		
HSE Specialist	2	Mike Baggett	1		
Sr. Well Conrol Engineer	2	Jim LaGrone	1		
Sr. Well Conrol Engineer	2	Rolly Gomez	1		
Sr. Well Control Specialist	2	Danny Clayton	1		
Sr. Well Control Specialist	2	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas	0		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend morning operations meeting
7:00		Arrive on location and check wind and LEL's. Strong NNW winds not favorable for work on bridge
		DOGR (O&G Regulator, Scott Walker) went to location. Welders waiting to fabricate framework for gas mist extractors
		Unable to weld due to burn ban and high winds
11:15		DOGR rep came on site. Wind not favorable for work
11:30		Lunch
12:45		Return to site with diminished winds, however out of NNW and LEL's +85% so can't do crane work on south side of well
14:00		Take AECON (structual engs) to site to determine feasibility of running large diameter vent pipe below bridge to bottom of crater
14:45		Clear site of all personnel
		Depart site

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper
Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	6	0.5		Jim LaGrone	6	0.5
Travis Martel	6	0.5		Rolly Gomez	6	0.5
Danny Clayton	6	0.5				
Bud Curtis	6	0.5				
Mike Baggett	6	0.5				
					Total Man-hours for Noted Date:	45.5

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Date:	28-Dec-2015	**Well Name and Number:**	Standard Sesnon 25 — Report # 65
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas	0		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend morning operations meeting
7:00		Arrive on SS25 location and check wind. Very little wind from the east. Check LEL downwind on west side 0 to 59%, zero other sides
		Move in track hoe and trash tote (roll-off box). Clear mud and debris from south and west side of bridge walkway.
		Close inside valve on choke side of tree. Run 3/4" wirerope guide line under south end of bridge. Place mist mesh on south end of bridge.
		Bring in vacuum trucks to empty test frac tanks on site.
10:00		Call Onyx lease services to rig down choke manifold & separator eqpt. Move concrete clump weights off of coflex choke line.
		Remove damaged pump line that was previously connected to wireline pump-in tee on XMAS tree
11:00		Onyx arrived on site
11:10		California OSHA coming to site for inspection. Clear all personnel from site.
11:15		Go to lunch
12:30		CalOSHA leaves location, B&C returned to site. Remove lower pump line to injection tee. Remove remaining pump
		swings & tees. Leave 2" lo-torque valves on line going up hill to kill location #1. RD all flow iron to Onxy test eqpt
14:30		Dump mud/debris from south and east side of crater into DOC roll-off boxes
15:30		Haul off DOC roll-off boxes. DOGR (Oil & Gas Regulators) rep (Scott Walker) on site for inspection.
		Remove Onyx tool trailer and test separator.
16:00		Clear site of all personnel and secure same.

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Beggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	28-Dec-2015	Well Name and Number:	Porter #39A — Report # 14
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well control Engineer	1	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:30	12:30	Made up directional BHA and ran in hole to 3,750' MD. Drilled from 3,750' MD to 3,850' MD. Circulate and condition hole. Departed hotel for location at 0630 hrs. Attended P#39A morning meeting at 0730 hrs.
12:30	15:30	Pulled out of hole and stood back directional tools
15:30	20:30	Rigged up wireline and ran ranging run #2 on wireline, laid down same. Departed location for hotel at 1630 hrs. Came back to location 2000 hrs to 2200 hrs to discuss ranging run #2 results (attached). Developed the RR#2 call box and target well movement diagram.
20:30	0:00	Made up directional BHA and ran in hole to 1,566' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	28-Dec-15

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	10				
Wayne Courville	12				
Arash	10				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	29-Dec-2015	Well Name and Number:	Standard Sesnon 25 — Report # 66
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]
Well Control Specialist	4	Travis Martel	1	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]
Sr. Well Conrol Engineer	4	Jim LaGrone	1	[redacted]
Sr. Well Conrol Engineer	4	Rolly Gomez	1	[redacted]
Sr. Well Control Specialist	4	Danny Clayton	1	[redacted]
Sr. Well Control Specialist	4	Bud Curtis	1	[redacted]
Houston Engineering Support	1	Arash Haghshenas	0	[redacted]
General Daily Expense	1		7	[redacted]
Hotel			7	[redacted]
Equipment		Junk Shot Manifold Stby	1	[redacted]
Rental Cars			3	[redacted]
		Estimated Daily Total		[redacted]

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel, Command Center moved from Location 9 to Loaction 3
6:30		Attend morning operations meeting
7:15		Arrive on location and check for wind and LEL. Strong wind from NNE. Move pump line over to east side of pad.
		Re-tension wellhead north guide line to dead man. Clear mud and debris from NE side of crater. Clear debris from N & W side.
		Moved out closed top frac tank
11:00		Clear personnel from site. Cal OSHA on site for inspection.
13:20		Return to site, received clerance to proceed with operations. Begin loading mud and debris into roll-off boxes
14:00		Cal OSHA returned to site. Stopped all operation for an additional inspection
15:45		Secured site and clear all personnel.

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	29-Dec-2015	Well Name and Number:	Porter #39A	Report #	15
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	0:30	Continued running in hole to 3,850' MD
2:00	7:30	Directionally drilled 8 1/2" hole from 3,850' MD to 3,950' MD. Slid 35%, rotated 65%. Traveled to location at 0630 hrs.
7:30	8:30	Attended P#39A relief well operations meeting at 0730. Discussed adjusting 7" liner setting depth to 10' TVD above the S1 sand to 8062' TVD of the relief well. Discussed contingency plans in case 6 1/8" hole is not stable, best way to perforate, etc. Circulated and pumped three sweeps to clean hole up.
9:00	12:00	Pulled out of hole from 3,950' MD. Laid down directional BHA.
12:00	16:30	Rigged up Halliburton wireline, ran ranging run #3 (results attached) on wireline, rigged down wireline.
16:30	22:00	Held meeting with SoCalGas, Sperry and B&C representatives to discuss ranging results at 1630 hrs. Target well did not shift much after this ranging. That means that relief well can drill deeper to 4,100' MD this time before ranging again. This ranging run was the last of the locate phase. If the next ranging run shows the target well to be where it is expected, the next few ranging runs will be performed in drill pipe. Rigged up SLB wireline logging equipment. Ran USIT and CBL. Rig down same. Departed location at 1700 and 1930 hrs for hotel.
22:30	0:00	Made up drilling BHA

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	29-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10.5					
Wayne Courville	13					
Arash	13					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	30-Dec-2015	**Well Name and Number:**	Standard Sesnon 25	Report #	67
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Houston Engineering Support	1	Arash Haghshenas	0		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel, Command Center moved from Location 9 to Loaction 3
6:30		Attend morning operations meeting
7:00		Arrive at SS25 location. Check wind and LEL from all directions. Clear debris from south and west end of crater. All gas straight up.
		Skid Weatherford choke manifold for pickup.
		Remove all kill lines to well from Site 1
		clean out mud and debris from site on NW part of location. NU flange on flange of co-flex hose on tubing.
10:00		Make pressure line to lower injecion "tee", open valve and begin recording tuing pressure @ 1051 psi
		Continue to clean off location and prepare site for sand bags ahead of storm weather
11:30		Lunch
12:00		Bring in Vacuum truck. Remove fluids from production tanks
13:30		Continue to clear mud from location and debris from west side of location. Spot sand bags
14:30		Load out and remove HOWCO pump iron. Remove junk shot manifold. Bring up straw barriers for rain runoff
15:45		Secure site an clear location of all personnel

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Danny Clayton	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	30-Dec-2015	Well Name and Number:	Porter #39A	Report #	16
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	[redacted]
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	1	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:30	2:00	RIH with directional BHA to 3,950' MD.
2:00	10:00	Directionally drilled from 3,950' MD to 4,100' MD. Slid 45%, rotated 55%. Circulated and cleaned hole. Departed hotel at 0630 hrs. Attended 0730 P#39A relief well morning meeting.
10:00	13:00	Pulled out of hole from 4,100' MD, laid down drilling BHA.
13:00	18:00	Rigged up Halliburton e-line, made ranging run #4 (results attached), rigged down Halliburton E-Line. One B&C personnel departed P#39A Location at 1530 hrs.
18:30	19:30	Two B&C personnel stayed at location to attend RR#4 meeting at 1830 hrs. Waited for drilling plan and corrected target well survey which were received at 1930 hrs.
20:30	23:00	Made up drilling BHA. Two B&C personnel departed location for hotel at 21:30 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	30-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	9					
Wayne Courville	13					
Arash	14					
					Total Man-hours for Noted Date:	

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Well Control Prevention Services
Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	31-Dec-2015	Well Name and Number:	Porter #39A	Report #	17
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	1:30	Continued running in hole to 4,100' MD.
1:30	15:00	Directionally drilled from 4,100' MD to 4,300' MD. Slid 30%, rotated 70%. Pumped high viscosity sweep. Departed hotel for P#39A location at 0630 hrs.
15:00	21:00	Departed P#39A location at 1630 hrs. Pulled out of hole from 4,300' MD to 4,156' MD (2 stands) and made up side entry sub. Ran ranging tools into DP, set shear pins on side entry sub, rigged up line guide. Ran into hole to 4,300' MD.
21:00	0:00	Performed ranging run #5 from 4,300' to 4,175' inside DP (results attached). Retrieved wire line, laide down side entry sub and ranging tools.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	31-Dec-15

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	9.5					
Wayne Courville	11					
Arash	10.5					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	31-Dec-2015	Well Name and Number:	Standard Sesnon 25 / Report # 68
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
Houston Engineering Support	1	Arash Haghshenas	0	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel, Command Center moved from Location 9 to Loaction 3
6:30		Attend morning operations meeting
		Wind on site SS25 is strong from north and not favorable for crane work. Wait on wind to subside.
10:30		Go to location with SoCal reps and Dogger rep. Wind very strong from the north
14:30		Go to location w/ SoCal reps, wind still very strong from the north
16:00		Secure site and all personnel, leave location

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Danny Clayton	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	1-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	69
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Operation Mtg
7:30		Arrive on site. Stong wind from North. Tubing Pressure - 1022 psi
		Inspect site w/ SoCal reps and DOGGR. Winds unfavorable from crane operations from the south
12:00		Lunch
13:30		Wind subsided, return to location. Move in 60 ft TRAY w/ 8" mesh mist extractor (33 ft) pads and spot on location.
14:30		Check depth of crater north of SS25 casing w/ plumb bob. Approximately 30 ft to hole in bottom of crater.
15:00		Layout sandbags as per GeoTech instructions. Prepare slope for run off with upcoming rain.
16:00		Secure site and clear all personnel. Lock out road to SS 25 location.

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	1-Jan-2016	Well Name and Number:	Porter #39A	Report #	18
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
1:00	17:30	Directionally drilled from 4,300' MD to 4,600' MD. Slid 10%, rotated 90%. Departed hotel for location at 0630 hrs. Attended P#39A relief well forward operations meeting at 0730 hrs. Departed P#39A location for hotel at 1500 hrs. Held forward operations discussion from 1000 hrs to 1100 hrs in regards to well securing actions while drilling below the 7" liner decision tree.
17:30	18:30	Circulated 3 high viscosity sweeps.
18:30	0:00	Pulled out of hole from 4,600' MD to 4,252' MD (4 stands), picked up ranging tools for RR#6 (results attached), ran wireline into drill pipe and made up side entry sub. Ran ranging tools to bottom of drill pipe. Ran in hole slowly with drill pipe to 4,600' MD. Performed ranging run #6 from 4,600' MD to 4252' MD. Pulled out of hole with wireline and laid down side entry sub and ranging tools. B&C received relief well #2 directional plan and checked it anti-collision, correlated formations and depths for SoCalGasCo geologist and entered the plan into the Compass database from 1900 hrs to 2100 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	1-Dec-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	8.5					
Wayne Courville	10.5					
Arash	8.5					
					Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	2-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 | Report # | 70
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Operation Mtg
7:30		Arrive on site (SS25). Check wind and LEL's. Wind blowing strong out of the north
		Continue to lay sand bags as per plan to divert the coming rain/runoff and keep out of the crater.
		Reposition trackhoe and begin installing fiber tube/barriers to prevent deterioration of slope north of location.
		Check crater depth = 25.58 ft deep on north side of wellbroe
9:30		Double layer sand bags on north end of pad. Wind is not favorable for crane work.
11:30		Lunch
14:00		Wind appears to be shifting east to west.
		Bring up crane to set mist tray (60 ft x 6 ft). Wind changed back to the north
15:30		Wait on favorable wind w/o any shift. Still blowing out of the north.
		Wind is supposed to change to the south this evening with favorable weather for tomorrow.
		Rains (El Nino) are supposed to begin tomorrow afternoon.
		Secure site and clear all personnel.

Projected Operations

Clear and secure site for wireline operations - noise/temp and tubing caliper

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Danny Clayton	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

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Date:	2-Jan-2016	Well Name and Number:	Porter #39A — Report # 19
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1		
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	1:00	Rigged down Hallibuerton E-Line equipment.
1:00	1:30	Ran in hole from 4,252' MD to 4,600' MD.
1:30	14:30	Directionally drilled 8-1/2" hole from 4,600' MD to 4,862' MD. Slid 10%, rotated 90%. B&C imported RR #6 into compass and generated directional plots from 0230 hrs to 0330 hrs. Experienced rig generator issues. Gas feed to rig generators cut with oil. Traveled to location from hotel at 0630 hrs.
14:30	16:00	Pumped 40 bbls high viscosity sweep, pulled out of hole from 4,862' MD to the shoe (3,680' MD). Departed location at 1530 hrs.
16:00	20:30	Drained oil from rig's gas scrubbers and generator gas supply lines. Mechnanics started flushing and cleaning all injector lines and fuel regulators. Decision made to source and set up two diesel type generators.
20:30	0:00	Pulled out of hole, on backup diesel generators, from shoe (3,680' MD). Laid down directional BHA.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	2-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	9					
Wayne Courville	10					
Arash	9					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	3-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report # 71
Customer Name:	Southern California Gas Company	County:	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California	
	Northridge, CA, 91326	Country:	USA	
AFE #:		Well Location:	Aliso Canyon Storage Facility	
Customer Representative:		Well Type:	Gas	
Report Generated By:	Jim LaGrone	Job Type:	Well Control	
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A	

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Danny Clayton	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Well Summary

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour	Hour	Activity on Site
5:30		Depart Hotel
6:30		Attend Operation Mtg
7:00		Arrive at site (SS25) and do site assessment with DOGGR rep. Wind is light from NE, vavorable for crane operations.
		Dispatch crane to location and spot same. Trouble w/ safety shut down switches on 110 ton crane. Rig down and move out
9:00		Move in and spot 40 ton crane. Moved 60 x 6 ft mist tray across EAST side of crater next to well bridge
		Grounded mist tray to ground rod. Released crane
10:00		Site visits by Geosyntch (soils) regarding sand bag placement in preparation of incoming rain.
10:30		Bring in track-hoe to south side of location and prepare west side of well/bridge for 100 x 6 ft mist tray.
11:00		Lunch
12:00		Masure for heat shield on SS25A and SS25B (offset wells on pad) with AECOM structural engineer
14:00		Take SoCal reps to location for site assessment
16:00		Secured site and removed all personnel.

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	4-Jan-2016	Well Name and Number:	Standard Sesnon 25 Report # 72
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel
8:00		Arrive on site, moderate to strong winds out of the north
		New collection trays "began" collecting oil
		Inspection of crater (Socal and DOGGR) shows no growth and trays are collecting some oil.
		Tubing pressure of SS25 is 959 psi, reservoir is being pulled down
11:45		LUNCH
12:30		Return to site. Load out remaning Hallburton pump iron
14:30		SoCal reps taken to site
15:30		Secure site and clear all personnel

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	4-Jan-2016	Well Name and Number:	Porter #39A	Report #	21
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	3:30	Continued servicing generators #1 & #3.
3:30	4:00	Pulled out of hoke with kill string.
4:00	8:00	Made up directional BHA and surface tested MWD. Traveld from hotel to location at 0630 hrs.
8:00	10:00	Ran in hole to 4,862' MD.
10:00	0:00	Directionally drilled from 4,862' MD to 5,156' MD. Slid 5% and rotated 95%. Departed location for hotel at 1700 hrs.

Projected Operations

Plan to drill to ~5,400' MD and perform RR #8 through DP

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	4-Jan-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	10.5				
Wayne Courville	10.5				
Arash	11.5				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	6-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	74
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
Sr. Well Control Specialist	1	Danny Clayton	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Morning Ops Mtg
7:00		Arrive on site SS25 to check wind and LEL Levels. Tubing pressure gauge @ R bunker was 908 psig. (Pore Pressure = 1070 psi, 2.4 ppg)
		Slight wind out of the east. Inspect crater. A section of crater wall on east side has sloughed off.
		A volume of sub-surface dirt 10 feet below ground level sloughed into the crater, approimately 10 x 15 ft or 3 cubic yrd.
		the crater opening at ground level has NOT changed.
		Reset drain tube on east side of pad to better enchance rain runoff
		Re-route NOX line closer proximity to wellhead
9:30		Heavy rain sets in. Vacuum trucks are skimming water and oil residue from sumps below location
		Site closed to all unnecessary traffic. Water and rain monitoring ongoing.
12:00		Lunch
12:45		W/O weather
15:30		Site inspection w/ SoCal and DOGGR representative. Wind shifting out of SW. Crater appears to be holding up to rain runoff.
		Small amount of fluid in crater +/- 3 bbls
15:45		Secure site and clear all personnel

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	9	0.5		Jim LaGrone	9	0.5
Travis Martel	9	0.5		Rolly Gomez	9	0.5
Danny Clayton	9	0.5				
Bud Curtis	9	0.5				
Mike Baggett	9	0.5				
					Total Man-hours for Noted Date:	66.5

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	5-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 73
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Danny Clayton	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
Sr. Well Control Specialist	1	Juan Moran	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Morning Ops Mtg
8:00		Arrive on SS25 site. Check wind and LEL levels. Wind from the south. Heavy rain and thick fog. Visibility is minimal.
		Vacuum trucks are simming water and oil residue from sumps below location. Site closed to all unessary traffic.
		Water and rain monitoring ongoing.
12:00		Take SoCal & DOGGR representatives to site.
		Heavy rainfall has not caused deterioration of SS25 site pad
13:45		Secure site, all personnel off location

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	9	0.5	Jim LaGrone	9	0.5
Travis Martel	9	0.5	Rolly Gomez	9	0.5
Danny Clayton	9	0.5			
Bud Curtis	9	0.5			
Mike Baggett	9	0.5			
				Total Man-hours for Noted Date:	66.5

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Boots & Coots
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	6-Jan-2016	Well Name and Number:	Porter #39A	Report #	23
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:00	3:30	Continued Ranging Run #8. Pulled out of hole with wireline, laid down side entry sub and ranging tools. Ran in hole from 4,918' MD to 5,488' MD.
3:30	0:00	Directionally drilled 8-1/2" hole from 5,488' MD to 5,910' MD. Slid 5% and rotated 95%.

Projected Operations

Drilling to 6,000' MD for RR #9

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	6-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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Date:	7-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	75
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on SS25 site and check wind and LEL. Slight wind out of the west. SITP=884 psig
		Inspect crater, observe two very small areas (3' x 3') that sloughed off on one of northwest, which were approx 10' below lip
		another on the east wall.
		Improved drainage into culvert on east side of location by lowering culvert to drain/sump system
8:00		Move in 70T crane and spot on SE side of pad. Remove pressure line monitor from wellhead. Move in collection pad "Tray 2" and spot
		east side of "Tray 1". Compeltely cover east side of crater on east side w/ mist trays. Reconnect tubing pressure lines
		at 881 psi. Clean up on west side of "bridge" for west side collection tray down to concrete slab
8:45		Crane having trouble w/ solenoid. W/O mechanic
9:45		DOGGR Reps on site for inspections
11:30		Lunch
12:30		Return to SS 25 site. Wind turning to the west. Repair crane and remove from site. GeoSenTec Rep
		came to site and inspected fiber rolls and sand bags. All approved for location drainage
14:15		CalOSHA on SS1 for inspection of activities
15:00		SoCal representatives on site to inspect location of wellsite and sand bags/collection demisters
15:45		Secure site and clear all personnel

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	9	0.5	Jim LaGrone	9	0.5
Travis Martel	9	0.5	Rolly Gomez	9	0.5
Danny Clayton	9	0.5			
Bud Curtis	9	0.5			
Mike Baggett	9	0.5			
				Total Man-hours for Noted Date:	66.5

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Boots & Coots
A HALLIBURTON SERVICE

Date:	7-Jan-2016	Well Name and Number:	Porter #39A	Report #	24
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	4:00	Continued directionally drilling from 5,910' MD to 6,000' MD. Slid 5% and rotated 95%. Pumped 40 bbl high vis sweep.
4:00	12:00	Performed flow check, no flow. Pulled out of hole from 6,000' MD to 5,488' MD (6 Stands). Installed ranging tools in drill pipe and made up side entry sub. Ran in hole slowly with ranging tools from 5,488' MD to 6,000' MD. Performed ranging run #9 (results attached). Pulled out of hole with wireline and laid down side entry sub and ranging tools.
12:00	13:00	Pulled out of hole from 5,488' MD to 3,682' MD (the 9-5/8" casing shoe).
13:00	17:30	Worked on top drive.
17:30	19:30	Ran in hole from 3,681' MD to 6,000' MD.
19:30	0:00	Directionally drilled 8-1/2" from 6,000' MD to 6,085' MD. Slid 5% and rotated 95%.

Projected Operations

Drilling to 6,600' MD for RR #10

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	7-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	8-Jan-2016	Well Name and Number:	Standard Sesnon 25 — Report # 76
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:30		Attend mtg w/ Regulators
8:00		Arrive on SS25 site. Check wind and LEL. Wind moderate out of NNE. SITP = 870 psi. Inspect crater and observe
		that a section of the concrete slab on the south side of well is now hanging down into the crater held by the re-bar. This
		section was previously undercut by flow from the 2" outlet on the 11" casing (pointing south). Slab is approximately 8 x 12 ft. The
		flow from the 11" surface casing is now hitting this section of slab, *possibly* preventing further erosion to the south side
		of the crater.
10:00		DOGGR & CalOSHA reps inspect SS25 pad
10:15		Cal State Govt. Representatives at SS1 observing SS25 site
11:00		CalOSHA set up air monitoring for BTEX (Benzene, Toluene, Ethylene, Xylene). SoCal set up w/ parallel monitors
12:00		Lunch
13:00		Return to SS25 site w/ techs to check all ground wires (make sure they are true grounds). SITP=820 psi. Tbg pressure began to rise
14:00		SITP=846
14:30		CalOSHA @ site SS1
15:00		CalOSHA and SoCal return to site to collect air monitoring equpt
16:00		Take gas samples near wellhead for SoCal
16:20		Secure site and clear all personnel

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	9	0.5		Jim LaGrone	9	0.5
Travis Martel	9	0.5		Rolly Gomez	9	0.5
Danny Clayton	9	0.5				
Bud Curtis	9	0.5				
Mike Baggett	9	0.5				
					Total Man-hours for Noted Date:	66.5

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Boots & Coots
A HALLIBURTON SERVICE

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Date:	8-Jan-2016	Well Name and Number:	Porter #39A — Report # 25
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			
		Well Summary			

Hour	Hour	Activity on Site
0:00	0:00	Continued drilling from 6,085' MD to 6,600' MD. Slid 5% and rotated 95%. Circulated and claned hole while reciprocating string. Pumped three 40 bbls high viscosity sweeps. Traveled to location at 0630 hrs and left location at 17:00 hrs.

Projected Operations

Drilling to 6,600' MD for RR #10

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	8-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10.5					
Wayne Courville	10.5					
Arash	11.5					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	9-Jan-2016	Well Name and Number:	Standard Sesnon 25 | Report # 77
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on site (SS25) and check wind and LEL's. Wind is still to very slight breeze from ESE.
		SITP=838 psi. Inspect crater for any change. Crater looks the same. However cement slab on south end has moved a few inches
		further north.
9:00		LaGrone attend Pre-Construction mtg of gas capture system
10:00		State Legislature officials @ Site 1, uphill and north of SS25
		SITP=842 psi, slight breeze from ESE
12:00		lunch
13:00		Continue monitoring pressure and well conditions. Paving operation ongoing at entry of SS25 (no issues)
15:00		Light mist (fog) moving in with visibility deteriorating rapidly
16:00		Secure site (lock out) and all personnel are removed.

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	9	0.5		Jim LaGrone	9	0.5
Travis Martel	9	0.5		Rolly Gomez	9	0.5
Danny Clayton	9	0.5				
Bud Curtis	9	0.5				
Mike Baggett	9	0.5				
					Total Man-hours for Noted Date:	66.5

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Houston, TX. 77066
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	10-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 | Report # | 78
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:45		Arrive on SS25 site and check winds and LEL's. Wind very slight out of ESE. Plume going straight up.
		No noticeable change in crater except more sludge at bottom.
7:30		Attend Mtg with regulators
8:00		SoCal & DOGGR reps came to site for inspection. T&T crane operator came to site to plan for big lift of Tray #3
8:30		Attend Intercept and Kill Well on Paper (Socal, B&C, Sperry, Shack)
9:00		Dress up area on SW side of bridge to accommodate Tray #3
10:30		SITP=800 psi
11:30		Lunch
12:00		Return to site. SITP=810 psi, wind shifting out of north, but light
13:30		Socal and DOGGR reps came to site for inspection
		Cleaning and maintaining eqpt on site.
15:30		Attend meeting w/ DOGGR and SoCal to discuss contingencies if Relief 1 & 2 fail
		Site SS25 secured of all personnel and locked out
17:00		Gas Capture Risk Opinion documment sent to Houston for review and approval.

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	9	0.5		Jim LaGrone	9	0.5
Travis Martel	9	0.5		Rolly Gomez	9	0.5
Danny Clayton	9	0.5				
Bud Curtis	9	0.5				
Mike Baggett	9	0.5				
					Total Man-hours for Noted Date:	66.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	9-Jan-2016	Well Name and Number:	Porter #39A	Report #	26
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	1:30	Pulled out of hole from 6,600' MD to 6,000' MD. No tight hole observed. Pumped one 40 bbls high viscosity sweep.
1:30	8:00	Checked for flow, no flow. Pulled out of hole with drill string.
8:00	14:00	Rigged up Halliburton E-Line truck. Ran in hole and performed open hole ranging run #10 (results attached) on bottom at 6,600' MD. Pulled ranging tools back to surface. Rigged down Halliburton E-Line equipment.
14:00	0:00	Made up directional BHA and ran in hole to 6,058' MD by midnight.

Projected Operations

Drilling to 7,200' MD for RR #11

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	9-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10.5					
Wayne Courville	10.5					
Arash	11.5					
					Total Man-hours for Noted Date:	

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	9-Jan-2016	Well Name and Number:	Porter #39A	Report #	26
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	0:30	Continued running in hole from 6,056' MD to 6,600' MD.
0:30	0:00	Directionally drilled 8-1/2" hole from 6,600' MD to 7,080' MD. Rotated 93% and slid 7%.

Projected Operations

Drilling to 7,200' MD for RR #11

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	9-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10.5					
Wayne Courville	10.5					
Arash	11.5					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	11-Jan-2016	Well Name and Number:	Standard Sesnon 25 / Report # 79
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
Estimated Daily Total					

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:30		Attend Daily Meeting w/ Regulators
7:30		Arrive on SS25 site. Check winds & LEL's. Moderately strong wind out of NNE. SITP=787 psi
		No noticable change in crater.
8:00		DOGGR representative inspects site
10:15		SoCal representatives and John Wright w/ WWC visited site for inspection. SITP=793 psi
11:30		Lunch
11:30		Attend conference call w/ B&C Houston, Howco legal and outside counsel to discuss CalOSHA document requrest
12:30		Return to site. Prepare north end of site for modified collection tray #3 (east side of bridge)
		Fill in low spot on northeast corner of pad in preparation for rain runoff (sandbags still in place). Refuel track-hoe
13:00		VIP's on site SS1, north and elevated of SS25
14:45		SoCal and DOGGR representative inspect site. SITP=787
15:45		Secure site and clear all personnel
16:00		Depart location
		Note: RR1 (Porter 39A ranged at 7200 ft)

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	12-Jan-2016	Well Name and Number:	Standard Sesnon 25 — Report # 80
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:45		Arrive on Site SS25 and check winds and LEL's. Strong wind out of north. 60% to 100% LEL at cone barrier
		on south end of crater where the crane needs to be set. Crater is about the same.
7:30		Attend Daily operations mtg w/ Regulators
8:00		SoCal and DOGGR representatives on site for instpection.
8:30		Large inspection party on Site SS1 looking at SS25 wellsite
9:00		Attend meeting led by Don Shackelford who analysized the 5 pumping jobs on SS25 down the 2-7/8" tubing.
		In each pump attempted there appeared to be a downhole void between 600 and 1400 bbl, which has now been matched
		with simulation. Several older temperature/noise logs also support this.
11:30		Lunch
12:30		Return to Site SS25, SITP=755 psi
15:00		SoCal and DOGGR representatives on site for instpection.
15:45		Secure site and personnel
16:00		Depart location
		Note: At 18:00 relief well Porter 39-A is at 7600 ft MD

Projected Operations

Intall mist extractors across crater to collect oil droplets.

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	12-Jan-2016	**Well Name and Number:**	Porter #39A	Report #	29
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California
	Northridge, CA 91326	**Country:**	USA
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well
Report Generated By:	John Hatteberg	**Job Type:**	Relief Well
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	18:30	Continued directionally drilling 8-1/2" hole from 7,217' MD to 7,600' MD. Slid 7% and rotated 93%. Made a wiper trip and pumped two 40 bbl high viscosity sweep.
18:30	0:00	Pulled out of hole from 7,600' MD. Laid down directional BHA

Projected Operations

About to run RR #12

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	12-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	13-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 81
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:45		Arrive on Site SS25. Check winds and LEL's, slight wind from WNW. SITP=743 psi
7:30		Attend Daily Meeting w/ Regulators via conference call
		Move in crane to Site SS25 and heat shield on stinger truck. Set up same. PU and move heat shield over SS25A & B in two lifts
8:45		Move out crane and stinger truck. Dress up location with skid ster, repair drainage along side of access road to SS25
11:30		Lunch
13:00		Return to Site SS25
		Pete Slagel came to location w/ SoCal representative for inspection of crater
14:00		Reposition wind sock on NW side of location for better visability
14:30		Attend meeting w/ DOGGR representative, Pete Slagel, John Wright and Don Shackelford to discuss wellbore modeling
15:00		Check fire water supply on SS25
15:45		Secure site of all personnel.
17:00		Depart Aliso canyon

Projected Operations

Waiting on 3rd mist extractor tray being fabricated to go on east side of bridge over well

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Well Control Prevention Services
Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	13-Jan-2016	Well Name and Number:	Porter #39A	Report #	30
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	11:30	Rigged up Halliburton E-line. Ran in hole with Wellspot Ranging tools and performed ranging run #12 (reports attached) open hole at 7,600' MD. Pulled tools back to surface. Made up 4-1/2" Wellspot Ranging tools. Rand in hole and performed ranging run #12 confirmation run in open hole again at 7,600' MD. Pulled E-line to surface and rigged down Halliburton's E-line equipment. Departed hotel for location at 0630 hrs.
11:30	17:00	Made up drilling BHA and ran in hole to 7,600' MD. Attended meeting from 1430 hrs to 1700 hrs to discuss potential 600 bbls void or fracture system in SS#25 well.
17:00	22:00	Directioinally drilled 8-1/2" hole from 7,600' MD to 7,710' MD. Slid 7% and rotated 93%. Circulated hole celan and pumped two 40 bbl high viscosity sweeps. Departed location for hotel at 17:00 hrs.
22:00	0:00	Pulled out oh hole from 7,710' MD to 6,890' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	13-Jan-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	10.5				
Wayne Courville	10.5				
Arash	11.5				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	14-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	82
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:15		Arrive on Site SS25 and check winds and LEL's. Wind moderately strong out of NNW
7:30		Attend Daily Operation Mtg w/ Regulators
8:55		Check temperature of gas flow at bottom of crater w/ thermal gun. 54 deg F. Double check w/ thermometer inside water bottle
11:00		SoCal safety representative on site for inspection. Check temperature in water bottle: 52 deg F. Reposition water bottle in gas flow
12:00		Return to site. SITP = 722 psig
14:00		Western W/L came to location to pre-plan running a gyro and rig up. Geosyntec personnel on site to plan errosional control.
14:15		Check water bottle, temperature 67 deg F. Temp gun read directly at source of flow is 67 to 69 deg F confirming water bottle reading
15:00		Move in Western W/L equipment
16:45		Secure site of all personnel
16:50		Depart Aliso Canyon

Projected Operations

Run Rate Gyro w/ Memory Temperature on wireline

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	14-Jan-2016	Well Name and Number:	Porter #39A — Report # 31
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1		
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	4:30	Continued pulling out of hole with directional tools from 6,890' MD. Stood back directional BHA.
4:30	12:00	Rigged up Halliburton's E-Line equipment. Ran in hole with WellSpot and performed ranging run #13 on bottom at 7,710' MD. (results attached). Pulled out of hole with same and then ran in hole with RGRIII WellSpot ranging tools and performed open hole passive magnetic ranging on bottom at 7,710' MD. Rigged down Halliburton's E-Line eqiupment. Traveled to location from hotel at 0630 hrs.
12:00	17:00	Made up directional BHA and ran in hole to 7,710' MD.
17:00	0:00	Directionally drilled 8-1/2" hole from 7,710' MD to 7,800' MD. Slid 23% and rotated 77%. Pumped two 40 bbls high viscosity sweeps. Pulled out of hole from 7,800' MD to 5,572' MD. Traveled from location to hotel at 16:30 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	14-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	15-Jan-2016	Well Name and Number:	Standard Sesnon 25 — Report # 83
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	[redacted]
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25, check winds and LEL's. No wind, gas going straight up, very foggy. SITP = 716 psi
7:20		Western wireline personnel on site. Move in 70T crane for W/L operations. Began rigging up.
7:30		Attend Daily Operation meeting w/ Regulators
		Pull water bottle from crater in gas flow. Temp = 62 deg F
9:00		Slick line arrive and began rigging up SL
9:30		Grating arrived and laid across bridge for access to tree
10:05		Pressure test lubricator 400 psi low/4000 psi high for 5 min, OK
10:30		Pump 1 bbl of glycol into well, no resistance
11:00		RIH w/ 25 ft of 1.87" tool string and 1.25" memory pressure and temperature tool.
11:45		Sat down @ 8382 ft. 8370 ft WLM. POH
12:30		Attend meeting w/ DOGGR and National Labratories to open discussion on kill theories
13:00		Out of hole w/ memory pressure/temperate tools. SITP = 676 psi
14:30		Release slick line unit and crane from site
15:20		SITP = 575 psi
15:27		SITP = 553 psi. Tubing pressure drops appear to be unloading thick oil into crater from vent in crater and out 2" outlet in 11" csg
15:30		Secure stie of all personnel
16:00		Depart Aliso Canyon

Projected Operations

Run Rate Gyro

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Danny Clayton	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	15-Jan-2016	Well Name and Number:	Porter #39A / Report # 32
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	4:00	Continued pulling out of hole from 5,272' MD. Laid down directional BHA.
4:00	12:00	Rigged up Halliburton E-Line. Ran in hole and performed open hole WellSpot Ranging Run #14 (Results attached) on bottom at 7,800' MD. Pulled tools to surface then ran passive magnetic ranging confirmation run, the RGR III tool, to 7,800' MD. Pulled tool back to surface. Rigged down Halliburton E-Line Equipment. Traveled from hotel to location at 0630 hrs.
12:00	16:30	Made up directional BHA. Ran in hole to 7,800' MD.
16:30	20:30	Directionally drilled from 7,800' MD to 7,860' MD. Slid 20% and rotated 80%. Pumped two 40 bbl high viscosity sweeps. Traveled from location to hotel at 1630 hrs.
20:30	0:00	Pulled out of hole from 7,860' MD to 1,946' MD (midnight depth).
		Arash worked with Don Shackelford to develop and present 600 bbls void presentation.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	15-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	16-Jan-2016	Well Name and Number:	Standard Sesnon 25 — Report # 84
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:45		Arrive Site SS25, check winds and LEL's. Wind from NNW and shifting. SITP = 691 psi
7:15		Move in crane. Moderate strong winds from NNW and shifting. Stop crane operations waiting on favorable wind
7:30		Attend Daily Operations meeting w/ Regulators
8:30		Wind starting to shift. Start crane operations for wireline work
9:00		Pick up lubricator. Working on north seeking gyro to find north.
10:00		SITP = 689 psi. Tool seeing north
10:15		Pressure test lubricator 400 psi low/4000 psi high, OK
10:30		Open well and RIH w/ Rate Gyro collect directional information both in and out
11:00		Hold Kill Well on Paper w/ Rig crew off tour, DOGGR rep and SoCal reps in attendance
12:00		SITP = 684 psi. Begin pulling out of hole w/ gyro
12:45		Hold Kill Well on Paper w/ Rig crew off tour, DOGGR rep and SoCal reps in attendance
13:15		Out of hole w/ gyro. Bleed off lubricator and rig down e-line
14:45		SITP = 683 psi. E-line loaded out. Release trucks and crane.
15:30		Secure location clear of all personnel
16:00		Depart Aliso Canyon Facility

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Danny Clayton	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	16-Jan-2016	Well Name and Number:	Porter #39A	Report #	33
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
Estimated Daily Total				

Well Summary

Hour	Hour	Activity on Site
0:00	2:00	Continued pulling out of hole from 1,956' MD to surface. Racked back directional tools.
2:00	6:00	Rigged up Halliburton's E-Line equipment. Ran in hole and performed open hole WellSpot ranging run #15 at 7,860' MD. Results attached). Pulled ranging tools back to surface. Rigged down Sperry WellSpot ranging tools and Halliburton's E-Line equipment.
6:00	11:00	Made up directional BHA. Ran in hole to 7,860' MD.
11:00	17:00	Directionally drilled from 7,860' MD to 7,950' MD. Slid 20% and rotated 80%. Pumped two high viscoisity sweeps.
17:00	21:30	Pulled out of hole from 7,950' MD. Stood back directional BHA.
21:30	0:00	Rigged up Halliburton's E-Line equipment. Began running in hole on e-line to perform open hole WellSpot ranging run #16 at 7,950' MD. (Results attached)

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	16-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

7047 W. Greens Rd.
Houston, TX. 77066
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	17-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 85
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:50		Arrive on Site SS25 and check winds/LEL's. Moderate strong winds from NNW. SITP = 658 psi
7:30		Attend Daily Operations meeting w/ Regulators
7:55		SoCal and DOGGR representatives on site for inspection
13:15		SoCal Union representative on Site SS1
14:00		SoCal representative on site for inspection
15:00		US Senate representatives on Site SS1
15:25		SoCal IHM on site
15:30		Secure Site of all personnel
16:00		Depart Aliso Canyoun

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	18-Jan-2016	**Well Name and Number:**	Standard Sesnon 25	Report #	86
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	[redacted]	
Sr. Well Control Specialist	4	Richard Hatteberg	1		
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:55		Arrive on Site SS25, check winds and LEL's. Moderate wind out of SSW. SITP = 668 psi. No visual change in crater.
		Some evidence of fresh oil in crater
7:30		Attend Daily Operations meeting w/ Regulators
		SoCal & DOGGR representatives inspect Site SS25
8:00		Meeting w/ all involved parties to discuss decision tree for intercept and kill
9:30		SITP = 667 psi
10:30		Close site due to poor visibility (Fog)
11:30		Return to Site SS25 with Sempra executives for inspection
12:00		Lunch
		Extremely poor visibility and deteriorating weather due to fog
13:00		Review decision tree work plan for SS25 remediation
15:30		Secure and clear all personnel of Site SS25
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	18-Jan-2016	Well Name and Number:	Porter #39A	Report # 35
Customer Name:	Southern California Gas Company	County:	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California	
	Northridge, CA 91326	Country:	USA	
Purchase Order#		Well Location:	Alsio Canyon Storage Facility	
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well	
Report Generated By:	John Hatteberg	Job Type:	Relief Well	
Lease - Well #:	Porter 39A	Rig No:	Ensign 587	

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
Estimated Daily Total				

Well Summary

Hour	Hour	Activity on Site
0:00	3:30	Ran in hole to 8,070' MD.
3:30	10:00	Directionally drilled from 8,070' MD to 8,160' MD. Slid 35%, rotated 65%. Pumped two 40 bbl high viscosity sweeps. Traveled from hotel to location at 0630 hrs. Held forward operations meeting to discuss Don Shackelford decision tree from 800 hrs to 845 hrs.
10:00	14:30	Pulled out of hole from 8,160' MD to surface. Laid down directional BHA.
14:30	18:30	Rigged up Halliburton E-Line equipment and Sperry WellSpot Ranging tools. Ran in hole with E-Line to 8,160' MD and performed Ranging Run #18 (results attached). Pulled ranging tools back to surface. Rigged down ranging tools and Halliburton's E-Line equipment.
18:30	0:00	Made up directional BHA. Ran in hole to 3,658' MD by midnight. Worked on drilling rig.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	18-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	19-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	87
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 and check winds and LEL's. Slight wind out of west. SITP = 638 psi
8:00		SoCal and DOGGR representative on site. SITP = 640 psi
9:00		Onyx lease services on site to organize equipment for post kill.
		Welder fabricating basket at Hot Work Area to work on wellhead post kill.
10:45		US State Congressment and City Govt officials on Site SS1 observing SS25 (300 yds away)
11:00		SoCal representative on site
11:30		SITP = 623 psi
12:00		Lunch - weather deteriorating
15:00		SITP = 640 psi
15:30		Clear site of all personnel and secure
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Well Control Prevention Services
Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	19-Jan-2016	Well Name and Number:	Porter #39A — Report # 36
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	1:30	Continued running in hole with drilling BHA to 8,160' MD.
2:30	8:00	Directionally drilled 8-1/2" hole from 8,160' MD to 8,240' MD. Slid 20% and rotated 80%. Departed hotel for location at 0630 hrs.
8:00	15:30	Pumped two 40 bbls high viscosity sweeps. Pulled out of hole from 8,240' MD. Stood back directional BHA.
15:30	20:00	Rigged up Halliburton's E-Line equipment. Ran in hole with ranging tools and performed Ranging Run #19 at 8,240' MD (results attached). Pulled tools to surface and rigged down Halliburton E-Line Equipment. Departed location for hotel at 1630 hrs.
20:30	0:00	Picked up directional BHA and ran in hole with same. Midnight depth was 1,500' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	19-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

7047 W. Greens Rd.
Houston, TX. 77066
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	20-Jan-2016	**Well Name and Number:**	Standard Sesnon 25	Report #	88
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 and check winds and LEL's. Breeze from west and increasing. SITP = 619 psi
		No visable change in crater, however asphalt slab on north end that is undercut is showing signs of sagging.
		There is a crack developing in the section along the west side and separation from bridge can be seen along
		the east site of the section.
7:30		Attend Daily Operatations meeting w/ Regulators
8:00		SoCal and DOGGR representatives on site for inspection
		Onyx personnel at site. Removed tool trailer, choke panel and N2 bottle rack. Take all to De-Con site
10:30		Remove both air compressors from location and take to De-Con
11:30		Lunch
13:00		Return to Site SS25. Slight breeze out of NNW. SITP = 606 psi
14:00		Bring an additional frac tank on site for any returns that return on kill job
15:45		Remove site of all personnel and secure same
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	20-Jan-2016	**Well Name and Number:**	Porter #39A	Report #	37
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	**Region:**	California		
		Country:	USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	John Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:00	2:00	Continued running in hole from 1,500' MD to 8,240' MD.
2:30	14:00	Directionally drilled 8-1/2" hole from 8,240' MD to 8,340' MD. Slid 41% and rotated 59%. Pumped two 40 bbl high viscosity sweeps. Departed hotel for location at 0630 hrs.
14:00	18:30	Pulled out of hole from 8,340' MD. Stand back drilling BHA. Departed location for hotel at 1630 hrs.
18:30	24L00	Made up gyro while drilling tools along with 8-1/2" bit (no mud motor). Ran in hole. Midnight depth was 5,000' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	20-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

7047 W. Greens Rd.
Houston, TX. 77066
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	21-Jan-2016	**Well Name and Number:**	Standard Sesnon 25	Report #	89
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California		
	Northridge, CA, 91326	**Country:**	USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 and check winds and LEL's. Strong wind out of the north. SITP = 597 psi. No visable change in the crater
7:30		Attend Daily Operations meeting w/ Regulators
8:00		SoCal and DOGGR representatives for site inspection. Winds not favorable for crane work
11:30		Lunch
13:00		Remove tools and safety cones from site to be de-con'd
14:30		SoCal representative on site to discuss wireline work for caliper log
15:45		Clear all personnel and secure site
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

7047 W. Greens Rd.
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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	21-Jan-2016	Well Name and Number:	Porter #39A — Report # 38
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region: Country:	California USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	3:30	Continued running in hole with GWD from 5,500' MD to 8,340' MD.
3:30	8:30	Pulled out of hole from 8,340' MD. Laid down GWD. Departed hotel for location at 0630 hrs.
8:30	12:30	Rigged up Halliburton's E-Line eqiupment. Ran in hole and performed ranging run #20 at 8,340' MD (results attached). Pulled tools back to surface. Rigged down WellSpot ranging tools and Halliburton's E-Line equipment. Attended AddEnergy presentation on modeling results from 0900 hrs to 1100 hrs.
14:30	17:30	Made up directional BHA and ran in hole to 8,340' MD. Departed location for hotel at 1630 hrs.
17:30	0:00	Directionally drilled 8-1/2" hole from 8,340' MD to 8,403' MD at midnight. At 7" liner depth. Slid 52% and rotated 48%.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	21-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	22-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	90
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:45		Arrive on Site SS25 and check winds/LEL's. Moderate strong wind out of north. 97% LEL @ cone barrierWind unfavorable for crane work.
		No visible change in crater deterioration. Considerable more oil accumalation in bottom of crater. (Est 15-20 bbls). Oil
		is pooling on matts and bridge. SITP = 607 psi
7:15		Use skid steer to spread dirt on south end of pad
7:30		Attend Daily Operation meeting w/ Regulators
7:50		Move in air compressor onto site
8:00		Wind shifting out of NW. Move in wireline equpt and unload with stinger crane
9:00		SoCal and DOGGR representatives for site inspection. Continue to unload and spot E-W/L eqpt. SITP = 617 psi
10:30		Reading to rig up E-W/L
10:45		Shut down operations as CalOSHA representatives arrive on Site SS25
11:00		CalOSHA request to perform site inspection and discuss w/ Western Wireline
12:20		Operations continue. Stabe lubricator. SITP = 610 psi
12:30		Test lubricator to 400/4000 psi low/hi for 5 min each
12:40		RIH w/ 24 finger surface readout tubing caliper
13:30		On bottom began logging tubing
14:00		Howco delivered 600 feet of 1502 iron w/ valves, tees, wings to tie into the wellhead
15:00		POOH w/ E-W/L. Cover all equipment w/ plastic sheeting
15:30		Out of hole. Bleed of lubricator. RD lubricator
15:45		Boom down crane. SITP = 597 psi
16:50		Secure site of all personnel
17:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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Houston, TX. 77066
281-931-8884

Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	22-Jan-2016	Well Name and Number:	Porter #39A	Report #	39
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:00	1:00	Pumped two 40 bbl high viscosity sweeps.
1:00	7:30	Pulled out of hole from 8,403' MD. Laid down directional tools.
8:00	11:30	Rigged up Halliburton E-Line equipment. Ran in hole and performed open hole ranging run #21 ranging on bottom at 8,403' MD (results attached). Pulled tools back to surface. Rigged down WellSpot ranging tools and Halliburton E-Line equipment.
12:00	17:00	Made up casing scraper and ran in hole to 3,395' MD. Circulated bottoms up. Pulled out of hole from 3,395' MD and laid down 9-5/8" casing scraper.
18:30	0:00	Made up 8-1/2" clean out assembly. Ran in hole to 6,500' MD midnight depth with no obstructions.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	

Signature Boots and Coots Representative	Print Name	Date
	John Hatteberg	22-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	23-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report # 91
Customer Name:	Southern California Gas Company	County:	Los Angeles	
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California	
	Northridge, CA, 91326	Country:	USA	
AFE #:		Well Location:	Aliso Canyon Storage Facility	
Customer Representative:		Well Type:	Gas	
Report Generated By:	Jim LaGrone	Job Type:	Well Control	
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A	

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
6:45		On Site SS25 check winds and LEL's. Slight wind out of west. SITP = 591 psi
7:00		Move in crane
7:45		Pick up and make up E-W/L lubricator
7:50		Pressure test lubricator 400/4000 psi hi/low for 5 min each
8:00		Open well & RIH w/ pressure/temperature logging tools at 60 fpm
9:30		Gather supplies to make additional guywires to secure well
10:15		On bottom w/ E-W/L tools
11:10		Finish out of hole w/ W/L tools. Bleed off lubricator and lay down same.
12:15		Release trucks from site. Boom down crane and release from site
13:30		Return to site. Run guy-wire cables to secure tree. Put cable on west side and north side
15:00		SITP = 582 psi
15:45		Secure Site SS25 of all personnel
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	23-Jan-2016	**Well Name and Number:**	Porter #39A	Report #	40
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California		
	Northridge, CA 91326	**Country:**	USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	John Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	14:00	Continued running in hole with 8-1/2" cleanout assembly from 6,500' MD to 8,403' MD. Pumped two 40 barrel high viscosity sweeps. Pulled out of hole from 8,403' MD to 3,648' MD. Ran back in hole to 8,403' MD. Circulated hole clean while rotating and reciprocating drill string. Pumped additional two 40 barrel high viscosity sweeps. Pulled out of hole to 3,682' MD. Dropped 2-5/8" rabbit with 110' wire attached. Continued pulling out of hole. Retrieved 2-5/8" rabbit. Laid down cleanout assembly.
14:00	0:00	Rigged up 7" liner running equipment and tubular pick up machine. Made up 7" float shoe, two 7" 26# L80 joints with pip tag made up in middle of connection, float collar, one 7" 26# L80 join, 7" landing collar. Shhoe track was thread locked and centralized. Continued running in hole with 7" liner to 3,650' MD midnight depth. Applied 8-1/2" centralizers to middle of each joint with 2 stop collars.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	23-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	24-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 / Report # 92
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 check winds and LEL's. Strong wind out of the north. SITP = 585 psi
7:30		Attend Daily Operations meeting w/ Regulators
		ONXY on site. Prepare tool and cables to make additional guidelines to tree
8:00		Affix two additional 3/4" wire rope lines to tree. Total of 8 guy wires secured to anchors.
		SoCal, DOGGR and LA County Fire Department representatives on Site SS25 for inspection
11:30		lunch
13:00		Return to site. Close valve on north side of injection tee. Bleed off pressure and remove pressure sensor
13:30		SoCal and DOGGR representatives on Site SS25 for inspection
13:45		Move in crane and make up 2" 1502 iron to injection tree. Iron is run down bridge. Install 2" tee, lo-torque vavles and pressure sensor
14:30		Open valve on injection tee to pressure sensor. SITP = 590 psi
15:00		Secure site of all personnel
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	24-Jan-2016	Well Name and Number:	Porter #39A — Report # 41
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	8:30	Continued running in hole with 7" 26# L80 liner to 5,015' MD. Made up 7" x 9-5/8" liner hanger assembly. Continue running in hole from 5,015' MD to 8,401' MD. Circulated bottoms up. Dropped liner setting ball. Set hanger with 2,200 psi. 7" liner shoe at 8,401' MD with top of 7" liner at 3,353' MD. Pressured up on work string and blew ball & seat with 2,800 psi. Regained circulation.
8:30	15:30	Tested cement pump lines to 4,500 psi. Pumped 150 bbls 8.6 ppg spacer at 5 bpm, 20 bbls of 11.0 ppg spacer at 5 bpm, 80 bbls of 14.8 ppg lead slurry at 5 bpm, 74 bbls of 14.8 ppg tail slurry at 4.4 bpm. Dropped drill pipe wiper dart and displace cement with 190 bbls of 8.9 ppg Polytek mud at 5 bpm, 50.9 bbls of 11.0 ppg spacer at 5 bpm while slowing to 2 bpm. Bumped plug 1000 psi over FCP to 2,690 psi and hel 5 minutes. Checked that floats held. Set liner packer. Unstung from packer and circulated casing clean.
15:30	0:00	Rigged up lay down machine. Set up pipe racks. Began laying down 5" drill pipe.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	24-Jan-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	10				
Wayne Courville	10				
Arash	11				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	25-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	93
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 to check winds and LEL's. Strong wind out of the north. SITP = 573 psi
7:30		Attend Daily Operations meeting conference call w/ Regulators
8:00		SoCal and DOGGR representatives on site for inspection. Onyx personnel on site prepping frac tanks and choke manifold.
9:00		Hook up lines to choke manifold and frac tank. Use skid steer to place cement blocks on flowlines
11:30		SoCal and Capstone (rescue) representatives on Site SS25 for tour and discuss rescue contingencies
11:50		Lunch
13:00		Return to Site SS25
13:30		Attend Intersect Operations mtg to disucss time line, ranging, manpower, rig prep, drillout
13:45		CalOSHA representative on Site SS1 to take photos
14:00		LA County Unified Command on Site SS25 for tour
14:45		Onyx finishing the line into frac tank. SITP = 586 psi
15:30		SoCal crew working on pipeline manifold north of Site SS25 inside of security chain.
16:00		Secure site of all personnel
16:30		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	25-Jan-2016	Well Name and Number:	Porter #39A	Report #	42
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	6:00	Rigged down lay down machine. Rigged up lay down machine. Laid down 60 joints excess 5" drill pipe. Rigged down lay down machine. Offloaded and set on pip racks 151 joints of 3-1/2" X95 15.50# drill pipe and 30 joints of 3-1/2" HWDP.
6:00	12:00	Flushed BOP stack. Swapped 3-1/2" X 5" VBRs to top ram cavity and 5" pipe rames to lower ram cavity.
12:00	0:00	Rigged up and tested BOPs. 300 psi low / 5,000 psi high held 20 minutes each with fresh water. Annular tested 300 psi low and 3,600 psi hgih 20 minutes. Completed 9 of 14 tests at Midnight.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	25-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	26-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	94
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 to check winds and LOL's. Very high winds from the north, unfavorable for crane work
7:30		Attend Daily Operations meeting conference call w/ Regulators
8:00		SoCal and DOGGR representatives on Site SS25 for inspection
10:30		Secure Site SS25 due to extremely high wind conditions
		Boots & Coots Safety Officer met w/ SoCal Safety and Logistics personnel to discuss site security, regulator requirements
		and future logistics needs
11:30		Lunch
13:00		Continue to monitor weather conditions from Site SS3. Very high winds from the north.
15:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	26-Jan-2016	Well Name and Number:	Porter #39A — Report # 43
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	5:00	Continued pressure testing stack. 300 psi low / 5,000 psi high held 20 minutes each with fresh water. Completed 14 tests. Pulled test plug.
5:00	6:00	Rigged up 3-1/2" drill pipe handling tools.
6:00	8:00	Established flow rates from vertical tanks to pits. Departed hotel for location at 0630 hrs.
8:00	18:00	Rigged up drll pipe pick up machine. Made up 6-1/8" mill tooth bit and sub. Ran in hole picking up 3-1/2" HWDP and 4-3/4" jars 903'. Slipped and cut 120' drilling line. Re-set and function tested C-O-M. Serviced rig equipment. Pulled out of hole and racked back the 3-1/2" HWDP. Ran in hole picking up 102 joints 3-1/2" 15.50# X95 drill pipe. Pulled out of hole and racked 3-1/2' drill pipe in derrick. Departed location for hotel at 15:30 hrs.
18:00	18:30	Tested delivery rates from rig's active tank through kill line with centrifugal charge pumps 1 & 2.
18:30	0:00	Ran in hole with 6-1/8" bit and 3-1/2" HWDP. Attempted to circulate, pipe plugged. Pulled out of hole and cleaned rust debris from bit sub and bit. Ran in hole with 3-1/2" HWDP open ended. Pumped through sting to remove debris. Pulled out of hole with 3-1/2" HWDP. Ran in hole with 34 stands of 3-1/2" DP, pumped through same to remove debris.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	26-Jan-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	9				
Wayne Courville	9				
Arash	10				
				Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	27-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	95
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 to check winds and LEL's. SITP = 555 psi
7:30		Attend Dailly Operations conference call w/ Regulators
7:45		SoCal, DOGGR, and LA County Fire representatives on site for inspection
8:00		Maintain and clean tools and equipment. Wind from the north and not favorable for crane work
11:30		Lunch
12:45		Return to Site SS25. Western W/L personnel on site to hook up antenna for future wireline work (data streaming)
13:50		Cal OSHA representative on Site SS1
14:00		Onyx personnel on site maintaining eqpt and cleaning tools
15:00		Western W/L on site completing installation of data antenna.
16:00		Secure site of all personnel
		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	27-Jan-2016	Well Name and Number:	Porter #39A	Report #	44
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:00	4:00	Pulled out hole hole with 3-1/2" DP. Picked up 48 joints of remaining 3-1/2" X95 15.5# drill pipe and ran in hole and circulated. Pulled out of hole with same.
4:00	16:30	Made up 6-1/8" bit and staged in hole with 3-1/2" HWDP, 3-1/2" drill pipe and 5" drill pipe to 8,286' = 7" landing collar. Observed no cement when entering 7" liner top at 3,353'. Circulated and condition mud 8.8 ppg mud in/out. Rigged up pump truck. Pressure tested 7" liner, 7" by 9-5/8" lap and 9-5/8" casing 3000 psi for 15 minutes on chart (Good test). Tested mud delivery to well bore with rigs charge pump through 3" kill line. Charge pumps was unable to deliver mud. Removed check valve on kill line. Re-tested mud delivery through kill line and observed 2.5 bpm. Drilled out landing collar at 8,286', Drilled out hard cement from 8,287' to 8,323'. Drilled out float collar at 8,323'. Drilled out hard cement from 8,324' to 8,400'. Drilled out shoe from 8,400' to 8,401'. Clean out hole from 8,401' to 8,403'. Departed hotel for location at 0630. Departed location for hotel at 1630 hrs.
16:30	0:00	Drilled 10' new formation from 8,403' to 8,413'. Circulated hole clean. Mud weight in/out 8.8 ppg. Rigged up Halliburtons pump truck. Tested lines 4000 psi. Attempted to performed FIT to 15.3 EMW. Formation broke down at 1080 psi and stabilized at 1000 psi in 5 minutes. Captured 11.2 ppg EMW. Circulated bottoms up. Checked and no flow. Pulled out of hole from 8,413'.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	27-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	9					
Wayne Courville	9					
Arash	10					
					Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	28-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 | Report # 96
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25, check winds and LEL's. SITP = 582 psi
7:30		Attend Daily Operations Conference call with Regulators
8:00		SoCal and DOGGR representatives on Site SS25 for inspection
8:15		Move sand bags as needed to reconfigure mist extractor trays
8:30		Repair drain on roadside to site
10:00		Western W/L on Site SS25 to test pressure/temperature data transmitter system
10:30		Anchor lines to frac tanks. Set roll off bins for mist extractor pads
11:30		Lunch
12:30		Return to Site SS25 and unload second roll off bin. SoCal Safety and Unified Command at Site SS1 to inspect site
		and trace evacuation route.
13:00		Onyx on Site SS25 to work on drainage. Western W/L on same site working on data antenna
13:45		BCI delievered light plant to site and set up same
14:50		SoCal and DOGGR representatives on Site SS25 for inspection
15:45		Secure location of all personnel
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	28-Jan-2016	Well Name and Number:	Porter #39A — Report # 45
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
Estimated Daily Total				

Well Summary

Hour	Hour	Activity on Site
0:00	6:00	Closed blind rams. Removed bell nipple from BOP stack. Welder installed two 4" outlets to bell nipple. Re-installed bell nipple. Installed low pressure gauges to mud pumps 1 & 2 charge pump discharge plumbing.
6:00	0:00	Made up 6-1/8" bit (No mud motor). Load probe. Up load GWD/LWD BHA. Ran hole to 520'. Perform shallow test. (neg). GWD tools not working. Trouble shooting GWD/LWD tool failure. Pulse tool would not send pulses to surface. Changed transducer at surface. Pulled tools back to surface. Picked up the back up positive pulse tool. Shallow tested tools at 521' (Alls good). Ran in hole from 521' to 8,413'. Installed WWT rubbers on 3-1/2" drill pipe (Stands 36 - 45). Broke circulation. Captured GWD surveys at 8,412', 8,402', 8,392', 8,382' & 8,372'. Checked and no flow. Pulled out of hole from 8,413' to 4,291' (Midnight depth). Departed hotel for location at 0630 hrs. Departed location for hotel at 1630 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	28-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	29-Jan-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 97
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to Site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 check winds and LEL's. SITP = 569 psi
		North wind not favorable for crane work. BCI on Site SS25 to maintain track-hoe
7:30		Attend Daily Operations Conference call w/ Regulators
7:45		SoCal and DOGGR representatives on Site SS25. Waitng on wind to remove de-mister trays.
9:40		Stage crane at curve of access road to Site SS25. Waiting on wind
		Perform radio check w/ Relief Well Rig floor, good coms
11:30		Lunch
12:30		Return to Site SS25 and move in crane and rig up. Remove both trays from east side of crater bridge.
		Remove all de-mister pads from trays and place in roll-off bins
14:00		Rig down crane. Haul off 1st roll-off bin. Call for stinger truck to haul off larger collection tray (Tray #1 closest to crater bridge)
14:15		Perform ***Omaha*** drill between relief well rig (Porter 39A) and Site SS25. Good communications during drill.
14:45		Stinger crane on Site SS25. Load out Tray 1 and take to decon site.
15:40		LACFD on Site SS25 for orientation
15:50		Secure Site SS25 of personel
16:00		Depart Aliso Canyon
		Note: Omaha is code word for complete losses in annulus of Porter 35A Relief Well

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	29-Jan-2016	Well Name and Number:	Porter #39A — Report # 46
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	2:30	Continued pulling out of hole from 4,291' MD.
2:30	9:30	Rigged up Schlumberger E-line equipment. Ran in hole and captured CBL/Neutron Gamma Ray log from 8,401' to 3,353'. Rigged down Schlumberger E-line equipment.
9:30	0:00	Made up directional BHA with 6-1/8" Kymera PDC bit. Ran in hole from 462' MD to 5,412' MD. Performed 2 severe loss circulation drills with drilling team. Drills witnessed by DOGGR, LA County Fire Department, SoCalGas reps, Boots & Coots reps & others. Excellent response time. Continued to run in hole from 5,412' MD to 8,413' MD. Performed mud motor/MWD bleed down test. Directional drilled 6-1/8" hole from 8,413' MD to 8,450' MD. Slid 60% and rotated 40%. Circulated hole clean. Pumped one 30 bbls high viscosity sweep while rotating and reciprocating drill string. Checked and no flow. Pulled out of hole from 8,450' MD to 5,204' MD (Midnight depth).

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	29-Jan-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	10				
Wayne Courville	10				
Arash	11				
				Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	30-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	98
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	State: Country:	California USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to Site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 check winds and LEL's. SITP = 583 psi
7:30		Attend Daily Operations conference call with Regulators
		Move in crand and rig up counter weights
8:00		Onxy on location. SoCal, DOGGR, and Unified Command reprentatives on Site SS25 for inspection
8:30		Held tailgate safety meeting. Close in tubing wing valve, bleed off flowline and disconnect from X-mas tree.
		Pick up north end of bridge approx 2 ft and place cribbing underneath. Pick up 60' skid (Tray #2) and place under north
		end of bridge for additional footprint support. Pick up bridge and remove cribbing and set bridge on skid
10:30		Release crane. Re-tighten guidelines as needed
11:30		Lunch
12:40		Return to site. Place rope barrier around crater. Ran Ground wire from bridge to Skid (Tray #2)
		Place safety cones around bridge and crater
13:30		SoCal and LACFD on site for inspection and orientation. Western W/L on site working on data transmission system
14:15		SoCal representative on site for inspection
14:45		SoCal, Public Utilities Commission, DOGGR & Blade Engineering representatives on site for inspection.
15:30		Secure Site SS25 of all personnel
15:45		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5				
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	73.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	30-Jan-2016	Well Name and Number:	Porter #39A	Report #	47
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1		
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	3:00	Continued pulling out of the hole from 5,204' MD with directional BHA. Stood back GWD/LWD and laid down mud motor.
3:00	14:30	Made up gyro BHA. RIH to 8,450' MD. Captured GWD surveys at 8,450' MD, 8,440' MD, 8,430' MD, 8,420' MD & 8,410' MD. Performed 2 lost circulation drills with the drilling team. Pulled out of hole from 8,450' MD to pick up directional BHA. Shut down operations due to site tour for OSHA from 1300 hrs to 1400 hrs. Departed hotel for location at 0630 hrs. Stood back BHA. Reviewed Kill Operations Procedures Document with SoCalGasCo, B&C and Conultants from 0900 hrs to 1130 hrs.
14:30	18:30	Rigged up Halliburton's E-Line equipment with Sperry WellSpot Ranging tools. Ran in hole and performed open hole WellSpot Ranging Run #22 on bottom at 8,450' (results attached). Pulled tools back to surface. Rigged down Sperry WellSpot Ranging tools and Halliburton's E-Line equipment. Departed location for hotel at 1630 hrs.
18:30	0:00	Made up directional BHA. Ran in hole to 8,450' MD (Midnight Depth).

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	30-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	31-Jan-2016	Well Name and Number:	Standard Sesnon 25	Report #	99
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to Site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25, check winds and LEL's. Heavy Fog w/ light mist. B&C HSE Specialist met w/ Unified Command about storm
7:30		Attend Daily Operations meeting conference call with Regulators
7:45		SoCal and DOGGR representatives on Site SS25 for inspection
8:00		Western W/L on Site SS25 working on data transmission system
9:30		Wind and rain picking up on Site SS25
11:00		Raining Hard. Good drainage on site, little water entering crater. Sand bags diverting rain
11:30		Lunch
12:30		Strong storm conditions
15:00		Check location, no visible change to crater. Location still draining well
15:30		Secure site of all personnel
16:00		Depart Aliso Canyon

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5			
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	73.5

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Well Control Prevention Services
Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	31-Jan-2016	Well Name and Number:	Porter #39A	Report #	48
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	9:00	Directionally drilled 6-1/8" hole from 8,450' MD to 8,500' MD. Slid 38% and rotated 62%. Circulated hole clean. Pumped one 30 bbls high viscosity sweep while rotating and reciprocating drill string. Checked and no flow. Pulled out of hole from 8,500'. Down loaded GWD/LWD tools. Laid down mud motor. Stood back GWD/LWD BHA. Departed hotel for location at
9:00	20:00	Made up 6-1/8" bit (no motor) and Gyro/LWD BHA. Ran in hole to 8,500' MD. Captured Gyro surveys at 8,498' MD, 8,490' MD, 8,480' MD, 8,470' MD, 8,460' MD and 8,450' MD. Pulled out of hole from 8,450' MD.
20:00	0:00	Rigged up E-Line equipment with WellSpot Ranging tools. Ran in hole and performed open hole WellSpot Ranging on bottom at 8,500' MD. (RR23). Pulled tools back to surface.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	31-Jan-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	1-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	100
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to Site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 check winds and LEL's. Strong wind from NNW. No visible change in crater. Some rain water
		in crater. SITP = 588 psi
7:45		SoCal and DOGGR representatives on site for inspection
		Monitor well as relief well drills through remainder of caprock
12:30		Porter 39A @ 8530, 12 feet below caprock. No losses
14:30		SoCal and LACFD on site for inspection and orientation
		SITP = 604 psi
16:30		Stay on Site SS25 until night crew arrive
17:00		Crew change with night crew (Moran & Kennedy)
18:00		Night crew monitoring well thru the night

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5	Joe Kennedy	10	0.5
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	84

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Date:	2-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 101
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Depart Hotel - Arrive to Site 3
6:30		Attend Daily Operations meeting
7:00		Arrive on Site SS25 check winds and LEL's. Strong wind from north. No visable change in crater. SITP = 590 psi
7:30		Attend Daily Operation conference call w/ Regulators
9:00		SoCal, DOGGR, LACFD Unified Command, Blade Energy, & CPUC on Site SS25 for inspection.
		Blade confirming point to install Gas Chromatograph
11:30		Lunch
13:00		Return to Site SS25. Western W/L finished installtion of data streaming equipment
13:30		Onyx services on Site SS25. Reconfigure needle vavle tree on flow line to accept Blade's chromatograph
		SITP = 581 psi
17:00		Crew change with night crew
18:00		Continue to monitor SS25 w/ 24 hour coverage

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	1-Feb-2016	Well Name and Number:	Porter #39A — Report # 49
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	1		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	3:00	Pulled tools back to surface. Rigged down Ranging tools and E-Line equipment.
3:00	18:00	Made up directional BHA with 6-1/8" bit. Ran in hole from to 8,402'. Held extreme losses safety meeting with Boots & Coots reps. Pre-assembled lubricator & grease head assembly for running down hole pressure gauge. Repaired leaking 2" HP nipple on rigs stand pipe manifold. Directional drilled 6-1/8" hole from 8,500' to 8,530'. Slid 50% and rotated 50%. Drilled through the cap rock at 8,518' and observed no loss of fluid. Circulated hole clean. Pumped one 30 bbls high vis sweep while rotating and reciprocating drill string. Checked and no flow. Pulled out of hole from 8,530'. Down loaded GWD/LWD tools. Laid down mud motor. Stood back GWD/LWD BHA.
18:00	0:00	Made up 6-1/8" bit (No mud motor). Ran in hole to 8,530'.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	1-Feb-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	11				
Wayne Courville	11				
Arash	11				
				Total Man-hours for Noted Date:	

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Date:	3-Feb-2016	Well Name and Number:	Standard Sesnon 25 / Report # 102
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
HSE Specialist		Joe Kennedy (N/C)	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Winds 10 mph from north, SITP = 581 psi. Wellhead stable, no change in crater
4:00		Winds 10 mph from north, SITP = 588 psi. No change in wellhead or crater
6:00		Attend Operations meeting
6:30		Arrive on location check winds & LEL's. Strong wind from north. No change in crater. SITP = 585 psi
		Attend Relief Well operations meeting
9:30		Cal OSHA on Site SS1 observing SS25 stie
11:45		Lunch. SoCal representative informed B&C to leave Site SS25 until further notice as per CPUC orders
14:10		SoCal representative informed B&C to return to Site SS25 to monitor
14:15		On Site SS25, winds from north, wellhead and crater stable. SITP = 585
14:45		SoCal and DOGGR representative on Site SS25 for inspection
17:00		Crew change w/ nite crew
18:00		Continue to monitor Site SS25 on 24 hour coverage
20:00		Site SS25 inspection. Winds out of NE approximately 6 mph. Wellhead stable. SITP = 587 psi
0:00		Winds north 15 mph. Wellhead and crater stable. SITP = 582
		Winds increase throughout nite.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5	Joe Kennedy	10	0.5
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	84

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	4-Feb-2016	Well Name and Number:	Standard Sesnon 25 — Report # 103
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California
	Northridge, CA, 91326	Country:	USA
AFE #:		Well Location:	Aliso Canyon Storage Facility
Customer Representative:		Well Type:	Gas
Report Generated By:	Jim LaGrone	Job Type:	Well Control
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	[redacted]
Well Control Specialist	4	Travis Martel	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
Sr. Well Conrol Engineer	4	Jim LaGrone	1	[redacted]	[redacted]
Sr. Well Conrol Engineer	4	Rolly Gomez	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Juan Moran	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Bud Curtis	1	[redacted]	[redacted]
HSE Specialist		Joe Kennedy (N/C)	1	[redacted]	[redacted]
General Daily Expense	1		7	[redacted]	[redacted]
Hotel			7	[redacted]	[redacted]
Equipment		Junk Shot Manifold Stby	1	[redacted]	[redacted]
Rental Cars			3	[redacted]	[redacted]
		Estimated Daily Total			[redacted]

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Winds on Site SS25 are 12-15 mph from north. Well & crater are stable, no change. SITP = 582 psi
4:00		Winds on Site SS25 are 20 mph north. No change in location parameters. Site secured.
5:45		Crew change w/ night crew
6:00		Attend Operation Meeting at Site SS3
6:30		Attend Relief Well Operation Meeting at Site SS3
7:00		Arrive Site SS25 take wind and LEL's. Strong winds from north. No visiable change in crater. SITP = 583 psi.
		Place new caution tape on existing rope barricade around crater to make more visiable. Add rope barrier across bridge, both sides
7:20		SoCal and Blade Energy on Site SS25 to gather gas samples from tubing flow line
10:15		SITP = 600 psi
10:30		Extreme strong winds. Secure site.
11:30		Lunch
12:30		Go to Site PS20 and consult rig on diverter lines
14:00		Very strong winds from the north
		Wellhead stable, no change in crater. SITP = 590 psi
17:00		Crew change with night crew
		Monitor Site SS25 thru the night

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5	Joe Kennedy	10	0.5
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

Date:	3-Feb-2016	Well Name and Number:	Porter #39A — Report # 51
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	11:00	Monitored well at 8,403' MD. Waited on daylight. Directionally drilled 6-1/8" hole from 8,530' MD to 8,560' MD. Slid 30% and rotated 70%. Circulateded hole clean. Pumped one 30 bbls high vis sweep while rotating and reciprocating drill string. Departed hotel at 0530 hrs.
11:00	16:30	Pulled out of hole from 8,560' MD. Down loaded GWD/LWD tools. Laid down mud motor. Stood back GWD/LWD BHA.
16:30	0:00	Made up 6-1/8" bit (No mud motor). Load probe. Up load GWD/LWD BHA. Ran in hole to 8,560'. Captured GWD surveys at 8,560', 8,550' & 8,540'. Checked and no flow. Departed location for hotel at 1630 hrs.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	3-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	11					
Wayne Courville	11					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	5-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	104
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	State:	California		
		Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Strong winds from the north. SITP = 603 psi
4:00		Winds are the same, wellhead and crater are stable. Location is secured
5:45		Crew change w/ night crew
6:00		Attend Operation Meeting at Site SS3
6:30		Attend Relief Well Operation Mtg @ Site 39
7:00		Arrive on Site SS25, check wind and LEL's. Strong wind from the north. No visible change
		SITP = 589 psi. No changes through out night notes on crater
		Placed "Keep Out" signs on site as requested by SoCal
11:30		Lunch
12:15		Return to site. Assist SoCal contractors w/ gas sampling
13:00		SITP= 595 psi
15:00		Secure site of all personnel
16:00		Crew change w/ night crew
		Monitor well thru night

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	**84**

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Boots & Coots
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	5-Feb-2016	Well Name and Number:	Porter #39A	Report #	53
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	13:00	Continued to run in hole from 6,000' MD to 8,402' MD. Circulated and conditioned mud at 8,402'. Waited on daylight/orders. Broke circulation. Captured GWD survey at 8,560. Oriented tool face.
13:00	21:30	Directional drilled 6-1/8" hole from 8,560' MD to 8,585'. Slid 44% and rotated 56%. Circulated hole clean. Pumped one 30 bbls high vis sweep while rotating and reciprocating drill string. Checked and no flow. Pulled out of hole from 8,585'. Laid down mud motor. Stood back GWD/LWD BHA.
21:30	0:00	Made up 6-1/8" bit (No mud motor). Load probe. Up load GWD/LWD BHA. Ran hole to 1,500' MD Midnight depth.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	5-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	11					
Wayne Courville	11					
Arash	11					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	6-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	105
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Strong winds from the north. Wellhead stable. SITP = 585 psi. Crater unchanged, location secured
4:00		Wind is stronger from the north. Wellhead stable. SITP = 601 psi. Crater unchanged. Location secured.
5:30		Crew Change
6:30		Attend Daily Operations meeting
7:30		Arrive on Site SS25. Wind is strong from the north. Wellhead stable. SITP = 593 psi. Location secured.
9:30		Strong winds from the north. Wellhead stable. SITP = 593 psi. Location secured
11:30		Lunch
13:00		Return to Site SS25. Wellhead stable. Crater unchanged. SITP = 610 psi. Secure site and clear all personnel
		SoCal and DOGGR representatives were on Site SS25 for inspection.
17:00		Crew change w/ nite crew

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	6-Feb-2016	Well Name and Number:	Porter #39A	Report #	54
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	5:00	Continued running n in hole from 1,500' MD to 8,585' MD. Captured GWD surveys at 8,585' MD, 8,575' MD, 8,565' MD, 8,555' MD, 8,545' MD & 8,535' MD. Pulled out of hole from 8,535' to 8,369'.
5:00	9:30	Top drive hydraulic hose developed leak. Replaced leaking Top drive hydraulic hose. At 0530 hrs departed hotel for location.
9:30	14:30	Pulled out of hole from 8,369'. Stood back GWD/LWD tools.
14:30	18:00	Rigged up E-Line equipment with WellSpot 2.375" ranging tools. Ran in hole and performed open hole WellSpot Ranging on bottom at 8,585'. (RR26, results attached). Pulled tools back to surface. Rigged down WellSpot Ranging tools and E-Line equipment. Departed location for hotel at 1530 hrs.
18:30	0:00	Serviced rig equipment. Made up directional BHA with 6-1/8" insert bit #10RR. Ran in hole to 8,401' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	6-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	10					
					Total Man-hours for Noted Date:	

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HALLIBURTON
BOOTS & COOTS SERVICES

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	7-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	106
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
HSE Specialist		Joe Kennedy (N/C)	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Strong wind from the north. Wellhead stable, crater unchanged. SITP = 609 psi. Location secured
4:00		Stronger winds from the north. Wellhead stable, crater unchange, SITP = 602 psi
5:30		Crew Change
6:30		Arrive on site. Wind strong form north. Wellhead and crater are stable. SITP = 604 psi
		Check radio commication with rig, all 100%.. Relief well drill from 8585 to 8600' w/o any reaction
9:30		Secure site of all peronnel. All stable
13:00		Return to site w/ Halliburton cmt/logging personnel to check site for data coms
13:30		Secure Site of all personnel
17:09		Crew Change for night crew

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

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Well Control Prevention Services
Boots & Coots
A Halliburton Service

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Date:	7-Feb-2016	Well Name and Number:	Porter #39A	Report #	55
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	7:00	Circulated and conditioned mud at 8,402' MD. Waited on daylight/orders. Ran in hole from 8,401' MD to 8,585' MD. Took GWD survey on bottom.
7:00	9:30	Directional drilled 6-1/8" hole from 8,585' MD to 8,600' MD. Slid 80% and rotated 20%. Circulated hole clean. Pumped one 30 bbls high viscosity sweep while rotating and reciprocating drill string. Checked and no flow/losses.
9:30	15:00	Pulled out of hole from 8,600' MD. Down loaded GWD/LWD tools. Laid down mud motor. Stood back GWD/LWD BHA.
15:00	0:00	Made up 6-1/8" bit (No mud motor). Load probe. Up load GWD/LWD BHA. Ran in hole to 8,600' MD. Re-logged from 8,585' MD to 8,600' MD. Captured GWD surveys at 8,600' MD, 8,590' MD & 8,580' MD, Circulated and conditioned mud.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	7-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	10					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	8-Feb-2016	**Well Name and Number:**	Standard Sesnon 25	Report #	107
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:** **Country:**	California USA		
AFE #:		**Well Location:**	Aliso Canyon Storage Facility		
Customer Representative:		**Well Type:**	Gas		
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control		
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Strong winds from the north. Wellhead is stable. Crater unchanged. SITP = 622 psi. Location is secured
4:00		Stonger winds from the north. Wellhead is stable. Crater unchaged. SITP = 612 psi. Location is secured
5:30		Crew change
6:30		Operation meeting
7:00		Arrive on Site SS25 and check winds/LEL's. Very strong winds from the north. Wellhead stable.
		No change in crater. SITP = 616 psi
8:00		SoCal and DOGGR representatives on site for inspection. SITP = 610 psi
8:45		Secure site due to extreme wind velocities
14:30		Return to Site SS25. Wind Very strong from the north. Wellhead stable, crater unchanged. SITP = 613
14:45		Secure site with extreme high winds
17:00		Crew change with night crew.
		Monitor well thru the night.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	**84**

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	9-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	108
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Strong winds from the north. Wellhead is stable. Crater unchanged. SITP = 599 psi. Location is secured
4:00		Stronger winds from the north. Wellhead is stable. Crater unchanged. SITP = 606 psi. Location is secured
5:30		Crew Change
6:00		Attend Operations Mtg
6:30		Attend Relief Well Operation Mtg
6:45		Arrive on Site SS25. Winds strong from north. Wellhead is stable. Crater unchanged. SITP = 599 psi. Est. Comms w/ Rig
8:00		Complete drilling on relief well to 8610 w/o communication
8:45		Strong wind from north. Wellhead is stable. Crater is unchanged. SITP = 605 psi. Location is secured
14:00		Return to Site SS25. Winds from the north. Wellhead is stable. Crater unchanged. SITP = 615 psi
14:30		Operatios delivered large 125 lbs ABC wheeled fire extinguisher to location. Place next to shed over Well SS 25B
15:00		Secured Site SS25
17:00		Crew change with night crew. Continue to monitor well throughout night.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	8-Feb-2016	Well Name and Number:	Porter #39A — Report # 56
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:00	7:00	Circulated and condition mud. Pulled out of hole from 8,600' to BHA. Down loaded GWD/LWD tools. Stood back GWD.LWD tools.
7:00	17:00	Rigged up E-Line equipment with WellSpot 4.5" Ranging tools. Ran in hole and performed open hole WellSpot Ranging on bottom at 8,600' MD. (RR27, results attached). Pulled tools back to surface. Rigged down WellSpot Ranging tools and E-Line equipment. Serviced rig equipment. Rigged up E-Line equipment with WellSpot 2.375" Ranging tools. Ran in hole and performed open hole Passive Magnetic Ranging on bottom at 8,600' MD. (RR27, results attached). Pulled tools back to surface. Rigged down WellSpot Ranging tools and E-Line equipment.
17:00	0:00	Made up directional BHA with 6-1/8" insert bit #10RR. Scribed and performed offset. Uploaded GWD/LWD tools. Surface/shallow tested GWD/LWD tools at 2,540' MD. Discovered discrepancy in offset. Pulled out of hole from 2,540' MD and stood back LWD/GWD BHA. Checked and re-scribed mud motor. Performed offset and uploaded LWD/GWD. Ran in hole to 2,540' and performed shallow test Midnight depth.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	8-Feb-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	10				
Wayne Courville	10				
Arash	10				
				Total Man-hours for Noted Date:	

7047 W. Greens Rd.
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	10-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 | Report # 109
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
HSE Specialist		Joe Kennedy (N/C)	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		On Site SS25. Moderately strong winds from the north. Wellhead is stable. No visible change in crater. SITP = 613 psi. Secured
4:00		On Site SS25. Wind from the north. Wellhead is stable. No visible change in crater. SITP = 623 psi. Secured location.
5:30		Crew Change
6:00		Attend Daily Operations Meeting
6:30		Arrive on Site SS25. Winds strong from the north. Wellhead is stable. No visibel change in crater. SITP = 600 psi.
		Attend Relief Well Operations meeting
6:45		Radio communication check from rig. Start sliding from 8610 ft MD
		Drill to 8615 ft MD and touched 7" casing in SS25. Received cement and metal shaving. No communication between wells.
8:00		SoCal and DOGGR reprsentatives on site for inspection
8:15		Secured Site SS25 and clear all personnel from site
14:00		Return to Site SS25. Condition are the same. SITP = 613 psi. Secured site
17:00		Crew change with night crew and continue Site SS25 throughout the night

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

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WELL CONTROL PREVENTION SERVICES
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	10-Feb-2016	Well Name and Number:	Porter #39A — Report # 58
Customer Name:	Southern California Gas Company	County:	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California
	Northridge, CA 91326	Country:	USA
Purchase Order#		Well Location:	Alsio Canyon Storage Facility
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well
Report Generated By:	John Hatteberg	Job Type:	Relief Well
Lease - Well #:	Porter 39A	Rig No:	Ensign 587

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	6:00	Ran in hole from 2,500' MD to 8,402' MD. Circulated and conditioned mud at 8,402'. Waited on daylight/orders.
6:00	7:30	Ran in hole from 8,402' MD to 8,610' MD. Circulated and captured GWD survey on bottom. Directional drilled 6-1/8" hole from 8,610' MD to 8,615' MD. Slid 100% and rotated 0%.
7:30	12:00	Soft touched target well at 8,615' MD. Observed 130 psi increase in differential pressure. Picked up and carefully lowered drill string down and verified soft touch twice. All agreed contact with TW was made. Circulated hole clean. Pumped one 30 bbls high vis sweep while rotating and reciprocating drill string. Observed 30% cement cuttings and metal shavings at bottoms up. Checked and no flow.
12:00	14:00	Pulled out of hole from 8,615' MD. Down loaded GWD/LWD tools. Laid down mud motor. Stood back GWD/LWD BHA.
14:00	17:00	Rigged up E-Line equipment with WellSpot 4.5" Ranging tools. Ran in hole and performed open hole WellSpot Ranging on bottom at 8,617' MD. (RR29, results attached). Pulled tools back to surface. Rigged down WellSpot Ranging tools and E-Line equipment. Serviced rig equipment.
17:30	0:00	Made up Milling/Directional BHA. Picked up 2.12 deg bend mud motor and 6-1/8" concave bottom mill #1. Scribed and performed offset. Uploaded GWD/LWD tools. Ran in hole to 8,402' MD. Circulated and conditioned mud at 8,402' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	10-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	12					
Wayne Courville	12					
Arash	12					
					Total Man-hours for Noted Date:	

7047 W. Greens Rd.
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281-931-8884

Well Control Prevention Services
Boots & Coots
A Halliburton Service

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	11-Feb-2016	Well Name and Number:	Porter #39A	Report #	59
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	6:00	Circulated and conditioned mud at 8,402' MD. Perform mud motor volume/ back pressure test. Waited on daylight/ Waited on orders.
6:00	8:00	Ran in hole from 8,402' MD to 8,600' MD. Circulated and captured GWD survey on bottom. Oriented mill 140 deg Az. Tagged target well SS25 7" casing at 8,615.3' MD. Milled 2.5" and lost full returns.
8:00	12:00	Open 4" delivery line to bell nipple at 18 bpm. Pulled out of hole from 8,615' MD to 8,402' MD. Pumped 18 bpm into back side. Regained near full returns after 15 minutes (280 bbls lost). Closed in the well. Pumped 2-3 bpm through kill line filling TW SS25 with drilling mud until 155 psi was observed on RW 39A annulus. Total mud lost/pumped 505 bbls.
12:00	13:30	Stopped pumping and monitored both TW & RW. Both appeared to be "Static". Bled off possible trapped pressure. Opened 39A RW well up. Monitored RW P39A on trip tank. Pumped 1 bbl down drill string every 30 minutes. TW SS25 U-tube 21 bbls drilling mud back into RW P39A and stabilized.
13:30	19:00	Ran in hole from 8,402' MD to 8,615.3' MD. Captured GWD survey. Oriented mill 140 deg Az. Continued to mill 8' window in TW SS25 7" casing from 8,615.3' MD to 8,623' MD. This will allow for tubing to be ran in TW SS25.
19:00	0:00	Pulled out of hole from 8,623' MD to 8,402' MD. Circulated hole clean. Pulled out of hole from 8,402' MD to 1,322' MD. Midnight depth.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	11-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	12					
Wayne Courville	12					
Arash	12					
					Total Man-hours for Noted Date:	

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Boots & Coots
A HALLIBURTON SERVICE

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Date:	12-Feb-2016	Well Name and Number:	Porter #39A	Report #	60
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	Region:	California		
	Northridge, CA 91326	Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
Estimated Daily Total					

Well Summary

Hour	Hour	Activity on Site
0:00	2:00	Pulled out of hole from 1,322' MD to Milling BHA. Down loaded GWD/LWD tools. Stood back GWD.LWD tools, laid down mud motor and mill #1.
2:00	9:00	Rigged up 2-7/8" tubing handling tools. Ran in hole picking 10 joints 2-7/8" 7.9# PH6 tubing and 10' stinger with 45 deg cut off and 2.5 deg bend 48" from bottom to 324'. Rigged down tubing tongs. Rigged up 3-1/2" drill pipe handling tools. Ran in hole from 324' to 8,615'. Entered 7" liner top at 3,353' /w no issues. Pumped in hole from 8,615' MD to 8,809' MD and tagged top of fill there. Pulled up through SS25 7" window from 8,615' to 8,623' no problems. Tagged SS25 5-1/2" liner top at 8,681' MD. Picked up work string 10' Rotated pipe 1/2 turn. Traveled back down and entered 5-1/2" liner /w no issues. Pulled up from 8,809' MD to 8,705' MD.
9:00	18:00	Circulated and condition mud / monitored well on trip tank. Well taking 6 bph. Ran in hole from to 8,808' MD. Attempted to circulate (No returns observed). Picked back up to 8,709' MD. Attempted to circulate at 4 bpm (Circulation established). Ran in hole to 8,808' MD. Attempted to circulate at 4 bpm (Good circulation established).
18:00	0:00	Rigged up Halliburton cementers. Tested lines to 3800 psi. Pumped 40 bbls 8.9 ppg drilling mud at 4.2 bpm with 870 psi, followed by 17 bbls fresh water at 4.2 bpm with 900 psi, followed by 20 bbls 62 sacks of 14.8 ppg cement at 4.2 bpm with 730 psi, followed by 17 bbls fresh water at 4.2 bpm with 650 psi, followed by 59.8 bbls 8.9 ppg drilling mud at 4.2 bpm with 350 psi. CIP 18:45 hours. Picked up to 8,627' MD. Attempted to circulate at 2 - 4 bpm (Partial returns). Picked up to 8,000' MD. Attempted to circulate at 2 - 4 bpm (Partial returns). Picked up to 7,043' MD. Attempted to circulate at 2 - 4 bpm (Near full returns). Circulated bottoms up at 7,043' MD. Observed small amount of soft cement at surface. Pulled out of hole from 7,043' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	12-Feb-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	12				
Wayne Courville	12				
Arash	12				
				Total Man-hours for Noted Date:	

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	13-Feb-2016	Well Name and Number:	Porter #39A	Report #	61
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	3	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH/WC	2	
Rental Car		JH	1	
Rental Car		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
0:00	5:00	Continued to pull out of hole to 324'. Rigged up 2-7/8" tubing handling tools. Pulled out of hole and stood back 2-7/8" 7.9# PH6 tubing stinger assembly in derrick. Rigged down 2-7/8" tubing handling tools.
5:00	15:00	Make up 6-1/8" tri-cone bit/clean out assembly. Ran in hole to 7,030' MD. Washed and reamed in hole from 7,030' to 8,605' Observed small amount of cement in returns. Continued to wash in hole without rotating from 8,605' to mid window depth at 8,618' (No cement observed). Closed annular. Applied 150 psi to annulus and verified communication with SS25 TW was still established. (Good test). Opened annular. Circulated bottoms up at 8,610' MD. Pulled out of hole from 8,610' MD. Laid down 6-1/8" bit and bit sub.
15:00	20:30	Rigged up 2-7/8" tubing handling tools. Picked up 324' 2-7/8" 7.9# PH6 tubing stinger assembly. Rigged up 3-1/2" drill pipe handling tools. Ran in hole with 2-7/8" tubing stinger on 3-1/2" and 5" drill pipe to 8,395'. Circulated and conditioned mud. Washed down from 8,395' at 3 bpm with 450 psi and tagged cement in at 8,657' MD RW referenced. Applied 6,000 lbs down weight on cement. Cement tag witnessed by DOGGR.
20:30	0:00	Pulled back up into RW 7" casing shoe at 8,402' MD. Circulated bottoms up at 8,402' MD. Allowed TW and RW to stabilize. Pulled out of hole from 8,402' MD.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	13-Feb-16

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
John Hatteberg	12				
Wayne Courville	12				
Arash	12				
				Total Man-hours for Noted Date:	

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SoCalGas-9.0183

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	14-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report # 113
Customer Name:	Southern California Gas Company	County:	Los Angeles	
Customer Billing Address:	12601 Tampa Ave., SC 9328 Northridge, CA, 91326	State:	California	
		Country:	USA	
AFE #:		Well Location:	Aliso Canyon Storage Facility	
Customer Representative:		Well Type:	Gas	
Report Generated By:	Jim LaGrone	Job Type:	Well Control	
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A	

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
HSE Specialist		Joe Kennedy (N/C)	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Arrive on Site SS25. Strong wind from the north. Wellhead and crater stable & static. SITP = 1277 psi. Location secured
4:00		Arrive on Site SS25. Wind from the north. Wellhead and crater stable & static. SITP = 1272 psi. Location secured
5:30		Crew Change
6:30		Attend Operation Meeting
7:30		Arrive on Site SS25. SITP = 1270 psi.
8:00		SoCal, CPUC & DOGGR representative on site for inspection
8:15		Prepare to bleed tubing during cementing job. Install gauge in choke manifold. Open lo-torque to choke manifold.
8:30		Porter Ranch 39A announce retainer is set. Testing line
8:45		Begin cement job on PR39A. SITP = 1380 psi
9:00		Bleed tubing as instructed by cement team on PR39A
10:20		Cmt in place. Close lo-torque to choke manifold. SITP = 1365 psi
11:30		lunch
11:50		Return to Site SS25. Socal, CalOSHA & LACFD on site to inspect bridge hand rails.
		CalOSHA led group up hill and to edge of 10 ft shear bank of unconsolidated class C Soil
		Boots & Coots pointed out to CalOSHA that this was an unsafe place to observe from
12:00		SITP = 1333 psi
12:30		SoCal and Western W/L representative on site to discuss W/L work
13:00		Bring crane to site and rig up
13:30		Western W/L eqpt on site, unload and spot. SITP = 1321 psi
14:45		Rig up e-line lubricator. SITP = 1314 psi
15:45		SITP = 1308 psi. Secure site of all personnel. No night crew.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5	Joe Kennedy	10	0.5
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	84

7047 W. Greens Rd.
Houston, TX. 77066
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	11-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 / Report # 110
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA, 91326	**State:**	California
		Country:	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.
11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		On Site SS25. Strong winds from the north. Wellhead stable and crater unchanged. SITP = 615 psi. Location secured.
4:00		On Site SS25. Moderate winds from the north. Wellhead stable and crater unchanged. SITP = 619 psi. Location secured
5:30		Crew change
6:00		Attend Operations Meeting
6:30		Attend Relief Well Operations Meeting
		Arrive on Site SS25. Wind from the north. Wellhead stable and crater unchanged. SITP = 616 psi
7:00		Radio Check w/ relief well. Start milling operation @ 8615' MD (Relief well) SITP = 615 psi
7:40		Mill to 8615.3' and well went on full losses. SITP dropped to 590 psi initially then began to climb
7:45		SITP = 660 psi. 2 min later SITP = 721 and crater quiet
7:55		SITP = 933 psi, well is quiet
8:00		SITP = 1060 psi
8:06		Relief well closed annular and pumped down kill line @ 2 BPM
8:35		SITP = 1378 psi
9:00		SITP = 1409 psi
9:50		SITP = 1424. Shut down pumping on relief well and observe reaction. SITP = 1414 psi
10:00		SoCal rep on site to discuss wireline operations
11:00		SoCal, LACFD and DOGGR reps on site for instpection
12:45		SoCal, LACFD and Fluor on site w/ FLIR camera to observe crater and hillside. SITP - 1366
13:30		Resume Milling operations on Relief Well. SITP = 1374 psi
15:15		SITP = 1394 psi. SoCal & Cal OSHA reps on site w/ discuss on how to make bridge safe as per CalOSHA regs. "Red Tagged" bridge
17:25		SITP = 1385 psi. Well is static, no flow, no activity in crater. Secure site, crew change. Monitor
17:50		B&C escorted SoCal and CalOSHA reps to Site SS25 (Dark - SS @ 17:33). Removed CalOSHA Red Tag from bridge. Location Secured
		Monitor thru NIGHT

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5	Joe Kennedy	10	0.5
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	**84**

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	12-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 / Report # 111
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	
Well Control Specialist	4	Travis Martel	1	
HSE Specialist	4	Mike Baggett	1	
Sr. Well Conrol Engineer	4	Jim LaGrone	1	
Sr. Well Conrol Engineer	4	Rolly Gomez	1	
Sr. Well Control Specialist	4	Juan Moran	1	
Sr. Well Control Specialist	4	Bud Curtis	1	
HSE Specialist		Joe Kennedy (N/C)	1	
General Daily Expense	1		7	
Hotel			7	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			3	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		On Site SS25. Strong winds from the north. Wellhead stable and crater unchanged. SITP = 1363 psi. Location secured.
4:00		On Site SS25. Winds from the north. Wellhead stable and crater unchanged. SITP = 1344 psi. Location secured.
5:30		Crew change
6:30		Attend Operation Meeting
7:00		Attend Relief Well Operations Meeting
7:30		Arrive on Site SS25. SITP = 1335 psi
7:45		SoCal and DOGGR representatives on Site SS25 for inspection
		C-PUC and CalOSHA on site to discuss bridge handrails
8:00		Porter Ranch 39A Relief Well has run stinger into SS25 well. SITP = 1351 psi
8:15		Porter Ranch 39A reports that 2-7/8" stinger is inside of 5-1/2" liner. SITP = 1352
8:37		Relief well tagged bottom of SS25 @ 8809 ft MD
10:00		SS25 SITP = 1354 psi
11:30		Lunch
12:30		Return to Site SS25. Well/Crater static. SITP = 1319 psi
		Wait on C-PUC representatives before beginning dirt work to place anchor for handrails.
14:00		Finish setting K-Rail anchor. SoCal representatives on site with thermal imaging group (FLIR)
15:00		SITP = 1325 psi
16:00		SITP = 1345 psi
16:30		Secure Site SS25 and crew change with night crew. Continue to monitor well periodically throughout night.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	13-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 112
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
0:00		Arrive on Site SS25. Strong wind from the north. Wellhead and crater stable & static. SITP = 1344 psi. Location secured
4:00		Arrive on Site SS25. Wind from the north. Wellhead and crater stable & static. SITP = 1322. Location secured.
5:30		Crew Change
6:30		Attend Daily Operations Meeting
7:30		Arrive on Site SS25. C-PUC representatives on site. Run handrail (5/8" cable) from k-rail anchor to bridge center upright
		and tighten with turnbuckles.
10:00		SITP = 1339 psi. Porter Ranch 39A at window, close annular and pressure up to 66 psi. No reaction on SS25. SITP = 1337 psi
		PR39A pressured up to 140 psi and bled off. Little reaction in SS25. SITP = 1340 psi
		PR39A opened annular and CBU.
10:15		SITP = 1350 psi
10:30		SITP = 1363 psi
11:00		SITP = 1377 psi
11:30		Lunch
13:22		Return to Site SS25. SITP = 1293. SoCal representatives on site for inspection.
14:30		SITP = 1290 psi
15:30		SITP = 1291 psi. Secure location of all personnel
17:00		Crew change. Continue to monitor well thru night.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	84

7047 W. Greens Rd.
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Well Control Prevention Services
Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	14-Feb-2016	**Well Name and Number:**	Porter #39A	Report #	62
Customer Name:	Southern California Gas Company	**County:**	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	**Region:**	California		
	Northridge, CA 91326	**Country:**	USA		
Purchase Order#		**Well Location:**	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	**Well Type:**	Relief Well		
Report Generated By:	John Hatteberg	**Job Type:**	Relief Well		
Lease - Well #:	Porter 39A	**Rig No:**	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1		
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	4:00	Continued to pull out of hole. Rigged up 2-7/8" handling tools. Laid down 10 joints 2-7/8" tubing. Rigged down 2-7/8" handling tools. Serviced rig equipment.
4:00	8:00	Made up Halliburton's 7" cement retainer. Ran in hole to 8,300'. Set 7" retainer at 8,298'.
8:00	11:00	Closed annular and tested retainer 1000 psi for 10 minutes. Un-stung from retainer and circulated above retainer while conducting safety meeting with cementer's. Re-stung into retainer. Applied 20k down weight. Closed annular and applied 500 psi to back side.
11:00	12:00	Pressure tested cementing lines 4,115 psi for 5 minutes. Pumped 17 bbls water ahead at 4 bpm with 824 psi, followed by 131 sacks (42 bbls) 14.8 ppg slurry at 4 bpm 855 psi start and 4 bpm with 450 psi final. Displaced cement with 17 bbls water behind at 4 bpm 380 psi, follow by 66 bbls 8.9 ppg drilling mud at 4 bpm with 180 psi start and .5 bpm 375 psi final.
12:00	0:00	Bleed pressure off back side and opened annular. Un-stung from retainer. Circulated bottom up just above retainer at 8,298'. Observed small amount of cement at bottoms up. Waited on cement.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	14-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	8					
Wayne Courville	8					
Arash	8					
					Total Man-hours for Noted Date:	

7047 W. Greens Rd.
Houston, TX. 77066
281-931-8884

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	15-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 114
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12601 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Arrive on Aliso Canyon facility.
6:30		Attend Operation Meeting
7:30		Arrive on Site SS25. Strong winds from north. Crater static and stable, no flow. SITP = 1248 psi
8:00		TNT Crane personnel on Site SS25 to access winds. Winds are too high for operations
		While spotting 150 ft cement plug on top of Cmt Ret @ 8300 ft in Porter Ranch 39A, had zero communication with relief well.
9:00		SoCal, DOGGR, CPUC, and ISI representatives on site for inspection. Bleed pressure of of tee and connect echo-meter to shoot level.
		First, Second and Third Ecometer shoots show fluid level @ 2443 ft
10:50		Secure site and clear all personnel due to very high winds
11:30		lunch
13:30		Return to Site SS25 with SoCal and CPUC representatives. SITP = 1236
15:00		Secure Site SS25 of all personnel

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5		Jim LaGrone	10	0.5
Travis Martel	10	0.5		Rolly Gomez	10	0.5
Juan Moran	10	0.5		Joe Kennedy	10	0.5
Bud Curtis	10	0.5				
Mike Baggett	10	0.5				
					Total Man-hours for Noted Date:	**84**

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281-931-8884

Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	15-Feb-2016	Well Name and Number:	Porter #39A	Report #	63
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	3	John Hatteberg	1	[redacted]	
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
0:00	5:30	Waited on cement.
5:30	9:00	Circulated bottoms up at 8,296'. Pressure tested lines 3,000 psi for 5 minutes. Pumped 15 bbls water ahead at 3.8 bpm with 753 psi, followed by 22 sacks (7 bbls) of 14.8 ppg slurry at 3.8 bpm with 840 psi. Displaced cement with 2.5 bbls water at 3.8 bpm with 680 psi, followed by 77.5 bbls 8.9 mud at 4 bpm with 680 psi start and 2 bpm with 43 psi final. Placed 150 liinear feet cement on top of retainer set at 8,298'. B&C worked on EOJ report during the day.
9:00	20:30	Pulled out of hole slowly from 8,296' to 7,793'. Circulated bottoms up twice. (No cement observed at surface). Pulled out of hole from 7,793' removing WWT non-rotating drill pipe rubbers. Laid down cement retainer running tool.
20:30	0:00	Made up 6-1/8" bit and Weatherford's 7" 26# casing scraper. Adjusted draw works brakes. Ran in hole with Weatherford's 7" 26# casing scraper to 5,030'. (Midnight depth). Slowly entered 7" liner top at 3,353' with no problem.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	15-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	8					
Wayne Courville	8					
Arash	8					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	16-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	115
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	
Well Control Specialist	4	Travis Martel	1		
HSE Specialist	4	Mike Baggett	1		
Sr. Well Conrol Engineer	4	Jim LaGrone	1		
Sr. Well Conrol Engineer	4	Rolly Gomez	1		
Sr. Well Control Specialist	4	Juan Moran	1		
Sr. Well Control Specialist	4	Bud Curtis	1		
HSE Specialist		Joe Kennedy (N/C)	1		
General Daily Expense	1		7		
Hotel			7		
Equipment		Junk Shot Manifold Stby	1		
Rental Cars			3		
		Estimated Daily Total			

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Arrive on Aliso Canyon facility.
6:30		Attend Operation Meeting
6:40		Arrive on Site SS25. Moderate wind from northwest. SITP = 1185 psi. Call for crane, wireline and CPUC personnel
7:30		Scope out crane, pick up lubricator and made up to SS25.
8:00		Test lubricator to 600 psi low & 1500 psi high. Open crown valve and RIH w/ noise/temp log. SITP = 1185 psi
11:00		Tag cement in tbg @ 8203'. POH making noise stations every 250 ft. SITP 1210 psi
12:00		Blade Energy personnel on Site SS25 for inspection.
		Western W/L @ 7500 ft w/ noise log, making 250' stops. SITP = 1210 psi
14:00		FOH w/ W/L. Closed crown valve. Bleed off lubricator and change tools to CBL.
15:00		Open well via crown valve and could not get CBL tool to fall. Made several attems. Close crown valve
15:30		Lay down lubricator and reconfigure string with additional sinker bars
16:30		Secure site of all personnel

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	10	0.5	Jim LaGrone	10	0.5
Travis Martel	10	0.5	Rolly Gomez	10	0.5
Juan Moran	10	0.5	Joe Kennedy	10	0.5
Bud Curtis	10	0.5			
Mike Baggett	10	0.5			
				Total Man-hours for Noted Date:	84

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Houston, TX. 77066
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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	16-Feb-2016	Well Name and Number:	Porter #39A	Report #	64
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]	
Well Control Engineer	3	John Hatteberg	1		
Well Control Engineer	3	Wayne Courville	1		
Well Control Engineer	2	Arash Haghshenas	0		
General Daily Expenses		JH/WC	2		
Hotel		JH/WC	2		
Rental Car		JH	1		
Rental Car		WC	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
5:30	17:30	B&C Relief Well personnel working on End of Job Report or on standby waiting for Noise/Temp Log, CBL and tubing punch pressure test results.

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	16-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	10					
Wayne Courville	10					
Arash	10					
					Total Man-hours for Noted Date:	

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Houston, TX. 77066
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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	17-Feb-2016	**Well Name and Number:**	Standard Sesnon 25 — Report # 116
Customer Name:	Southern California Gas Company	**County:**	Los Angeles
Customer Billing Address:	12801 Tampa Ave., SC 9328	**State:**	California
	Northridge, CA, 91326	**Country:**	USA
AFE #:		**Well Location:**	Aliso Canyon Storage Facility
Customer Representative:		**Well Type:**	Gas
Report Generated By:	Jim LaGrone	**Job Type:**	Well Control
Lease - Well #:	Standard Sesnon 25	**Rig No:**	N/A

Description of Charges:	Level	Comments	Units	[redacted]	[redacted]
Sr. Well Control Specialist	4	Richard Hatteberg	1	[redacted]	[redacted]
Well Control Specialist	1	Travis Martel (transit)	1	[redacted]	[redacted]
HSE Specialist	4	Mike Baggett	1	[redacted]	[redacted]
Sr. Well Conrol Engineer	4	Jim LaGrone	1	[redacted]	[redacted]
Sr. Well Conrol Engineer	4	Rolly Gomez	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Juan Moran	1	[redacted]	[redacted]
Sr. Well Control Specialist	4	Bud Curtis	1	[redacted]	[redacted]
HSE Specialist		Joe Kennedy (N/C)	1	[redacted]	[redacted]
General Daily Expense	1		7	[redacted]	[redacted]
Hotel			7	[redacted]	[redacted]
Equipment		Junk Shot Manifold Stby	1	[redacted]	[redacted]
Rental Cars			3	[redacted]	[redacted]
		Estimated Daily Total			[redacted]

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
5:30		Arrive on Aliso Canyon facility.
6:30		Attend Operation Meeting
6:40		Arrive on Site SS25. Slight wind from NW. SITP = 1107 psi. Call for Don Shackelford, Crane, W/L, and CPUC personnel
7:00		Safety Toolbox Talk
7:20		Lube and Bleed 11 bbs into well as per procedure
9:45		SITP = 100 psi. M/U lubricator and RIH w/ CBL
10:50		CBL indicates top of cement at 7620'. Logout and after logging began bleeding remaining pressure from well & fill w 6.5 bbl H2O
12:45		FOOH break off lubricator and swap out tools o perf gun
13:10		RIH w/ tubing punch guns
13:45		On depth and punch tubing 8005-06' w/ 4 spf. Positive indication of gun firing
14:30		FOH, gun fired
14:40		Pressure test as per DOGGR
17:30		Rig Up light plant to continue w/ test
17:45		Finish test. Help 1000 psi for 15 min, OK. Secure Tree
18:15		Load out test eqpt
19:00		Secure Site of all personnel.
		Boots & Coots RELEASED

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	

Signature Boots and Coots Representative	Print Name	Date
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours	Employee Name	Hours on Location	Travel Hours
Richard Hatteberg	12	0.5	Jim LaGrone	12	0.5
			Rolly Gomez	12	0.5
Juan Moran	12	0.5	Joe Kennedy	12	0.5
Bud Curtis	12	0.5			
Mike Baggett	12	0.5			
				Total Man-hours for Noted Date:	87.5

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	17-Feb-2016	Well Name and Number:	Porter #39A	Report #	65
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	[redacted]
Well Control Engineer	3	John Hatteberg	1	
Well Control Engineer	1	Wayne Courville	1	
Well Control Engineer	2	Arash Haghshenas	0	
General Daily Expenses		JH/WC	2	
Hotel		JH	1	
Rental Car		JH	1	
Airfare		WC	1	
		Estimated Daily Total		

Well Summary

Hour	Hour	Activity on Site
5:30	19:30	B&C Relief Well personnel working on End of Job Report or on standby waiting for completion of Noise/Temp Log, CBL and tubing punch pressure test results from SS#25 well. Results delivered to B&C, end of job report sent to Southern California Gas Company.
		Wayne Courville Travel from Los Angeles to Houston

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	17-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	14					
Wayne Courville	0					
Arash	14					
					Total Man-hours for Noted Date:	

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Boots & Coots
A HALLIBURTON SERVICE

This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	18-Feb-2016	Well Name and Number:	Porter #39A	Report #	66
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12801 Tampa Ave., SC 9328 Northridge, CA 91326	Region:	California		
		Country:	USA		
Purchase Order#		Well Location:	Alsio Canyon Storage Facility		
Customer Representative:	Todd Van de Putte, Mike Dozier	Well Type:	Relief Well		
Report Generated By:	John Hatteberg	Job Type:	Relief Well		
Lease - Well #:	Porter 39A	Rig No:	Ensign 587		

Description of Charges:	Level	Comments	Units	Unit Charge	Total
Well Control Engineer	1	John Hatteberg	1	[redacted]	
Well Control Engineer	1	Arash Haghshenas	0		
General Daily Expenses		JH	1		
Rental Car		JH	1		
Airfare		JH	1		
		Estimated Daily Total			

Well Summary

Hour	Hour	Activity on Site
		John Hatteberg travel from Los Angeles to Houston

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Todd Van de Putte	
Signature Boots and Coots Representative	**Print Name**	**Date**
	John Hatteberg	18-Feb-16

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
John Hatteberg	0					
Arash	0					
					Total Man-hours for Noted Date:	

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This is an estimate only for the date listed on this sheet. This is not an invoice.

Date:	18-Feb-2016	Well Name and Number:	Standard Sesnon 25	Report #	117
Customer Name:	Southern California Gas Company	County:	Los Angeles		
Customer Billing Address:	12601 Tampa Ave., SC 9328	State:	California		
	Northridge, CA, 91326	Country:	USA		
AFE #:		Well Location:	Aliso Canyon Storage Facility		
Customer Representative:		Well Type:	Gas		
Report Generated By:	Jim LaGrone	Job Type:	Well Control		
Lease - Well #:	Standard Sesnon 25	Rig No:	N/A		

Description of Charges:	Level	Comments	Units	[redacted]
Sr. Well Control Specialist	1	Richard Hatteberg	1	
HSE Specialist	1	Mike Baggett	1	
Sr. Well Conrol Engineer	1	Jim LaGrone	1	
Sr. Well Conrol Engineer	1	Rolly Gomez	1	
Sr. Well Control Specialist	1	Juan Moran	1	
Sr. Well Control Specialist	1	Bud Curtis	1	
HSE Specialist		Joe Kennedy (N/C)	1	
General Daily Expense	1		0	
Hotel			0	
Equipment		Junk Shot Manifold Stby	1	
Rental Cars			0	
		Estimated Daily Total		

Standard Senson 25 has broached to surface with several fissures on pad site.

11-3/4" casing to 990 ft. 7" casing to 8,585 ft. 5-1/2" slotted liner to 8,745 ft. 2-7/8" tubing to 8,510 ft. Packer depth 8,468 ft.

Hour		Activity on Site
		Boots & Coots Transit to Houston
		Final Report

Projected Operations

Approvals

Signature Customer Representative	Print Name	Date
	Mike Dozier	
Signature Boots and Coots Representative	**Print Name**	**Date**
	Jim LaGrone	

Employee Name	Hours on Location	Travel Hours		Employee Name	Hours on Location	Travel Hours
Richard Hatteberg				Jim LaGrone		
				Rolly Gomez		
Juan Moran				Joe Kennedy		
Bud Curtis						
Mike Baggett						
					Total Man-hours for Noted Date:	0

Ex. III- 4

SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF LOS ANGELES, CENTRAL DISTRICT

COORDINATION PROCEEDING SPECIAL TITLE (Rule 3.550)	)	JCCP No. 4861
SOUTHERN CALIFORNIA GAS LEAK CASES	)	Hon. Carolyn B. Kuhl Department SS12
THIS DOCUMENT RELATES TO:	)	
All Actions.	)	

Friday, February 21, 2020

Videotaped Deposition of DANIEL WALZEL, as Person Most Qualified of Boots & Coots Services LLC and in his Personal Capacity, held at Morgan, Lewis & Bockius, LLP, 1000 Louisiana Street, Suite 4000, Houston, Texas, commencing at 9:14 a.m. on the above date, before Susan Perry Miller, Registered Diplomate Reporter, Certified Realtime Reporter, Certified Realtime Captioner, and Notary Public.

GOLKOW LITIGATION SERVICES
877.370.DEPS ph | 917.591.5672 fax
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LA-SEAN CASELBERRY, Esq., Halliburton

VIDEOGRAPHER:
BRIAN BOBBITT

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INDEX OF EXHIBITS

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(Friday, February 21, 2020, 9:14 a.m.)

THE VIDEOGRAPHER: Stand by. We're now on the record. My name is Brian Bobbitt. I'm a videographer for Golkow Litigation Services. Today's date, February 21st, 2020. The time is 9:14 a.m.

This video deposition is being held in Houston, Texas, in the Porter Ranch Southern California Gas Leak cases, JCCP -- I forgot the number.

MS. BOLTON: 4861.

THE VIDEOGRAPHER: -- 4861 for the Los Angeles Superior Court. The deponent is Danny Walzel. Counsel will be noted on the stenographic record.

Will the reader please swear in the witness.

(Witness sworn by the stenographer.)

(Examination begins on next page.)

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P R O C E E D I N G S

DANIEL WALZEL,

having sworn or affirmed to tell the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

EXAMINATION

BY MR. KELLY:

Q. Good morning.

A. Good morning.

Q. My name is Michael Kelly and I represent approximately 35,000 people, families, that live or lived adjacent to the Aliso Canyon during the SS-25 blowout.

MR. KELLY: Before we begin your deposition, we have made some accommodations with regard to consolidating your deposition as a person most qualified and as yourself individually into one deposition, and we were going to put on the record an agreement among counsel as to how that will proceed.

MR. LOTTERMAN: Good morning. Mr. Walzel was originally scheduled to appear as a PMQ witness on February 19 and as a fact witness on February 21st. However, he had some personal circumstances arise which made him unable to appear on the 19th.

So upon agreement of counsel, we agreed to suspend that deposition and combine both his PMQ and his percipient deposition today, February 21st.

To accommodate that combination, all parties have agreed to the following: Anyone can ask questions and we will assume that Mr. Walzel is answering them in his capacity as the person most qualified on behalf of Boots & Coots.

If for whatever reason someone believes that he is testifying outside the scope of the PMQ notice, they can object on scope grounds and then the testimony automatically becomes fact testimony.

So --

MR. KELLY: Assuming the objection is sustained by someone at some point.

MR. LOTTERMAN: Of course. Of course. So there's no need to go off and on the record for the various depositions. There's no need to segment various pieces of testimony. His testimony will be presumed as PMQ testimony unless a scope objection is made and sustained.

MR. KELLY: So agreed.

MR. ESBENSHADE: Agreed.

MR. HELSLEY: Agreed. And I'll just add that he's here as the PMQ for the kill attempts that occurred prior to December 22nd, 2015, done by Boots & Coots.

MR. KELLY: Thank you.

BY MR. KELLY:

Q. Mr. Walzel, could you please state and spell your name for the record?

A. Danny, D-A -- or legal name Daniel, D-A-N-I-E-L, Walzel, W-A-L-Z-E-L.

Q. Okay. Have you given a deposition before?

A. I have not.

Q. Okay. Let me go through briefly a few ground rules for the deposition. You've been placed under oath by this young lady to my left, which means that you are required under the penalty of perjury to tell the truth and to give accurate and honest testimony.

Do you understand that?

A. I do.

Q. Okay. And if you don't, you can get in trouble, and I won't go through all the different types of troubles you can get into. But it's important that you know that you're under oath and tell the truth.

A. Uh-huh.

Q. It would be helpful also if during the deposition you answer audibly -- that is, yes or no, and don't use things like mm-mmm or huh-uh --

A. Okay.

Q. -- because it's hard for this young lady to take that down. She may have to guess what you're saying.

We're going to take your deposition for some period of time today, but we'll try to take a break about every hour. If you'd like to take a break at some time when we're still going, just ask. Please answer any questions that are pending and then just ask to take a break, and we'll accommodate you. Okay?

A. Okay.

Q. Please don't guess or speculate.

A. Right.

Q. But we are entitled to estimations, if you have estimations on things, okay? If you don't know the answer to a question, just tell us you don't know the answer. You're not required to try to answer questions you don't know how to answer or don't have the memory to answer questions.

And if you don't understand the question or even think you don't understand the question, tell us and we'll do our best to rephrase it or reframe it so that you can understand it.

A. Okay.

Q. If you do answer the question, we're going to assume that you did understand

it and gave us your best answer. Okay?
A. Okay.
Q. Any questions before we go?
A. No.
Q. Okay. Would you please give the jury a brief summary of your educational history?
A. I graduated high school, and then I went to Austin College in Sherman, Texas. And I have a bachelor of arts from there and then Texas A&M University, bachelor of science, petroleum engineering.
Q. Bachelor of science?
A. Yes, sir.
Q. Okay. When did you receive that?
A. 2002.
Q. Have you had any other formal education?
A. No. After college, it was just all industry training.
Q. Okay. Have you attended any technical seminars of substance, like a week-long class or two weeks or --
A. Yes.

Q. What would those be in?
A. Oh, I took a directional drilling class that might have been four or five days. I took mud school at a -- online, that was two weeks.
Q. What's mud school?
A. It wasn't -- it wasn't the same mud school you'd go to if you were learning to be a mud engineer, but it was one week of learning about water-based muds and one about oil-based muds.
Q. Okay. Anything else?
A. I did -- yes. So I'm trying to think of them all, but I did a class -- these were Halliburton, they call them DEAL classes, but it's -- I don't know what it stands for, but I did a week-long class on directional drilling and the software COMPASS and a casing design class.
I'm trying to think of the names of the other ones. I don't remember what the other names were, but, yeah, there was three or four classes there that were a week long.
Then I've done, you know, well

control school every two years. That's -- I mean, that's what I can think of right now.

Q. Okay. Could you please give the jury a summary of your work history?

A. My work history?

Q. Yes, sir.

A. So after college I started with Boots & Coots in the WellSure group, which was -- it's tied in with insurance, but we do like review of well plans, something like rig audits, prevention work type stuff. And in 2003, Iraq started and I went over there. And then that's where I, you know, kind of started the well control.

And then, you know, since then I moved into the -- you know, the well control group and, you know, been doing it since then.

Q. Okay. How long were you in Iraq?

A. I think I made two and a half months, maybe.

Q. Okay. How many wells did Boots & Coots kill in Iraq?

A. We did, I think, three.

Q. Three, okay. Any of those take more than 111 days?
A. No.
Q. Any of them take more than 10 days?
A. Yes, from what I can recall.
Q. What was the longest one?
A. There was one, I don't know, might have been a week or two, but, you know, we ended up stinging it, but we tried several -- we tried two or three kill attempts on it because, you know, Iraq didn't give us any information on the wells before we showed up.
Q. Shame on them.
A. Yeah.
Q. So you've worked for Boots & Coots since approximately 2002?
A. Yes, sir.
Q. Okay. And what have your -- strike that.
What positions have you held?
A. Well control specialist engineer.
Q. Any others?

A. No.
Q. Okay.
A. You know, junior and senior.
Q. So you started out as a junior --
A. Yes.
Q. -- and went to senior?
A. Yeah.
Q. What's your present title?
A. Senior well control engineer, specialist. Well control specialist engineer.
Q. And when did you first become involved in any way in the Aliso Canyon SS-25 blowout?
A. I don't remember the date, but I guess when they called us in October, early November sometime.
Q. Okay. Were you one of the initial group of Boots & Coots personnel to travel to Southern California?
A. Yes, sir.
Q. Did you go to Southern California with any other personnel?
A. It was James Kopecky and Danny

Clayton.

Q. And when did you leave Southern California?

A. First -- first part of December, I believe.

Q. Do you recall when?

A. Not the -- no. It was first -- maybe the second week of December.

Q. I'm going to try not to mess these up. So this is the first deposition we did and this is the second and this is the third.

Do you recall that you left Southern California and returned home to Texas either December 4th or December 14th of 2015?

A. Yeah, I don't -- I mean, it was about that time. I don't know what date.

Q. Do you recall giving testimony before the California Public Utilities Commission on August 8th, 2018?

A. I do.

Q. How did that occur?

A. They asked --

MR. HELSLEY: Objection, vague.

You can answer the question.
A. Like how did -- how did it -- what do you mean by how did it occur?
BY MR. KELLY:
Q. Did someone ask you to go give testimony?
A. Yes. Well, we were -- I mean, you know, they requested we come out and talk to them.
Q. Okay. How did that request get transmitted to you?
MR. HELSLEY: I'm going to object to the extent it calls for attorney-client privilege. So anything that we discussed, you're not allowed to talk about, but anything else, go ahead and answer the question.
A. Yeah. I mean...
BY MR. KELLY:
Q. Were you advised by someone affiliated with Boots & Coots that they wanted you to come out and talk to them?
A. Yeah. I mean, I didn't -- yes.
Q. You didn't volunteer?

A. Yeah. I mean, yeah, I was just asked if I would go out there and talk to them so I did.

Q. Okay. And you went out and you actually gave testimony under oath. Is that correct?

A. Yes, sir.

Q. And you went with Mr. Kopecky?

A. Yes, sir.

Q. And if I understand the forum that that occurred in, it was something that took place in a conference room?

A. It was, yeah, a room.

Q. Okay. And the two of you gave testimony at the same time. Is that right?

A. Yes, sir.

Q. Okay. I'm going to show you what's been marked as Exhibit 246-2 to Mr. Kopecky's deposition, and it is a transcript of the testimony you and Mr. Kopecky gave under oath to the California Public Utilities Commission on August 8th, 2018. Okay?

A. Okay.

Q. Thank you. If you could turn

to page 76 and 77.

A. Uh-huh. Okay.

Q. If you look down at the bottom of page 76 and the top of page 77, there's a statement by you: "I was. And I either got home on December 4th or December 14th."

Do you see that?

A. Yes, sir.

Q. Does that refresh your recollection as when you returned home from Southern California?

A. Yes. I'm -- either the 4th or the 14th.

Q. Okay. And that was your best recollection?

A. Right, yes, sir.

Q. That was your best recollection and testimony as of August 18 -- August 8, 2018?

A. Yes. I mean, that was the best I could remember.

Q. Okay. Had anyone started drilling the relief well by the time you left Southern California?

A. I don't recall if they -- if it

had spud yet or not, but preparations were -- were started.

Q. Okay. If you could turn the page to page 78. In response to a question, you testified, beginning at line 21: "But they didn't -- they hadn't started drilling by the time I got out of there. They were still in the rigging-up process."

A. Okay.

Q. Do you see that?

A. Yes, sir.

Q. Does that refresh your recollection that it was your best testimony as of August 8th, 2018, that at the time you left Southern California, they had not yet started drilling the relief well?

A. Yes. I mean, that was my best testimony, that they hadn't spud yet.

Q. Okay. And could you tell the jury what spud means?

A. Just when the bit -- you put the bit on the ground and start drilling.

Q. Okay. Doesn't have anything to do with potatoes?

A. No, not in Cal- -- maybe in

Idaho.

Q. Definitely in Idaho.

Okay. So you, Mr. Kopecky and Mr. Clayton were the first wave of Boots & Coots employees to go to Aliso Canyon. Is that correct?

A. Yes, sir.

Q. Yes?

A. Yes.

Q. One other thing I didn't mention earlier is if you just -- if you wait until I finish my question --

A. Okay, I'm sorry.

Q. -- and then probably just take a little beat, a pause, in case counsel wants to make an objection, and then they can do that, and then you can go ahead and answer the question. Okay?

A. Okay.

Q. All right. And Mr. Clayton was a senior well control specialist?

A. Yes, sir.

Q. And what was your title at the time?

A. Well control specialist

engineer, senior, I believe.
Q. Okay. Was -- and Mr. Kopecky was a well control specialist?
A. Yes, sir.
Q. Was Mr. Clayton designated lead?
A. Yes.
Q. And so when the three of you got to Aliso Canyon, he was kind of in charge of the three of you?
A. Yes.
Q. Okay. Mr. Kopecky testified that when you were working at the SS-25 well site, that he was sort of the hands-on guy at the well pad, that you assisted him there but you were also involved in some meetings, and that Mr. Clayton was more involved in meetings than assisting on the well pad.
A. Correct.
Q. Is that --
A. It's pretty -- yeah, that's accurate.
Q. Is that accurate? Okay.
How many meetings did you attend?

A. Oh, I don't have an exact number. Every morning. Every morning we'd have, you know, our morning safety operations meeting, and then, you know, meetings throughout the day, but I don't have a number of how many I attended.

Q. Okay. Where did these meetings take place?

A. On location.

Q. Near the well pad?

A. No. They would have been down the -- down the hill from them. Sometimes -- I think they brought in an office or something.

Q. Were cell phones allowed at the well pad?

A. I don't recall. I mean, in the hot zone -- I don't recall if they -- you know, I don't remember any mention -- anything about cell phones, really.

Q. Okay. You don't recall that they were not allowed?

A. Yeah. I mean, they -- usually for safety you don't want them in the -- you know, in the hot zones.

Q. With regard to well kills --
A. Yes.
Q. -- you were present for a number of well kills. Is that correct?
A. Yes.
Q. By the time you three arrived in Southern California, at Aliso Canyon, was it your understanding that at least one kill attempt had been executed by the SoCalGas people?
A. I mean, you know, I wasn't -- I wasn't there, so -- but you just, you know, were counting the numbers. But yeah, no, I wasn't -- you know, they -- yeah, I mean, I wasn't there, you know, so I can't comment on any kill attempts that they did.
Q. Okay. My question was just did you become aware that they had attempted one.
A. I mean, I knew they'd pumped on it.
Q. What does that mean?
A. Or, you know, you pump fluid, you know.
Q. Is that a well kill attempt?
A. I mean, you know...

Q. Yes?

A. Yeah. I mean, you know, I don't -- you know, if they were trying to kill it or pump on it or, you know...

Q. Okay. Well, when you arrived in Southern California, did you attempt to familiarize yourself with the history and condition of SS-25, the well that was undergoing a blowout?

A. I looked -- I looked at the drilling records.

Q. Okay. What are drilling records?

A. You know, like when the well was drilled, you know, the daily reports from the drilling.

Q. Okay. What type of daily reports are you referring to?

A. You know, drilled from this depth to this depth, with this mud weight. You know, any problems that might have been encountered while drilling.

Q. So you're talking about the initial drilling --

A. Yes, sir.

Q. -- of SS-25?
A. Right. You know.
Q. What year was SS-25 originally drilled in?
A. I believe in the '50s.
Q. Okay. 1953? Do you recall?
A. I mean, I knew it was in the early '50s, so, I mean, '53 is --
Q. Okay. I'm not telling you, I'm asking you.
A. Right.
Q. Does that -- does 1953 comport with your recollection --
A. Yes.
Q. -- of your review of the drilling records?
A. Yes, the best I can remember.
Q. Okay. And what other records did you look at to prepare yourself to deal with the SS-25 blowout?
A. I don't -- I think there was maybe some gamma ray logs. But, you know, the drilling records, casing, tubings, things like that.
Q. Did you attempt to ascertain

whether or not SS-25 had ever undergone a
workover with a casing integrity inspection
at any time prior to the blowout which
occurred on August 23rd, 2015?
MR. LOTTERMAN: Michael, I
think you misspoke.
MS. BOLTON: October 23rd.
MR. KELLY: Oh, yes, I did.
Thank you.
BY MR. KELLY:
Q. Let me rephrase the question.
Did you attempt to ascertain whether or not
SS-25 had ever undergone a workover with a
casing integrity inspection at any time prior
to the blowout which occurred on
October 23rd, 2015?
A. Did I -- can you repeat the
first part of the question?
Q. Let me just read it back.
A. Okay.
Q. Did you attempt to ascertain
whether or not SS-25 had ever undergone a
workover with a casing integrity inspection
at any time prior to the blowout which
occurred on October 23rd, 2015?

A. I don't recall that now. You mean did I -- am I asking if they had ever done it?

Q. Did you attempt to ascertain whether or not they had ever done it?

A. I mean, I asked for, you know -- you know, we asked for records of the logs and stuff, so I don't -- I don't recall if I specifically asked for if they'd ever done it.

Q. Did you make any attempt to determine whether or not they had ever done that?

MR. HELSLEY: Objection, asked and answered, but go ahead.

A. Oh. I'm sorry, can you repeat the question?

BY MR. KELLY:

Q. Sure.

Did you make an attempt to determine whether or not SS-25 had ever under --

A. I don't -- oh, sorry.

Q. -- undergone a workover to inspect the integrity of the casing prior to

the time that the blowout occurred?
A. I don't recall asking for one.
Q. Okay. Did you ask for the historical records of SS-25?
A. Yes.
Q. And did you receive them?
A. Yes. Like I said, the drilling reports, gamma ray logs, you know, is the ones I remember looking at when I first got there.
Q. Okay. Did you make a determination that SS-25 had or had not ever undergone a workover with a casing integrity inspection at any time prior to the blowout --
A. That --
Q. -- which you were there to address?
A. Yeah, no. That wasn't something I determined or was able to determine.
Q. Okay. Was that not important to your job?
A. I mean, if the information is there, then, you know, I mean -- yeah. I

mean, I guess not every well has one.
Q. Has a workover?
A. Oh. I thought you're talking about the logs. Or casing integrity tests.
Q. Okay. Yes, I'm referring to casing integrity inspections --
A. Okay.
Q. -- such as a Vertilog or a caliper inspection or USIT, that type of log.
A. Uh-huh. Right. No, I don't recall looking at -- looking at any caliper logs or the other log you mentioned.
Q. USIT or Vertilog?
A. Right.
Q. Okay. So you don't recall seeing that any of those three casing integrity inspections had been run --
A. Right.
Q. -- on SS-25 prior to the blowout. Is that accurate?
A. Yeah, I don't recall seeing any data on that.
Q. Okay. Did you look at any well schematic diagrams?
A. Yeah, I'm sure I -- I mean,

yes.

Q. Okay.

(Sotto voce discussion.)

BY MR. KELLY:

Q. Mr. Walzel, let me show you an exhibit that's been previously marked as 246-1, and it is an eight-page document, the top e-mail of which is dated 10/24/2015.

In the middle of page 1 there is an e-mail dated October 24, 2015, at 2339 from James Kopecky to Danny Clayton and yourself. If you could take a look at that document, please.

A. Okay.

(Document review by witness.)

BY MR. KELLY:

Q. Let me know when you've had a chance to look at it, please.

A. Okay.

Q. Have you seen that document before?

A. I'm sure I have.

Q. Okay. Was that document some information that was sent by SoCalGas to Mr. Kopecky, who forwarded it on to you?

A. I'm sure it was.
Q. Okay. And is there a well schematic diagram contained in those documents?
A. Yes.
Q. And does that well schematic diagram depict a subsurface safety valve?
(Document review by witness.)
A. It says that there is a Camco 2?-inch subsurface safety valve.
BY MR. KELLY:
Q. Okay. And what page of the document is that on?
MR. HELSLEY: You refer down to the bottom right, you have the Bates numbers you refer to.
A. Oh. 13893.
BY MR. KELLY:
Q. Okay. And at what depth or location is that subsurface safety valve depicted?
A. 8,451.
Q. Okay. When you arrived at Aliso Canyon and addressed SS-25, did you determine whether or not there actually was a

subsurface safety valve installed and operational on the well?

A. I don't -- yes, as I recall, there wasn't -- the profile was there.

Q. Okay.

A. But the -- I don't -- I don't believe, no, there wasn't a safety valve in it.

Q. So is it your testimony that the subsurface safety valve had been removed?

A. From what I remember, yes.

Q. Okay. And when you say the profile was there, are you testifying that the housing which used to house the subsurface safety valve was present but the valve was not?

A. Correct.

Q. Okay. And was the condition of the area where the subsurface safety valve used to reside such that there was an opening between the tubing of the well and the annulus inside the production casing?

A. I believe there were ports in it.

Q. Okay. And did you determine

whether or not that port was intentionally left open?

A. I -- I wouldn't be able to tell if it was intentionally or -- you mean the ports in the housing?

Q. The port left by the housing.

MR. LOTTERMAN: I think he's using the plural.

(Sotto voce discussion.)

BY MR. KELLY:

Q. Okay. When the subsurface safety valve was removed, there was an open space or spaces between the inside of the tubing and the outside of the tubing or the annulus. Is that correct?

A. Yeah, I believe that's the way it was described to me.

Q. Okay. And was it -- strike that.

Did you make a determination as to whether that port or those ports were intentionally left open to provide communication between the inside of the tubing and the annulus inside the production casing?

A. Right. I'm not -- I'm not familiar with that safety valve, and if they could -- I don't recall if they could be opened and closed.

Q. Okay. Was the safety valve present?

MR. LOTTERMAN: Asked and answered.

THE WITNESS: Do I answer that?

BY MR. KELLY:

Q. Yes.

A. Okay.

Q. You should answer after everybody is done making noise.

A. Okay.

Q. You should answer the question unless your attorney tells you not to.

A. Right. No, I -- like I answered earlier.

Q. Okay. So it was gone?

A. Yes.

Q. Okay. And you don't recall whether or not the ports or openings that were left were able to be closed and opened or whether they were just in a constant open position?

A. Correct, yeah. I don't -- I don't know exactly how this safety valve works.

Q. Okay. Did you, as part of your -- strike that.

When you began to address this well with well kills, did you want to make sure that the information you had about the well was as accurate as possible?

A. Yes.

Q. And what did you do to make sure that you had accurate information about the condition of SS-25 before you attempted well kills?

A. Well, you know, the casing, tubing that was in the well, you know, reservoir pressure, you know, surface equipment. You know -- you know, reservoir -- any information on the reservoir and, you know, those would have been the main things.

Q. Okay. Did you obtain a value for reservoir pressure?

A. Yes. Well, I mean, we had

surface -- we had -- you know, there was gauges on other wells in the -- nearby or whatever that you could -- you know, you could gather and get the reservoir pressure. It was given to us.

Q. Okay. Is your testimony that someone gave you the reservoir pressure?

A. Yes.

Q. Okay. Who gave you the reservoir pressure?

A. Oh, I don't recall specifically who gave it to me.

Q. Was it someone from SoCalGas?

A. Yes.

Q. Okay. So some individual from SoCalGas provided you with a value for reservoir pressure.

A. Yes, sir.

Q. Slow down just a little, okay?

A. Oh, okay.

Q. Okay. Do you recall what that value was?

A. No, I don't remember the number or the exact number.

Q. What else did you do to

familiarize yourself with the condition of SS-25, if anything?

A. You know, just asked questions and any available information that might be -- be available.

Q. Okay. What did you do to familiarize yourself with any well kill attempts that had proceeded before you arrived?

A. You know, any documentation. You know, basically just records.

Q. What did you obtain in that regard?

A. You know, the drilling records. I mean, pretty much what I described earlier.

Q. When Boots & Coots does -- strike that.

When Boots & Coots attempts a well kill, how do you go about planning the well kill?

A. Well, I mean, everyone -- you know, everyone's different, but if it's -- you know, if it's a rig that took a kick, you know, shut-in pressures, volumes, things like that. If it's blowing out, we want to know, you know, where -- you know, flow paths, you know, any estimated rates. Fluid -- you know, reservoir fluid properties, things like that.

Q. Okay. Do you commonly prepare some type of document which would detail the parameters of the well kill you're going to attempt?

A. I mean, you know, we'd send them a list, you know, we'd like this information as far as casing design, reservoir -- like, you know, the things I mentioned earlier.

Q. Okay. I'm speaking specifically to how you would go about documenting planning a well kill attempt. Okay?

A. Uh-huh.

Q. Do you put together some sort of sheet which would detail the parameters of how you're going to attempt a well kill?

A. Right, yeah. I'd either send a list or ask for it verbally.

Q. Okay. But I'm not talking about something you're asking for. I'm talking about what documentation you would prepare about a well kill you were going to plan and attempt.

A. Right. So it would be the same. Drilling records, surface equipment, reservoir pressures, properties.

Q. Okay. Would you document -- would you document what you were going to inject down or shoot down the well?

A. When you say shoot...

Q. Well, you're injecting some type of kill fluid or kill substance into a well in a kill attempt, right?

A. Yes.

Q. Would you document, before you attempted a kill attempt, what it is you're going to inject into the well to try to kill it?

A. Yeah. I mean, it would be in a program, you know, pump 9-pound mud, whatever.

Q. Okay. So there would be some documentation of what it is you're pumping in.

A. Correct.

Q. Okay. Brine, mud, water, whatever.

A. Yes, I'm sure there would be documentation.

Q. And the weight?

A. Right.

Q. Okay. And would you document how much you're going to pump in, the volume?

A. Yeah, there would be an estimate, probably, in there.

Q. Okay. And would you document how fast you're going to pump it in?

A. As -- no. I mean, there would be, like, an estimate, you know, or -- you know, pump this fast until hitting this pressure. But, yeah, there would be something like that in there.

Q. Okay. Did you see any -- any of these parameters documented in any form for the first well kill attempt that SoCalGas performed before you arrived?

A. I don't -- I don't recall.

Q. You don't recall seeing any?

A. No.

Q. Did you ask anyone to provide

you with the parameters for any well kill attempt that was undertaken before you arrived?

A. I don't -- I don't recall, you know, seeing the documents or... no, I don't.

Q. You didn't ask anyone to see any documents either?

A. I don't -- yeah, I mean, you know, we asked for, you know, any -- I guess operations or anything, but I don't recall any, you know, documents --

Q. Okay.

A. -- specifically.

Q. When you do -- strike that.

When you attempt well kills, do you try to -- in the instance where the first well kill doesn't work, do you try to learn something from that to maybe refine or modify your second or next well kill attempt?

A. Yes. I mean yes, you know, that's what I do, and I do it on my well kill attempts too.

Q. Okay. So if a well kill attempt is unsuccessful, at worst, it's a learning experience.

A. Uh-huh.
Q. Is that right?
A. Right.
Q. Okay. So you're learning something hopefully from what didn't work so maybe you can do something different that will work on your next attempt. Is that fair?
A. Uh-huh, yes.
Q. Okay. So it's important, when you have a well kill attempt that's unsuccessful, that you ascertain what the exact parameters of that well kill attempt were. Is that accurate?
MR. LOTTERMAN: Objection, leading.
A. What's -- can you repeat the question?
BY MR. KELLY:
Q. I'll rephrase it.
Do you consider it important when you have a well kill attempt that is unsuccessful that you ascertain what the exact parameters, as best you can, of that well attempt were so that you can hopefully

change or modify parameters for your next well kill attempt?
A. Yes.
Q. Okay. And is it your testimony that you did not, before attempting the first Boots & Coots well attempt, ascertain what the parameters were of any well kill attempt previously performed by SoCalGas?
MR. HELSLEY: Objection, asked and answered.
Go ahead, you can answer it.
A. Okay. Can you repeat the question?
BY MR. KELLY:
Q. Sure. Subject to counsel's objection.
Is it your testimony that you did not, before attempting the first Boots & Coots well kill attempt, ascertain the parameters of any well kill attempt previously attempted by SoCalGas?
A. Yes. I mean, you know, like I said earlier, I wasn't -- you know, I wasn't -- I wasn't there. You know, they gave, you know -- I'm sorry, can you repeat

the question?

MR. KELLY: Sure. Could you read it back, please.

(The reporter read back the following portion of the preceding record.)

"QUESTION: Sure. Subject to counsel's objection.

Is it your testimony that you did not, before attempting the first Boots & Coots well kill attempt, ascertain the parameters of any well kill attempt previously attempted by SoCalGas?"

(End of readback.)

A. Yeah. I mean, they -- you know, they provided some documents, you know, history, but I don't recall any information right now about that.

BY MR. KELLY:

Q. About the well kill attempt?

A. Right.

Q. Okay. Would it have been important before you planned your first Boots & Coots well kill attempt to find and review that information about the first SCG well kill attempt?

MR. LOTTERMAN: Objection, speculation.

THE WITNESS: Do I still answer it?

MR. LOTTERMAN: You do.

A. I mean, it might have been important, but, you know, something happened between, you know -- you know, yeah. But, I mean, it was different, so I don't know how important -- you know, how much information we would have got from it.

BY MR. KELLY:

Q. Well, wouldn't you have to know what the parameters were and what information was available before you can judge what you might have learned from it?

MR. LOTTERMAN: Same objection.

A. Yeah. What's the question?

BY MR. KELLY:

Q. Wouldn't you have to know what the parameters were and what information was available before you can judge what you might have learned from it?

MR. LOTTERMAN: Same objection.
A. Yeah. Yeah, I mean... yeah, I mean -- yeah, I mean -- I guess I have to see the information.
BY MR. KELLY:
Q. Before you know whether it would have been helpful or not?
A. Right.
Q. Correct?
A. Yes.
Q. Okay.
MR. LOTTERMAN: Michael, to avoid confusing Mr. Walzel, can we agree that if I make an objection on your question and it's re-read or rephrased, that that objection is carried forth?
MR. KELLY: Of course.
MR. LOTTERMAN: Thank you.
MR. KELLY: To the next question. I usually try to --
MR. LOTTERMAN: I understand, and I'm just trying to move this along a little faster and I'm concerned that my objections are breaking up the

flow.

MR. KELLY: They're confusing me too.

MR. LOTTERMAN: I get it.

MR. KELLY: All right.

BY MR. KELLY:

Q. What would be the benefit of reviewing the SS-25 drilling records?

A. Just to familiar -- familiarize myself with the well.

Q. What information did you have about what was happening with SS-25 when you arrived on the site?

A. Well, visually I looked at it and there was -- I mean, it looked like a drilling -- you know, a location. There was a pad around it and there was some cracks with a little bit of gas coming out.

Q. A little bit of gas?

A. Well, I mean, not -- I couldn't quantify it.

Q. Okay. Were there fissures in the asphalt around the well?

A. Yes.

Q. Was gas coming out of them?

A. Yes.
Q. Did you also ascertain that gas was coming out of some holes in the hillside adjacent to the well site?
A. I don't recall the day -- I don't recall seeing any gas coming out from the side of the mountain when we got there that day.
Q. Did someone tell you that that was in fact occurring?
A. Yes.
Q. Did you identify that SS-25 was experiencing an uncontrolled release of gas into the atmosphere?
A. Was I advised on it?
Q. Did you ascertain that that was in fact happening?
A. Yes.
Q. Okay. And would you consider that a blowout?
A. Yes.
Q. Okay.
MR. HELSLEY: We've been going for an hour. Is now a good time to take a break?

MR. KELLY: Sure. Let's take a break.

THE VIDEOGRAPHER: Off the record, 10:08.

(Recess taken, 10:08 a.m. to 10:29 a.m.)

THE VIDEOGRAPHER: Stand by. The time is 10:29, back on the record.

BY MR. KELLY:

Q. Mr. Walzel, I wanted to follow up a little bit on the first kill attempt performed by SoCalGas.

A. Okay.

Q. I've asked you some questions and you've given me some answers about information that you had or didn't have about the first kill attempt. I just want to confirm a few additional things.

Would it be accurate to state that at the time you were planning the first Boots & Coots well kill attempt that you did not know what personnel performed the SoCalGas first well kill attempt?

MR. LOTTERMAN: Objection, leading.

A. Can I clarify that? Because I was reading this description here, and we did -- the e-mail described what the operations -- because I said they talked about the operation, but it said they bullheaded water into the well, 8.6 brine, then attempted to lube and bleed, and gas to the surface. So I did receive that in the initial blowout.

But that it was a bullhead operation, not a kill like we were doing. So that is information, it's just -- it's not -- it's a different type of kill, so...

BY MR. KELLY:

Q. Did that come to your attention at the break we just took?

MR. HELSLEY: Objection, calls for attorney-client privilege. But other than that, go ahead.

A. Yes.

BY MR. KELLY:

Q. Okay. Thank you for that clarification.

Now, my question was, would it be accurate -- and let me read this question

back, subject to counsel's objection.
Would it be accurate to state that at the time you were planning the first Boots & Coots well kill attempt that you did not know what personnel performed the SoCalGas first well kill attempt?
A. What personnel, like names?
Q. Like who.
A. No. I don't know -- I don't remember any names of people who were there before I got there.
Q. Okay. Do you know -- strike that.
When you were planning the first Boots & Coots well kill attempt, did you have any information as to whether the well kill attempt performed previously by SoCalGas involved both a kill attempt pumping fluid down the tubing and a kill attempt pumping fluid down the casing?
A. It doesn't specify here. Attempt to bullhead kill, 8.6 brine... but typically a bullhead would be down, you know, tubing or casing.
Q. Okay. Is it fair to say that

at the time you were planning the first Boots & Coots well kill attempt, you didn't have any information as to whether the SoCalGas well kill attempt involved two separate kill attempts, one with injection down the tubing and one with injection down the casing?

MR. LOTTERMAN: Objection, leading.

A. I'm sure that was discussed, and -- I mean, if you're -- yeah, I mean, if you're bullheading a well, you're going to pump -- you know, you're not circulating so you're pumping down -- you've got to pump down each to kill it.

BY MR. KELLY:

Q. Okay. So your best recollection is that the well kill attempt by SoCalGas involved both the pumping of kill fluid down the tubing and also down the casing. Is that accurate?

A. My best recollection.

Q. Okay. Did you learn at some point in time that the SoCalGas first well kill attempt created an ice plug or hydrate

in the tubing?
A. No. I mean, I wasn't -- that wasn't information when I first got there.
Q. Okay. At some point in time, did you learn that there was a hydrate or ice plug in the well tubing?
A. Yes. I don't remember when, but yes, there was an ice plug in the tubing.
Q. Okay. When did you learn that?
A. I don't remember the date or -- but it would have been either when we started to pump on -- down the tubing or run the tools in the tubing.
Q. Okay. By "we," you mean Boots & Coots?
A. Yeah, Boots & Coots, you know. Yes.
Q. Okay. Are you --
A. We didn't do the pumping, you know. Halliburton did the pumping, but it was found through trying to do an operation of some sort.
Q. Okay. What do you mean, "we didn't do the pumping, Halliburton did"?
A. Well, Halliburton -- Boots &

Coots doesn't have pump trucks. But, yes, when Boots & Coots was attempting to pump on the well.

Q. What is Boots & Coots' relationship to Halliburton?

A. Right. Halliburton -- Halliburton owns us.

Q. Okay. When you say --

MR. HELSLEY: Let him finish.

BY MR. KELLY:

Q. When you say Boots & Coots didn't have pumping equipment, what does that mean?

A. Like there's not a pump truck with the name Boots & Coots on it. I was just -- you know, I just wanted to clarify that Halliburton owns us and it was, you know -- but yes, it was a direct -- you know, it would have been a pumping operation as part of our kill.

Q. Okay. Is it your testimony that Boots & Coots discovered there was a hydrate or ice plug present at the time that they attempted their first well kill?

A. You know, like I said, I don't

record -- I mean, if it's -- I'd have to look at the daily reports, but, I mean, it's likely it happened, and I don't recall exactly right now. I'd have to refresh myself.

Q. Okay. When was that in your -- strike that.

In your opinion, when was the hydrate or ice plug formed?

MR. LOTTERMAN: Objection, foundation, speculation.

A. I mean, all I can say is before we tried to pump on it or run tools, you know, whatever -- whenever we found it, it had happened sometime before that.

BY MR. KELLY:

Q. Okay. Is it your testimony that the hydrate or ice plug was formed before Boots & Coots did anything to SS-25?

A. Like I said, I'd have to look through the -- I'd have to go through the reports to find out when, but -- I already forgot your question.

Q. Okay. Is it your testimony that the hydrate or ice plug was formed

before Boots & Coots did anything to SS-25?
MR. LOTTERMAN: Objection, speculation, foundation.
A. Yes. I mean, like I said, I don't remember the exact day or what operation it was, but if it was before we did our first one, then it would have had to have been there before we did it, you know, before the first pump operation, if that's when it -- or before our first, if we had discovered it then.
BY MR. KELLY:
Q. Okay. And is that what happened?
MR. LOTTERMAN: Same objections.
A. Like I said, I don't recall when that was.
BY MR. KELLY:
Q. Okay. Let me give you Exhibit 242-1, which is a collection of the work orders by Boots & Coots.
A. Okay.
Q. And see if you can find any information in there which will help us

answer the question as to when the hydrate was discovered and when it, in your opinion, was formed.

(Document review by witness.)

(Sotto voce discussion.)

A. It looks like we weren't able to pump into it on October 28th, down the tubing.

BY MR. KELLY:

Q. October 28, 2015?

A. Yes. I just have to go through here and make sure, see when.

(Document review by witness.)

A. Yes. I mean, it says here on the 28th, we tried to pump on it and ran it with the bailer and tagged. And so, yes, there was an obstruction in the tubing at that time.

BY MR. KELLY:

Q. On October 28, 2015?

A. Yes, sir.

Q. Okay. Do you understand that you have been designated by Halliburton and Boots & Coots as the person most qualified to answer questions --

A. Yes, I was told that.

Q. -- regarding well kills performed by Boots & Coots and Halliburton, up to but not including the last well kill, which occurred on December 22nd, 2015?

A. Yes.

Q. Okay. And are you comfortable doing that, being that person?

A. Yes.

Q. Okay. And you were there for all of the Halliburton Boots & Coots attempted well kills up to but not including the last one, which occurred on December 22nd, 2015?

A. Yes.

Q. Okay. Were any of those well kills successful?

MR. HELSLEY: Objection, vague.

Go ahead.

BY MR. KELLY:

Q. Do you understand that question?

A. I do. Yes. I mean, none of the -- none of the -- you know, the -- didn't stop the flow of gas.

Q. Okay. Well, isn't that what a well kill is designed to do?

A. Right. They were -- you know, each one, we did gain information on the well.

Q. Okay. But the point of a well kill --

A. Right.

Q. -- is to stop the uncontrolled flow of gas out of the well, correct?

A. Correct.

Q. And so even though you may have gained some information about well kills performed by Halliburton, up to but not including the final attempt on December 22nd, none of those well kills were successful, were they?

MR. HELSLEY: Vague.

A. The gas continued to flow.

BY MR. KELLY:

Q. Okay. Can I just ask you to --

A. Oh, sorry.

Q. -- to put your hand down? That's okay. It may affect the video.

A. Okay.

Q. Okay. Thank you.
You don't have to sit up straight if you don't want to, but just don't put your --
A. I'll try to find an in between. I'm leaning over.
(Laughter.)
BY MR. KELLY:
Q. I'm not trying to correct your posture; I'm just saying if you put your hand in front of your mouth, it makes the video a little difficult to comprehend. Because we'll all be slouching before the day is over, guaranteed. Thank you.
So the hydrate was discovered by Boots & Coots on October 28, 2015. Is that what you testified to?
A. Right. Well, from the report, we couldn't -- it looked like we couldn't pump into it and we ran and tagged, but I don't think at the time we had identified it as a hydrate.
Q. Okay. Just as blockage at that point?
A. Right.

Q. Okay. And was that -- was October 28, was that a well kill attempt?

A. I'm -- yes. I mean, it looked like we were getting lined up to pump down the tubing, so... yes. I would say that's probably what we were doing. I can read it. Yes, I'd say so.

Q. Okay. So the first well kill attempt by Boots & Coots and Halliburton was on October 28, 2015.

A. It appears so.

Q. Okay. And was that when you discovered there was some blockage in the tubing?

A. Yes.

Q. When was that blocking identified as an ice plug or hydrate?

(Document review by witness.)

A. It looks like the coiled tubing went in on November 6th.

BY MR. KELLY:

Q. Is the coiled tubing what was used to remove the hydrate or ice plug from the tubing?

A. Yes.

Q. Okay. Where did the coiled tubing come from?
A. I believe somewhere in Louisiana, if I remember.
Q. Okay. Was that owned by Halliburton?
A. Yes, it was a Halliburton coiled tubing unit.
Q. Okay. Were there no other coiled tubing units available, like on the West Coast?
A. We searched and that was the closest one to it.
Q. Okay. So sometime between October 28th and November 6th of 2015, you identified the blockage in the tubing as an ice plug or hydrate. Is that correct?
A. Right. I mean, it would have been -- I don't have anything in here like received ice chunks out or anything.
Q. Okay. And then on November 6, the coiled tubing showed up?
A. No. It showed up...
(Document review by witness.)
A. I'd say I met with the coiled

tubing supervisor on November 1st, so on or around November 1st.

BY MR. KELLY:

Q. Okay. When was the hydrate or ice plug actually removed?

A. On November 6th.

Q. Okay. So when was the first Boots & Coots well kill attempt performed?

A. After the 6th.

Q. Can you tell me when?

A. Hmm.

(Document review by witness.)

A. Can I write --

BY MR. KELLY:

Q. Oop --

A. No? I mean, I'm not going to write on this (demonstrating), but --

Q. If you want to make a --

A. Just if I can write a date, go back, just a number.

Q. We'll get you a piece of paper to write on, but don't --

MR. HELSLEY: What are you trying to do?

THE WITNESS: The 6th is when

the coil -- I was trying to find a date, because then it looked like we did do coil...

BY MR. KELLY:

Q. Do you want a piece of paper to write on, is that --

A. If you don't mind, just so I can go back to the, you know, page number or something.

MR. HELSLEY: What are you trying to do, Danny? What are you going to write?

THE WITNESS: Just 5.

MR. HELSLEY: I'm sorry?

THE WITNESS: Just the number 5.

MR. HELSLEY: You can do that.

THE WITNESS: Or, I'm sorry, 8.

A. Okay. Here it says -- I'm sorry, did I tell you the 6th?

BY MR. KELLY:

Q. You said that the coiled tubing --

A. Yeah.

Q. -- was operational as of the

6th, I believe is what you said.
A. Right. So I did put in my notes "Found bottom of hydrate plug" at whatever feet.
MR. LOTTERMAN: What date?
THE WITNESS: November -- I'm sorry. November 6th.
MR. LOTTERMAN: Thank you.
BY MR. KELLY:
Q. So, then, the date we're looking for is when the first Boots & Coots well kill attempt was actually performed.
A. Yes. Then we ran some logs.
(Document review by witness.)
A. November -- we pumped on November 13th.
BY MR. KELLY:
Q. November 13?
A. Yes. If I read -- if I didn't miss something.
Q. So that was the first Boots & Coots well attempt -- well kill attempt?
A. Yes. There was some pumping while we did the coil, but -- but yes. I'd say the 13th.

Q. Okay. And so the originally planned first well kill attempt by Boots & Coots was to take place on October 28th, correct?

MR. LOTTERMAN: Objection, leading.

A. I mean, we planned -- yes. We planned to pump on it -- looked like we were lining up to pump on it on the 28th, yes.

BY MR. KELLY:

Q. Okay. And that's when you discovered the blockage.

A. Correct.

Q. And then you got the coiled tubing unit out to California.

A. Yes.

Q. And then you cleared the blockage, the hydrate or ice plug, right?

A. Yes.

Q. And then you actually performed the first well kill on November 13th.

A. Yes. Unless I missed something there.

Q. Okay. Well, take your time.

A. Yes, okay. 13th.

Q. And there's 31 days in October because, as my colleague reminded me, that's when Halloween is, right?

A. (Demonstrating). Yes, 31.

Q. Okay. We agree on that?

A. (Nods head.)

Q. And then 13 days. So the first well kill attempt by Boots & Coots was delayed 16 days because of the presence of the blockage; that is, the hydrate or ice plug.

MR. LOTTERMAN: Objection, leading.

A. We ran some -- in between, we ran some -- tried to run some diagnostic logs.

BY MR. KELLY:

Q. Okay. I'm just talking about well kill attempts.

A. Let me go back and read the 28th.

Q. Okay.

(Document review by witness.)

A. I just want to clarify, because I don't know if we were lining up to kill it or just pressuring the valves up to equalize them.

(Document review by witness.)

A. Well, from the notes, it looks like we were trying to run logs and we couldn't -- or tools in the hole and couldn't, so I can't say that the 28th was the day we were going to kill it. It's just we were -- because the projected operations, rig down A-frame, move in crane, run in the hole with additional weight bars --

(Interruption by the stenographer.)

A. Okay. Basically, I can't say the 28th was the day we were -- from this, I can't determine if we were going to kill it, because our projected operations were -- see if we could even get down with tools in the well at that time.

BY MR. KELLY:

Q. Okay. You could not have attempted a well kill until the hydrate or ice plug was removed. Is that accurate?

A. Yes, that's accurate.

Q. Okay. So in any event, the

hydrate would have prevented any well kill attempt until November 13, 2015?

MR. LOTTERMAN: Objection, leading.

BY MR. KELLY:

Q. Let me rephrase the question.

A. Yeah.

Q. You had to get the hydrate, the ice plug, out of the well before you could try to kill it, right?

A. Yes. And then there was some other things we were wanting to get done before the kill, like running these diagnostic tools.

Q. Okay. But back to my question, you had to get the hydrate or plug out of the well before you could try to kill it, right?

A. So I would say November 6th, we continued with our plan at the time.

MR. HELSLEY: And you're doing an excellent job, but just try to listen to his question and just focus on his question and just try to answer his question.

THE WITNESS: Okay.

MR. HELSLEY: You can go ahead and ask that again if you want.
MR. KELLY: Sure.
BY MR. KELLY:
Q. You had to get the blockage, the hydrate, the ice plug, you had to get that out of the tubing before you could attempt a well kill --
A. Yes.
Q. -- right? Right?
A. Right.
Q. Okay.
A. Do I answer yes or --
Q. Yes or right is fine. That's good. Either one, both.
A. Okay.
Q. And you started -- you got the equipment and started removing the ice plug on November 6th, correct?
A. Correct. That's how I entered that.
Q. And then you were able to do the first well kill attempt on November 13th, 2015, correct?
A. That's when we pumped, yes.

Q. Okay. And was that your first attempt at a well kill?

A. The best I can recall when reading the notes.

Q. Okay. And was that well kill successful?

MR. HELSLEY: Object. Let me make an objection, vague.

Go ahead.

A. Oh. The gas still flowed after we pumped.

BY MR. KELLY:

Q. Is your answer then that it was not successful?

A. Yes.

Q. Okay. If it was successful, then the gas would have stopped flowing, right?

A. Correct.

Q. Okay. So how is it that you went about planning your subsequent well kill attempts?

A. What day did I say, the 13th?

Q. Yes, sir.

A. Okay. So after the first one,

yeah, so I wrote that the gas -- the -- after we pumped our kill job, the well -- from what I remember, the gas coming out of the ground increased, and after we did our job, the gas stopped, and -- for, you know, a brief time, so that told -- you know, and then it started flowing again. So at the time that -- you know, the well stayed static for a little while and then -- and you're asking what we did for the next one?

Q. My question is just generally, how did you plan subsequent well kill attempts?

A. Right. I believe we planned to try to increase the pump rate on the next one.

Q. Okay. Did you generally use the same -- the same type, that is, weight and consistency of kill fluids in the subsequent kill attempts?

A. Generally they were similar.

Q. Okay. So you used a similar weight and consistency of kill fluid in the --

A. Yes.

Q. -- subsequent kill attempts?
MR. LOTTERMAN: Objection, vague.
BY MR. KELLY:
Q. And by "subsequent kill attempts," you understand I mean up to but not including the kill attempt on December 22nd, right?
A. Let me find the next kill attempt.
(Document review by witness.)
A. The fluid was -- looked like the same weight, but we pumped at a faster rate.
BY MR. KELLY:
Q. Okay. For the next one?
A. I believe so.
Q. Okay. Did you -- and by "you," I mean Danny Walzel -- perform any detailed transient modeling before any of the kill attempts that you participated in?
A. Yes.
Q. When did you do that?
A. I don't remember the exact one, but somewhere probably after the second one.

Q. Where would we find that detailed transient modeling?
A. I don't have it anymore.
Q. Where did it go?
A. With -- it got -- when I got back from that job, my computer got stolen out of my truck.
Q. And your detailed transient model was in your computer?
A. Yes.
Q. Who stole the computer, do you know?
A. I didn't get his name.
Q. Didn't catch him?
A. No.
Q. Was your computer ever recovered?
A. No.
Q. Was your computer backed up anywhere?
A. I believe I would have backed -- you know, saved files on an external, but it -- at the time I hadn't backed it up on anything else and it would have been stolen too.

Q. The external hard drive was stolen also?

A. Well, you know, a little (demonstrating) -- yes, external. My whole computer bag. Passports, everything.

Q. Okay. And whoever stole your computer bag stole the computer that had the detailed transient model on it and they also stole the hard drive, external hard drive, which had a copy of the detailed transient modeling on it?

A. Yes. Everything. And there's a police -- you know, police report and everything.

Q. Did you determine a flow rate before your second well kill attempt?

A. A flow rate coming out of the well with gas or a flow rate as far as pumping?

Q. A flow rate as far as gas coming out of the well as part of your detailed transient model, which was stolen.

A. So the -- I didn't have the exact number of gas. My model was a model of the well, and then I did it at increasing gas flow rates.

Q. What do you mean, "increasing gas flow rates"?

A. So I said, okay, if it's making 10 million cubic feet of gas a day, then I increased it to 20, 30, 40, 50.

Q. Were those just guesses?

A. It was testing the model against different flow rates.

Q. Well, how did you come up with different flow rates?

A. I used 10,000, 20, 30, 40, and just increased it.

Q. And so my question is, were those just numbers you pulled out of the air or where did you get them?

A. I mean -- yes. I mean, I just used those numbers in the model at varying gas rates.

Q. Were you ever able to get an actual flow rate of the gas coming from the well to use in your modeling?

A. We were never able to measure the gas flow rate coming out of the well.

Q. Okay. At any time?

A. At any time.

Q. And so you were never able to include that variable in your modeling?

A. No.

Q. You were not?

A. We weren't able to ever measure the gas flow rate. It's difficult when it's coming out of the ground like that.

Q. Did you ever accurately model the gas flow rate?

A. What do you mean by "accurately"?

Q. Within a reasonable degree of engineering certainty.

MR. LOTTERMAN: Objection, vague.

A. Are you asking for an exact number of gas -- how much gas is coming out of the well?

BY MR. KELLY:

Q. An accurate number.

A. You know, I was able to, in my model or in the model I recall, you know, with the weight and the pump -- at pump rates, we'd be able to kill a certain amount

of gas rate.
Q. Okay. My question was: Were you ever able to accurately model the gas flow rate?
A. No.
Q. Is it -- did you make changes to anything other than the volumes when you planned subsequent kill attempts after your first kill attempt?
A. As I recall, earlier I said we tried to pump faster.
Q. Okay. Was the weight and consistency of the pumping fluid that you used the same or nearly the same throughout all of your kill attempts?
A. I'd have to read through here to refresh my memory on what the weight was on 3, 4, 5.
Q. Can I ask you to refer to page 141 in your testimony before the PUC, please, sir?
A. Uh-huh. 141?
Q. Yes, sir.
A. Okay.
Q. If you could just read the

testimony starting with the question on line 10 down to the bottom of the page.

A. 10 all the way down to the bottom of the page?

Q. Yes, sir.

A. Okay. "Washed out the ice plug, but, no" --

Q. You don't have to read it out loud. Just read it to yourself.

A. Oh, I thought that's what you said.

Q. No. I'm sorry. I apologize. I was inaccurate or unclear.

(Document review by witness.)

A. Okay.

BY MR. KELLY:

Q. Does that refresh your recollection that --

A. Oh, I'm sorry, I was on the wrong page.

Q. Oh. 141.

A. Right.

Q. All right.

(Document review by witness.)

A. Yes.

BY MR. KELLY:
Q. Does that refresh your recollection that the methodology that you used for the well kill procedures remained basically unchanged throughout the series of well kills Boots & Coots attempted?
MR. LOTTERMAN: Objection, foundation, speculation.
A. Yes.
BY MR. KELLY:
Q. Okay. Does that refresh -- does that testimony refresh your recollection that the only thing that you were changing during the different well kill attempts was the volume?
A. From -- well, like I said earlier, we changed the pump rates as well.
Q. Okay. Volume and pump rates?
A. Best as I can remember.
Q. Your answer is yes?
A. Yes, best I can remember.
Q. Okay. When you were designing the kill attempts, did you consider the loss of fluid to the permeable reservoir?
A. When you say plan for, what do

you mean by plan for?
Q. Did you put in values for loss of fluid to the permeable reservoir?
A. I didn't put a value number in. It would have been hard to determine a number you lose.
Q. Okay. Is your answer then that you didn't plan for that in your calculations or modeling?
A. No. I'd say it's accurate to say the barite -- part of the barite pill was when the barite fall out to plug the bottom of the well and stop any losses. So I'd say that was a planned-for.
Q. For the barite to fall out to plug the bottom of the well, wouldn't the gas have to settle?
A. Gas doesn't settle. I mean, it -- I mean, it always comes out to the top.
Or what do you mean by gas settle?
Q. When you were planning kill attempts, did you have morning meetings to do that?
A. We had -- yes.

Q. And at the morning meetings, would you meet in the trailer and talk about what you would like to do and come up with a formula and then just go do your pump job?

A. No. I mean, the plan wasn't -- come up with at the morning meeting and then we go out and do it.

Q. It wasn't that?

A. I mean, it was discussed in other places besides just the morning meeting.

Q. Okay. Could you turn to page 40 of your testimony before the PUC, please.

A. Page 40?

Q. Yes, sir.

A. Okay.

Q. Down at the bottom of the page starting at line 21, witness Walzel testified -- and again, this is testimony under oath -- "Yes. I mean, I was -- typically, I would be, like, present at the morning meeting and, you know, like I said, our team was in the meetings. You know, I mean, it was kind of, you know, meet in the trailer, talk about what we would like to do, and come up with a formula and go out and do our pump job," end of quote.

Is that the testimony you gave under oath before the PUC?

A. Yes, it is.

Q. Was that testimony accurate when you gave it?

A. The best of my recollection.

Q. Okay.

(Discussion off the stenographic record.)

BY MR. KELLY:

Q. When you did perform each of the subsequent well kill attempts, was there a deterioration of the condition of the well and its surroundings?

A. I don't remember if it was after the first one we did or the second one, but the fissures -- I mean, it got bigger, but as we pumped, the area around the well eroded.

Q. Okay. Could you describe for the jury what you mean by that?

A. So there was a hole in the

ground around the well.

Q. Okay. A hole in the earth?

A. Earth. Ground, earth.

Q. And how did that occur?

A. So when we showed up, the gas was going through the earth and coming out in various places. And then as you pumped, the fluids and everything that were exiting the well eroded, coming up to surface.

So instead of everything coming up all over the place, everything was coming up right around the well.

Q. Adjacent to the well pipe?

A. All the way around it, you know (demonstrating). Adjacent, yeah.

Q. And did that create some type of erosion away of the soil there?

A. Yes.

Q. Yes?

A. (Nods head.)

Q. And did that have the effect of destabilizing the wellhead?

A. Yes.

Q. And what happened in that regard?

A. Well, there was no longer any earth around the well, so when we pumped or there was fluid in there or -- anyway, just the wellhead was unsupported and it would move (demonstrating).
Q. It became unstable?
A. Yes.
Q. And what did you do -- when I use the term "you," I mean you, the group -- what did the group do to stabilize or restabilize the wellhead?
A. Well, actually, I went and helped put cables around the well to stabilize it.
Q. Okay. Like guy-wires --
A. Right.
Q. -- to the wellhead?
A. Correct, yes.
Q. Okay. To keep it from swaying?
A. Yes.
Q. And you assisted in doing that?
A. Yes. Yeah, any work that was done hands-on on the well, you know, that was a big part of me and James out there. We were actually working hands-on the well.

Q. You were helping him.
A. Okay.
Q. How big did the crater become?
A. I don't recall the number.
(Sotto voce discussion.)
BY MR. KELLY:
Q. Did the crater around the wellhead eventually reach dimensions of about 40 feet deep, 60 feet wide, and 90 feet long, to your recollection?
MR. LOTTERMAN: Objection, leading.
A. Like I said, I don't remember a number.
BY MR. KELLY:
Q. Those are the figures that Mr. LaGrone gave us yesterday --
A. Okay.
Q. -- for the dimensions of the crater.
MR. LOTTERMAN: Objection, speech.
A. Are you waiting on my answer?
BY MR. KELLY:
Q. No, I was waiting to see if

anything else was going to come from across the table before I finished my question.

Let me just start over, subject to counsel's objection. Those are the figures that Mr. LaGrone gave us yesterday for the dimensions of the crater.

A. Okay.

Q. Do you agree or disagree with those?

MR. HELSLEY: Asked and answered, but go ahead.

A. I don't recall a number. If -- I mean, I'd have to agree with Jim if he says it.

BY MR. KELLY:

Q. Okay. Does that sound about right to you?

A. I'll tell you, it would be, you know, an estimate of it, yes.

Q. It was a big crater, wasn't it?

A. I mean, I've seen bigger.

Q. Okay. Still pretty big, though, right?

A. Like I said, I've seen bigger. I guess it depends on how you say -- what you

call big is.
Q. Okay. Were you required to build a bridge across the crater at one point to allow personnel to access the wellhead?
A. The bridge was being built, I believe, as I was -- as I was ending my trip -- you know, the -- it was being built, yes.
Q. As you were shipping out?
A. Yeah.
Q. Okay. Did they have to suspend attempted kill operations while the bridge was being built?
A. I wouldn't have been there for that, but the way me and James were going out and tying on the well was on a manlift.
Q. On a what?
A. A manlift.
Q. Oh, a hydraulic lift?
A. It would have been hydraulic, yeah.
Q. Like a little pod on a boom?
A. Right, yeah.
Q. Okay. Did you have any type of special protective gear when you were out in

that manlift?
A. I mean, I had on a hard hat, safety glasses, coveralls and boots.
Q. Were you tethered by a cable to anything else?
A. I don't believe I -- I mean a lot of times we don't tether off just in case we have to leave in an emergency.
Q. Okay.
A. I don't know if I was, you know, at that time or not.
MR. KELLY: Okay. We've been going an hour. Why don't we take a short break.
THE VIDEOGRAPHER: Off the record, 11:31.
(Recess taken, 11:31 a.m. to 11:48 a.m.)
(Ms. Bolton is no longer present.)
THE VIDEOGRAPHER: Stand by. The time is 11:48. Back on the record, beginning of File 2.
BY MR. KELLY:
Q. Mr. Walzel, during the multiple

well kill attempts performed by Boots & Coots at SS-25, was there an ejection of well kill fluids and well kill substances up outside the production casing such that it sprayed up into the air?

A. Yes.

Q. How many well kill attempts did that happen on?

A. I mean, every time we pumped on it, fluid came out.

Q. Okay. And when the fluid came up, was it consistent in the way it came up or were there different versions of that?

A. Well, like the first time, it stopped, I mean, and then started again. I mean, I'd say after the -- after the hole formed, I'd say it was similar. Maybe -- I don't remember exactly.

Q. Was the well kill fluid that was coming back up, was it coming up through the casing or was it coming up outside of the casing?

MR. LOTTERMAN: Objection, speculation, foundation.

A. It was coming up out -- I mean,

out of the hole in the ground.
BY MR. KELLY:
Q. Okay. So outside the production casing?
MR. LOTTERMAN: Objection, leading, foundation, speculation.
A. Out -- yeah, outside the -- I mean, it was coming out of the ground, so...
BY MR. KELLY:
Q. Okay. Where was it coming out of the ground?
A. I couldn't -- I mean, I can't -- I couldn't see other than it was coming out of the ground.
Q. Okay. Was it spraying into the air?
A. The -- what?
Q. The fluids coming back out of the --
A. I mean, it would get above ground level at times while we were pumping (indicating).
Q. Okay. You're indicating maybe three feet, four feet?
A. Just (demonstrating) this is

the ground and coming up above it.

Q. Did you ever see the well kill fluids spray 75 to 80 feet into the air?

A. I wouldn't -- I don't know how high it went. I didn't measure it.

Q. Okay. Well, just a minute ago you were indicating three or four feet.

A. No, I was just indicating above the ground (demonstrating).

Q. Oh. So that wasn't intended to be from the floor?

A. It wasn't a measurement, no.

Q. Okay. So it was spraying up into the air?

A. Yes.

Q. Appreciably?

A. It was spraying up in the air.

Q. Okay. Was it going -- can you estimate at all how high it was going?

A. I don't -- I didn't estimate. You know, I wouldn't know. We were -- I mean, it was coming out above the ground level because it was -- you know, we collected it on location there when it came out of the crater.

Q. Okay. Did you ever observe the spray that was coming up out of the well area during a kill attempt to form an oily mist in the area?

A. I observed an oily mist, yes.

Q. Okay. Could you describe that for us, please?

A. From what -- I mean, I recall it was just a fine, oily mist. I mean, not -- you know, it's just a -- small droplets of water -- or oil.

Q. Did it get on your clothing?

A. Yes.

Q. Did you see it accumulate to the extent that it could drift away from the well site?

A. You mean in the air?

Q. Yes, sir.

A. I mean, I recall it, you know, coming out and just lightly, you know, covering the ground around the well site.

Q. Okay. Did you have an opinion as to why the kill fluids were being ejected back out of the well after they were pumped in?

A. Do I have an opinion why?
Q. Yes, sir.
A. Well, because the gas was coming -- I mean, when you pump -- we were pumping down the tubing and up the annulus so, you know, the mud was coming. But just the flow from the well was bringing it to the surface.
Q. Okay. So you were pumping down the tube?
A. Correct.
Q. On any of the well kill attempts, did you pump down the casing?
A. No. Not during the well kill attempts, no.
Q. Okay. Always down the tube?
A. Always down the tubing.
Q. At some point in time, was a plug inserted in the tubing?
A. Yes.
Q. What did you call that plug?
A. I believe it was -- well, I read it just in here, but it was an EZSV tubing plug.
Q. And for what purpose was the

plug put in the tubing?

A. The plug was put in there to test the integrity of the tubing, and if the decision was made later to cut the tubing, below the cut would be isolated.

Q. After the plug was put in, did you test the integrity of the tubing?

A. There was a negative test done, yes.

Q. What's a negative test?

A. So there was -- we -- what it means is we bled the tubing pressure off and observed for any leaks, which would have been indicated by an increase in pressure on the tubing.

Q. Okay. And did you find any leaks?

A. It didn't appear there was any leaks in the tubing.

Q. Okay. So then did you take the plug out?

A. No.

Q. Why not?

A. Well, like I said, we put it there to test the tubing, and then if the tubing was ever to be cut, it would have been -- it would have isolated below where we would have cut the tubing.

Q. What would have isolated below that?

A. The plug.

Q. What do you mean by that?

A. Or the cut would have been above the plug, but it would have isolated the tubing below.

Q. Why would you want the tubing below a cut isolated?

A. I mean, it's best practice if you ever cut tubing to set plugs below your cut.

Q. Why?

A. To keep reservoir fluids from coming up the tubing.

Q. In your opinion, did the plug interfere with the ability to pump well kill fluid down the tubing?

A. No.

Q. Why not?

A. Because we perforated holes above the plug and were able to circulate from there.

Q. But your subsequent kill attempts were not able to overcome the upward flow of gas from the reservoir. Is that correct?

MR. LOTTERMAN: Objection, leading.

BY MR. KELLY:

Q. Strike that.

A. I'd have --

Q. Let me rephrase.

Were your subsequent kill attempts able to overcome the upward flow of gas from the reservoir?

A. Subsequent being after?

Q. Yes, after you set the plug.

A. Gas continued to flow after additional kills.

Q. Okay. Let me show you an exhibit previously marked as 246-3.

A. Uh-huh.

Q. I'll ask you to take just a minute and review this document. The first page of this document is an e-mail from a gentleman named James Mansdorfer, dated

December 3, 2015.

And then there are two hand sketches or drawings attached to it. You do not need to read the last pages of this document titled Draft SS-25 Well Control Plan because I'm not going to ask you any questions about that, okay?

A. Okay.

(Document review by witness.)

A. Okay.

BY MR. KELLY:

Q. If you could look at the -- there's two drawings that are attached to this memo, pages 34 and 35.

A. Okay.

Q. The first drawing is one where Mr. Mansdorfer has attempted to indicate how a kill would act without the plug, and in the second one, he's attempted to document how the kill would act with the plug in it.

Do you see that?

A. Uh-huh.

MR. LOTTERMAN: Objection, leading, foundation, speculation.

BY MR. KELLY:

Q. Turning you to page 35,
Mr. Mansdorfer notes that SS-25 as currently configured with tubing plug. You lose benefit of downward momentum of kill fluid to overcome upward momentum of gas.
Do you see that?
MR. LOTTERMAN: Same objections.
A. I don't see it. Where?
MR. HELSLEY: Let me help you. Help you out. It's right here.
THE WITNESS: Oh.
MR. HELSLEY: Second page.
A. Yes, I see this picture.
BY MR. KELLY:
Q. Okay. And you see where he's written "SS-25 as currently configured with tubing plug" at the top there?
A. Yes.
Q. And then he writes, "Lose benefit of downward momentum of kill fluid to overcome upward momentum of gas."
Do you see that?
MR. LOTTERMAN: Same objections.

A. Okay. Okay, I see that.
BY MR. KELLY:
Q. Okay. Do you agree with his drawing and his opinion or do you disagree with it?
MR. LOTTERMAN: Same objections, and compound.
A. I would disagree with him.
BY MR. KELLY:
Q. Okay. Why do you disagree?
A. Because if I recall right, we -- I mean, the plug and the perforations didn't have any effect on how fast -- you know, how fast we could pump. I mean, it wasn't a limiting factor.
Q. Okay. Do you know who Mr. Mansdorfer is?
A. I have no idea.
Q. Okay. Did you ever speak with Mr. Mansdorfer?
A. I don't know. I don't believe so.
Q. When was the -- when was the plug inserted into the tubing in SS-25?
(Document review by witness.)

A. November 12th. No.
November 12th.
BY MR. KELLY:
Q. Okay. So the plug was inserted November 12th, 2015?
A. That's correct.
Q. Okay. And while you were at Aliso Canyon, did you attempt to perform what was commonly referred to as a junk shot?
A. Yes.
Q. Could you tell the jury what a junk shot is, please?
A. So a junk shot's used -- consists of ball bearings, rope, cut-up inner tube, golf balls, but the objective is to pump it into the well and plug up a hole in the tubular.
Q. In the tube or the casing?
A. Tubulars being casing, tubing. I'm sorry, just pipe. That's a name for just pipe.
Q. Okay. And did you attempt to perform a junk shot?
A. Yes.
Q. When?

A. I just saw it. November 13th.
Q. So the day after the plug was inserted?
A. Correct.
Q. Okay.
A. And we pumped the junk shot down the casing, not the tubing.
Q. Okay. Was it successful in stopping the flow of gas from the well?
A. It was not.
Q. Was not?
A. No.
Q. What happened when you pumped the -- it's just junk, right?
A. I believe it was -- I don't recall exactly, but I believe it was like some golf balls and rope and maybe some cut-up inner tube.
Q. Okay. And you pumped that down the casing?
A. Yes.
Q. What do you pump it out of?
A. Well, we built a little manifold with some pump iron, and stuffed the stuff in there and shut the valve and pumped

it in the well.

Q. Okay. What was the volume of junk that you pumped into the well?

A. I don't have a number on it. As much as we could get stuffed into the pump iron.

Q. What's a pump iron?

A. It's a piece of pipe (demonstrating), about 2 inches.

Q. Okay. I mean, are we talking about a bucket of junk or barrels of junk?

A. No, it wouldn't have been barrels. I don't know how to -- we didn't measure it before we, you know, stuffed it in the pipe till we couldn't get any more in there, and then we pumped it down the hole.

Q. Okay. And did it come back up?

A. I think, yes.

Q. Okay. The golf balls were coming back up out of the hole?

A. I think we found one later, if I recall. But, yes, I mean, they went somewhere out of the hole.

Q. Okay. But they weren't shooting up into the air, were they?

A. I don't recall ever seeing it being shot out in the air.
Q. Okay. So they're just kind of coming up into the crater?
A. Yes. I mean -- the one we found, it would have been laying on the ground or something somewhere.
Q. Okay.
A. If they were shot out, I didn't see them leaving the hole.
Q. Okay. And the plug was left in during all of the subsequent kill attempts --
A. Correct.
Q. -- that you performed?
A. Yeah.
Q. Yes?
A. Yes.
Q. When you were rotated out of the Aliso Canyon SS-25 job, did somebody come in to replace you?
A. Yes. I mean, to -- yes. I mean, a new crew came to replace us.
Q. So basically the people who had come in in October were replaced by a new crew?

A. I don't remember if -- yes.
Q. Okay. And did that happen kind of around early December?
A. Early December, yes.
Q. Okay.
MR. KELLY: I'll pass the witness.
MR. ESBENSHADE: Let's go off the record.
THE VIDEOGRAPHER: Off the record, 12:12.
(Recess taken, 12:12 p.m. to 12:17 p.m.)
THE VIDEOGRAPHER: The time is 12:17, back on the record.

EXAMINATION

BY MR. ESBENSHADE:
Q. Mr. Walzel, my name is Andy Esbenshade. I'm going to continue some questioning, and I represent Toll Brothers and Porter Ranch Development Company in this lawsuit, okay?
Is there any reason that you can't continue with your testimony this afternoon?

A. No.
Q. Did you do anything to prepare for today's deposition?
A. No.
Q. Did you meet with or speak over the phone with lawyers for Boots & Coots?
A. I mean, I talked -- we met.
Q. And how many times did you meet with lawyers from Boots & Coots to prepare for today's deposition?
A. Two days or a day -- on two days.
Q. Approximately how long were each of those meetings?
A. The first day was a couple of hours, and then -- I don't know, maybe six hours the second day.
Q. And did you have any other meetings to prepare for today's deposition besides those two?
A. No.
Q. Did you have any phone calls to prepare for today's deposition?
A. No.
Q. Did you review any documents to

prepare for today's deposition?
A. No.
Q. And just so we have a clean record, I think you're doing a better job than in the beginning, but try to let me finish my question --
A. Okay.
Q. -- and I will do my best to let you finish your answer before I ask another question, okay?
A. Oh, I'm sorry.
Q. That's okay.
Have you spoken to anyone representing Southern California Gas or Sempra with regard to your deposition today?
A. No.
Q. If you could look at what's been marked as Exhibit 246-2 in front of you, it's the testimony. It's right there.
A. Okay.
Q. I just wanted to confirm that this testimony you gave before the California Public Utilities Commission, you understand that that was testimony under oath, correct?
A. Yes.

Q. And the testimony you gave to the California Public Utilities Commission was truthful and accurate to the best of your knowledge?

A. To the best of my knowledge, yeah.

Q. If you could look at page 37 of that testimony.

A. Okay. Yes, 37.

Q. Yeah, it should be at the upper right where the numbers are. Right near the top of that, it identifies you, Witness Walzel, as testifying on line 3: "I mean, the definition of a blowout is an uncontrolled flow or release," and then your colleague, Mr. Kopecky, finishes, "To the atmosphere."

Do you see that?

A. Yes.

Q. And that was an accurate statement of your understanding of the definition of a blowout, correct?

MR. LOTTERMAN: You know, you may want to just finish with Mr. Walzel's final part of his answer, just to be complete.

MR. ESBENSHADE: That's fine.

BY MR. ESBENSHADE:

Q. And you added "or underground." So I'll just go back.

You stated under oath that your understanding of the definition of a blowout is an uncontrolled flow or release. Mr. Kopecky added "to the atmosphere" and you added "or underground."

A. Yes.

Q. And that's accurate to your understanding?

A. Yes.

Q. And you would describe the SS-25 incident as a blowout, correct?

A. Yes.

Q. You arrived at the Aliso Canyon facility on October 25th, a Sunday, of 2015?

Do you recall generally that?

A. Generally that, yes.

Q. And when you -- you arrived with Mr. Clayton and Mr. Kopecky? Is that correct?

A. Yes.

Q. And until sometime in early December, you, Mr. Kopecky and Mr. Clayton were the Boots & Coots team that was working on the response to the SS-25 blowout, correct?

A. Yes.

Q. And was there anyone else that was working with you from Boots & Coots at the Aliso Canyon facility through November of 2015?

A. Anybody else? Mike Baggett.

Q. Anyone besides the four of you, you, Mr. Kopecky, Mr. Clayton and Mr. Baggett?

A. Up until what date?

Q. Through November of 2015.

A. I believe that's correct, yes. It was just us.

Q. And then you left in -- sometime in the first half of December of 2015, correct?

A. Yes.

Q. And after that point, did you have any further role in the response to the SS-25 blowout?

A. No.
Q. You didn't continue to communicate with those people from Boots & Coots that were at the Aliso Canyon facility about the SS-25 blowout?
A. Well, you know, I'd read the daily reports when they'd send them in to the office, and I don't recall if I ever called them on the phone or anything. But, you know, kept up with it through the reports and stuff.
Q. But you did not take any active role in responding to the SS-25 blowout once you left the Aliso Canyon facility?
A. No. I mean, after I left, they did one more kill, and then it was a relief well and, you know, I didn't have any part on a relief well.
Q. Did you have any part on that last kill attempt that took place in December of 2015?
A. No.
Q. When you and Mr. Kopecky and Mr. Clayton arrived at the Aliso Canyon facility, was the equipment needed for a

surface well kill attempt on-site at the facility?

A. I don't recall where the -- I mean, we ordered pumps and everything, so I don't -- the pumps that came weren't on this facility.

Q. So once you and the rest of your Boots & Coots colleagues arrived, you ordered pumps and other equipment that was necessary for the well kill attempt?

A. Correct.

Q. Okay. And at the time that you and the other Boots & Coots employees arrived at the Aliso Canyon facility, were you told by Southern California Gas if they knew where the leak was in the SS-25 well?

A. No. I don't recall being told it -- where the leak -- you know, an exact depth or -- no. No.

Q. Was it your understanding that Southern California Gas did not know at that time where the leak was in SS-25?

MR. LOTTERMAN: Objection, foundation, speculation.

A. Well, I mean, they didn't -- I

don't recall a number being talked about, so, you know, that was part of running logs and stuff to try to determine where it would be because that would be -- you know, that would -- it's part of the whole planning process for killing the well.

BY MR. ESBENSHADE:

Q. And when you refer to the logs and the planning process for killing the well, you're talking about what Boots & Coots did prior to attempting to kill the well, correct?

A. Correct.

Q. Okay. And do you know whether Southern California Gas had done any logs or other efforts to determine where the leak was in SS-25 by the time you and your colleagues arrived?

A. I don't know of any.

Q. They didn't provide any to you?

A. No. I mean, they called us on one day and we showed up the next, or soon after, and ordered these noise-to-temperature tools and stuff.

Q. And the information you were

provided by Southern California Gas was historical records related to the well, correct?

A. Yes.

Q. There was nothing like, "Here's a temperature or a noise log that we ran since the SS-25 blowout was discovered"?

A. No.

Q. Okay. And there was some discussion earlier with Mr. Kelly about part of the effort Southern California Gas had made -- let me step back.

You were aware when you arrived that Southern California Gas had made an attempt to kill the well themselves on the prior day, correct?

MR. LOTTERMAN: Objection, leading.

A. The bullhead -- I mean, the e-mail said -- described the bullhead.

BY MR. ESBENSHADE:

Q. Other than what was in the e-mail, did you have an understanding of what Southern California Gas had done to try to kill the SS-25 well prior to your arrival?

A. No. I mean, the description in the e-mail was -- I knew what -- you know, I understand what happened.

Q. Did you know, for instance, what weight of kill fluid was used in Southern California Gas' effort to kill the well?

A. It says 8.6.

Q. And did you have an understanding that Southern California Gas pumped fluid down the casing annulus as part of its effort to attempt to kill the SS-25 well before Boots & Coots arrived?

A. Yes.

Q. And did you have an understanding of what the outcome was of Southern California Gas' attempt to pump fluid down the casing annulus to kill SS-25?

A. I'm sorry?

Q. Did you have an understanding as to what happened when Southern California Gas --

A. Yes.

Q. -- pumped fluid down the casing annulus?

A. Yes. It says right here.
Q. And what does it say?
A. Bullhead, attempt to lube and bleed, and gas broached venting to surface. It's what James reported, been told.
Q. So that's what Mr. Kopecky was told by Southern California Gas?
A. Yes.
Q. And you understand that to mean after Southern California Gas pumped fluid down the casing annulus, gas began to come out through fissures in the surface?
MR. LOTTERMAN: Objection, leading.
BY MR. ESBENSHADE:
Q. Cracks in the surface?
MR. LOTTERMAN: Same objection.
A. Yes. I mean, that's what he reported.
BY MR. ESBENSHADE:
Q. Okay. So you have an understanding that Southern California Gas' pumping of fluid down the casing annulus made the situation at SS-25 worse, correct?
MR. LOTTERMAN: Objection,

leading and foundation.
A. I mean, what I understand is that they pumped and afterwards gas was reported to the surface.
BY MR. ESBENSHADE:
Q. Did Boots & Coots ever pump well kill fluid through the casing annulus in any of its well kill efforts that you were involved in?
A. No. The only pumping we did down the annulus was to attempt to plug a hole in the casing with a junk shot.
Q. And why did Boots & Coots not pump kill fluid through the casing annulus as part of its efforts to kill the SS-25 blowout?
A. Well, from -- I mean, from the junk shot, I mean, there was a hole somewhere, so any fluid -- it wouldn't have made it to bottom with the hole there.
Q. And were you concerned that it would increase the flow of gas out of the well?
A. That wasn't a concern. It was just not being able to get kill fluids to

where we need it to go.

Q. Boots & Coots ran temperature logs and noise logs prior to making any well kill attempt on SS-25? Is that correct?

MR. LOTTERMAN: Objection, leading.

A. We ran the noise/temp. I believe it was before the first kill.

BY MR. ESBENSHADE:

Q. And is that, in your experience, standard procedure for a well kill attempt?

A. Yes.

Q. And you believe it's a prudent practice to run those logs prior to a well kill attempt, correct?

A. Yes.

Q. With regard to the first well kill attempt that Boots & Coots made, which I think you -- after looking at Exhibit 242-1 -- decided was November 13th, 2015. Is that correct?

A. Yes.

Q. Okay. How did Boots & Coots calculate the weight of the kill fluid that would be used for that first well kill attempt?

A. Well, we knew what the reservoir pressure was and so calculated, you know, a mud weight more than what the pore pressure was.

Q. And who made that calculation?

A. I calculated that, and I'm sure, you know, other people. I mean, it's a common drilling equation.

Q. Okay. But do you recall with regard to the first well kill attempt who actually made the calculation for that, that attempt of the well kill fluid weight?

A. Right. I mean, like I said, I would have done it for sure.

Q. Okay. And do you also -- for the first well kill attempt, did someone at Boots & Coots also calculate the pumping rate for the kill fluid?

A. No. I mean, the rate was going to be based off of pressure. You know, the more you pump, the higher the pressure, so we had a limit -- a pressure limit due to the surface equipment.

Q. And somebody made that calculation of what the maximum pump rate could be, correct?

A. I mean, it wasn't a -- you have the equipment's rated for this pressure at a -- you know, a safety factor was added in, and we were going to go to that limit.

Q. And is the maximum pump rate that can be used based on the equipment, is that impacted by the weight of the fluid?

A. The heavier -- I mean, the heavier the fluid, the more friction pressure you'll have, so the higher pressures, pump pressures.

Q. So the higher the weight of the kill fluid, all other things being equal, you have to use a lower pump rate so as not to exceed the maximum pressure, correct?

A. Yes. I mean, that's typically the way it works, you know, because the more -- yes.

Q. Okay. So you calculated the weight for the kill fluid --

A. Uh-huh.

Q. -- for the first well kill

attempt, and then that, in combination with the maximum pressure the wellhead can withstand determined the pump rate that would be used?

MR. LOTTERMAN: Objection, leading.

A. Yes. I mean, we knew the weight and then, you know -- yes. I mean, but we just set a limit on what we felt safe to pump at, pump pressure.

BY MR. ESBENSHADE:

Q. And prior to that first well kill attempt, had there been any kind of transient or dynamic modeling done by Boots & Coots?

A. I hadn't, no.

Q. And are you aware of anyone else at Boots & Coots that had done any such modeling prior to the first well kill attempt?

A. No.

Q. And you testified earlier that at one point -- at some point you did do some transient modeling, correct?

A. Correct.

Q. And when did you do your modeling in regard to the various well kill attempts that Boots & Coots made?

A. It would have been after our -- I mean, it would have been some -- probably -- I don't have the date, but, you know, not the first one. After our second one.

Q. And -- I'm sorry, are you finished?

A. Yes. I was just going back over in my head the different numbering systems.

Q. So you believe that you did your transient modeling after the second Boots & Coots well kill attempt?

A. No. Yeah. Yeah, which probably would have been the third.

Q. Third including the Southern California Gas attempt, correct?

A. Yeah, the best I can recall.

Q. Between the first well kill attempt that Boots & Coots did and the second well kill attempt that Boots & Coots did, do you recall any calculations or modeling to determine whether the weight of the kill fluid should be changed from the first well kill attempt?

A. No. We -- you know, you can either change the weight or the rate that you pump, and we increased -- tried to increase the rate.

Q. So between the first and the second well kill attempt that Boots & Coots conducted, the weight of the kill fluid stayed the same but the pumping rate was increased?

A. Yes.

Q. And you talked earlier about every well kill attempt, even if it's not successful in stopping the flow of gas, you gain some information.

A. Yes.

Q. So was the increase in pump rate something that you and the other Boots & Coots employees decided to do based on the results of the first well kill attempt?

A. Yes. I mean, like I said, after the -- after we did the kill and shut the pumps off, the flow stopped for -- I didn't time it, but some time, you know. So -- and then it came back. So the pump rate was increased to -- you know, when we felt like we could safely increase it, then -- but, you know, that's the difference, we increased the rate.

Q. And did you and the other Boots & Coots employees consider increasing the weight of the kill fluid rather than increasing the pump rate?

A. I don't recall discussing it.

Q. With regard to the modeling that you did after the second well kill attempt, can you explain what exactly that modeling entailed?

A. Right.

So I, you know, started building a model the best -- with the best understanding I had of the well, you know, where holes might be or whatever, and the plug and the perforations. And then, you know, used, you know, 30 cubic -- 30 million cubic feet a day, 40, 50, 60, and I recall going up to maybe 70 million a day.

Q. And so those were all factors

that you utilized in building your model?
A. Right. Like in my model, I said if it's flowing this much, you know, assuming the model I built was accurate, you know, it's still a lot of unknowns in the well. You know, if we pump this weight at this rate, will it kill it, you know.
Q. You referenced one of the factors being where the holes might be.
A. Uh-huh.
Q. You're referring to holes in the well, correct?
A. In the well, yes, sir.
Q. And did you know at that time after the second well kill attempt where the leaks in the SS-25 well were?
A. I didn't have -- you know, exact depth was not -- couldn't determine an exact depth.
Q. And you referenced using various estimates for the amount of cubic feet a day that were escaping the SS-25 well, correct?
A. Yes.
Q. And you said, I believe, you

had various estimates between 30 and 70 million cubic feet a day of gas escaping the SS-25 well? Is that correct?

A. Yes.

Q. And where did you get those numbers? Were those provided by Southern California Gas?

MR. LOTTERMAN: Objection, leading.

A. Yes. I mean, usually we ask, you know, for a number and we're given a number. And then, you know, then I -- and then you would just, you know, add more to it, you know, just to see why, because, you know, if it didn't kill it, either your model is not right or there's something going on you don't know about or, you know, any of the inputs that are -- a lot of them are unknown, affect the model, you know.

And even with the model up, I haven't seen a well kill go just follow the line of the model, you know.

BY MR. ESBENSHADE:

Q. So you're saying if the estimate of the amount of gas that is being released by the well is too low, that's going to throw off the result of the modeling, correct?

MR. LOTTERMAN: Objection, leading.

A. Well, I mean, if the gas -- yes. The gas rate is a factor as well as, you know, flow paths, wellbore geometries, if there's a washout behind the casing, you know, where the hole depths are, size of the holes, anything.

BY MR. ESBENSHADE:

Q. And I think you said this, but the estimates for the amount of gas escaping the SS-25 well were provided to you by Southern California Gas, correct?

MR. LOTTERMAN: Objection, misstates testimony, leading.

A. Yes.

BY MR. ESBENSHADE:

Q. And then you added a safety factor on top of that, correct?

MR. LOTTERMAN: Leading.

A. Yeah. I chose gas rates higher, because like I said, it's either the gas rate or the inputs that you think are happening down in the hole -- you know, down in the well.

BY MR. ESBENSHADE:

Q. So just to make sure I understand, you used 30 million cubic feet as sort of the low end of what you used. If you were provided the number 30 million cubic feet, you might have put into the model 40 million cubic feet so that you had a 10-million-cubic-foot sort of cushion in running the model. Is that correct?

MR. LOTTERMAN: Objection, leading.

A. Correct.

BY MR. ESBENSHADE:

Q. And if, even with your cushion you provided, if the number for the amount of gas escaping the well is too low, that could throw off the results of the model, correct?

MR. LOTTERMAN: Objection, leading.

A. It could. Assuming -- you know, if everything else you assumed in the model was correct, yes.

BY MR. ESBENSHADE:
Q. Okay. Now, do you recall you ran the model after the second Boots & Coots well kill attempt, correct?
A. I believe -- I believe so.
Q. And did the results of your modeling end up changing the approach Boots & Coots took to the next well kill attempt?
A. What I remember is that there's -- I think it was -- I recall at 60, it said we could have killed it pumping at the rates we were pumping at.
Q. Did that indicate to you that the amount of gas escaping the well could have been greater than 60 million cubic feet a day?
A. Well, from that, I mean, I determined that -- it says I should be able to at 60 or either our gas estimates, you know, need to be changed or there's something in the well that, you know, I'm not -- that wasn't accounted for in the modeling.
Q. So based on that, did Boots & Coots change its approach in any way for the next well kill effort?

A. No. I believe -- well, I mean, the last -- I recall pumping at a faster rate.

Q. Okay. So the -- your recollection is after running the modeling, the weight of the well kill fluid did not change, correct?

A. I don't recall changing it.

Q. Okay. But the pumping rate was again increased --

A. Right.

Q. -- correct?

A. Right. Because, you know, the pressure and all that is a factor, but also what was happening to the well was, you know, if you got to a certain rate and it was getting -- moving too much, then, you know, you didn't want to damage the wellhead and lose access to the well. So, you know, based on those factors is what we actually pumped during the job.

Q. Okay. And that third well kill effort was not successful in stopping the gas from escaping from SS-25, correct?

A. Correct.

Q. And then did you again run the model after the third effort to determine how to make the well kill effort the next time?

A. I don't recall if I changed, you know, other than just trying to go through and verify, you know, at this rate you should be able to kill it.

Q. And could you figure out why the well kill attempt was not successful when the modeling indicated it should be?

A. I couldn't give a definite answer on why it wasn't, you know. You know, reality wasn't matching the model.

Q. And was anyone else from Boots & Coots working with you on this model at the time?

A. I sent -- I talked to Arash with it over the phone and went over what I was doing, you know, what I did, and he, I guess, repeated it in the office.

Q. And do you consider Arash to be sort of the expert on these kind of transient modeling and simulations at Boots & Coots?

A. Yes.

Q. And did Arash make any changes

to the modeling you were doing after you discussed it with him?

A. I don't recall any changes being discussed.

Q. Okay. Did either Mr. Kopecky or Mr. Clayton work with you on the modeling?

A. No.

Q. And I think you said you -- did you say you spoke with Mr. Arash or you sent him the model? Sorry, not Mr. Arash.

A. I -- I --

Q. Sorry, let me step back and start that again.

A. Okay.

Q. Did you send the model to Arash?

A. I didn't e-mail him -- I e-mailed him, I believe, a description, and then, you know, holes here, rates, you know. But, no, I didn't e-mail him the file I had built.

Q. Do you recall e-mailing that file of the model you built to anyone else at Boots & Coots?

A. No. I didn't, no.

Q. Did you ever share the model that you built with anyone at Southern California Gas?

A. I don't believe I showed them other than, you know, the results, discussed the results with them of what it said.

Q. And who did you discuss the results of your modeling with at Southern California Gas?

A. It would have been Bret Lane.

Q. Anyone else?

A. I can't think of -- I don't recall.

Q. Did Mr. Lane provide any input to you or feedback regarding the modeling you were doing?

A. I don't recall. You know, I don't recall the discussion, but, no, I don't recall any changes.

Q. And you described earlier that the computer you had at the time of the modeling was later stolen.

A. Yes, sir.

Q. Today, if you wanted to get a copy or get access to the modeling that you

did during the well kill efforts for SS-25, who would you contact or what would you do?
A. I don't -- I mean, I'd just build another wellbore model in the -- you know, in the program.
Q. Okay. And I appreciate that. I'm referring to recovering the model that you actually built at the time.
Did you ever at any point save it to a Boots & Coots server or a system or somewhere where it could be accessed by others?
A. No.
Q. So the modeling that you did was solely available, to your understanding, from your laptop?
A. Yes, sir.
Q. And you don't recall ever e-mailing it to anyone else?
A. No.
Q. And do you recall ever printing it out? Is it something you would have printed at the Aliso Canyon facility?
A. I don't -- no, I didn't print it out.

Q. So as far as you know, there's no way to recover the actual modeling that you did for the well kill attempts on the SS-25?
A. No. Other than just, you know, recreating it.
Q. And are you aware that sometime -- let me start over.
Are you aware that at some point Arash did simulations of his own for well -- the final well kill attempt of SS-25?
A. For the relief well?
Q. I think he separately did them for the relief well, but I'm talking about for the last surface well kill attempt that Boots & Coots made, are you aware that Arash ran simulations prior to that attempt?
A. I'm not -- no, I mean, I'm not aware. The only discussions we had were the ones that we -- you know, that I was -- when I was out there.
Q. So you discussed with him while you were building your model, correct?
A. Correct.
Q. But you didn't ever discuss

with Arash the model he was building or the simulations he was doing?

A. No. I mean, I was aware he was doing them for the relief well.

Q. Okay. Somewhere in front of you I believe is Exhibit 242-1, which is the collection of daily logs. I think it's to your right underneath the big one.

A. Oh, this one.

Q. Yeah, that one. So I just generally have a question. In terms of the specifics of what was done on a day-to-day basis, the weight of the kill fluid, the pump rates that was used for each well kill attempt, is that exhibit and the logs that are in that exhibit, is that the best information you have as to those well kill attempts?

A. Yes.

Q. Okay. So if you wanted to confirm what the weight of kill fluid was for any of the attempts Boots & Coots made, you would refer to that document?

A. Yes. I tried to make it as accurate of a report for the day as possible.

Q. And you were the person who filled those out for the period while you were at Aliso Canyon, correct?

A. Yes, sir.

Q. And each of the logs that you filled out was true and correct to the best of your knowledge?

A. Yes.

Q. And it was as complete as you could make it?

A. Yes.

Q. There was a discussion earlier today about a subsurface safety valve that had at some time been -- in the past, been present in SS-25.

Do you generally recall that?

A. Yes.

Q. And your understanding was it was not in place at the time of the SS-25 blowout, correct?

A. Yes.

Q. Okay. If the subsurface safety valve had been in place in SS-25 at the time of the blowout, that safety valve could have been useful in responding to the blowout, correct?

MR. LOTTERMAN: Objection, foundation, speculation, calls for an opinion.

A. Depending on -- it would depend on the flow path.

BY MR. ESBENSHADE:

Q. So it might or might not have been useful?

MR. LOTTERMAN: Same objection.

A. I mean, I can say it may -- yeah, may or may not have been.

BY MR. ESBENSHADE:

Q. Do you have in front of you a document that was -- let me see, it might be here. 242-12?

A. I don't have a 12.

Q. Okay. Let me get the exhibit for you.

MR. ESBENSHADE: I'm going to show the witness what's been previously marked Exhibit 242-12, which is a four-page document beginning at SCG00020550.

BY MR. ESBENSHADE:

Q. Mr. Walzel, this is a document I don't believe you're copied on. It is something that Southern California Gas sent to the California Public Utilities Commission, and the last two pages are the actual response that Southern California Gas provided to the California Public Utilities Commission.

Do you see that?

A. Yes.

Q. Have you -- do you recall looking at this generally? Do you think you've seen this document before?

A. No, I have not.

Q. Okay. If you look at the third page, which is the actual response -- it's the third including the back of that one -- at the bottom of that -- first of all, question 1 asks Southern California Gas to provide a summary of the well kill attempts on SS-25, and there are seven attempts listed.

Do you see that?

A. Yes.

Q. Okay. And the first one is

October 24 and they are all 2015. The October 24 --

A. Wait. I have 22nd.

MR. HELSLEY: I think he's just referring to --

BY MR. ESBENSHADE:

Q. Sorry. If you look at the response to question 1, which is in the middle of the page --

A. Okay.

Q. -- that you're on, the first well kill attempt listed is October 24.

Do you see that?

A. Oh, yes, sir.

Q. Okay. And your understanding is that's the well kill attempt that Southern California Gas made, correct?

A. Yes.

Q. Okay. And then the next, from number 2 through number 6, from November 13 to November 25, those are the five well kill attempts that you were involved in, correct?

A. Yes.

Q. Okay. And then the last one, number 7, is December 22nd, that is the well kill attempt you were not involved in; you had already left Aliso Canyon, correct?

A. Yes.

Q. Okay. And there was testimony you provided earlier about a hydrate or ice plug that had formed in SS-25. Is that the primary reason that the first well kill attempt Boots & Coots made was approximately 20 days after -- or 19 days after arriving at Aliso Canyon?

A. Our first one?

Q. Yeah. Let me just step back and try to ask more clearly.

You and Mr. Kopecky and Mr. Clayton arrived at Aliso Canyon on October 25th, 2015, correct?

A. Yes.

Q. And it was 19 days before the first well kill attempt that Boots & Coots made on SS-25, correct?

MR. LOTTERMAN: Objection, leading.

A. Yeah. I mean, the first one would have been that day or, you know...

BY MR. ESBENSHADE:

Q. And was the reason for that delay or the reason for that amount of time between when you arrived and when you conducted the first well kill attempt the hydrate or ice plug that had formed in SS-25?

A. There were some days -- you know, we had to get -- remove the ice plug. And then -- and I remember -- you know, during the coiled tubing, because I read that and I remembered, you know, we're going to -- we did some pumping with the -- down the coil and circulate and then we observed the mud coming out. And, you know, and then we -- so, you know, we still didn't -- nobody had an idea of what was going on in the well, so then, you know, the diagnostic logs took some time. And so there were some days in there for that too.

Q. Looking at the same document on the same page, if you could stay where -- yeah. There's a question 2 below from the California Public Utilities Commission that states: Why did each of the well kill attempts fail?

And if you look at the response

from Southern California Gas, it says: Based upon the information available to SoCalGas at the present time, and upon communications with and review of documents and other materials provided by our contractors retained for the purpose of performing well kill operations, we understand that the weight of the fluids used during the kill attempts appears to have been insufficient to overcome the countervailing upward pressure of natural gas being released from the reservoir through the well, and so the operations failed to regain hydrostatic balance.

Do you agree with that response from Southern California Gas?

MR. LOTTERMAN: Objection, foundation.

BY MR. ESBENSHADE:

Q. With regard to the well kill attempts in which you were involved?

MR. LOTTERMAN: Objection, foundation, speculation. And vague.

A. Well, from -- you know, like we talked about earlier in the modeling, the modelings have showed that that weight, pumping at the rates we were pumping at, were enough, you know. The model said it would have killed it.

So, you know -- I mean, could be the weight or the rates, you know, and -- you know, could be other -- you know, could be other factors as well.

BY MR. ESBENSHADE:

Q. So with regard to the response by Southern California Gas that the weight of the fluids used during the kill attempts appears to have been insufficient, you believe that might be the reason that they were unsuccessful, but there might be other factors?

MR. LOTTERMAN: Objection, leading.

A. I mean, the mud weight and the flow paths and all that, I consider them all factors, you know.

BY MR. ESBENSHADE:

Q. And you can't say as you sit here which you believe was the factor or factors that caused the well kill attempts to be unsuccessful?

A. I can't pinpoint one.

Q. Were you consulted on this -- let me step back.

The response we just read states that it is based on, among other things, documents and materials provided by our contractors and communications.

Did you have any communications with Southern California Gas regarding this response?

A. I don't -- no. I don't recall ever talking about this response.

Q. Okay. Did you provide any documents to Southern California Gas related to this response, that you know of?

A. I mean, I submitted daily -- you know, the daily reports and -- yeah, I mean, mainly the daily reports and, you know, pump down and stuff would have been from -- you know, the reports are our main thing.

Q. You referenced earlier at some point in your testimony a hot zone?

A. Correct.

Q. Okay. And can you explain to

me and the jury, what is the hot zone with regard to a well blowout?

A. So that's usually the area closest to the well and determined by, you know, our safety -- you know. It's just an area around the well where if someone else wants to come in there, we usually escort them in or -- you know, you base that off of wind direction, the amount of gas. It's the most -- I guess you'd call it the most secured area as far as people coming in and out.

Q. So it's an area in which access is restricted, correct?

A. Correct.

Q. Okay. And to -- Boots & Coots people were permitted in the hot zone for SS-25, correct?

A. Correct.

MR. LOTTERMAN: Objection, leading.

BY MR. ESBENSHADE:

Q. If Southern California Gas representatives wanted to come in the hot zone, they were escorted? Is that what you said?

A. Yes. We'd be there with them.

Q. Okay. And the reason that access is restricted to the hot zone is because it's a -- considered a more -- to have greater safety risk, correct?

MR. LOTTERMAN: Objection, leading.

A. Yeah. Typically, I mean, any -- any -- you know -- yes. Yes, there's -- you know, there could be more gas or something like that in those areas.

BY MR. ESBENSHADE:

Q. And there's some risk of fire when you have gas coming out of the ground, correct?

A. Yes.

Q. And there's some risk of landslide or other earth movement when you have an unstable crater at a wellhead, correct?

MR. LOTTERMAN: Objection, leading and foundation, speculation.

A. I mean, I can't -- I wasn't ever worried about a landslide.

BY MR. ESBENSHADE:
Q. Is that generally a risk that is involved in well blowouts when a crater is being formed around the wellhead?
A. Yes. I mean, you want to not be around the crater, you know. You don't want to fall in the crater.
Q. There are a number of safety risks that are involved in well kill attempts for a well blowout, correct?
A. Yeah, there's risks. Some risks.
Q. And you consider it a dangerous activity?
A. I mean, I'd just say there's some risks involved when you do this -- do the work.
Q. Enough risk that there has to be a safety representative on-site at all times, correct?
MR. LOTTERMAN: Objection, leading.
A. I mean, when they're -- you know, I can't say -- yeah. I mean, it's good to have a safety person there.

BY MR. ESBENSHADE:
Q. Whenever there is any activity at the site, there is a safety representative --
A. Right.
Q. -- on-site, correct?
A. Yes.
MR. ESBENSHADE: I think it's 1:00 o'clock. We had decided to take lunch, so why don't we take a break.
THE VIDEOGRAPHER: Off the record, 1:02.
(Recess taken, 1:02 p.m. to 2:10 p.m.)
(Mr. Caselberry is no longer present.)
THE VIDEOGRAPHER: Back on the record, 2:10 p.m.
BY MR. ESBENSHADE:
Q. Good afternoon, Mr. Walzel. Is there any reason that you can't continue with your testimony?
A. No.
Q. You testified this morning about observing oily mist released during the

well kill efforts. Do you generally recall that?

A. Yes.

Q. I don't think you were able to provide an exact estimate, but would you say that the spray of oily mist was above your head?

A. It would have depended on the wind. I'd say, you know, maybe around my height.

Q. And you referenced the wind. You testified earlier that there were strong winds in Aliso Canyon, correct?

A. Very strong. I don't believe -- I don't know if I did, but there was strong winds.

Q. And the winds, as you referenced, would carry the oily mist, correct?

A. Yes.

Q. And do you know how far the oily mist spread from the SS-25 well site?

MR. LOTTERMAN: I'll object on foundation grounds.

A. I mean, I didn't measure it.

There was a -- so the well was on top of the hill and then there was a road that went around, kinda, and, you know, maybe halfway down that hill seems to be what I remember.

BY MR. ESBENSHADE:

Q. Do you know whether some of the oily mist was carried farther than that?

A. I don't know.

Q. Did you ever come to understand that some of the oily mist was carried beyond the boundaries of the Aliso Canyon facility?

MR. LOTTERMAN: Objection, foundation, speculation.

A. I read that in a subpoena.

BY MR. ESBENSHADE:

Q. But you personally don't know either way whether the oily mist was carried outside the boundaries of the Aliso Canyon facility?

A. No, I don't know.

Q. Did anyone from Southern California Gas express any concern as to whether the oily mist that was released during these well kill attempts was impacting the community surrounding Aliso Canyon?

MR. HELSLEY: I'm just going to state an objection. Are we going outside -- are these meant to be PMQ or is this meant to be just his own personal knowledge?

MR. ESBENSHADE: I'm talking about the five, I believe, well kill attempts that Boots & Coots made where he is the PMQ. So with regard to those, so I'm talking about -- I'll start over, but those are the well kill attempts I'm referencing so I think it's within the scope.

MR. LOTTERMAN: I guess what counsel is asking is these questions about the oily mist seem personal in nature. Do you want to make those percipient or PMQ?

MR. HELSLEY: And the reason I ask is I don't -- the deposition category of PMQ, it was somewhat broad. It did say well kill attempts and so I don't know that he's necessarily prepared as a representative to talk about the oil.

MR. ESBENSHADE: Okay. Why don't -- I'll restate the question. If you believe it's outside, just make that objection and then we'll see what happens.

MR. HELSLEY: Okay. Fair enough.

MR. ESBENSHADE: I think it's within generally, although I recognize the topics are broad.

MR. LOTTERMAN: Okay.

BY MR. ESBENSHADE:

Q. So with regard to those well kill attempts where you were present at Aliso Canyon and on which you're generally the person most qualified for Boots & Coots, did anyone from SoCalGas ever express, during those well kill attempts, concern as to whether the oily mist that was released was impacting the community surrounding Aliso Canyon?

MR. HELSLEY: Objection, scope, but go ahead.

MR. LOTTERMAN: Same.

A. Okay. I don't -- I don't -- I

mean, you know, we were containing it on the site the best we could. I don't recall any discussions that there was oil getting, you know, outside the area that we were maintaining.

BY MR. ESBENSHADE:

Q. And just to be clear, I'll restate the question. But my question is just whether anyone from SoCalGas expressed concerns about it, so I'll reask the question, but just so you have in mind that's what the question is.

So what I asked was with regard to the well kill attempts you were present for at Aliso Canyon, did anyone from SoCalGas ever express during those well kill attempts, to your knowledge, concern about the oily mist that was released impacting the community surrounding Aliso Canyon?

MR. HELSLEY: Objection, scope.

Go ahead.

MR. LOTTERMAN: Same.

A. You know, I don't recall any discussions about it. You know, we were trying -- you know, we were trying to maintain it. I mean, it's always a concern, but I don't recall any conversations about it.

BY MR. ESBENSHADE:

Q. Okay. And you referenced Bret Lane earlier. Was Bret Lane present at all of the well kill attempts that you were present for?

A. As far as I can recall, he was there every day.

Q. And you don't recall Mr. Lane ever expressing any concern about the oily mist that was released during his well kill attempts impacting the community surrounding Aliso Canyon?

A. I can't recall discussing it. You know, we were just -- we were maintaining it right there.

Q. And you don't recall any discussion with or from Mr. Lane on that subject?

MR. LOTTERMAN: Asked and answered.

A. No. I don't recall discussing, you know, other than monitoring the area and where it has been. But, no, I don't -- specifically, I don't recall discussing it.

BY MR. ESBENSHADE:

Q. I'm going to mark as Exhibit 248-1 a two-page document beginning at HALLIBURTON00009.

(Whereupon, Deposition Exhibit 248-1, Hazardous Work Contract, HALLIBURTON000009 - 10, was marked for identification.)

BY MR. ESBENSHADE:

Q. Mr. Walzel, do you recognize this as a Halliburton contract for work, Halliburton/Boots & Coots?

A. Yes.

Q. Okay. And looking at the first paragraph, the date and then the description and the reference to Standard Sesnon 25 in Aliso Canyon, do you recognize that this is at least one of the contracts under which Boots & Coots was performing its services for Southern California Gas and Sempra?

A. Yes, it appears so.

Q. And do you know on -- if you look at page 2, there is a signature under

Halliburton Energy Services, it seems to say strategic business manager.

Do you recognize the signature above that?

A. I do not.

Q. And going back to the first page, you see that this contract is entitled Hazardous Work Contract, correct?

A. Yes.

Q. Okay. Do you know whether there are different kinds of contracts that Halliburton has or Boots & Coots has depending on the particular project?

MR. HELSLEY: Objection, scope.

BY MR. ESBENSHADE:

Q. If you know.

A. I know there's, you know, hazardous and nonhazardous, I guess you'd call it.

Q. And the one that was used for this particular project on SS-25 was the Hazardous Work Contract?

A. Yes.

Q. Mr. Walzel, are you familiar with Blade Energy Partners?

A. No.
Q. Are you aware that Blade Energy Partners conducted a root cause analysis on the SS-25 blowout?
A. Yes.
Q. Have you read the -- any part of Blade Energy Partners' report on the SS-25 blowout?
A. I've skimmed through it and seen some videos on YouTube.
Q. When you say "videos on YouTube," was at least one of those the video that Blade released kind of summarizing some of their findings?
A. It was a picture of the well, some gas pumped on it and came up around the well.
Q. And when you say that you skimmed -- I think you used the word "skimmed" -- the Blade report on the SS-25 blowout, were there particular parts that you read more closely?
A. I skimmed -- I remember looking at the picture of the corrosion on the pipe and then where it says, you know, discussed

the well kill attempts, the well control company.

Q. I assume that was of more interest to you because you were involved in that?

A. Yes.

Q. When you say you saw the picture of the corrosion on the pipe, was that -- were those pictures you had seen before?

A. No, I don't believe I saw them before.

Q. Had you ever discussed with anyone at Boots & Coots having seen corrosion on any of the SS-25 well casings or tubings?

A. We didn't -- I didn't see any corrosion on the pipe when I was there.

Q. Well, when you were there the pipe was still in the ground.

A. Right.

Q. But did you at any point, after the pipe was -- the well was removed, did you discuss with anyone at Boots & Coots what they had seen?

A. I mean, I recall hearing, you

know, it was pipe with corrosion on it.

Q. Did you hear that from Mr. LaGrone?

A. Yes, probably so.

Q. Okay. And do you recall what -- other than seeing corrosion of the pipe, do you recall anything else that Mr. LaGrone said about it?

A. No. That was -- corroded pipe.

Q. When you saw the photos in the Blade report, was there anything that struck you about the corrosion that you saw?

A. No. I mean, it looks like corrosion.

Q. Was it pretty extensive from what you could tell in the photo?

MR. LOTTERMAN: Objection, foundation.

A. I mean, I don't have anything to judge it on if it was excessive or -- I mean, it looked like corrosion.

BY MR. ESBENSHADE:

Q. Do you have any knowledge about the cause of the SS-25 blowout?

MR. HELSLEY: Again, I'll just

object as scope. I just -- go ahead.
MR. KELLY: That's probably outside. He can answer it individually.
MR. LOTTERMAN: Same.
A. You know, I read where they called it microbial. I think that was mentioned on YouTube or something. But as far as what caused it, I mean, just the things that normally cause corrosion. You know, water and oxygen.
BY MR. ESBENSHADE:
Q. So in your experience, if water comes in contact with a pipe over a long enough period of time, there will be corrosion?
MR. LOTTERMAN: Objection, scope, foundation.
A. I mean, I can't say it happens 100% of the time, but I mean -- you know, I can say it's not the first well that we've been on that had corrosion on it or, you know, was an issue on a well.
BY MR. ESBENSHADE:
Q. Did you discuss with anyone at

Boots & Coots any of the findings of the Blade root cause analysis on the SS-25 blowout?

MR. HELSLEY: Objection, scope.
Go ahead.

A. Yeah. I mean, I -- Jim, you know, just -- you know, and the report saying if they had done this or that, you know, their opinion was it would have been different.

BY MR. ESBENSHADE:

Q. And when you referenced Jim, you're referring to Jim LaGrone?

A. Correct, yes.

Q. Was there anything about Blade's findings on the well kill attempts for SS-25 that you thought was incorrect?

MR. HELSLEY: Objection, scope.
Go ahead.

A. I mean, I just had the feeling --

MR. HELSLEY: Lacks foundation.
I'm sorry. I didn't mean to interrupt. Go ahead.

A. You know, I mean -- I couldn't

comment on if it's correct or incorrect. I haven't seen the modeling or work they did to find it, you know, and then their estimates, I didn't know -- you know, there was a lot of verbiage in there. But, you know, I didn't know enough to say that, oh, yeah, this is correct or not, you know. I mean, they looked at it for whatever, years, to come up with those, you know, so I don't know how they did it.

BY MR. ESBENSHADE:

Q. Other than Mr. LaGrone, is there anyone else with whom you discussed the Blade report on the SS-25 blowout?

A. I think there was one call from -- his name is Bo Burris, and he asked me if I had seen it, and I said no.

Q. At that time you hadn't seen it, I take it?

A. No.

Q. Okay. Did Mr. Burris tell you why he was asking about it?

A. He was -- he was asking about the pumping and stuff. And I said, well, you know, this is what we did, what we did. And he said okay.

Q. Is there anything Mr. LaGrone told you about the Blade report when you spoke with him?

A. Nothing other than, you know, came up with these conclusions, years or whatever, after we did it. You know, he didn't know how they came up with it either.

Q. I mentioned at the outset of my questioning that I represent Toll Brothers. At the time you were at Aliso Canyon, did you have any knowledge that Toll Brothers owned property adjacent to the Aliso Canyon facility?

A. No.

Q. And you have no knowledge as to whether there was any impact on the Toll Brothers property based on the SS-25 blowout?

A. No.

MR. ESBENSHADE: Okay. I have no more questions. Thank you for your time.

THE WITNESS: All right. Thank you.

MR. HELSLEY: You want to

switch? Is that easier?
MR. LOTTERMAN: I think I'm okay right here if that's okay with you.
MR. HELSLEY: Yeah.

EXAMINATION

BY MR. LOTTERMAN:
Q. Mr. Walzel, my name is Tom Lotterman. I believe I shook your hand at the beginning of today.
A. Yes.
Q. I know it's been a long day for you, but I can tell you, you're in the fourth quarter, and I would ask that you be patient and stay focused, and I'll try to get through my examination as quickly as I can, okay?
A. Okay.
Q. All right. And I wanted to warn you that I'm going to go over some fields that have already been plowed, but it's mainly for context and mainly for flow of testimony.
But as you'll see, I think I've got a couple of documents that may or may not help you with your recollection, okay?

A. Okay.

Q. And just to confirm, same rules as you followed with Mr. Kelly and Mr. Esbenshade as far as waiting for me to finish my question; I'll wait for you to finish your answer, and of course, be truthful because you're still under oath. All right?

A. Okay.

Q. All right. So tell me, as a senior well control specialist engineer, how many well control projects you've been on in your lifetime.

A. Oh, I don't have a number off the top of my head, but blowouts, probably 40 to 50.

Q. Okay.

A. You know, surface -- you know, plus many other, you know, types of jobs. Pressure jobs.

Q. I'll stick with blowouts.

A. Okay.

Q. How many blowouts have you been involved with since the SS-25?

A. Well, I just had to come home

from one to be here, so that's one. I don't know. Since then, 10, 10 to 15.

Q. All right. And again, just your best estimate.

A. Uh-huh.

Q. The other thing I should tell you is I'm going to ask you to -- you know, we lawyers like to pick people's brains a little bit. You should feel free to say "I don't recall."

A. Okay.

Q. Because I'm going to get into some detail here and I understand it's been a while. Okay?

All right. What's a mud engineer?

A. He's the person on location with the company that builds the mud, the drilling fluids.

Q. Was one needed at Aliso Canyon?

A. I'd say yes.

Q. And who played that role?

A. I don't recall his name or even what company he worked for.

Q. And while you were on that

project, were you the one that told the mud engineer what type of mud to mix?

A. I didn't specify, you know, brine or anything.

Q. Who made that decision?

A. Initially -- well, initially, you know, it was discussed and kind of weighed the pros and cons. And, you know, we still didn't know what was exactly going on with the well, so it was preferred to use brine. Because, I mean, that's what they killed -- you know, when they were working over wells, it was the same fluid that they -- same type of fluid that I was told that they killed all the wells with.

Q. I guess what I'm asking is who is the person that told the mud engineer at SS-25 what mud to use?

A. I don't -- I don't recall who told him that.

Q. All right. You've been asked a lot of questions -- or several questions today about this Examination Under Oath that you attended on August 8, 2018.

Do you recall those questions?

Vaguely?

A. Vaguely.

Q. All right. Did you get a chance to read this transcript after you attended this examination?

A. Is that the --

MR. HELSLEY: Go ahead. I'm not sure the question is clear for him, but go ahead.

BY MR. LOTTERMAN:

Q. So let me rephrase the question. Before the last few days, had you seen this transcript before?

A. No.

Q. Okay. So is it fair to say that you did not have a chance to review and make any corrections to this transcript?

MR. KELLY: Objection, calls for speculation, lacks foundation.

A. Yeah. Before the last couple of days, I didn't look at it or make any corrections.

(Mr. Esbenshade left the deposition room.)

--oOo--

BY MR. LOTTERMAN:

Q. All right. So when you answered questions from Mr. Esbenshade and Mr. Kelly about the accuracy of your testimony, were you testifying about the accuracy of the person who transcribed your words?

MR. KELLY: Objection, calls for speculation, lacks foundation.

A. No.

MR. KELLY: Argumentative.

BY MR. LOTTERMAN:

Q. I'm sorry?

A. No.

Q. Okay. I believe Mr. Kelly asked you a number of questions as to your training over time. Not your formal training but sort of your training either through Halliburton --

A. Right.

Q. -- and other companies. You remember that?

Have you had any training in modeling?

A. I took a -- when it was owned

by Drillbench or SPE Group -- that's what
I guess is the name -- I took a class with
them.

Q. Okay. And are you certified?

A. I don't -- I don't believe
there's an actual certification for it.

MR. KELLY: Objection, move to
strike, nonresponsive.

BY MR. LOTTERMAN:

Q. Okay. If you wouldn't mind
turning to the exhibit that was looked at
earlier, it's 246-1. All right? Are you on
the page?

A. Yes, sir.

Q. Okay. And if you wouldn't mind
turning to the well schematic on page 3.

A. Okay.

Q. Do you know who --

MR. KELLY: Excuse me, is that
the Mansdorfer?

MR. LOTTERMAN: No, no, this is
the information he received from
SoCalGas.

MR. KELLY: Okay, thanks.

--oOo--

BY MR. LOTTERMAN:
Q. Do you know whose notes those are on page 3?
A. I do not know.
Q. Okay. Do you recall whether you reviewed this information contained in Exhibit 246-2 [sic] before you arrived at the facility?
A. I can't recall for sure but I'm sure I looked at it on my phone on the way there.
Q. Okay. All right. Did you find the information helpful?
A. Yes.
Q. There have been a number of questions that counsel have asked you about the -- your daily reports.
A. Yes, sir.
Q. I'm going to mark as a separate exhibit to this deposition a copy of the reports that has been used in earlier depositions for Boots & Coots, but I want the record to be clear on what copy you're looking at, okay?
A. Okay.

Q. All right. And I'm going to mark this as 248-2.

(Whereupon, Deposition Exhibit 248-2, Halliburton Boots & Coots Daily Operating Reports, SCG02110313 - SCG04561502, was marked for identification.)

BY MR. LOTTERMAN:

Q. All right. And for the record, it was previously marked as Boots & Coots PMQ 242-1.

Now, when I go through this -- by the way, are these called DORs?

A. DORs, yes, sir.

Q. All right. I'm going to call them that. When I go through these DORs, I see your name on the first page, which is October 25, 2015.

Do you see that?

A. Yes.

Q. Okay. And then the last one I see you show up on is December 13, 2015. Would you mind checking that for me?

A. I'm sorry, what date?

Q. December 13.

A. Okay. Okay.
Q. Do you see your name as the report generator on that date?
A. Yes.
Q. Okay. And who began generating the reports on December 14?
A. Oh. I don't know for sure.
Q. Take a look.
A. Oh, I'm sorry.
MR. KELLY: Objection, leading.
A. On the 14th, yes, Jim LaGrone.
BY MR. LOTTERMAN:
Q. Okay. So can we infer from the fact that you stopped generating reports on December 13 that that was the last day you worked on the project?
MR. KELLY: Objection, leading.
A. Yes, because the next -- on the next day I was traveling.
BY MR. LOTTERMAN:
Q. Okay. And where do you see that?
A. On -- where it says Transit.
Q. All right. So to be clear, you first set foot at the Aliso Canyon facility

on October 25th, 2015, right? Page 1.
A. Yes.
Q. Okay. And by December 14, 2015, you were in transit back to Houston.
A. Yes.
Q. Okay. I want you to turn to the first page with me again. We're going to walk through this a little bit to refresh your recollection, okay?
If you go down to 1400 hours, actually starting -- so it looks like you took a flight that morning? Is that right?
A. Yes.
Q. Okay. And you grabbed a rental car?
A. Yes.
Q. And then you drove from LAX to the facility, right?
A. Yes.
Q. Okay. Do you see the entry for 1400 hours?
A. Yes.
Q. Did you write "Met with SoCalGas Company representatives"?
A. Yes.

Q. Okay. Did you meet with the SoCalGas representatives on the afternoon of December [sic] 25th?

A. When I -- the representative, I don't remember his name, but -- I'll call him the company man. But the company man, I guess they were people that were already in the field, from what I remember.

Q. Okay. Was that meeting you're referring to there a long, substantive meeting?

A. No, I don't believe so. It's, you know, typically you get there and meet and -- you know --

Q. All right.

A. I don't recall any, like, in-depth conversations.

Q. Good. Okay. Let's just take this one step at a time. You see the next step, it says "Traveled to Standard Sesnon 25 well site"?

A. Yes.

Q. I'm going to stay right in that little paragraph for about five minutes, okay?

All right. Did you travel to the well site that day?
A. Yes.
Q. Do you recall what you saw?
A. I saw some wells and some little cracks in the asphalt and a little gas coming out of there.
Q. Could you hear the gas coming out?
A. I don't believe -- I don't recall hearing it.
Q. Could you smell the gas?
A. I don't recall smelling it.
Q. Okay. Did you -- let's take this one step at a time.
Okay. So the next line says performed site assessment. What does that mean?
A. Basically just taking a visual of what's -- what's there on location.
Q. Is that a fancy way of saying you eyeballed it?
A. Pretty much.
Q. Okay. Did you examine the wellhead itself?

A. At the time we just visually looked at it.
Q. Did there come a point in time when you checked to see whether the valves were working?
A. Yes. I mean, there was a day me and James got in there and operated the valves and stuff like that, I recall.
Q. Did the surface equipment seem in good condition?
A. As I recall, all the valves opened and closed.
Q. Okay. And did you have an opportunity to compare the schematic you received to the wellhead you looked at?
A. Yes.
Q. Did the schematic appear accurate to you?
A. Yes, from what I recall.
Q. Do you know what the phrase "fit for purpose" means?
A. Yes.
Q. Okay. When you examined that wellhead on October 25, 2015, did you believe it was fit for purpose?

A. Yes.
Q. All right. Now, the next line you say: Observed gas broaches to surface through several fissures on well pad.
Do you see that?
A. Yes.
Q. And we talked about that previously, right?
A. Yes.
Q. Okay. The next line says: Discussed operations prior to broaching with client representatives.
A. Yes.
Q. Do you remember that discussion?
A. It would have been about the bullhead.
Q. Okay. And the information you received during that discussion, did it differ at all from the information that Mr. Kopecky sent you in that earlier e-mail you looked at?
A. No, I don't recall any differences.
Q. Okay. Do you recall whom you

met with from SoCalGas to talk about the prior operations?

A. I don't recall his name.

Q. How about Alan Fortenberry?

A. That doesn't ring a bell.

Q. How about Todd Van de Putte?

A. I remember his name, yes.

Q. All right. Do you remember anything about that discussion that you can share with us today?

A. No, I don't recall anything other than, you know, we pumped that fluid.

Q. Okay. And then if you look, there's a couple of lines where you talk about you were informed by the client, et cetera, et cetera, you see that, and then operations were discontinued.

Is that basically at least a summary of what you were told at the Aliso Canyon facility on October 25th, 2015?

A. Yes, it would have been a summary.

Q. All right. That wasn't all you were told?

A. No. I mean, I can't say it's

inclusive.

Q. Thank you. All right.

Now let's look at the next line. It says: Began sourcing slick line unit, frac tanks for kill fluid, dual pump truck, and additional pump iron.

Do you see that?

A. Yes.

Q. Now, was that part of the discussion you talked about earlier where you ordered pumps and various equipment?

A. Was it a discussion that we talked about previously?

Q. I'm trying to short-circuit this, but let me take it one step at a time.

A. Oh.

Q. When you say you began sourcing these items, what were you doing? What does that mean?

A. So the discussion would have been like, "What do you need?"

"Okay, we need pump trucks and iron," you know, and then SoCal, through their contractors, would have started making phone calls.

Q. Did you ask for vacuum trucks?
A. Yes.
Q. What about cranes?
A. I don't know if we asked for a crane that day.
Q. At some point in time?
A. Yeah, some point in time.
Q. Okay. What about wireline services?
A. Yes.
Q. What about trucking services, generally?
A. Those -- I mean, they would have been needed.
Q. Looking back at the experience, was SoCalGas able to provide the sources you need -- needed to conduct the well kills that you planned and executed?
A. Yes.
Q. When I go through these daily reports, I tend to see morning meetings and end-of-day meetings. Was that generally the practice?
A. Yes.
Q. Okay. Who typically attended

the morning meetings? Just categories.
A. It would have been SoCalGas representatives, you know, the E-Line -- the electric line company, the flowback company, the crane operator --
Q. And you?
A. And me and any contractors that were involved in the operation.
Q. What was the purpose of the morning meetings?
A. Oh, to discuss -- you know, just discuss what was going to happen, you know, in safety meetings and, you know, but just a -- what to expect for the day.
Q. Did those expectations and plans change from time to time?
A. From time to time.
MR. KELLY: Objection, vague.
BY MR. LOTTERMAN:
Q. Okay. I notice you also tended to have what I believe you called end-of-day meetings. What was the purpose of them?
MR. KELLY: Objection, calls for speculation.
A. They would have been just,

again, you know, discussing the next day's operation and what happened that day.

BY MR. LOTTERMAN:

Q. Did you feel that you had sufficient access to SoCalGas' decision-makers in those meetings and elsewhere?

A. Absolutely.

Q. Okay. Did you interact with DOGGR from time to time?

A. We had a few conversations.

Q. What was the main topics, without getting into too much detail?

A. I think it was -- there was DOGGR, and I believe it was, but, you know, he was asking just -- you know, anything that, you know, not mud, but anything else that could be pumped into the reservoir to seal the reservoir.

Q. So sounds like they were making some suggestions?

MR. KELLY: Objection, leading.

A. They were asking questions.

BY MR. LOTTERMAN:

Q. Asking questions.

Did you attempt to answer those questions?

A. I believe my answer was, you know -- he was asking about something, I don't remember what it was, but, you know, the response was, "Well, we don't want" -- it was along the lines of, "No, as far as like sealing the -- we don't want to pump anything that might seal something that will make it worse, you know, in the wellbore." We don't know where the holes are or the condition of, you know, simple -- you know, put a finger here, you don't want something popping out over here (demonstrating).

Q. Okay. What role did you have, if any, in managing site safety?

A. Not much, other than just everybody has the right to stop work and things like that.

Q. And as a general matter, was work on the top kill, not the relief well, limited to daylight hours?

A. Yes.

Q. Whose rule was that?

A. It's just a rule that, you

know, we like to not do operations like that at night.

Q. You're speaking on behalf of Boots & Coots?

A. Right.

Q. Why not?

A. It's just, you know, it's safer during the day.

Q. What are the risks of working at night?

A. Well, if you're working and, you know, there was some kind of incident, you know, you've got to shut down lights and equipment and doing all that and, you know, then trying to find people at night and -- you know, I guess visually, if something bad happens at night, it can be worse.

Q. Was there a concern that if you attempted to light up those areas at night you may increase the ignition risk?

A. Yes.

Q. Okay.

MR. KELLY: Objection, move to strike, leading.

--oOo--

BY MR. LOTTERMAN:

Q. Was there a practice while you were there of removing and returning equipment every day from the pad --

A. Yes.

Q. -- or at least certain equipment?

A. Yes.

Q. Why would you do that?

A. Well, like the crane, you know, you didn't want something to happen to it overnight and it wouldn't be available the next day. You know, just -- just remove it so -- you know, just removing equipment just to, you know, wanting to service stuff at night and, you know, you just didn't want it being around the well on the location unattended.

Q. Were you involved at all with the planning or spudding or implementation of the relief well?

A. No. The only thing -- the only thing I did for the relief well, they were rigging up the rig and they asked me to go over there and look at the rig-up of the diverter line and choke manifold.

Q. Other than that, though, that was someone else at Boots & Coots' responsibility?

A. Yes.

Q. Who was that?

A. Our relief guys at the time, John Hatteberg, Wayne Courville. I don't know if -- I don't know if Jim was. I don't remember who was out there.

Q. Who was in charge?

A. I would say it would have been John and Wayne -- you know, John Wayne -- John Hatteberg and --

Q. Had he drilled a couple of relief wells in his lifetime?

A. Yes.

Q. Okay. Pretty qualified?

A. Yes.

Q. Okay. Was weather a challenge while you were at the Aliso Canyon facility?

A. Yes. I mean, there was days, I remember early on the -- you know, we set up a bunch of tents to have meetings and stuff, and the wind blew them over. And then, you know, there was days if the wind direction wasn't right, you couldn't drive up the road to the -- to the pad. You had to wait for the wind to be right to blow any gas away from you.

Q. Were there days when it was too windy to work?

A. Yes, I believe so. If it's over a certain mile -- I don't know what it was, but if the wind is so high the crane won't rig up.

Q. Did the weather conditions cause delays in killing the SS-25?

MR. KELLY: Objection, vague, lacks foundation, calls for speculation.

A. I recall there was times and days where we couldn't do anything on-site. I don't recall if it was before or after the kill, but, yeah, there was stoppages.

BY MR. LOTTERMAN:

Q. Okay. I want to ask you about smelling -- the smells you noticed while you were there. Are you familiar with the smell of natural gas?

A. Yes.
Q. Okay. Do you realize it has mercaptans in it, which gives it a smell?
A. Right, yes.
Q. Okay. Did you smell mercaptans or natural gas outside of the Aliso Canyon facility while you were working that project?
A. No.
MR. KELLY: Objection. Can you slow down just a little, please?
Objection, vague.
BY MR. LOTTERMAN:
Q. Okay. Answer?
A. No.
Q. Let's go back to the daily reports, if you would, sir, and I want you to turn to the report dated 10/28.
A. That's October, right?
Q. Correct.
A. Yeah. Yep.
Q. And I want to direct your attention to the entry at 1700 hours.
A. At 1700, okay.
Q. Do you see that?
And did you write -- did you

write that entry?
A. Yes.
Q. What does it mean, "Ran in hole with sample bailer. Tagged hard at 465 [sic] feet. Pulled out of the hole. Secured well"?
A. So the sample bailer is just a tool that, you know, you lower it in the well with the slick line and it catches anything in the well that might be there. And then as we were running it in the hole, we just (demonstrating) -- you know, tagged hard. It's just, you know, you run it in, just (demonstrating) -- sit down on something.
Q. Does tag mean blockage, you couldn't go any farther with the tool?
A. Yeah, we couldn't go any further with the tool.
Q. Okay. And is it your testimony that that entry denotes the time when Boots & Coots noticed a blockage or hydrate in the tubing at SS-25?
A. Yes.
Q. Okay. And let's talk a little bit about your efforts to remove that

blockage.

Did you need a coiled tubing unit?

A. We ended up using one, yes.

Q. Okay. And are those units typically operated with internal combustion engines?

A. Yes.

Q. Okay. Was that a viable unit to run at Aliso Canyon?

A. Yes.

Q. Okay. But was there an ignition risk at Aliso Canyon?

MR. KELLY: Objection, leading.

A. I mean, I guess if there's gas, there, you know, it's something we always think about, but we mitigate it by putting it upwind or things like that.

BY MR. LOTTERMAN:

Q. I guess what I'm wondering is, did you have to search for an electrical powered unit to perform the coiled tubing at the Aliso Canyon facility?

A. Did we have to, no.

Q. Okay.

MR. KELLY: Move to strike, interpose the objection, leading.

BY MR. LOTTERMAN:

Q. Did you need a DOGGR permit to do that work?

A. I don't recall if we needed to get one or not.

Q. And let's make sure the record is clear again. If you wouldn't mind turning to November 6 at 10:00 o'clock.

A. Uh-huh.

Q. And if you look right at the bottom of that paragraph, it reads: Found bottom of hydrate plug at 188 feet, et cetera.

Was that the moment when the hydrate was cleared?

A. Yes.

Q. Okay. Did you use a glycol to clear it?

A. Yeah, it shows we pumped some glycol.

Q. Are you referring to the 9:00 o'clock entry, a.m.?

A. Yes.

Q. Okay. All right. Let's go to the -- let's go to November 8, 2015.

A. November 8?

Q. Uh-huh.

A. Okay.

Q. I believe you answered some questions earlier about running diagnostics.

A. Uh-huh. Yes, sir.

Q. Were those diagnostics run on November 8?

A. Yes.

Q. Did it include temp logs?

A. Yes.

Q. Noise logs?

A. Yes.

Q. Do you recall what those logs showed?

A. I do. The -- I remember that the tools at -- I don't remember the depth, but there was a time where the tools quit sending signals to the -- to the electric line truck at some interval.

But there was a cooling around -- it was hard -- it was hard because the tools weren't reading, but yes, there was a cooling -- I want to say it was like 800 feet or something, but there was a range in there where the temperature got cool -- cold.

Q. As a general matter, did the temp and noise logs that were conducted on November 8, 2015, provide you with any clarity as to the wellbore integrity?

A. It wasn't clear enough to say, oh, there's a hole here at this depth.

Q. Okay. Was it clear enough to tell you what the size of the hole was?

A. No.

Q. Was it clear enough to tell you what effect, if any, the hole had on the nearby formation?

A. No.

Q. Was it clear enough to tell you what the flow path was of the leak?

A. No.

Q. Was it clear enough to inform you as to what the flow rate was from that leak?

A. No.

Q. These were all unknowns, right?

A. All unknowns.
Q. All right. Did the noise and temp logs tell you about the condition of the tubing?
A. No.
Q. Is that why you set the bridge plug?
A. Yes.
MR. KELLY: Objection, leading.
BY MR. LOTTERMAN:
Q. You talked about some of the simulation or modeling you did after the second kill with opposing counsel. I want to follow up with some questions on that.
What program did you use?
A. Drillbench.
Q. Okay. Is that standard at Boots & Coots?
A. Yes.
Q. Now, I believe it was in response to Mr. Kelly's questions, you were talking about the range of million cubic feet per day that you plugged into the model.
Do you remember that?
A. Yes.

Q. And did I hear you correctly that you said the range was from 30 to 70 million cubic feet per day?

A. Yes. I know I -- I know I did 60 and 70.

Q. Okay. All right.

When you were asked earlier about why you set the plug and why you left open the possibility of cutting the tubing, you said it was best practices.

What did you mean by that?

MR. KELLY: Objection, leading.

A. By -- when you set a plug?

BY MR. LOTTERMAN:

Q. Yes.

A. Before you cut the tubing or part it, you know, you set plugs in the pipe below it just to keep the reservoir fluids and pressures from coming up the tubing, you know.

MR. KELLY: Objection, move to strike, lacks foundation, calls for speculation.

BY MR. LOTTERMAN:

Q. Have you done that before on

other blowouts?
A. Yes.
Q. Okay. All right. Would you pull out Exhibit 242-12.
MR. KELLY: What is that, please?
MR. LOTTERMAN: It was that CPUC response.
MR. KELLY: Oh, okay.
BY MR. LOTTERMAN:
Q. This is what it looks like.
A. Right. Yes, sir.
MR. KELLY: 240?
MR. LOTTERMAN: 2-12.
BY MR. LOTTERMAN:
Q. All right. I want you to turn to the second page, sir.
A. Yes.
Q. And I want you to put that page right in front of you, okay? Because I want to use that page as a reference as we walk through what you did, okay? And I want to start with item 2, which is the November 13 kill.
Do you see that?

A. Yes, sir.
Q. Okay. And I don't want to talk about what this document says was done. I just want to make sure we're talking about the same well kill, okay?
A. Okay.
Q. All right. I'm going to mark as Exhibit 248-3 a one-page document bearing Bates stamp HAL_400.
(Whereupon, Deposition Exhibit 248-3, "Kill Procedure, SS-25, Nov. 12, 2015," HAL000400, was marked for identification.)
BY MR. LOTTERMAN:
Q. Let me know when you're ready to talk about it.
A. Okay.
Q. Okay. Have you seen this document before today?
A. Yes.
Q. What is it?
A. It's the program for the pump -- pumping we were going to do that day.
Q. Okay. Who typically prepared these?

A. I did.
Q. Okay. And this one is dated November 12, 2015.
Do you see that?
A. Yes.
Q. Would that be the program for the kill shown as number 2 up top of November 13, 2015?
A. Yes.
Q. Okay. And bullet 1 talks about 600 barrels of 9.4 ppg calcium chloride.
Do you see that?
A. Yes.
Q. Okay. And then if you look, skip down to item 5, what's item 5?
A. Set EZSV.
Q. Okay. Is that the bridge plug?
A. Yeah. Yes.
Q. Okay. Is EZSV a type of bridge plug?
A. Yes. It's the name of the model.
Q. Okay. How is that set?
A. It was set on electric line.
Q. Okay. How was it -- how does

it have to be removed?
A. You can drill them.
Q. Okay. Can you remove it by wireline?
A. I don't know if this one -- I think it had to be drilled, milled.
Q. Okay. When you say milled, you mean sending something down to the bottom of the wellbore and drilling it out?
A. Yeah.
Q. Okay. And then if you look at item 9, it says: Perform negative test on the plug at 500 psi below tubing pressure.
Is that the tubing integrity test you were talking about earlier?
A. Yes.
Q. Okay. And then if you look at item 13, it talks about perforating the tubing.
Do you see that?
A. Yes.
Q. What was the purpose of perforating the tubing above the bridge plug?
A. So we could circulate -- pump fluids down the tubing and into the annulus.

Q. And was the thought of that to replace the subsurface safety valve slots that you were basically plugging off?
A. Yes. I mean, we had to have a way to circulate.
Q. Right. How did you decide how many perforations to make?
A. I don't recall if it was the amount, you know -- the amount the gun held at -- you know, that he could do.
Q. Okay. And is the number of shots and the size of the perforations important?
A. Yes.
Q. Why?
A. For, you know -- you know, it affects pressure and you just get a pressure drop across the holes.
Q. And if you look at -- I'm going to skip 16 and 17 because we'll look at what you actually did in a minute.
Let's look at item 18. It says: Increase pump rate according to pump pressure, max pump pressure 4,000 psi.
What does that mean?

A. You could increase the pump rate up to 4,000 psi.

Q. And could you go beyond that?

A. That was our safety factor, you know, just -- you know, it's a practice not to go right up to working pressure, especially on -- you know, we didn't know the condition -- the condition of everything.

Q. And why did you choose calcium chloride?

A. Like I said, it was what -- you know, it was the same mud system that was used in the wells in the field.

Q. And why did you choose 9.4 pounds per gallon?

A. It was -- I don't recall if they said that was, you know -- it was the -- you know, it was more than bottomhole pressure. It was what they -- you know, I guess hadn't killed for the other wells.

Q. All right. So now let's go to the actual kill itself, and I believe, if this chart is right, that occurred on November -- before we go there. So if you look at the entry -- let's go to the daily reports, okay?

A. Okay.

Q. I don't know which copy you're looking at, but let's go to November 12. We're going to take this chronologically.

MR. KELLY: Excuse me, can I have the other exhibit that you're not looking at? Yeah.

BY MR. LOTTERMAN:

Q. So do you see the daily report for November 12, Mr. Walzel?

A. Yes.

Q. Okay. And does that basically outline the work that was done on that date to set the bridge plug --

A. Yes.

Q. Okay. And in fact, does it indicate that 11:15 a.m. on that date, the bridge plug was set at 8,393 feet?

A. Yes.

Q. All right. Now let's look at the kill itself on the next day, so turn to November 13, 2015.

A. Okay.

Q. And is it your testimony that

this summary of activity on-site for that day is at least -- is as accurate as possible as to what was done on that date?

A. Yes.

Q. Okay. Can you tell us very briefly what you did?

A. We started pumping the mud and brine and -- yeah, we just -- we pumped the mud and up to 8 barrels a minute and the pump pressure was 1500, and started seeing -- okay, yeah, this was when the gas was coming up. The gas increased, you know, it was coming up (demonstrating) around the trucks and -- and then we pumped --

Q. Did you do a junk shot next?

MR. KELLY: I don't think he was finished. Were you finished?

THE WITNESS: Yeah, we pumped 600 and -- 693 barrels and then 10 barrels of the polymer pill, and spotted down there, tubing pressure was zero, and we showed 192 on the 7-inch and 92 on the 11?, and then it says we pumped junk shots.

--oOo--

BY MR. LOTTERMAN:
Q. Okay. And we've talked about that. I just want you to summarize in one sentence what happened during that well kill on that date.
A. One --
Q. One sentence.
A. Okay. Yeah, we pumped the fluid and, you know, I do -- I recall there was, you know, the gas increased coming up through the cracks, and I don't know if I noted it on this one, if the flow stopped briefly. It must have been the next one.
Q. Okay. Did you shut down early?
A. I believe we did.
Q. Did you regroup?
A. Yes.
Q. Did you learn anything from that attempt?
A. Well, we learned the more you -- seemed like the faster you pumped, the more gas was coming out of the cracks.
Q. What does that mean?
A. We were displacing -- displacing the gas faster.

Q. Is it unusual in your business to not kill a blowout on the first attempt?
A. Yes. I mean, it happens.
Q. All right. Let's mark as Exhibit 248-4 a single-page document bearing Bates stamps HAL_389.
(Whereupon, Deposition Exhibit 248-4, "Barite Pill, November 14, 2015," HAL000389, was marked for identification.)
BY MR. LOTTERMAN:
Q. Do you recognize this document?
A. Yes.
Q. What is it?
A. A recipe for barite pills.
Q. Is this also part of one of your programs, as you called them?
A. It was either a recipe I got out of an MI mud manual or a Baroid recipe.
Q. Why did you decide to put a barite pill into the wellbore?
A. The first -- the first kill, we used this polymer pill, which I guess was common practice in other wells in the field. And the barite, you know, is an 18-pound mud,

but the idea was to get the barite to fall out and plug up the bottom of the well.

Q. Now, when you talk about a common practice in the field, are you saying that, at least on the first well attempt, you tried to do what SoCalGas typically did at the Aliso Canyon facility?

A. Yeah. The polymer pill they said was a good plug, you know, we call it a plug, kept -- kept kill fluids in the wellbore.

Q. Whose idea was the barite?

A. I believe I mentioned that or, you know, recommended it.

Q. Everyone agree?

A. Yes. Everything had to be approved, you know, through SoCal.

Q. Okay. Why did you continue to use a solids-free kill fluid in a brine and fresh water?

A. Well, if my timeline is right, the first one we pumped, and I think we shut down and I believe it was after the second one was when the flow stopped for a little bit. And then it must have been the third one, we kept the same fluid and just tried to get as -- a faster rate.

But initially, you know, I guess one of the benefits of the clear fluid, it would have been a little less abrasive on any tubulars that might have been damaged.

Q. Would a less abrasive fluid been less likely to damage the surrounding formation?

A. Well, brine would be less damaging to the formation, you know, the reservoir.

Q. How did you expect the barite to settle when -- or how does one expect barite to settle when a well is flowing like this one did?

A. Well, the -- I guess you call it the theory behind it, it would have been dead, dynamically dead by the time we spot it down on the bottom. Or the barite, you know, falls out and plugs up any flow.

Q. Okay. Now let's turn to November 15, 2015, two days later. Are you on that page?

A. Yes.
Q. Was that Boots & Coots' next well kill attempt?
A. Yes.
Q. Did you keep the fluid weights the same?
A. Yes.
Q. Did you attempt a barite pill again?
A. I believe so.
Q. Okay. Did a crater begin to form around the wellhead?
A. Well, it says: Flow from fissures stopped briefly and then began flowing gas at 12 --
Q. All right, so --
A. So I don't know, I don't recall if on this one is when the crater started forming or the cracks just got bigger.
Q. All right. So tell the jury what happened during this pump kill on November 15. Just in two sentences or less.
MR. KELLY: Objection, restrictive.
A. Okay. Yeah, this was the one

where we pumped and then after we shut the -- I remember the flow from the well was -- the gas flow was, you know, decreased throughout the job. And then after we pumped the -- I guess we got 19 barrels out of the tank on this one, barite, shut -- when we turned the pumps off to monitor the flow, it stopped for a short period of time.

BY MR. LOTTERMAN:

Q. But the flow picked up again?

A. Yes. I remember it kind of bubbled a few times and then increased and came back.

Q. Any lessons learned from that attempt?

A. Ah. I mean, it showed that, you know -- well, either the gas was coming from the reservoir or the gas that was exiting out of the hole, you know, it was -- it unloaded some gas that was in that formation, you know, unloaded up from the top of the hole and then the well came back in.

Q. Okay. Between well kill attempts, would you typically perform diagnostic work?

A. I don't believe we ran any more noise/temperatures because -- I don't think we did, because -- yeah. No, I don't think we did because, you know, the first time we ran them, you know, it was cold and the tools didn't work.

Q. Okay. Let's mark as Exhibit 248-5 a two-page document bearing Bates stamps HAL_387 and 388.

(Whereupon, Deposition Exhibit 248-5, "Barite Pill, November 15, 2015," HAL000387 - 388, was marked for identification.)

MR. LOTTERMAN: And while we're at it, we'll add 248-6.

(Whereupon, Deposition Exhibit 248-6, "Barite Pill, November 15, 2015," SCG2425994, was marked for identification.)

MR. LOTTERMAN: Which bears Bates stamp number SCG2425994.

MR. KELLY: Wait, were these two separate exhibits?

MR. LOTTERMAN: Two separate exhibits.

BY MR. LOTTERMAN:

Q. So do me a favor, Mr. Walzel, and put those two in front of you. I've got 248-5 and 248-6.

A. Okay.

Q. Do you recognize these documents?

A. Yes.

Q. What are they?

A. Programs for the pump procedure.

Q. Okay. By the way, would you typically share these with SoCalGas before an attempt?

A. Yes.

Q. All right. And did you prepare these two documents?

A. Yes.

Q. Okay. And can you explain to us what the plan was for this kill attempt?

A. So this one -- these are the same day?

Q. Well, I think the programs are dated the same day. If you look on the chart, the next kill was November 18.

Q. Do you see that?
A. Okay.
MR. KELLY: Where are you pointing to, Counsel?
MR. LOTTERMAN: I'm going to let him clarify.
MR. KELLY: Well, you're instructing the witness about documents. I'd like to know what you're instructing him.
MR. LOTTERMAN: He didn't see it, you don't see it.
MR. KELLY: I don't see it.
BY MR. LOTTERMAN:
Q. Go ahead, please.
A. So this one --
MR. KELLY: Just a second. If you're identifying things to the witness --
BY MR. LOTTERMAN:
Q. Mr. Walzel -- Mr. Walzel, what are the dates of Exhibit 248-5 and Exhibit 248-6?
A. November 15th.
Q. Okay. And can you explain to

the jury what the plan was for these particular well kills?

A. It was -- okay. Yes, the same, pump the calcium chloride, and then contingencies of pumping -- yeah. It was the well kill, so this would have been the one after the flow had stopped. So it was -- yeah. I mean, it's just an outline of the program we had to pump this job.

Q. Okay. And to be clear, was this the program for the well kill done on November 15 or for the well kill done on November 18? And if you would refer to your daily reports, I'd appreciate it.

(Document review by witness.)

A. The 15th and the 18th?

BY MR. LOTTERMAN:

Q. I'm asking you which programs these two documents were for, the kill on the 15th or the kill on the 18th?

A. Okay. So this one looks like it was for the 18th.

Q. Okay. So --

A. And a larger barite pill.

Q. Give me the document number,

sir.

A. Oh, I'm sorry.

Q. Verbally.

A. Okay. Ending in 387-1.

Q. All right. So you're referring to Exhibit 248-5, right?

A. Yes, I'm sorry, wrong number.

Q. That's fine. No, no. I realize this is your first deposition.

So is it your testimony that the program showed on Exhibit 248-5 was for the well kill that occurred on November 18, 2015?

A. Yeah, I believe it was.

Q. So tell us what happened during the well kill on November 18.

A. What number is this that we did?

Q. This would be number 3. We've gone through November 13, November 15, and now we're on November 18.

MR. KELLY: Objection. Object to counsel testifying.

BY MR. LOTTERMAN:

Q. I guess what I'm wondering is,

can you tell from the daily reports, sir?
A. That's what I'm looking at.
Q. Oh, I see. Okay. I gotcha. My apologies.
A. This looks like we started pumping, and soon after we started pumping, after 45 barrels, the gas increased at the surface.
(Document review by witness.)
A. It appears we didn't pump as much of the 9.4 because the winds were shifting, and then we ended up pumping 35 barrels of the 18-pound barite pill.
So just from reading this, it looks like the weather conditions changed.
BY MR. LOTTERMAN:
Q. Okay. Do you have any independent recollection of that attempt?
A. I don't.
Q. All right. Let's mark as 248-7 --
A. Oh, I don't know if you want me to keep talking about -- but this is the one where we moved the equipment up the hill, pumping equipment.

Q. Do you know why?
A. Yeah, because the -- the amount of gas that was coming -- and I guess maybe because of the crater, but it was safer to, you know, just get it out of the -- off location and put it up the hill.
MR. KELLY: Move to strike, nonresponsive.
BY MR. LOTTERMAN:
Q. Okay. You can put that one down, sir. I've now marked as Exhibit 248-7 a two-page document bearing Bates stamps SCG2125865 and 866.
(Whereupon, Deposition Exhibit 248-7, E-mail from Walzel to Lane, 11/23/2015, and Attachment; SCG02125865 - 2125866, was marked for identification.)
(Document review by witness.)
BY MR. LOTTERMAN:
Q. Do you recognize this document?
A. Yes.
Q. What is it?
A. The program for 11/24.
Q. Okay. And if you'll look at

the chart that we're using, the list of kills, there appears to be one on 11/24/2015? Do you see that?

I think you've lost that page. It's okay. You know what, I'll sort it out.

So tell me what you were trying to do on the program dated November 24, 2015.

A. Well, kill the well.

Q. All right.

A. So we started off with fresh water, trying to pump it up to 15 barrels a minute to slow the flow down. Started with the 9.4 calcium chloride -- sorry, I'm going backwards.

Q. Tell you what, why don't you take a moment to review it.

A. Okay. Yeah, it's been a long time.

Q. I understand. Take a moment to review it quietly and then maybe you can summarize for us what you did.

(Document review by witness.)

BY MR. LOTTERMAN:

Q. Let me know when you're ready.

A. Okay. So I kind of remember.

Yeah, so we had the -- pumped a thousand barrels of fresh water up to 15, and then we had to mix some polymer sweeps. That would have been the -- I believe that was the gelled pills or whatever for LC -- you know, lost circulation.

And then we pumped a thousand barrels of water, 500 barrels of the calcium chloride and then a barite pill.

Q. Okay. So a couple of questions for you. Number one, why use lost circulation material here?

A. It would have been to -- if we were losing any to the formation to, you know, try to heal that up while we were pumping.

Q. Okay. Second question, what was different about this program from the earlier ones we looked at, if anything?

A. Well, it looks like the LCM pills were different, the sweeps.

Q. Okay. Now let's turn to the kill itself. Let's look at November 25th -- I'm sorry, November 24, 2015. Do you have that daily report?

A. November 24th?
Q. Yes. All right. So do me a favor, take a moment to review that and then I have some questions for you.
(Document review by witness.)
A. Okay. This one --
BY MR. LOTTERMAN:
Q. Hold on. All right. So I didn't have -- there wasn't a question pending.
A. Oh, I'm sorry.
Q. I want to make sure we move along here as efficiently as possible.
So explain what Boots & Coots did in the kill attempt on November 24, 2015.
A. This one, we mixed -- we had the LCM pills. There was the GEO Zan polymer pill loaded with LCM and the barite pill ready to go. Pumped the water, and then I believe this was the fastest we pumped on this one, you know, and that was part of getting everybody away.
Got up to 13 barrels a minute, which was the pump pressure of 4,167, which was right around, you know, the limit of

the -- that we had set for max.
Q. And what happened?
A. With -- what happened to what?
Q. What happened to the kill attempt?
A. Well, we finished pumping and the pump pressure went to zero, but I remember on this one, you know, the -- how much mud did we pump?
(Document review by witness.)
A. Okay. From the report, I remember the well was moving around a lot (demonstrating), and I didn't know -- I don't have anything noted in here as far as pumping the brine, so, you know, due to the -- from what I recall doing from the movement of the well, you know, and how much it was moving, we -- looks like we cut the operations. Maybe we didn't do the pill because there was worry about, you know, losing the wellhead.
(Whereupon, Deposition Exhibit 248-8, "Well 25 Kill Program, 11-25-15," HAL000399, was marked for identification.)
--oOo--

BY MR. LOTTERMAN:

Q. All right. Let's mark as Exhibit 248-8 a one-page document bearing Bates stamp HAL_399.

Do you recognize this document?

A. Yes.

Q. What's its date?

A. 11/25/15.

Q. Okay. Is this another kill program?

A. Yes.

Q. Okay. And what was the plan here?

A. The plan was using the LCM again, and, you know, the barite pill and then following it with a junk shot. But on this -- I guess if you asked -- am I still answering the question, what happened?

Q. Yes, sir.

A. So this one, we actually pumped the LCM and the mud and -- okay. We started with -- we did the water, then we started pumping the mud. And looks like then we started pumping -- and after 20 barrels, slowed down to 2 barrels a minute and --

yeah.

And so the well was moving around a lot, so looks like we stopped the -- slowed the pumps down. And this is where it was moving so much that the flow line from the 7-inch tubing had broke and the nipple on the wellhead broke and the pump line on the 7-inch casing head broke. And then we had to build some extension handles, and me and James went and shut the valves on the tree.

Q. Okay. And in answering that last question, were you referring to the daily report?

A. Yes.

Q. Were you referring to the daily report dated November 25th, 2015?

A. Yes.

Q. Okay. Now, I notice, for example, if you stay with that report, I notice on the bottom of some of these reports you talk about relief well plans and presentations and the like.

A. Right.

Q. Were those entries that you made on this report?

A. Yes.
Q. Were they provided to you by someone else?
A. Well, I knew -- I knew John and them were working, you know, on that, so I put it on there.
Q. Okay. So, for example, if you'd turn back to November 18, 2015. November 18, 2015.
A. Yes.
Q. Is it your testimony on the bottom of that page that Boots & Coots Houston prepared preliminary relief well plots and submitted them to SoCalGas?
A. Yes. I believe that's when -- yes.
Q. Okay. And if you'd turn ahead to December 4, 2015.
A. December 4?
Q. Please.
A. Yes.
Q. You see an entry, "Plan to spud relief well tonight"?
A. Yes.
Q. Did you put that entry in?

A. Yes.

Q. Okay. Look at the next day, December 5th, 2015, bottom of the activities summary. Do you see where it says "Relief well drilled to plus or minus 360 feet"?

A. Yes.

Q. Did you put that entry in?

A. Yes.

Q. Are both those accurate?

A. It's my best recollection.

Q. So does this refresh your recollection as to whether the relief well spudding started before or after you left this project?

A. Okay. It must have started before.

Q. Okay. Well, I don't want your speculation. I want you to look at these two daily reports and tell me if you were on-site on December 4 and December 5.

A. I was on -- I was on the SS-25 site.

Q. Right.

A. And -- okay. So, yeah, they must have spudded, you know, reported that so

I put it in a report.

MR. KELLY: Are you speculating or is that your testimony?

THE WITNESS: No, I mean that's what I put in the report, so the best of my recollection, that would be accurate.

MR. KELLY: Thank you.

BY MR. LOTTERMAN:

Q. So we've gone through a kill on November 13, November 15, November 18, November 24 and November 25, and were you involved with all of them?

A. Yes.

Q. Okay. And once the kill was done on the last one, on November 25, 2015, where were you as far as what your next approach was for the next well kill?

A. After the one on the 25th?

Q. Yes, sir.

A. You know, at that time it was -- the best I recall, we were just, you know, monitoring the activities on the 25 pad at that time.

Q. So what did you do between that

kill on November 25, 2015, and your leaving on December 14, 2015?

A. Looks like we cleaned -- monitored LELs and began cleaning up location.

Q. Okay. Did a new team come in at that point?

A. It looks like on the 6th there was -- yeah. They were -- well, Richard -- Richard -- yes. Richard -- well, looks like Richard traveled there that day.

Q. Okay. Let's mark as Exhibit 248-9 a two-page document bearing Bates stamps SCG2125845 and 846.

(Whereupon, Deposition Exhibit 248-9, E-mail Chain ending with E-mail from Clayton to Walzel, 11/28/2015; SCG02125845 - 2125846, was marked for identification.)

(Document review by witness.)

BY MR. LOTTERMAN:

Q. Have you had a chance to review Exhibit 248-9?

A. Yes.

Q. Okay. And is this an e-mail,

at least the top one, that you sent to Mr. LaGrone and Mr. Kopecky and others on November 28, 2015?

A. I didn't send it. Danny Clayton did.

Q. Oh, I'm sorry. You're right. Is this something that Danny Clayton sent to you?

A. Yes.

Q. And you recall receiving it?

A. I don't -- yes.

Q. All right. Any reason to believe you didn't receive it?

A. I didn't know.

Q. Got it. Understood. I understand this has been a while ago.

So here's my question: I'm reading the top paragraph. It says: Wasn't copied but will take the liberty to reply. That has been my plan all along. No one outside of me and Danny would buy off on it. Was saving Flow Chek as last option as it is risky.

What's Flow Chek?

A. It's just a product to -- it's

a product you can -- you can stop flow with it.

Q. Why is it risky?

A. Well, it goes -- I guess -- I guess -- I don't know what he was meaning, but, you know, we talked about pumping a lot of things and, you know, as everybody involved didn't want to pump anything that, you know, might plug up the hole. You know, if it plugged up the hole up top or something, we might make another hole down below if there was a weak link, as best I can recall.

MR. KELLY: Move to strike, speculation.

BY MR. LOTTERMAN:

Q. Do you recall discussing the Flow Chek option with Danny Clayton?

A. I don't recall any conversations with him. We discussed a lot of different things to pump.

Q. Sure. That was my next question.

What other options did you consider during your involvement with these well kills?

A. I believe we discussed sodium silicate and, you know, even gunk, you know, like a gunk pill or something is the two that come to mind.

Q. Okay. And did you view using Flow Chek as risky?

A. I mean, if it, you know, it goes back to when we discussed it with everybody at SoCal, you know, that you can go with more aggressive pills. But like I said, if you plugged your tubing or plugged the annulus or stopped a hole somewhere, it possibly could have made it worse.

Q. Okay. Do you recall who didn't buy off on this idea?

A. I don't know. I don't know. I don't know what he's referring to in that.

Q. Okay. All right. Do you recall bringing in some outside experts, some technical advisors to assist on the well kill?

A. Again, timelines, I have a hard time. I remember them being involved, but I think -- I think they came after I left.

Q. Okay. Let me throw some names out and we'll see if it refreshes any recollection.
Do you recall working with a gentleman named Don Shackelford?
A. I don't recall him being there when I was there.
Q. Okay. Do you recall working with a gentleman named Jim Fox?
A. I don't.
Q. Okay. Do you recall working with a gentleman named Pete Slagel?
A. I don't. And like I said, I don't -- I don't remember seeing them out there. You know, if they were in the office or something, but I don't remember working with them.
Q. I just want your best recollection today.
Do you recall working with John Wright?
A. No.
Q. Do you recall any interface or interactions you had with scientists from the national labs?

A. No.
Q. What was the status of the well and the well kill on your final day at the Aliso Canyon facility?
MR. KELLY: Objection.
Objection, vague.
A. Yeah, I mean I recall, you know, it was getting -- as far as the stability (demonstrating), you know, we had to tie some guy-wires up on it, you know, but -- you know, it was missing a -- you know, we had to go get the pump iron and stuff out of the crater.
The last I remember it was, you know, the gas was coming out of the wellhead casing valve, casing head valve, you know, and it just had some, you know, movement to it (demonstrating).
BY MR. LOTTERMAN:
Q. And I believe you testified earlier that you had no specific involvement with the well kill efforts or the relief well after you left on December 13. Is that accurate?
A. Yes.

Q. Okay. But I also believe you said that from time to time, you read some of the DORs?
A. Correct.
Q. Were you consulted at all as to what program or approach to take on that last well kill that occurred on December 22?
A. I don't recall discussing it with anybody.
Q. Were you consulted at all with the decision to stop all top kills from that point forward?
A. No. I don't recall being in that discussion.
Q. Were you consulted at all with what sort of well kill to apply to the relief well if and when it intercepted SS-25?
A. No.
Q. During your time as senior well control specialist engineer at the Aliso Canyon job or project, did SoCalGas have a clear command structure?
A. Yes.
Q. Okay. Did they make themselves accessible to you?

A. Yes.
Q. Did they solicit your views?
A. Yes.
Q. Were you candid with them?
A. Yes.
Q. Did they hold daily meetings?
A. Yes.
Q. Did they provide the information you needed?
A. Yes.
Q. Did they bring in the local contractors and suppliers you needed?
A. Yes.
Q. Did they observe every well kill attempt?
A. Yes.
Q. Were they overall responsive to your needs?
A. Yes.
Q. When I say "your," I mean Boots & Coots.
A. Yes.
Q. Okay. Did SoCalGas allow Boots & Coots to execute the well kill plans it wanted to?

A. Yes. I mean, you know, every job was discussed amongst SoCal and pros and cons and, you know, came up with an agreed plan.

MR. LOTTERMAN: Let me, if you don't mind, consult with my colleagues a minute, off the record. I think I'm done.

THE VIDEOGRAPHER: Off the record, 3:41.

(Recess taken, 3:41 p.m. to 3:50 p.m.)

THE VIDEOGRAPHER: The time is 3:50 p.m., back on the record.

MR. LOTTERMAN: I have no further questions. Thank you, Mr. Walzel.

FURTHER EXAMINATION

BY MR. KELLY:

Q. I have just a few follow-up questions, sir. Mr. Lotterman asked you whether or not you had an opportunity to review the transcript of the testimony you gave in front of the Public Utilities Commission on August 8th, 2018.

Do you remember that?

A. Yes.

Q. And I didn't understand your answer. I caught something about you hadn't looked at it in three days or for three days or -- what did you...

A. Yeah. So up until recently, I haven't reviewed it or heard about it or...

Q. Okay. Did you review it recently?

A. Yes.

Q. When was that?

A. I skimmed through it this morning.

Q. Okay. When was -- did you see it before this morning?

A. No.

Q. Okay. Did you -- when you skimmed through it, did you see anything in it that was inaccurate?

MR. LOTTERMAN: Objection, vague.

A. I didn't read it closely, you know.

BY MR. KELLY:

Q. Okay. To whatever extent you did read it, did you see anything that was inaccurate?

MR. LOTTERMAN: Same objections.

A. At the time, nothing stood out to me.

BY MR. KELLY:

Q. Okay. I asked you this morning about several passages of testimony you gave.

A. Uh-huh.

Q. And I asked you if that was true and correct or if you gave that testimony, and you agreed with me on each occasion. Were you telling the truth then?

A. As far as --

Q. That the testimony you gave was accurate.

A. As to what?

Q. That it's the truth.

A. Oh, all of it?

Q. Yeah.

A. Oh, yes.

Q. What you said --

A. Right.

Q. -- was what was in the record and it was truthful and honest at the time you said it?

A. Yeah, to the best of my recollection.

Q. Because you knew at the time you gave that testimony you were under penalty of perjury, right?

A. Correct.

Q. Just like you are here today.

A. Correct.

Q. And you did your best to give truthful and accurate testimony, correct?

A. Yes.

Q. Okay. And you're not -- and you're not now attempting to disclaim or discredit any of the testimony that you gave on August 8th, 2018, are you?

A. No.

Q. Okay. You -- in response to a question about using water for one of the well kill attempts, you told Mr. Lotterman that you used water because it was less abrasive and would cause less disruption or damage to the well pipe? Do you recall that

testimony?
A. I believe that was referring to the brine.
Q. Okay. Brine.
A. Uh-huh.
Q. Were you worried about preserving the integrity of the well pipe when you were trying to kill the well?
A. Well, so the step process that we went through was to -- you know, we didn't want to make it worse.
Q. Okay. But you were focused on killing the well, right?
A. Correct.
Q. And at the time you were trying to kill the well, you had a high degree of suspicion that there was some sort of a rupture in the casing, the production casing, correct?
A. Right.
MR. LOTTERMAN: Objection, leading.
BY MR. KELLY:
Q. Correct?
A. Correct.

Q. Okay. And so your primary concern at that point was not to be nice to the well pipe but to kill the well. Is that correct?

MR. LOTTERMAN: Objection, leading.

A. Well, yeah, the casing we suspected had a hole, but that was probably more reference to the wellhead and tubing, you know.

BY MR. KELLY:

Q. And what was the calcium chloride? What is that?

A. Just, you know, it's a brine.

Q. Brine water?

A. Correct, weighted up with the calcium chloride.

Q. Did you use that in every one of the well kill attempts you were on?

A. We did.

Q. You didn't?

A. No, we did, that I was on, yes.

Q. Oh, okay. And at the weight of 9.4?

A. Yes.

Q. Okay. And that never changed?
A. No. We changed -- no. We changed other things.
Q. Okay. But that never changed?
A. No.
MR. KELLY: Okay. That's all I have. Thank you very much for your time.
MR. LOTTERMAN: You're done.
THE WITNESS: Okay. Thank you.
THE VIDEOGRAPHER: Off the record, 3:55.
(Deposition recessed at 3:55 p.m.)
REPORTER'S NOTE: The amount of examination time used in this respective volume of testimony is:
BY MR. KELLY: 02:24:48
BY MR. LOTTERMAN: 01:17:33
BY MR. ESBENSHADE: 0:59:34

--oOo--

CERTIFICATE

I, SUSAN PERRY MILLER, Registered Diplomate Reporter, Certified Realtime Reporter, Certified Court Reporter and Notary Public, do hereby certify that prior to the commencement of the examination, DANIEL WALZEL was duly sworn by me to testify to the truth, the whole truth and nothing but the truth;

That signature of the witness was reserved by the witness or other party before the conclusion of the deposition;

That the foregoing is a verbatim transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth, to the best of my ability.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.

____
Susan Perry Miller
CSR-TX, CCR-LA, CSR-CA-13648
Registered Diplomate Reporter
Certified Realtime Reporter
Certified Realtime Captioner
NCRA Realtime Systems Administrator
Notary Public, State of Texas
My Commission Expires 03/30/2020

Dated: 2nd day of March, 2020

ACKNOWLEDGMENT OF DEPONENT

I, DANIEL WALZEL, do hereby certify that I have read the foregoing pages and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

____

DANIEL WALZEL DATE

ERRATA

PAGE LINE CHANGE

REASON:

REASON:

REASON:

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REASON:

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LAWYER'S NOTES

PAGE LINE

Ex. III- 5

Kill Procedure

SS-25

Nov. 12, 2015

1. Ensure a minimum of 600 bbls of 9.4 ppg $CaCl_2$ is available to pump before perforating the tubing.
2. Make up 2-7/8" EZSV on e-line.
3. Stab lubricator. Test to 300/4,000 psi.
4. RIH with 2-7/8" EZSV.
5. Set EZSV at ± 8,390 ft.
6. Pull out of hole.
7. Perform positive test on EZSV to 500 psi above tubing pressure.
8. Observe 30 minutes.
9. Perform negative test on EZSV to 500 psi below tubing pressure.
10. Observe for 30 minutes.
11. RIH with tubing punch.
12. Pressure tubing to 2,000 psi.
13. Perforate tubing ± 8,391 – 8,385 ft. (16 Shots, 0.3" x 3/8" Charge, 4 shots/foot)
14. Pull out of hole into lubricator.
15. Close swab valve and upper maseter.
16. Pump 10 bbls 9.4 ppg Polymer Plug.
17. Start pumping 9.4 ppg $CaCl_2$ at 4 bpm. Observe pressures
18. Increase pump rate according to pump pressure. MAX PUMP PRESSURE – 4,000 psi.
    - Observe pump pressure when KWM leaves the perforations. Attempt to maintain constant pump pressure.
    - If unable to maintain constant pump pressure a decision will be made to open choke to allow KWM to flow up the 2-7/8" x 7" annulus.
19. Pump 303 bbls. Observe well.

Barite Pill
November 14, 2015

1. Mix 22 bbls of 18.0 ppg barite pill in batch mixer.

BARITE PLUG - WATER BASED SLURRY - 1 BARREL					
Slurry wt, ppg	**14.0**	**16.0**	**18.0**	**20.0**	**22.0**
Fresh Water, % bbl	.788	.713	.638	.563	.489
BAROID, ppb	310	420	530	641	750
QUICK-THIN, ppb	2	2	2	2	2
Caustic Soda, ppb	.5	.5	.5	.5	.5

2. Pump 50 bbls of 9.4 ppg $CaCl_2$ to ensure perforations are open.
3. Continue pumping170 bbls 9.4 ppg $CaCl_2$ at 8- 10 bpm.
4. Displace 22 bbls of 18.0 ppg barite pill.
5. Displace barite pill with 50 bbls of 9.4 $CaCl_2$ at 4 bpm
6. Shut down.
7. Wait on barite pill for 12 hours.

Barite Pill
November 15, 2015

1. Mix 22 bbls of 18.0 ppg barite pill in batch mixer.

BARITE PLUG - WATER BASED SLURRY - 1 BARREL					
Slurry wt, ppg	**14.0**	**16.0**	**18.0**	**20.0**	**22.0**
Fresh Water, % bbl	.788	.713	.638	.563	.489
BAROID, ppb	310	420	530	641	750
QUICK-THIN, ppb	2	2	2	2	2
Caustic Soda, ppb	.5	.5	.5	.5	.5

2. Pump 50 bbls of 9.4 ppg $CaCl_2$ to ensure perforations are open.
3. Continue pumping170 bbls (220 bbls total) 9.4 ppg $CaCl_2$ at 8 - 10 bpm.
4. Displace 22 bbls of 18.0 ppg barite pill.
5. Displace barite pill with 50 bbls of 9.4 $CaCl_2$ at 4 bpm
6. Shut down.
7. Wait on barite pill for 12 hours.
8. Monitor Pressures.

Contingencies

A. 125 bbls of 9.4 ppg $CaCl_2$ + 22 bbls of 18.0 ppg Barite Pill in the 7" x 2-7/8" annulus equates to 2,700 psi hydrostatic pressure.

B. If transfer pump goes down while transferring the barite pill to the pump truck immediately displace any pill in the tubing out of the perforations with 9.4 ppg $CaCl_2$.

C. The barite pill can be pumped at anytime. If surface conditions deteriorate a decision will be made to pump the barite pill even if 170 bbls of 9.4 ppg $CaCl_2$ has not been pumped.

WELL 25

Kill Program

11-24-15

1. Mix 50 bbl GEO Zan pill in 9.4 ppg $CaCl_2$
2. Mix 35 bbl 18.0 ppg Barite Pill.
3. Pump 50 bbls GEO Zan pill down tubing.
   - Prepare 50 bbls GEO Zan pill in 9.4 ppg $CaCl_2$.
4. Begin pumping fresh water at 12-15 bpm.
   - Monitor pump pressures. Pump at highest rate possible keeping pump pressure below 5,000 psi.
5. Pump 1,000 bbls of fresh water at 11-15 bpm.
6. Observe well.
7. If well is dead continue with **STEP 9.**
8. If well is not dead continue with **STEP 12.**
9. Pump 35 bbl 18.0 ppg Barite Pill down tubing.
10. Displace out of the perforations. (Estimated Displacement Volume – 55.5 bbls.)
11. If well is not dead begin pumping 9.4 ppg $CaCl_2$ at 8 – 10 BPM. Pump LCM pills as needed.
    - Monitor pump pressures. Pump at highest rate possible keeping pump pressure below 5,000 psi.
12. Pump 500 bbls CaCl2 at 8-10 bpm.
    - Monitor pump pressures. Pump at highest rate possible keeping pump pressure below 5,000 psi.
13. Pump 35 bbls 18.0 ppg barite pill down tubing.
14. Displace with 56 bbls $CaCl_2$

Contingencies

A. If while pumping unable to build pump pressure pump 15 bbl Polymer "sweeps".
B. Slow pump rates to try and build pump pressure.
C. If surface conditions deteriorate the barite pill can be pumped at any time.
D. Have transport trucks loaded with $CaCl_2$ to fill frac tank once pumping operations commence.
E. Have transport truck loaded with fresh water once pumping operations commence.

WELL 25

Kill Program

11-25-15

1. Mix 100 bbl GEO Zan pill with LCM in 9.4 ppg $CaCl_2$
2. Pump 50 bbls GEO Zan pill down tubing.
   - Prepare 50 bbls GEO Zan pill in 9.4 ppg $CaCl_2$.
3. Begin pumping fresh water down tubing at 12-15 bpm.
   - Monitor pump pressures. Pump at highest rate possible keeping pump pressure below 5,000 psi.
4. Pump a minimum 1,000 bbls of fresh water at 12-15 bpm.
5. Bleed off 7” casing.
6. Once 7” casing bleeds off pump 100 bbls GEO Zan pill down tubing.
7. Displace place GEO Zan pill will 56 bbls of 9.4 $CaCl_s$
8. Displace out of the perforations. (Estimated Displacement Volume – 56 bbls.)
9. Line up to pump down 7” casing.
10. Pump “Junk Shot” down 7” casing.
11. Fill 7” casing with fresh water.
12. Observe well.

Ex. III- 6

PURPOSE **A well kill may be required to perform workover operations, to stop gas loss due to a casing, wellhead, or shoe leak, or to perform wireline or wellhead work that cannot be performed otherwise.**

1. POLICY

1.1. The **Storage Field Engineer** is responsible for well kills. Responsibility may be delegated to certain other **Company** personnel in some circumstances. The person in charge, in accordance with pre-arranged kill plans immediately handles emergency kill jobs. The **Storage Operations Manager** and **Storage Engineering Manager** are informed of such incidents as soon as practical.

2. RESPONSIBILITIES & QUALIFICATIONS

2.1. FACILITIES OPERATIONS

2.1.1. Storage Field personnel operate all surface valves. On routine kills, notify the **Storage Field Engineer** at least two days prior to killing the well to allow time for piping modifications and to make arrangements to accept the displaced gas through the withdrawal system.

3. DEFINITIONS

3.1. Not Applicable

4. PROCEDURE

4.1. OVERVIEW

4.1.1. This document provides guidelines for routine, planned kill jobs. Emergency kills that are performed because of unplanned conditions that may result in uncontrolled discharge of gas require special procedures for each case. Special kill plans for emergency conditions are prepared by **Storage Engineering.**

4.1.2. Killing a well involves circulating a fluid into the well that provides a higher hydrostatic pressure than the reservoir gas pressure, effectively resulting in zero pressure at the surface.

4.2. FLUID

4.2.1. The fluid used to kill a well must be of sufficient density to provide a 200 to 500 psi overbalance over the reservoir pressure and viscous enough to prevent excessive fluid loss to the formation.

4.2.1.1. The fluid must be designed to minimize formation damage. This requires low solids content to prevent pore plugging.

4.2.1.2. The fluid must have high enough salinity to prevent swelling and dispersion of formation clays.

4.2.1.3. The best fluid to use is formation water produced from the zone to be killed if it has high enough density to provide the 200 to 500 psi overbalance. When a higher density is required, use KCI or CaCl2 water to the needed density. The KCI or CaCl2 will generally prevent clay swelling or dispersion even at low concentrations. See **STANDARD 224.05**, *Blowout Prevention Equipment Configuration, Installation, Testing and Operation*, for the method of calculating the required fluid density.

4.2.1.4. A viscous pill may sometimes be used when killing a well to prevent excessive fluid loss to the formation. However, at Aliso Canyon and Honor Rancho when the reservoir is at high inventory, a viscous pill may not be necessary. Adequate viscosity for a pill can be obtained by mixing two pounds of HEC polymer per barrel of fluid. The remainder of the kill fluid should be viscosified by adding 1.0 pounds of HEC per barrel of fluid. The kill fluid should also contain biocide, corrosion inhibitor, oxygen scavenger and foam retardant in amounts recommended by the Storage Engineering Department.

4.2.1.5. Do not use a HEC viscous pill at the Playa Del Rey field because stubborn emulsion problems will develop. Kill fluid at Playa Del Rey should also contain 3% Misol or A-Sol G15 by volume to minimize emulsion formation. Misol is currently available from MTS Stimulation Services and is the preferred chemical. A-Sol G15 is a Welchem product available from BJ Services.

4.3. EQUIPMENT (Figure 1)

4.3.1. Pump

4.3.1.1. The pump used to kill the well must be capable of pumping against the shut-in wellhead pressure plus 500 psi. It should be capable of at least a three-barrel-per minute rate at the highest wellhead pressure. The pump should be equipped with a calibrated pressure recorder.

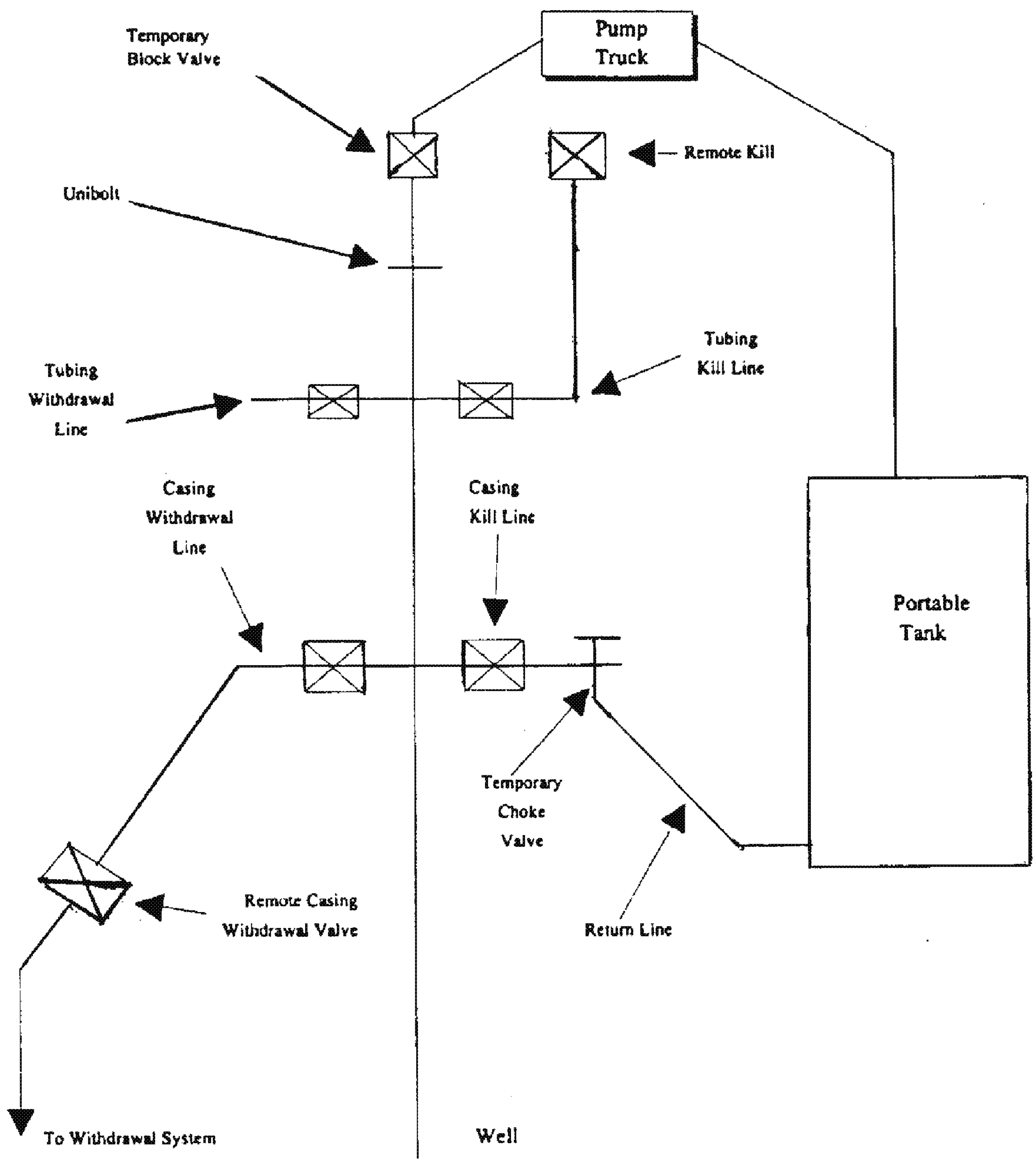

FIGURE 1
TYPICAL PIPING SCHEMATIC

4.3.2. Lines and Valves

4.3.2.1. When a pump truck is used to kill the well, all lines from the pump truck to the wellhead must be at least 5,000 psi pressure rating. Install a valve of at least 5,000 psi pressure rating between the line from the pump truck and the wellhead or remote kill valve.

4.3.2.2. The well may also be killed through the Company kill line.

4.3.2.3. Install choke valve of at least 5,000 psi pressure rating on the casing kill side or other suitable location that will allow casing pressure to be bled down to atmosphere without having the low pressure sensor prevent flow by closing the surface safety valve.

4.3.2.4. A return line of at least 1,000 psi pressure rating is installed between the choke valve and the tank used to hold fluid returns.

4.3.3. All components between the wellhead and the choke valve must have a pressure rating that is equivalent to or exceeds that of the wellhead.

4.4. PROCEDURES

4.4.1. The preparations and kill operations are carried out in accordance with **STANDARD 224.045**, *Routine Well Kills*.

5. RECORDS

5.1. Record the pressure during a kill operation on a pressure chart.

5.1.1. Measure and record the total volume of fluid used.

5.1.2. The volume of gas vented to atmosphere is estimated and reported to the Storage Field Engineer.

5.2. If the well is killed by a **Rig Supervisor**, attach these records to the Daily Activity Report. If the well is killed by someone other than a **Rig Supervisor**, retain these records in the field well file.

NOTE: Do not alter or add any content from this page down; the following content is automatically generated.
Brief: Document was fully reviewed and remains valid with no changes.

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Ex. III- 7

PURPOSE: Provide direction in killing a gas storage well in a routine situation.

1. PLANNING

1.1. Prior to killing the well, review the well file and discuss kill with the **Storage Field Engineer** to ensure that a means of pressure communication exists between the tubing and tubing/casing annulus. Schedule any required wireline work prior to well killing operations.

1.2. Contact and inform the proper **Station personnel** of the scheduled time for the kill. This will allow the **Station personnel** to schedule any necessary piping modifications and to make arrangements for the displaced gas.

1.3. If necessary, make arrangements to have a portable tank moved to the well site, Allow sufficient time to place the tank and install return line prior to the kill.

1.4. Make arrangements with a drilling fluids company and vacuum truck service to have the kill fluid mixed and delivered prior to the kill.

1.5. Make arrangements to have portable radios available for communication when the valve that is used to control gas flow from the well is more than 100 feet from the wellhead.

2. PREPARATION (Guideline)

2.1. Portable Tank Installation

Move a portable liquids storage tank to the well site. If a workover rig will be moved onto the well after it is killed, consult with **drilling representatives** for proper placement of tank.

2.2. Piping Modifications

If piping modifications are required:

2.2.1. Install choke valve and return line at remote casing kill valve and bleed gas pressure off casing according to region job instructions. The casing kill lateral must remain in place until well is killed.

2.2.2. Check the manufacturer's instructions to ensure correct installation of the choke valve. On some wells the choke valve can be installed on the casing withdrawal line, but flow through the casing withdrawal line must not be restricted. There must be a valve in the withdrawal line downstream from the choke that can be closed to isolate the wellhead.

2.2.3. Run a two-inch return line from the choke valve to the portable tank.

2.2.4. Install gauges to measure the tubing and casing wellhead pressures.

2.2.5. Grease all valves that will be affected by the kill operation. Be sure they operate properly and do not leak.

2.3. Kill Fluid

2.3.1. The kill fluid is mixed and hauled to the well site prior to killing the well. The quantity of kill fluid delivered to the well must be at least 120% of the well volume.

2.3.2. The kill fluid should be filtered whenever possible.

2.3.3. The viscous pill is delivered to the site just before the kill begins. The pill volume must be at least the volume of the well below the circulating depth plus ten barrels, but not more than the volume of the well below the circulating depth plus tubing volume plus ten barrels.

3. WELL KILL USING CONSTANT TUBING PRESSURE METHOD

3.1. Where a pump truck is used, rig up the line from pump discharge to the wellhead with a block valve that is convenient to operate. The line can be rigged up to either the Unibolt or the tubing kill valve.

3.1.1. Calibrate zero point on pressure recorder.

3.1.2. Test pumps and lines to 500 psi above wellhead pressure against the temporary block valve for 15 minutes.

3.1.3. Calibrate pressure recorder with pressure gauge at test pressure.

3.1.4. Bleed off pressure and re-calibrate zero point on pressure recorder.

3.2. Record original shut in casing pressure (OSICP). Connect vacuum truck containing viscous pill to pump intake. With casing shut in, pump viscous pill at two barrels per minute.

3.2.1. After viscous pill is pumped, shut down the pump.

3.2.2. Disconnect pump intake line from vacuum truck and connect to tank containing kill fluid.

3.2.3. If the viscous pill is not of sufficient volume to fill the volume of the well below the circulating depth and the tubing volume, pump enough kill fluid to fill the tubing to the surface.

3.2.4. Close the master valve. Leave all valves closed for 45 minutes to one hour, or as determined by the **Storage Field Engineer**, to allow the viscous pill to fill pore space adjacent to the wellbore.

3.3. Open master valve and pump kill fluid at a constant rate. Allow casing pressure to increase to 50-75 psi above OSICP. Open the remote casing withdrawal valve just enough to maintain this pressure. If casing pressure does not start to increase after 20 barrels of kill fluid is pumped, stop pumping and shut-in well for 30 - 45 minutes to allow the formation to "heal," then attempt it again.

3.4. During the first portion of the kill with casing pressure 50 - 75 psi above OSICP, tubing pressure should be zero.

3.4.1. As the fluid level in the annulus increases, tubing pressure will increase.

3.4.2. When tubing pressure reaches a pressure P as defined below, disregard casing pressure and manipulate the remote casing withdrawal valve to maintain tubing pressure at P.

3.4.3. P is calculated using Equation 1. P represents the pressure drop in the tubing assuming an average value for density and viscosity of the fluid and friction factor in the tubing.

$$P = \frac{L * Q^2}{2 * D^5} \qquad \text{Equation 1}$$

where:

P = tubing pressure (psig)

L = measured depth of tubing (feet)

D = internal diameter of tubing (inches)

Q = pump rate (barrels per minute)

3.5. Continue pumping at a constant rate while maintaining tubing pressure at P until casing pressure is down to withdrawal line pressure. Record total volume pumped and casing pressure at this time.

3.5.1. Close the operating withdrawal valve and flow gas through the return line to the portable tank, still maintaining tubing pressure at P by manipulating the temporary choke valve. It may be necessary to reduce the pump rate to have a tolerable flow rate at the portable tank.

3.5.2. When fluid returns are obtained, record the total volume pumped and circulate at least 10% of the well volume to ensure no gas cut mud is present.

3.6. If the fluid returns are gas cut, continue circulating but keep the flow choked back so that tubing pressure does not drop below P. Where returns are going into the same tank that the pump intake is pulling from, monitor the fluid before it reaches the pump intake. Stop pumping when gas cut fluid reaches the pump intake and shut the well in.

3.6.1. When it is not urgent that the well be completely dead, wait until the gas comes out of solution from the fluid in the tank. This may take a day or more depending on the volume and viscosity of the fluid.

3.6.2. If the well must be dead as soon as possible, it will be necessary to bring fresh fluid to continue circulating.

3.6.3. In either case, when pumping commences again, there will be a gas bubble in the annulus. Do not blow this gas down quickly, as this will allow more gas entry from the formation. Choke the flow while pumping to maintain tubing pressure at P.

3.7. It is necessary to estimate the quantity of gas vented to the atmosphere. If casing pressure is between 400 psi and 800 psi when venting to the atmosphere begins, use Equation 2 to estimate the quantity of gas. If casing pressure is outside this range, the Storage Field Engineer should be asked to determine the quantity of gas.

$$V = \frac{Pc(V_2 - V_1)}{2800} \qquad \text{Equation 2}$$

where:

V = volume of gas vented to atmosphere (MCF at standard conditions)

Pc = casing pressure at the moment when venting to the atmosphere begins (psi)

V_2 = total volume of fluid pumped at the moment fluid returns are obtained, including volume of pill (barrels)

V_1 = total volume of fluid pumped at the moment venting to the atmosphere begins, including pill (barrels)

Report the volume of gas vented to the atmosphere to appropriate **Station personnel**.

4. WELL KILL USING SCHEDULE METHOD

4.1. The schedule method assumes that as the liquid is pumped down the tubing or casing an equivalent head of fluid is being displaced out the other side and a constant bottom hole pressure is maintained.

4.2. The schedule method does not consider any fluid lost to the formation and does not give any direct surface indication of bottom hole pressure. Accurate volume measurement of the fluid being pumped is essential.

4.3. Where a pump truck is used, rig up the line from pump discharge to the wellhead with a block valve conveniently located for ease of operation. The line can be rigged up to either the Unibolt, tubing kill valve, or casing kill valve dependent upon the type of kill (tubing, casing).

4.3.1. Calibrate zero point on pressure recorder.

4.3.2. Test pumps and lines to 500 psi above wellhead pressure against the temporary block valve for 15 minutes.

4.3.3. Calibrate pressure recorder with pressure gauge at test pressure.

4.3.4. Bleed off pressure and re-calibrate zero point on pressure recorder.

4.4. Record original shut-in casing pressure (OSICP). Connect vacuum truck containing viscous pill to pump intake. With casing shut-in, pump viscous pill at two barrels per minute.

4.4.1. If the viscous pill volume is less than the volume to fill the well below the circulating depth and the tubing, pump enough kill fluid to fill the tubing to the surface.

4.4.2. Close the master valve. Leave all valves closed for 45 minutes to one hour, or as determined by the **Storage Field Engineer**, to allow the viscous pill to fill pore space adjacent to the wellbore.

4.5. Kill Schedule Calculation Procedures

4.5.1. Determine total volume to fill tubing and casing above circulating depth.

4.5.2. Determine wellhead pressure assuming tubing and casing both are filled with gas above the pill (assume top of pill is liner top).

4.5.3. Prepare a kill schedule following the example in Table A.

4.5.4. Open master valve and pump kill fluid at a constant rate of approximately 3 bpm. Allow casing/tubing pressure, whichever is used for returns, to increase approximately 50 psi above OSIP; or, after 20 barrels of kill fluid have been pumped, open the return line valve just enough to allow a pressure decrease equivalent to the volume of liquids pumped (see kill schedule). If return line pressure does not increase after pumping 20 barrels of kill fluid, stop pumping and close all valves for 30 minutes to allow the formation to "heal," then repeat the procedure. Pressure on the pump side will fall to zero shortly after pumping begins (a volume of 30 - 40 barrels) and remain at zero until returns arrive.

4.6. Continue pumping until return line pressure is down to withdrawal line pressure. Record total volume pumped and return line pressure at this time.

4.6.1. Close the operating withdrawal valve and flow gas through the return line to the portable tank. It may be necessary to reduce the pump rate to have a tolerable flow rate at the portable tank.

4.6.2. When fluid returns are obtained, record the total volume pumped and continue circulating at least 10% of the well volume to ensure no gas cut mud is present.

4.7. If the fluid returns are gas cut, continue circulating until fluid is gas free. Where returns are going into the same tank that the pump intake is pulling from, monitor the fluid before it reaches the pump intake. Stop pumping when gas cut fluid reaches the pump intake and close the well in.

4.7.1. When it is not urgent that the well be completely dead, wait until the gas comes out of solution from the fluid in the tank. This may take a day or more depending on the volume and viscosity of the fluid.

4.7.2. If the well must be dead as soon as possible, it will be necessary to bring fresh fluid to continue circulating.

4.7.3. In either case, when pumping commences again, there will be a gas bubble in the annulus. Do not blow this gas down quickly, as this will allow more gas entry from the formation. Choke the flow while pumping to maintain tubing pressure at P.

4.8. It is necessary to estimate the quantity of gas vented to the atmosphere. If casing pressure is between 400 psi and 800 psi when venting to the atmosphere begins, use Equation 2 to estimate the quantity of gas. If casing pressure is outside this range, the **Storage Field Engineer** should determine the quantity of gas.

$$V = \frac{Pc(V_2 - V_1)}{2800} \qquad \text{Equation 2}$$

where:

V = volume of gas vented to atmosphere (MCF at standard conditions)

Pc = casing pressure at the moment when venting to the atmosphere begins (psi)

V_2 = total volume of fluid pumped at the moment fluid returns are obtained, including volume of pill (barrels)

V_1 = total volume of fluid pumped at the moment venting to the atmosphere begins, including pill (barrels)

Report the volume of gas vented to the atmosphere to the Station.

TABLE A
Example Well Kill Schedule

SIWHP = 1500 PSIG

Total Well Capacity = 200 Bbls.

$$\frac{(1500+50)\text{psi}}{(200-20)\text{bbl}} = 8.61 \text{ psi/bbl}$$

Therefore, bleed off approximately 8.61 psi of pressure for each barrel of kill fluid pumped. The returns should arrive at surface when wellhead pressure reads zero (psig).

SIWHP (PSIG)	**LIQUID PUMPED * (BBLS)**
1500	0
1500	20
1378	40
1205	60
1034	80
862	100
690	120
518	140
346	160
174	180
0	200

*Pumping at approximately 3 bbl/min

5. Circulating Fluid with a Wireline Plug Installed in the Tubing (No-Go) Profile Nipple

5.1. Install gauges on the tubing and casing. Set a wireline plug in the profile nipple below the sliding sleeve. Open the sliding sleeve. Reduce the tubing pressure by 200 psi. If the casing pressure also falls, the sleeve is verified open and communication between tubing and casing has been established.

5.2. Calculate the well volume above the wireline plug and packer and record the equalized wellhead pressure.

5.3. Block both surface safety valves open and remove the high pressure pilot, low pressure pilot and sacrificial probes etc. and lateral piping. Install temporary piping on either the kill or injection lateral and connect it to a tubing and a casing wellhead valve. Install temporary piping on the opposite tubing and casing wellhead valves and route them to the inlet of a portable separator. Connect the "Gas Out" of the separator through an adjustable choke to the withdrawal piping and the "Liquid Out" of the separator to an empty fluid tank.

5.4. The goal of this method is to replace gas pressure with hydrostatic head. It is important to keep differential pressure across the wireline plug constant while circulating gas out of the well. This is done by dividing the wellhead pressure (psi) and calculated fluid volume by 20, then pump fluid and reduce gas pressure in equal increments. Gas is flowed from the casing through the separator to the withdrawal line while fluid is pumped into the tubing until fluid returns on the casing is achieved.

Refer to the example below:

Pressure	Volume
2250	50
2137.5	75
2025	100
1912.5	125
1800	150
1687.5	175
1575	200
1462.5	225
1350	250
1237.5	275
1125	300
1012.5	325
900	350
787.5	375

675	400
562.5	425
450	450
337.5	475
225	500

NOTE: Do not alter or add any content from this page down; the following content is automatically generated.
Brief: Section 5 was added describing circulation of fluid above a wireline plug installed in the tubing.

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Ex. III- 8

SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF LOS ANGELES, CENTRAL DISTRICT

COORDINATION PROCEEDING SPECIAL TITLE (Rule 3.550)	JCCP No. 4861
SOUTHERN CALIFORNIA GAS LEAK CASES	Hon. Carolyn B. Kuhl Department SS12
THIS DOCUMENT RELATES TO: All Actions.	

Friday, November 22, 2019

CONFIDENTIAL
SUBJECT TO FURTHER CONFIDENTIALITY REVIEW

Videotaped Deposition of RAVI M. KRISHNAMURTHY, Ph.D., VOLUME 3, held at Bradley Arant Boult Cummings LLP, 600 Travis, Suite 4800, Houston, Texas, commencing at 9:03 a.m. on the above date, before Susan Perry Miller, Registered Diplomate Reporter, Certified Realtime Reporter, Certified Realtime Captioner, and Notary Public.

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Golkow Litigation Services

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INDEX OF EXHIBITS

INDEX OF EXHIBITS, Continued

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(Friday, November 22, 2019, 9:03 a.m.)

THE VIDEOGRAPHER: Okay. We are back on the record. It is Friday, November 22nd, 2019. The time on the monitor is 9:03 a.m., and this is the beginning of Media 13.

P R O C E E D I N G S

RAVI M. KRISHNAMURTHY, Ph.D.,

having previously sworn or affirmed to tell the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

EXAMINATION

BY MR. LOTTERMAN:

Q. Good morning, Mr. Krishnamurthy. My name is Tom Lotterman. I believe we met in the hall.

A. Yes.

Q. I represent the defendants in this case, and I believe you have met my colleagues as well.

A. Yes.

Q. We've added someone today, Mr. Glenn La Fevers down at the end.

A. Yes.

Q. So these are all SoCalGas either counsel or employees.
I'm going to be asking you questions today. I wanted to remind you that you're still under oath.
A. Yes.
Q. And I would ask that you employ the same rules for me that you used for Mr. Petosa and Mr. Leslie, okay?
A. Yes.
Q. Also, I'm going to rely on your counsel to tell us when to take breaks because often when you're asking questions, time can escape, all right?
A. Yes.
Q. Now, I understand we have two administrative matters to deal with before I begin. You want to start with your clarifications first?
A. Yes. The clarifications are not administrative matters.
Q. Okay.
A. There was an issue yesterday about SS-25A USIT log from August -- or 2010, I don't remember the month, it's sometime in

2010. So yesterday when I was shown that, I didn't recognize it right away. I didn't recognize the summary, and there was a reason for that. We did know the log existed but we had downloaded the log from the DOGGR website. It may not have been part of the well file as the question was asked around.

So -- and I would direct folks to supplementary report 4A and the title is Analysis of Aliso Canyon Wells with Casing Failures. And if you'll look at that, look at that particular report, on page 47, you will see a reference in August 2010 to "ran USIT log." So we have referenced it in the report also.

And the reason we did not identify it as having shallow corrosion was it did not have shallow corrosion; it had internal corrosion. We were looking only at shallow oily corrosion. That was analogous to SS-25. So that is the reason it was not in that shallow corrosion map.

Q. Let me pause you right there.

MR. LOTTERMAN: Mr. Petosa, do you have an exhibit number for him?

MR. PETOSA: Yeah, it's Exhibit 142-28.

MR. LOTTERMAN: 142-20?

MS. FRAZIER: 8.

MR. PETOSA: 28.

MR. LOTTERMAN: 28. All right. Thank you.

A. I don't have it in front of me.

BY MR. LOTTERMAN:

Q. Thank you, Doctor. Next clarification?

A. So that is item 1. Then the next one was we discussed yesterday multiple times about annular safety systems or subsurface safety valves, and there was a terminology mix-up and I want to clarify that.

What we reference in the industry as subsurface safety valve is a shallow safety valve, but it's a tubing set subsurface safety valve. And what you need -- what you needed pre-2015 incident is what we call annular safety system. So you need to isolate the flow in the casing and the tubing.

So those kind of safety systems, as far as we could find in the industry, was not readily available. So that is the reason for our conclusion in the root cause -- or not including it in the root cause.

So I just wanted to clarify those two. And those were details I wanted to make sure I brought out.

Q. Thank you.

A. And going back to SS-25A, one other point I forgot, we reran a USIT log in June-July of 2017 and we relied on that more than the August one, even though we looked at it, we compared and correlated the depths. There is an August 2017 log we ran in the 8-5/8, 6-5/8, same -- same, and that's what we used.

MR. PETOSA: For well 25A?

THE WITNESS: 25A, yes.

MR. PETOSA: I know we ran out of time yesterday. But in light of this new information, I have one or two questions just about the exhibit that he just mentioned.

MR. LOTTERMAN: Why don't we take care of it right now.

MR. PETOSA: Yeah.

FURTHER EXAMINATION

BY MR. PETOSA:

Q. With respect to Exhibit 142-28, it's the August 18th, 2010 USIT log report dated February 5th, 2015.

So I understand this, is it Blade's -- did Blade review this report and disagree with the conclusions of the Schlumberger representative, the log analyst Matt Beken, relative to the findings that there are some areas of external corrosion noted in the remarks track on the log and signs of emerging external corrosion?

A. No, we don't disagree with that. What we disagree with is that shallow external corrosion -- shallow external corrosion is what I'm talking about. If you remember, we had an approximate depth of 1500 feet and shallower, and that was our focus, okay.

And so 25A -- because we were looking for analogous corrosion in 25A and

25B. We did not find it. Partially because they had stage collars there, the cementing was much superior in 25A and 25B compared to 25. So a lot of other reasons. So that is the reason.

Q. Okay.

A. And that log -- so what we normally do, just to clarify. What Schlumberger does is gives you a summary. We take the LAS file and the actual log and analyze it ourselves with Schlumberger's help because of interpretation difference, so...

Q. So did Blade contact Schlumberger to assist in the interpretation of this log that was run, the USIT log run on August 18th of 2010 for well SS-25A?

A. Again, I can't be that specific. We worked with Schlumberger on all their logging, so I'm sure our team worked with theirs as we went through various logs. So we had run numerous Schlumberger logs. SLB logs were the highest number in 25, 25A and some of the other wells. So we worked with them extensively.

Q. Okay. And then I had a

follow-up question for you from a document that was marked yesterday, Dr. Krishnamurthy. It's Exhibit 142-86.

A. I don't have it. Is it here?

MS. FRAZIER: I have it. Is it okay if I --

MR. PETOSA: Yes, that's fine.

BY MR. PETOSA:

Q. It's the February 1984 interoffice correspondence regarding wells SS-25 and IW-77, which is SS-25B. We had discussed it briefly yesterday. You said you couldn't recall if that was something that Blade was provided in light of the documents provided to Blade regarding the field.

I don't know if you had an opportunity last night to speak with your colleagues or to review the files to see if this was received. I wanted to follow up and ask about that.

A. No, I did not have a chance. As far as I know we didn't receive it, but I can't confirm that at this point until I check it. It took us, a team of three, to figure out the 25A question for me. So I just addressed that. I wanted to clarify that, so I have not.

MR. PETOSA: Okay. No further questions on that. I appreciate it. Thank you.

MR. LOTTERMAN: Mr. Leslie?

MR. LESLIE: Nothing.

MR. KELLY: Can I ask you to let me ask the witness one question so I can clear up something?

EXAMINATION

BY MR. KELLY:

Q. I just want to know, sir, are you saying that Blade received a copy of Schlumberger's 2015 analysis of the 2010 USIT on SS-25A?

A. We received it, we believe, our best estimate based on last night's review of information, we downloaded it from the DOGGR website. Every log that is run in Aliso at some point gets on the DOGGR website.

So we had two or three sources of this tool data. We received -- that's how we got it.

Q. So you did have possession of

it --
A. Yes.
Q. -- before you issued your report?
A. Yes. Yes.
Q. You had the report or the data? That's what I'm --
A. We definitely had the data, okay? My assumption is we had the report, but I'll have to check that. For me, the more important thing is the data. That's what we go by. Even if there is a report by somebody else, we would do our own analysis on a situation like this.
Q. I just wanted to clarify. You know you had the data --
A. Yes.
Q. -- but you don't know if you actually received a copy from any source of the 2015 Schlumberger report on the data?
A. On the August 2010, I can't confirm that.
Q. Okay. Thank you.
A. I can't confirm that.

--oOo--

FURTHER EXAMINATION

BY MR. LESLIE:

Q. I do have one question. Do you know when that log was uploaded to the DOGGR website?

A. I don't know. We struggled last night to figure that out because it's a moving target, DOGGR website. Things go up, things go down. And so we used to get a lot of data from DOGGR website; the SIMP data, for example, we got it from the DOGGR website.

Because it was a long process to put a data request, get data. Quite often it's faster if we can get the data directly, we would get it.

MR. LESLIE: That's it.

MR. LOTTERMAN: Last call?

MR. KELLY: Good. Thank you.

CONTINUED EXAMINATION

BY MR. LOTTERMAN:

Q. Dr. Krishnamurthy, I've done a couple of things to try to expedite today's deposition. As you can see on the left there's a couple of suitcases and stuff so

people want to get out of here.
A. Yes.
Q. I'm going to try to accommodate that as best I can. First thing I did last night is I spent some time going through my outline to remove some of the questions and areas that Mr. Petosa and Mr. Leslie covered, okay?
The second thing I did was I went through the exhibits used from days 1 and 2 and I divided it into exhibits that I want to talk about and exhibits that I don't plan to talk about.
A. Okay.
Q. That first category is that pile on your left.
A. Okay.
Q. Directly on your left.
A. Oh, this one. Oh, okay.
Q. Right there, under your cell phone. You can leave it right there for now.
A. Okay.
Q. And the pile I don't plan to use today is on the chair to your left.
Do you see that?

A. Yes.
Q. Now, you are free to look at anything you want, but I just thought maybe if we cut down on the volume of paper you've got to rifle through, we may save some time. Okay?
A. Sure.
Q. All right. During the first two days, did you have to refer to your root cause analysis main report from time to time to answer some of the questions that Mr. Leslie and Petosa posed?
A. Yes, absolutely I had to, yeah. I have to.
Q. And in fact, you brought a copy with you on days 1 and 2?
A. Yes.
Q. Did you bring a copy today?
A. Yes.
Q. Okay. Were you shown pictures on days 1 and 2 that made their way into the main report or supplemental reports?
A. Yes.
Q. Were you shown some figures and tables from days 1 and 2 that made it into

one or more of your reports?
A. Yes.
Q. In fact, do you remember an exhibit Mr. Leslie showed you which appeared to have a compilation of figures and tables which all ended up in your main report?
A. Yes. There was -- again, I can't recall from day one, but there was a package with a bunch of figure numbers in there.
Q. It should be on the left there, 142-27. I'd just like you to confirm that for me.
A. Give me a second.
Q. So Exhibit 142-27.
A. 27, 26... yeah. It does say from the main report, so yes.
Q. Okay. And is it fair and accurate to say that during days 1 and 2 that many of the pictures and much of the data you were shown was from either the RCA itself or from the project?
MR. LESLIE: Objection, leading.
A. Yes. All of those photographs

were taken as part of our RCA work. We didn't use all of them because some of the pictures made more -- were more relevant, so yes.

BY MR. LOTTERMAN:

Q. Okay. Let's talk about Blade Energy Partners a minute. I'm going to refer to them as Blade today. I believe others have as well. Are you okay with that?

A. Yes. Yes, yes, absolutely.

Q. All right. As of September 2015, just before you became involved with the Aliso Canyon project, can you give me a sense as to the number of full-time employees?

A. September 2015?

Q. Uh-huh. Just rough.

A. I don't -- it's approximately 80, plus or minus.

Q. And how many of those were licensed engineers?

A. Hmm, I don't have an exact number. I would say at least 15.

Q. Okay. And how many of those engineers were licensed to -- or registered in California?

A. California, we only had one.

Q. Okay. As of September 2015, did Blade have any expertise in converting depleted oilfields to natural gas storage fields?

A. That specific expertise, we didn't -- we had not done that. However, we have knowledge of depleted oilfields, we have knowledge of gas fields, so the actual task of it is, from a technical point of view and an operational point of view, not such a big leap from things we have done in the past.

Q. Again, same time period. Did Blade have any expertise in designing underground storage facilities?

MR. LESLIE: Vague and ambiguous.

A. By -- can you repeat? Are you talking about underground storage wells or what do you mean by --

BY MR. LOTTERMAN:

Q. Let's start with wells.

A. We have done a lot of land and depleted oil wells, but specifically underground storage wells, we have not. We have not designed. But there are a lot of wells in the oil patch which are similar so it is not really --

Q. What about any expertise or experience in actually operating or maintaining an underground storage facility?

A. Not specifically underground storage but a lot of upstream wells, yes.

Q. What about any expertise or experience creating or developing operating standards for underground storage facilities?

A. No. We have done that for conventional upstream and high-pressure gas wells.

Q. What about advising underground storage facility operators on regulatory compliance?

MS. FRAZIER: So I'm just going to object to this whole line of questioning as outside the scope of the corporate rep because the corporate rep topic is the main report. But if you want to ask him if he knows individually, that's fine.

MR. LESLIE: Join.

BY MR. LOTTERMAN:

Q. I'll accept that limitation. I'm asking what you know. So my question, let me repeat it for you.

A. Yes.

Q. I'm wondering, as of September 2015, if Blade had any expertise and/or experience in advising underground storage facility operators on regulatory compliance.

A. No. We had not done that.

Q. What about designing well kills?

A. We have done that.

MS. FRAZIER: It's a running objection.

MR. LOTTERMAN: Standing objection.

MS. FRAZIER: Okay.

A. Yes, we have done -- designed well kills. We use it for well control operations. We also train folks in well control.

BY MR. LOTTERMAN:

Q. What about modeling well kills?

A. We have done modeling well kills and well control operations prior to that.

Q. What about performing well kills?

A. We have a lot of folks internally who have been involved in well kills.

Q. What about designing relief wells?

A. We have been involved in designing relief wells.

Q. What about modeling relief wells?

A. Yes, we have been involved in modeling relief wells.

Q. What about drilling relief wells?

A. We have been involved in drilling relief wells.

Q. Okay. Let's turn to your experience. What experience did you have as of September 2015 with underground storage facilities generally?

A. Other than being aware of how

they are done, no, not direct. Same.

Q. What about any experience with wells that both withdraw and inject?

A. We have quite a bit of experience with that.

Q. I was asking about you personally.

A. Yeah, me personally.

Q. Okay.

A. Thermal wells, there's lots of wells where you inject steam, withdraw oil. So there's a lot of cyclic operations. Then there are geothermal wells that you have different --

THE REPORTER: Can you please slow down.

THE WITNESS: Sorry. I thought I was slower.

A. So multiple, multiple experiences with thermal wells, geothermal wells, cyclic operations are common. Sorry. Cyclic operations are quite common in oil patch, so extensive experience.

BY MR. LOTTERMAN:

Q. Okay. What about dual-flow

wells? And what I mean by that is flowing through either the tubing or the annulus or both.
A. Yes, we have, because a lot of the frac wells do that. They flow through the casing. So flowing through the casing is not uncommon for various land wells in the U.S.
Q. Okay. If you wouldn't mind turning to Exhibit 142-2, which should be the second document in the "to be used" pile.
Do you see that?
A. Yep.
Q. All right. If I understood your testimony earlier this week, this is a detailed r?sum? of you.
A. As -- again, I don't update it as much so, yes, it's what -- I don't really spend much time with this.
Q. I understand.
A. Yeah.
Q. And if you turn to page 5 of 7 of Exhibit 142-2 --
A. Yeah.
Q. -- it looks like in the middle

of the page toward the bottom you list your specific expertise.

Do you see that?

A. Yep.

Q. Okay. And are you still considered -- do you still consider yourself an expert in those areas today?

A. Yes.

Q. Have you added any expertise?

A. Quite a few. I mean, it's not in this list. Like I said, I don't update this very often.

Q. I thought I heard you say, I believe on day one, that you are not an expert in microbiology. Is that an accurate recollection?

MR. LESLIE: Objection, leading.

A. Yes. I am not a microbiologist. Microbiology is a very specific area. And for this project, I'm knowledgeable and expertise in microbiological corrosions, two separate items here.

So the corrosion part of it I'm

quite familiar with it. Microbiology as an area of expertise is different than microbiological corrosion.

BY MR. LOTTERMAN:

Q. Are you a NACE member?

A. Yes.

Q. In good standing?

A. Some standing, yeah.

Q. Do you participate?

A. Yes.

Q. Does NACE issue standards representing consensus of members who have reviewed those standards or drafts?

A. I don't recall, but yes, I'm sure they do.

Q. Have you ever participated in that effort?

A. No.

Q. Have you ever served as an expert witness?

A. Yes.

Q. In what capacity?

A. Expert. I'm curious --

Q. That was a trick question.

A. Sorry.

Q. In what context?

A. There's a few contexts but I'll tell you a couple -- one or two I remember. There's been quite a few. I've been in a lot of frac wells where they have had issues, failures and various issues. But I've never been deposed that often. We write reports, and quite often it ends there.

Recently, a couple of years ago, two, three -- two years ago, three years ago, I forget the exact timeline on that, I was an expert witness on cavern storage failures.

Q. Cavern?

A. Cavern, yeah. Gas storage cavern failures.

Q. Any others that come to mind?

A. Quite a few. At various points through the last 10 years, I've done various but small.

Q. Any in federal or state court?

A. No.

Q. Any in private arbitrations?

A. The only one is that cavern, in a European arbitration.

Q. Any in regulatory proceedings?
A. I've been an expert in front of transportation safety board, ages ago when I was very young, when I had hair. It was 2001, '2, at NTSB. So I've worked with PHMSA a lot on various root cause analysis, but I wouldn't call that an expert witness.
Q. As a general matter, what was your expertise in those contexts?
A. Various -- in the cavern, I can tell you, that's the latest one I remember. There was a completion and there was a failure, and the knowledge was about how the well was completed, how the material withstood the loads, everything. All that.
Q. Are you familiar with the phrase "a reasonable degree of engineering certainty"?
MR. LESLIE: Objection, vague and ambiguous, calls for a legal conclusion.
A. Sorry, I'll pause. I'll wait.
BY MR. LOTTERMAN:
Q. Thank you.
A. Okay.

Q. Let me ask the question again.
A. Yes.
Q. Are you familiar with the phrase "reasonable degree of engineering certainty"?
MR. LESLIE: Same objection.
A. I am familiar with it, but I don't necessarily use it as often. Yes.
BY MR. LOTTERMAN:
Q. Have you used it before?
A. May have. I don't recall.
Q. What does it mean to you?
A. Reasonable certainty.
Q. Let's talk about the RCA. We talked or you talked, I believe, a little bit about the difference between an RCA and a failure analysis.
Do you remember that?
A. Yes.
Q. Okay. Are you familiar with the term "technical RCA"?
A. I'm -- it's a phrase that people have used, but it implies -- it's root cause analysis without looking at individuals or organizational structures. That's how I

interpret it.

Q. Were you hired in the Aliso Canyon case to conduct a technical RCA?

A. It was vague.

Q. I'm sorry?

A. It was vague. There was technical RCA in one place in the contract as we talked about the other day. It was another terminology in the scope that was given to us. But we always understood our scope to be technical RCA.

Q. Explain to me again how a technical RCA is different from an RCA.

A. It is my definition, my difference, so I'm going to articulate that. I don't think there is a written differentiation between the two.

To me, a technical RCA is looking at a root cause, looking at procedures, processes, management systems that could contribute or may have contributed to a failure. Whereas a true RCA would be to see who did what to whom, what was actually -- what was fundamentally -- let me step back a little bit.

RCA, root cause analysis, starts with a complete technical understanding of what caused the failure and then saying how did those technical factors come to be.

And then in our Apollo RCA, if you keep going to the right, we stop at a point where it says was the -- again, there could be internal people who may be arguing for more stricter guidelines on how to manage storage wells; some folks may be easier. Whether folks who had stricter guidelines were heard in the organization, not heard, all of that goes beyond a technical RCA to me.

Q. Which type of RCA did you conduct at Aliso Canyon?

A. As far as we're concerned, it's a technical RCA.

Q. When did Blade first arrive at the Aliso Canyon facility?

A. I believe -- again, I'm talking from memory. I think it's 29th of January, 2016. I can go back and check.

Q. I can show you some documents

that comport with that memory.

A. Okay. Okay.

Q. So let's go with January 29, 2016.

A. Okay.

Q. How long was it after January 29, 2016, did you get near enough to the SS-25 well pad to view it?

A. I believe it was 2nd or 3rd of February. I have to go back to my notes. It is when we took the gas sample. That's when we got to the -- when I personally got to the location.

Q. And how many times between January 29, 2016 and when the well was killed did you visit the SS-25 well pad?

A. That is the only time.

Q. It's my understanding from your testimony earlier this week that once the well was killed, you had more access to the well pad? Is that a fair statement?

A. Once the well was killed and SoCal ensured it was safe to get there, yes.

Q. At that point in time were there any -- can you recall any times when you wanted access to the well pad and it was denied by SoCalGas?

A. No.

Q. How was your RCA team organized internally?

A. I was the primary leader of the team. It was a large team. It was organized, but they all reported to me. They all reported to me.

Q. Did you have a deputy?

A. I had multiple deputies. There were multiple deputies depending on what we were trying to do. It depends on the expertise required and the skills required, so it was driven by that.

Q. Okay.

A. So there was phases. So in a project like this we didn't -- we didn't know exactly how this process was going to be followed. I don't believe the regulators knew nor SoCal knew. So the process was developed as the project evolved.

Q. Okay.

A. Was my observation. Ravi's observation.

Q. Was it fluid?

A. It was fluid and evolving. There were some parameters that were clear. CPUC was in control of the site, and so if I needed somebody to watch a logging run that was being done over two days, then I would have a certain type of individual.

So then if it was required that you need to interpret drilling data, then a different skill set is required, so it depends on the skill set that's required.

Q. How did you communicate internally within the Blade team?

A. We had various ways of communicating. We had weekly meetings. In the first couple of months we had daily meetings because we were inundated with new information and we were trying to understand them as quickly as we could.

Q. Did you communicate by e-mail?

A. Yes. Yes, yes.

Q. How about text?

A. Text was more ad hoc, can you get here, can you go there. But e-mail is the most.

Q. Do you have a separate Blade cell phone?
A. No.
Q. Did you communicate by memos? I may be dating myself on that question.
A. Yeah. E-mails are the memos --
Q. Let's strike the question. Why don't we strike the question and we'll move on.
Did you prepare internal reports on progress?
A. Progress, yes, yes, yes. There were various -- there were reports generated on various stages. Quite often the data may not be complete, the interpretation may be off, so we'd step back and start again.
Q. Did your meetings typically have agendas?
A. Depends. Sometimes yes, sometimes no.
Q. Did the attendees typically take notes?
A. Yes. Yes.
Q. Did someone often commit the meeting to minutes?

A. Not often. Sometimes.
Q. As far as you know, were any documents that you created as part of this exercise destroyed or lost?
A. No.
Q. As far as you know, were any communications that were made internally within Blade destroyed or lost?
A. No. The texts are the only thing I'm not sure that we have that.
Q. Does Blade have a document retention policy that would have precluded e-mails from being destroyed prematurely?
A. Yes.
Q. As far as you know, was there any data that you developed as part of this exercise deleted or lost?
A. No.
Q. Okay. Did you produce any of these internal methods of communication, either electronically or writing or otherwise, in response to the plaintiffs' subpoena?
A. No.
Q. Let's talk about the scope of

work that the RCA entailed. I believe, if I understood your testimony earlier this week correctly, at least the initial scope was identified in Exhibit 142-1. Is that right?

A. I'll have to look at it. Let me look at it again.

Q. Just generally. I'm not going to commit you word by word, but I just want to make --

A. Yeah. This was based on our understanding at that stage, so yes. I have to look at it, but anyway, yeah.

Q. So that prompts my next question. I have a sense, did that scope change over time?

A. It evolved is the word I would use. I'll give you an example so it's an important thing to understand: There was a lot of evidence downhole which was crucial to the assessment and interpretation, and as we looked at it, as Blade, we got nervous about just pulling things so we had to get involved in exactly defining how to extract it.

There could be totally two separate rules. You could say this is how we want to make sure it's extracted safely; another way is tell you how to do it safely and do it safely. So we got into that element of the work.

Q. Did you personally have a suspicion when you first stepped on that site as to what caused that leak?

A. I don't like initial suspicions, but yes, because it was all over the newspapers. So yeah, everybody said internal corrosion, this, that, so yeah. Yeah, yeah. But I didn't believe it, so anyway...

Q. Okay. If you don't mind, take your -- the main report, and if you would turn to page 6.

A. Hang on.

Q. I believe it's right in front of you there.

A. No, no, no, this is a supplementary report.

Q. All right.

A. Go ahead.

Q. Turn to page 6. Is that the table of contents for the main report?

A. Yes.
Q. All right. Would you mind just quickly walking through with me on a couple of these items and let me know if they were part of the initial scope of work as to the best of your recollection, okay?
A. Yeah.
Q. 2, Well Failure Causes?
A. Yes.
Q. Okay. What about 3, Post-Leak Events?
A. Definitely not the way we discussed it here. We were going to analyze the kill but in context of the failure, so...
Q. Which aspects of the post-leak events evolved over time v?s-a-v?s the initial scope of work?
A. When we found out that the gas rate was estimated -- estimations were off, we didn't see it. And then when we realized -- let me step back.
So when we look -- so our first source of data was the daily reports during the kill attempts and the leak was discovered. So when you read those reports,

you will see the leak was small, the leak became big, it became a blowout. You'll see all sorts of notes there. So when you looked at that, our first thought was the failure happened and then the failure became bigger as something became bigger. So that was the thinking when we undertook post the kill analysis initially until we saw other items.

Q. Why did you decide at some point in time to calculate the total gas leak volume as depicted in 3.5?

A. Once we realized the rate was off, the gas rate estimate was off, so the kill attempts were not successful. We estimated the gas as part of that.

Q. And why would estimating the gas assist you in that analysis?

A. Because in order to design a kill attempt, you need to know the rate the well was flowing at at each time. So that's why we did that.

Q. No, I understand the rate. I'm wondering about the volume. Why do you need to know the leak volume to assist you in that exercise?

A. To confirm that our kill modeling is correct. So we had to independently verify the volume using scientific evaluation data which was the only data available. So when you're doing a modeling, you want to make sure your modeling is as accurate as possible in terms of rates and pressures and everything else.

So as you do that, you want to establish the volume to verify the volume I'm getting is correct versus scientific evaluation. So that's the only reason we matched the data. That was the intent.

Q. Let's look at Section 4 called Aliso Canyon Casing Integrity.

A. Yes.

Q. Was that topic generally part of the initial scope of work?

A. Yes. When we started, it was, for only one reason, because our scope was RCA so my fear was we may not get everything we want from the SS-25 well in terms of samples, in terms of data, in terms of scale.

So looking at analogous failures and interpreting SS-25 was one of the intents of that. So that is why it was part of it.

Q. What about -- turning to page 7 of the main report --

A. Yeah.

Q. -- what about Section 5.3, Mitigation Solutions and Root Causes? Was that part of the initial statement of work?

A. Yeah, root causes was part of it. And the process we used, it doesn't -- it doesn't identify -- it identifies the most cost-effective solutions and those solutions lead you to root causes. That is why it's mitigation solutions and root causes. That's why the title.

Q. So when you submitted your initial statement of work, which is depicted on Exhibit 142-1, were you intending to provide not only root causes but mitigation solutions at some point in time?

A. At that point we had not landed on the process we will use for the RCA, so it depends on -- there's umpteen ways of doing this, fishbone diagram, fault tree analysis. So we didn't believe any of those were amenable to this process here. So that's why we chose this.

Q. Okay. Let's talk about your interaction with the regulators a minute. If I understand -- if my notes are correct, you identified three primary contacts with the CPUC. I have Ken Bruno, Matt Epuna and Randy Holter.

A. Correct.

Q. Did I miss anyone?

A. Yes. Those were the three primary ones. I occasionally met some other folks from CPUC, but they were not my primary contact.

Q. How frequently did you interact with Mr. Bruno?

A. It depends on the time frame, so there was a period when we were not having any movement in getting to SS-25 and extracting the tubulars. There was almost a six-month hiatus, if you -- I'll have to look at my timeline to tell you when and where.

But during that period I would be bothering Bruno, Ken, a lot to say we need to see some movement. Because he was my contact and CPUC was considered to be in charge of the location and everything else. So that was my primary source of communication. So it depends on what we were doing.

There were periods when I wouldn't communicate to him but every other month or so and there were periods I would communicate to him every other week. So it depends on the timeline.

Q. Did that -- excuse me.

Did that interaction with Mr. Bruno end at some point?

A. It ended when he called me to tell me he was going on a medical leave. I forget the exact date, but it was, I believe, sometime in April. I don't -- I'll have to --

Q. April of 2019?

A. Yes.

Q. What did he say?

A. He told me he had --

Q. Actually, let me stop you. I don't need to know the medical details.

A. Okay.

Q. What did he say besides the actual medical issues?

A. That was all he told me about. He said he was going on leave and he'll be back in a couple of weeks. And he told me he will be back -- nonmedical issues, he told me he will be back in a couple of weeks and he will be there in time for the final report whenever it comes out.

Q. Was he?

A. No.

Q. After that phone call in April of 2019, did you have any other communications with Mr. Bruno?

A. No.

Q. Okay.

A. There was only one communication I got from him. I got a text from him, I believe the day after the report or something, I forget the exact date. Sometime that time.

Q. What did it say?

A. Congratulations on a good job or something to that effect. That's all it is.

Q. Who were your primary contacts at DOGGR?

A. DOGGR, the contacts changed over time. Marilu Habel was my primary contact for a large portion of the project.

Q. Habel?

A. Habel, yeah. And DOGGR was a bit more -- I'm talking DOGGR investigative team so I want to be careful here. There is DOGGR investigative and DOGGR district. DOGGR investigative, I contacted. They were the team that was doing their own root cause analysis.

But there's a DOGGR district who I -- whose contact was through SoCalGas or through CPUC, we would -- I would avoid going directly to them. So the DOGGR investigative team was Marilu Habel. Then it was May Soe after a point.

Q. What did your interactions with the DOGGR investigative team entail?

A. They -- both of them wanted updates on where we were in the process. So we would give them, hey, this is what we're doing, a high level. Because our edict up front given to us by CPUC specifically and reiterated by DOGGR and reiterated by SoCalGas was to be independent. So when somebody comes to us and tells us at Blade be independent, we take it independent.

I am not going to -- so I avoided telling them results. I would tell them what activities we were planning, which was also communicated to SoCalGas, hey, we were going to extract tubing, you know, whatever, that was the plan. So that was the level of communications.

Q. Did you ever make presentations to the DOGGR investigative team on the status of the root cause analysis?

A. I don't know about presentations. I don't recall. I know I gave them status updates, yes.

Q. And I'm not thinking phone calls, I'm thinking get everyone in a room and sit around a table and spend more than five minutes talking through something. That's what I had in mind.

A. There was, early on, in April -- again, you're challenging my memory, but it was in April or March of 2016, okay. They were worried about some sample collection and oil collection and all that on-site. So we had a meeting between DOGGR, CPUC and us to clarify what we were doing, and we had a protocol and why that was being followed. That was early on.

Q. Okay. Did you ever --

A. That was the only meeting -- sorry. That is the only meeting I remember.

The other meetings involved Schlumberger, for example. Schlumberger would -- DOGGR would want interpretations of what Schlumberger was doing so we would facilitate that meeting. And Schlumberger would give the interpretation.

Q. When you say facilitate, did it include attending those meetings?

A. Yes, we attended. We had Schlumberger in our offices and we would go to a meeting. That's what I remember. I'll have to check to confirm. Those are the kind of meetings that I remember. We had a few of those, two or three of those. CPUC never attended that, it was primarily DOGGR.

Q. Did Blade share any data with the DOGGR investigative team?

A. Other than the log, no. Log data was the only one. I have to go back and confirm that, but I don't think -- the only other thing, it's possible that I would have sent to either CPUC or DOGGR would be a couple of times I remember informing SoCalGas also about it, they wanted us to conduct -- was it oil or gas, I forget, so I have to go back and check. I have to look at my records for this because we didn't care -- it was not relevant to our RCA.

We did EPA-type analysis. They would ask us to just send it to the lab, Toll or whoever. So we supplied that data back to them. We didn't use it. It was not relevant to our analysis.

Q. Were there other regulators besides the CPUC and DOGGR, either the investigative team or the district, that you interacted with on a routine basis v?s-a-v?s the RCA?

A. Can you repeat the question?

Q. I'm wondering -- let me ask you

more directly. What other regulators, if any, did you interact with as part of the RCA?

A. The only one we interacted with was DOG- -- CPUC would ask us to talk to somebody at PHMSA and they would ask us for updates on the status, which they would give to PHMSA. And PHMSA came and visited Element when we were there once to see the samples.

Q. Aside from that visit, did you have any face-to-faces with PHMSA to discuss the progress of the root cause analysis?

A. No.

Q. Did you have any telephonic meetings with PHMSA to discuss the progress of the root cause analysis?

A. I don't recall any of those.

Q. Okay. Any other regulars come to mind besides the CPUC, DOGGR and PHMSA as far as sort of a more than a one- or two- or three-time interaction?

A. PHMSA was the only one outside of the California regulators.

Q. What types of communications would you have with these regulators? Let me run through some possibilities. E-mails?

A. No.

Q. Okay.

A. It was -- they came to see the failed sample. That's what they came for.

Q. Actually, I was trying to expand the question to --

A. Sorry.

Q. No, that's fine. That's my problem, not yours. I was actually -- let me start over.

So in interacting with the CPUC, DOGGR, and PHMSA, was it done via e-mail?

MR. LESLIE: Compound.

MS. FRAZIER: Yeah. Maybe break them up. Just a suggestion.

A. Of course I communicated with CPUC and DOGGR through e-mail, extensively.

BY MR. LOTTERMAN:

Q. Okay.

A. So that was extensive e-mail communication. PHMSA, I don't recall. I believe it was a face-to-face. Because Matt Epuna would call me and say, hey, Steve

Nanney wants to see some samples and so unless CPUC directs me, I wouldn't do it.
So I looked at CPUC as our person in charge.
Q. Did you communicate with any of the regulators by text?
A. Possible, yeah.
Q. Did you communicate with Mr. Bruno by text?
A. Yes.
Q. Often?
A. No, not often. On occasion. If I'm meeting him right after a meeting or something like that.
Q. Would you communicate with the regulators by webinar?
A. That was after the root cause report, not prior.
Q. Did you submit progress reports to the regulators, any of the regulators?
A. I don't recall submitting reports. We had weekly calls which I didn't want during a large part of it, but when we left the location, they wanted a weekly update. So we would have a weekly call.

There was early on -- this was in -- this was in 2016, February of 2016, right when we got on-site they asked us for a high-level approach or stuff like that. So I remember some e-mail, e-mail exchanges.

It would be part of the e-mails that we exchanged with them, so yeah. But other than that, I don't remember any status updates through e-mail. I can't recall. I need to confirm, but I don't believe so.

Q. I'm just looking for your best recollection today.

A. My best recollection, no.

Q. Fair enough.

Did you have face-to-face meetings with the regulators? And I'm not thinking on-site, I'm thinking kind of offsite-type meetings.

MR. LESLIE: Vague and ambiguous.

A. Yes. Yes. I would have -- I would meet, say, Ken and Matt and Randy at lunch or something like that or dinner to -- but it would be after Aliso, we would go for lunch. So, yeah, I did do that.

BY MR. LOTTERMAN:
Q. But were those meetings where business was discussed?
A. Some business. Basically, hey, you know, we need to get this tubing extraction going. Because there was a large period we were sitting around and we were getting -- because I knew at the end of the day I would be asked to deliver the report fast and we would be waiting around for extraction for nearly six to eight months. It was a general frustration for everybody. So those were the periods when I would want them to move on things.
Q. Were you ever instructed by the CPUC not to put anything in writing?
A. Repeat the question?
Q. Yes. Were you ever instructed by the CPUC not to put something in writing?
A. No.
Q. Were you ever instructed by the CPUC not as a general practice to put things in writing?
A. No.
Q. As far as your interactions or

communications with the regulators, are you aware of any documents destroyed or lost in that context?

MR. LESLIE: Vague and ambiguous.

A. Can you repeat the question?

BY MR. LOTTERMAN:

Q. Sure. I'm focusing now on your external communications between you and the regulators. And my question is: Are you aware of any documents, any written documents or, you know, kind of hard documents, destroyed or lost?

A. No, I don't believe so.

Q. Okay. Are you aware of any communications that were destroyed or lost?

A. I don't believe so. I'm talking e-mail now, okay? E-mail is all there. Text, I don't know. But e-mails, yes.

Q. Why don't you know about texts?

A. I don't know whether the texts are hung on. It depends on everybody's phone whether the texts are still there. But e-mails, yes, I know.

Q. Did you delete your texts between you and, say, Mr. Bruno?

A. I don't think so.

Q. Okay. Did you produce those texts?

A. No.

Q. Are you aware of any data -- strike that question.

Why didn't you produce your texts between you and Mr. Bruno?

A. I think we objected to it as part of this, so we didn't want to -- it's a lot of work to do this. It took us a lot of effort to get this data together for this exercise. So it was a question of effort. That's all it was.

Q. Did others have a practice of texting -- others at Blade have a practice of texting the regulators?

MR. LESLIE: Lack of foundation.

A. Text was a means of communication with everybody, not just regulators. We texted even SoCalGas folks, I believe, so it depends on the situation. So it was not a -- it was a convenient means of communicating when you're on-site and when phones don't work, so that's why you text. It's not a preferred option as talk or e-mail.

BY MR. LOTTERMAN:

Q. Okay. Would you mind turning to page 242 of the main report?

A. Main report, yeah. 242, okay.

Q. Are you there?

A. Yes, I believe I'm there. Main report, right?

Q. Yes.

A. Okay.

Q. And is that Section 7 entitled Acknowledgments?

A. Yes.

Q. Did you write that section?

A. Yes.

Q. Okay. It says -- let's skip to the third line -- the third paragraph. It says: We also acknowledge SoCalGas' willing support and cooperation for all aspects of RCA work including providing data for numerous data requests.

Do you see that?
A. Yes.
Q. Is that true?
A. Yes.
Q. Okay. And I believe during the first two days of this deposition we spent some time looking at a supplemental report which laid out the requests you made to SoCalGas.
Do you remember that?
A. Yes.
Q. Okay. And I believe there was also a summary report or a supplemental report, shall we say, where Blade summarized the collection of data.
Do you remember that?
A. Yes.
Q. And were you satisfied with the data production from SoCalGas as part of the RCA?
A. Absolutely, yes.
Q. Okay. As far as you know, was it complete?
A. As far as I know, yes, it was complete.

Q. No gaps?

A. Again, I wouldn't know if there were gaps. But as far as we know, we would not have finalized the report if we didn't feel the data was reasonably complete. So yes.

Q. How many well files do you think Blade went through at the Aliso Canyon facility as part of this exercise?

A. I can't -- I don't remember. It's a lot of well files.

Q. Did you go through them personally?

A. No, no, no. I would not. I would not be sitting here. We had a large team. We had two or three people who would have gone through it.

Q. Is it fair to say that sitting here today, you would not be able to recall every document that was produced from whatever source as part of the RCA?

A. No.

Q. It is not fair or it is fair?

A. No, no, I can't recall. I mean, there's no way.

Q. All right.
A. I know all the important ones, the ones that finally contributed to the report. But even there, I'm not complete by any means.
Q. If you'd turn to the next sentence in the acknowledgments on page 242 of the main report, you write: We also want to acknowledge SoCalGas' support of the independence of this investigation.
Do you see that?
A. Yes.
Q. How did SoCalGas support your independence?
A. Let me read the sentence again and then I'll tell you. Give me a minute. Yeah, okay. Yeah. Sorry.
No, no, it was important to us so it was very -- Blade as a company and me as an individual as part of Blade and prior, we go to a lot of locations, a lot of operator locations and we function.
And quite often it's -- you will have a couple of folks challenging our presence, not wanting us there, various

reasons. So as a consulting engineering firm that is always a challenge.

This situation, we were a bit worried. We were a bit concerned because we were walking in, doing an RCA of a failure, and we absolutely needed SoCal's input on operational -- a lot of operational issues.

And we were instructed to be independent, so we really didn't want anybody to ask us questions that we want to deny answering. And we were never asked that by SoCal. We were never questioned about what exactly we were doing, why we were doing it, at any point in the process.

So that is why we wanted to make sure it's clarified that they allowed us to be independent.

Q. All right. Thank you.

Let's look at the next sentence, same page. You write: During the operational phases of the project, Phase 1, Phase 2 and Phase 3, the on-site support at Aliso Canyon was crucial to successful extraction of the tubing and casing.

What did you mean by that?

A. So it's discussed in the Phase 3 summary report and in the main report. For us to interpret when the failure happened, that's the morning of the 23rd, to interpret that the failure didn't become -- the circumferential parting or the axial split did not get exacerbated by the kill attempts, we needed to extract the bottom portion of the sample without any damage.

And we did that by modifying a tool design with NOV, but it required a lot of operational coordination with SoCalGas to make it happen.

We designed the tools and all that stuff, but operationally, we were a pest. We would ask for this, we would ask for that. So they complied with everything, which allowed us to do it at the end of the day. And the value was that we could conclude with no doubt that approximately in the morning it happened, this happened, kill attempts did not do anything to this.

All of those conclusions would not have been possible if we did not extract the samples carefully.

Q. Okay. And then turning to the last sentence of that paragraph, you write: SoCalGas' support for the many complex operational requirements with personnel and other service company resources was essential for a successful investigation.

A. Yep.

Q. Was that true?

A. Yeah.

Q. You still feel that way today?

A. Oh, yes. Yeah.

Q. Okay. Did you observe any destruction of evidence during the RCA?

MR. LESLIE: Vague and ambiguous.

MS. FRAZIER: I join.

A. Again, of course, if we saw something, we would have raised hell about it. So we did not see anything.

BY MR. LOTTERMAN:

Q. Okay. Did you hear about any destruction of evidence?

A. No.

Q. Okay. Are you aware that Ken Bruno has sued SoCalGas for damages?

A. I became aware later on, yeah.
Q. How did you find out?
A. I got a call from Malashenko, Elizaveta Malashenko from CPUC.
Q. What did she say?
A. She just said he has sued them. So that's all I was aware. So I was getting into a plane for some meeting in San Francisco, so...
Q. Did you ever discuss the lawsuit with Mr. Bruno?
A. No.
Q. Did you ever discuss with Mr. Bruno his -- the fact that he might be considering suing SoCalGas?
A. No.
Q. Did you ever discuss with Mr. Bruno before he had that call with you in April of 2019 whether he was feeling ill or had any ill effects from his time at the Aliso Canyon facility?
A. No. I was not aware of anything.
Q. Okay. Are you aware that Mr. Bruno has alleged that SoCalGas attempted

to destroy vital evidence at the site?
A. I'm not aware.
MR. CREED: Objection. That misstates. I'm his attorney so I'm going to object to any Bruno questions.
BY MR. LOTTERMAN
Q. Are you aware that Mr. Bruno has alleged that Blade needed the actual tubing -- casing and tubing from SS-25 to conduct a proper root cause analysis?
A. Please repeat. I apologize. I'm lost.
Q. Are you aware that -- let me ask it this way. Are you aware that Mr. Bruno has alleged that Sempra and SoCalGas sought to block Blade from obtaining actual tubing and casing evidence as part of the root cause analysis?
MR. CREED: Same objection.
MR. LESLIE: Assumes facts.
A. Are you asking me whether I think they blocked? I apologize.
BY MR. LOTTERMAN:
Q. I'm asking if you are aware of

that allegation.

A. I'm aware of it now. I'm aware a little bit vaguely, but yeah, I don't read it carefully. It's a lot of writing.

MR. LESLIE: Vague and ambiguous as to time.

A. Yeah, go ahead.

BY MR. LOTTERMAN:

Q. Were you aware at a certain point in time that SoCalGas was attempting to plug and abandon SS-25? Were you involved with that process?

A. The plug and abandon was at the end. Yes, we were -- we were quite -- we were involved in saying at this point I'm done and we can P&A, yeah.

Q. And were you there when SoCalGas poured cement into the piping and tubing?

A. Not me personally but Blade team members were there, I believe. I believe.

Q. And was Blade comfortable with that process?

A. Yes. Yes, yes, yes. We were

done with the well, so...

Q. And do you believe that plugging and abandoning SS-25 would have destroyed vital evidence for the RCA?

MR. LESLIE: Vague and ambiguous.

A. We had collected all the evidence we needed prior to us -- us identifying that we are okay with P&A.

BY MR. LOTTERMAN:

Q. Explain, if you would, the process for drafting the various reports. Just generally.

A. Reports or protocol? Reports you mean?

Q. Reports, please.

A. That was a very tough process. Yes. There are various authors, as you can -- we have listed the authors in the report, so various folks drafted various portions.

The main report I drafted the outline and the structure and then I wrote portions of it. I asked folks to write different portions of it, then I went through all the portions, tweaked them and back -- a long process. It's a very challenging process, a long process.

Q. Did you share drafts internally?

A. Yes.

Q. Did you share any drafts externally?

A. No.

Q. Did you have anyone conduct an outside peer review of any aspect of the written product?

A. Outside, no. Outside, there's only one individual who was outside but he was consulting with us. He is on the kill attempts, Jerry Shursen. I had him review portions of the report. Internally there were a lot of folks who were not involved in any aspect of the project would review it. So, yeah.

Q. Did you apply a particular engineering standard to the analyses and conclusions in the report?

MS. FRAZIER: Vague.

MR. LESLIE: Join.

A. As far as I recall, there is no standard that -- there are standards to various aspects of the analysis, but not to the whole product.

BY MR. LOTTERMAN:

Q. Did you apply the standard of reasonable certainty of -- reasonable --

MS. FRAZIER: Why don't you just start over.

MR. LOTTERMAN: Let me start over on that one.

MR. KELLY: Degree of engineering certainty.

MR. LOTTERMAN: Thank you.

BY MR. LOTTERMAN:

Q. Did you apply the standard of a reasonable degree of engineering certainty in the reports?

A. I'm not familiar with that exact terminology, but yes, any conclusions we make, as we do this routinely, so any conclusions we make, we have to have evidence for those conclusions. And so, yes, I would say some -- not exact terminology that you described, but --

Q. Similar in spirit?
A. Similar spirit, yes.
Q. Okay. You mentioned authors of the report. If you'd turn to page 241 of the main report.
A. Yeah.
Q. Are those the authors you were referring to?
A. Yes.
Q. And if you look down to the second-to-last name, Jerry Shursen?
A. Yes.
Q. S-H-U-R-S-E-N?
A. Yes.
Q. Is that the gentleman you were just referring to?
A. Yes, I am.
Q. Okay. And I believe you mentioned Liz Summer yesterday?
A. Yes.
Q. Was she your microbiologist?
A. (Nods head.)
Q. Yes or no? Verbally.
A. Yes.
Q. Thank you.

I want to turn all the way to the front of the main report now. It's actually the page after the cover, which I don't believe is numbered.

A. The page after the cover, yeah.

Q. You see it?

A. Yep.

Q. Where it lays out the main report and the supplementary reports?

A. Yep.

Q. All right. Would you be able to walk through this list very quickly and tell me who the principal author was of each report?

A. Not to a reasonable degree of certainty, but I can.

Q. Touch?. Let's give it a try.

A. It's because multiple people wrote all these reports. It was not one individual.

Q. Understood. Yeah.

A. Okay? And I was involved in many of them, but I'm going to exclude me and I'll tell you who else.

Q. Fair enough.

A. Okay? Phase 0 would have been Randy Rudolf, Bill Whitney, Nigel.

Q. Nice and slow here.

A. Sorry. I will say it slowly. I won't tell their last name, I'll just give the first names. Is that okay?

Q. Sure.

A. Phase 1 summary would have been Ryan Milligan, Jack Soape, Ken -- Ken may not have been listed -- and Bill Whitney.

Phase 2 would have been Eric Sells, Randy Rudolf. Phase 3 would have been a lot of people; would have been Randy, Bill, Nigel. Randy, Bill, Nigel. Ryan, Jack. At least that many. There may have been more.

Q. Okay.

A. And Phase 4 would have been Ryan and Bill, Ming --

Q. Ming, M-I-N-G?

A. M-I-N-G, Ming. Ming Gao, he's on the list. And Noelle. And going down that list, SS-25 casing failure analysis would have been Ming, Noelle, Ryan, Shree, perhaps Ken.

Speedtite connection testing

would have been Jack, Brian Schwind, Bill Whitney. Microbial organisms would be Liz, Noelle, Ming, Rudy. Casing internal corrosion would be Rudy and Bill. Inspection log analysis would have been Nigel, Bill and Randy. Temperature pressure noise log would be Nigel, Bill and Randy. Aliso Canyon hydrology would be Ismail. Geology would be -- give me a minute. I forget the names suddenly. Is that a sign of age?

Geology would be Carol and Bill. 7-inch loading analysis would be Miodrag and Randy. Randy primarily, but Miodrag did some of the analysis. Tubing NDE analysis would be Bill. Annular flow safety system would be Randy, Bill -- there's one more name I'm missing. He helped us draw the exact Camco valve.

Nodal analysis, uncontrolled leak estimation would be Greg Asher primarily. Hong would have been another person who contributed to that. And Suri Suryanarayana would have reviewed some of the work. Aliso Canyon injection network deliverability was Nazia and --

Q. Hold on. You know what, I'll tell you what. Let's do this. Let me ask you the report and you give me the answer, and maybe we can pace it a little bit better that way.

So let's pick up with the Aliso Canyon injection network deliverability analysis.

A. That was Nazia, Sriram and Greg.

Q. How about the post-failure gas pathway and temperature anomalies?

A. Hong, Greg, Ismail.

Q. How about the transient well kill analysis?

A. Randy, Jerry, Will Bacon, couple of other people. Those three for sure.

Q. Okay. All right. Then let's move to Volume 4. How about the analysis of the wells with casing failures?

A. That would be primarily Randy, Nigel, Bill.

Q. How about the shallow corrosion analysis?

A. Nigel. Nigel, Randy, Bill probably.
Q. How about the surface casing evaluation?
A. Nigel, Randy, Bill.
Q. 1988 candidate wells?
A. Randy and Nigel.
Q. The regulations review?
A. Randy.
Q. The withdrawal/injection analysis?
A. Ismail.
Q. And the regional and local seismic events analysis?
A. Ismail.
Q. Thank you. That was very helpful.
Final question, then let's take a break.
A. Okay.
Q. I think we've been at it for about an hour plus.
How were the costs managed as part of this project?
A. How were the costs managed?

They were managed by me. So depending on what data we have, we would undertake an analysis. If we did this project sequentially, it would take us another three years.

So my fear as the project progressed was that the samples would be extracted and there would be tremendous pressure on completing it, which is what actually happened. So everybody would want the results quickly. So we attempted to do some of the initial modeling up front and looking at the wells when we were waiting for things to be extracted.

So we managed the work. We didn't -- we made sure we had the right amount of people when we needed it, and when we didn't need it, we sent them home. So -- because there's a lot of -- at Aliso, there is weather, there is operational issues where you would be waiting for two or three days sometimes. So it's kind of a judgment call as you go through.

Q. Did the CPUC provide you with any budgets?

A. No.
Q. Did you have any internal budgets?
A. No.
Q. Did the CPUC give you any restrictions on the amount of money you could spend on the RCA?
A. No.
Q. Have you been paid to date?
A. Yes.
MR. LOTTERMAN: All right. Let's take a break.
THE VIDEOGRAPHER: We are off the record. It is 10:13. This is the end of Media 13.
(Recess taken, 10:13 a.m. to 10:26 a.m.)
THE VIDEOGRAPHER: Okay. We are back on the record. It is 10:26 and this is the beginning of Media 14.
BY MR. LOTTERMAN:
Q. Dr. Krishnamurthy, do you have any clarifications from our last session?
A. I don't -- I didn't look at it here.

Q. No. I was just asking you generally from what we just talked about, any clarifications you wish to make?
A. I don't think so.
Q. Okay, good.
Going back to sort of your expectations, you personally, your expectations when you first took on this project, what was your expectation on schedule?
A. I forget. Six months, a year. That was the plan, yeah.
Q. What happened?
A. It didn't happen, as you know. So everything was harder than we thought. So we would write a protocol, it would go through reviews everywhere. By the time we get feedback and we finalize it and we get on actions, there was a lot of different steps we had to take.
Q. Were there aspects of the root cause analysis that the CPUC either requested or wanted you to do that you didn't think was necessary?
A. Again, they were -- it's not

wanting. I recognize, until we were on-site, we didn't realize the degree of attention it was receiving. There were not specific tasks that the CPUC asked us to do, or DOGGR. It was more -- for example, in Phase 1, we wanted to kind of scan that surface and look for things. And we may have done it more in some sort of a grid fashion, which one of the -- Randy was wanting us to do it so we did it. So minor things. There were some minor additional requests, but that was more on Phase 1.

In Phase 3, in Phase 3 -- because those were the two phases where we were on-site, and Phase 1 and Phase 3 were the big ones. Phase 2 was a -- SoCal was accountable.

Phase 3 was extraction of the tubulars. The only thing we did, which was a big item requested by the regulators, was 25A, okay? The 25A extraction was not -- it was not in our plans.

Q. Why not?

A. Until I look at 25, I don't know what else I want to look at. So I got a call from DOGGR, Ken Harris and Al Walker, I believe. They just wanted to find out. I think there was an intention to get the field back on reinjection and so they didn't want to approve that because there was a casing patch on SS-25A that appeared to be leaking.

So I was told -- so they called me directly, actually, which is unusual. Ken Harris called me and said, hey, what would you need to do for us to P&A 25A up to 3,000 feet? Okay? So I said I can't tell you I don't need 25A now. If I finish 25, then I can tell you I don't need 25A. Until then, I can't -- I can't -- I don't accept P&A'ing 25A.

So we ended up doing 25A first because of that. So that was a big item in terms of time. All others were smaller items.

Q. That was my question. Did the work on 25A push back the schedule?

A. Yes.

Q. Okay. Significantly?

A. Significantly, yeah, because we had to prepare for it. It's not something you can just do. It's on the same pad, though, so you have to be careful with everything. So there was a lot of details to it.

Q. Okay. I'd like to turn now to Blade's collection of evidence, generally. And it's my understanding that the tubing extraction began in August of 2017. Is that right?

A. That's correct.

Q. Okay.

A. I have to look at my timeline but that sounds about right.

Q. Well, let me give you a suggestion here.

A. All right.

Q. In front of you I've got 142-6.

A. Yep.

Q. If you'd turn to page 26.

A. Thank you. Okay. Go ahead.

Q. And I believe this discusses the tubing extraction, correct?

A. Yeah. That's correct.

Q. And does it indicate in Exhibit 142-6 at 26 that the extraction of the tubing began around August of 2017?

A. Yes.

Q. How long did it take?

A. I don't recollect. I'll have to look at my timeline. I have an overall timeline. Probably the seven days were spent pulling the joints, which is what this report says. So I have to look at my -- there was an overall timeline somewhere. I don't know where it is.

Q. You know what, we don't need to get into the weeds.

A. Okay.

Q. I'm just trying to lay a foundation generally as to what you were doing. So if I understand you correctly, it took about seven days to pull the joints. What happened next as far as the extraction process goes?

A. So when we pulled the joints, we ran camera, I believe, during that part, if I'm not wrong, to see the condition of the 7-inch. And so as we pulled the tubing right around 895 feet, we stopped and we ran the camera to see how the 7-inch looked. Once --

because that was part of the objective of this exercise. So when we got the tubing out and we prepared the tubing for storage and transportation, we shifted our focus to figuring out how to extract the inch.

So then that had to go through approvals; SoCal, DOGGR, CPUC, DOGGR district. So all entities had to buy into the next steps. And so we prepared slides, presentations, with all three entities and talked about it. And then we went back.

Q. Right. And if I understand your testimony from earlier this week, it was during that time when you ran the -- after the tubing was extracted and once you ran the camera down the production casing that you learned that the 7-inch casing was completely parted at or about 892 feet.

A. Yes.

Q. Okay. What was -- what happened to the tubing once it was extracted? Where was it placed and then stored?

A. You're asking me a bit of detail there, but I think there was sea containers or something on-site. I believe we stored it there for SS-25 temporarily. I think so. I don't remember when we had shipped it to Houston. There was a point at which we shipped it to Houston.

Q. And where is it today?

A. Houston.

Q. And did Blade follow industry practices for extracting tubing as part of that process?

A. Not the normal practices, no. Normally you could have done that in one day.

Q. How did it -- why did it differ?

A. Because every time you pull the tubing, you have to document it. We documented everything. And it was important to do that so that once you move and you store things, things change with time. So you want to capture it as they come out. So that was an important part.

Q. How long did the tubing stay on-site before it was transferred or transported to Houston, roughly?

A. I can't recollect.

Q. That's fine.

A. My guess is two or three weeks, a month, in that timeline. Maybe even longer. See, what I don't recollect is did we ship it -- I think we shipped it separately. We probably shipped the tubing first and then the casing. So I don't remember how we did it. It's been a while.

Q. Was the tubing cleaned at some point?

A. Yes, it was cleaned on location.

Q. How?

A. I have to look at the procedure.

Q. Generally?

A. There's a procedure.

We had a cleaning crew. They swabbed inside, they cleaned outside. There was a process we developed. We developed that prior to that.

Q. What was the purpose of the cleaning?

A. Cleaning to visually observe any corrosion, any -- anything else. That was the intent of that.

MR. LESLIE: Tom, I think there may be an ambiguity. You're saying the tubing was cleaned? Are you just drawing a distinction between casing and tubing?

BY MR. LOTTERMAN:

Q. My questions were about cleaning the tubing. Were we on the same page?

A. Yes, yes, yes.

MR. LOTTERMAN: Okay. Thank you, Mike.

BY MR. LOTTERMAN:

Q. I noticed -- if I'm not mistaken, we talked yesterday about wellhead cleaning?

A. Yes.

Q. Do you remember that?

A. Yeah.

Q. When did that occur v?s-a-v?s extraction of the tubing?

A. It happened in Phase 1. It was -- my guess is April-May of 2016.

Q. Okay.

A. Don't hold me to that exact

time, but it's 2016, midyear.

Q. First or second quarter 2016, well before the tubing extraction?

A. Yes.

Q. Okay. How was the -- how was the wellhead cleaned, with what apparatus?

A. I'd have to go back and look. We jet -- we had a lot of different techniques we tested. SoCal had a supplier who helped us and we tested it at other -- so anything, any procedure we applied to SS-25, whether it be tubing cleaning, wellhead cleaning, was tested separately.

Q. Okay.

A. In some cases in a lab. There were reports written to say this is how the cleaning procedure was developed, this is the explanation for why it works. It may not have entered the final report at the end of the day, but there was a very detailed process followed.

Then once we documented that we were comfortable with it, then it entered protocol.

Q. I assume that took time too?

A. Yes, absolutely that takes time, yeah. But fortunately we had a lot of time. They gave us time.

Q. What sort of liquids were used in cleaning the wellhead?

A. I don't recall.

Q. Water?

A. Possibly. I would have to look at the protocol. There's a valid cleaning protocol we have. Every one of these has a protocol so I'll have to refer to that.

Q. Where did the liquids go typically once they hit the wellhead? Did they go down into the crater?

A. Yeah, they went into the crater.

Q. Was there any attempt by Blade or its contractors to restrict where the liquids went from the wellhead cleaning?

A. I don't recall how we did that for the wellhead. But the sampling of the oil, all of that happened prior to the cleaning. So all the sampling was done first. So the process was laid out where the sampling was done. So we recognized it would be contaminated afterwards, so yeah.

Q. How would it have been contaminated?

A. If you had cleaning fluids, it would drop into the oil in the crater. So we sampled the crater way before that.

Q. Okay. Let's turn to extracting the production casing.

A. Yep.

Q. When did that begin? And I'll give you a hint --

A. I'll have to go back and look.

Q. Turn to page 28.

A. Okay. October 10th, according to the document here.

Q. Okay. And roughly how long -- oh, let me back up. And if I understood you correctly yesterday, did that occur in two stages?

A. Multiple stages. Maybe even three.

Q. Okay.

A. Because I think we did it with the workover rig first. Then we got the drilling rig in. So there was different steps to the process.

Q. And again, correct me if I'm wrong, but I thought I heard you say at some point -- I think it might have been during Mr. Leslie's examination -- that you extracted the first roughly 1024 feet first?

A. No. First we extracted -- so the easy one to pull is the top joints, it was parted, so the broken part at 892 feet, roughly. And then you got the pawl system in place, according to this, November 8th, 2013, we got a pawl in there to get the bottom down. So we got -- the first round of approval we only got to 939 feet, I believe.

Q. Okay. I see.

A. My memory is really being challenged, but I think it's 939. That number rings a bell. So we cut it at 939. We took all the casings, we studied what we got.

You have to go back in the story a little bit. Those of us who went through it remember all aspects unfortunately, but when you go back, at one point the MID tool was run and we suspected there was some corrosion at 3,000 or 4,000. And we didn't know how relevant it was to the overall RCA.

Sorry. I'll slow down. So our discussions were internally robust about extracting it all the way to 3,000, and folks were against, folks were for, all that stuff. Blade want -- from an RCA perspective, we wanted it and we believed it could be done safely.

So we parted, then we came here. So once we got the 939 feet out we tied back the 7-inch to surface. We logged it with the USIT and HRVRT logs we discussed yesterday in the deposition, and then we confirmed that the corrosion at 3,000 or 4,000 and the axial rupture and all that we looked at was not relevant, so we requested a cutting at 1024. And that's when we got the 1024.

Q. Okay. And if I understand you -- if I understood your testimony correctly, cutting the 1024 feet encompassed both the top of the parted casing and at least a portion of the bottom of the parted casing.

A. Yep.

Q. Okay. Why did you bother, then, to extract the portions of the casing that were -- had been tied and logged?

A. Okay. Well, let me step back. The first round we took the top out, okay. Then I have the bottom sticking up. So I go in with a pawl tool, pull on the connection, cut it at 939 feet. So I've got all of that out now.

Now I take it from 939 to surface, I put a new casing, tie it to surface, and then I log the whole well. And then we decide I only need 1024 feet, so we come back and cut at 1024, pulled it out, and then we're done. At that point we focused on 11-3/4-inch and larger.

Q. I guess what I'm wondering is at some point in time did you then go in and extract below 1,024 feet?

A. No, we never did. We left it in place.

Q. Got it. That's important. Thank you very much.

A. Yeah. We left it in place.

Q. Okay. Where was the -- where was the extracted production casing placed once you pulled it out of the wellbore?

A. Once we pulled it out, we inspected it on-site, the SS-25. And I keep forgetting the other location. It's SS something, I apologize. I completely forgot. And we went there, put it on racks, further inspected it.

If appropriate per our protocol, we cleaned it, don't clean it. So all that depended on what we were trying to do.

Q. What did the cleaning entail?

A. ID cleaning, OD cleaning, it depends. So a lot of joints we didn't clean. Going back to the tubing there were two tubing joints we left uncleaned just so that if we needed to do something else in the lab. So even today they are in the lab not cleaned. We didn't believe it was needed anymore.

Casing, we left all the connections that were cut not clean. Some of the casings were not cleaned, some of them were cleaned. So I have to go back to my notes.

Q. Sure. Sure.

A. Those were decisions we made as we reviewed the condition of the casing.

Q. Was the production casing that was extracted that was immediately above and below the parted casing cleaned?

A. I don't recall. I'll have to go back and check. I would have to check my notes.

Q. At what point in time did the extracted production casing get transported to Houston?

A. I want to say two or three weeks. I don't remember. Again, it had to go through approvals. I have to go back and check. I would have to look at my timeline to figure that out. But I don't remember. I don't recall. I can find out.

Q. That's fine. If it's in your report, I'm sure we can find it.

A. Yeah, it's there. Should be there.

Q. All right. Was the production casing sandblasted?

MR. LESLIE: Vague and ambiguous as to time.

A. No, not at location. It was sandblasted much later in the stage when we wanted to establish the condition of the casing.

BY MR. LOTTERMAN:

Q. Where was it sandblasted?

A. In Houston.

Q. Can you give me a rough time frame when the sandblasting occurred?

A. I don't remember. End of 2018 is my guess. I can't recollect. I'll have to confirm all that.

Q. Would that be in your detailed timeline as well?

A. Maybe. Maybe. That is very detailed.

Q. Why does one sandblast a wellbore as part of a root cause analysis?

A. In this particular case, there was a lot of scale, a lot of solid particles. Perhaps from kill attempts, perhaps various other things, which we took extensive scale samples. Once we got all the scale samples from every joint we could, then the next question is the corrosion condition.

So you cannot see the corrosion if you have scale. And we laser scanned it first without removing the scale and it was giving a lot of random results, corrosion where there was no corrosion, so stuff like that.

So the reason you want to use -- I have to go back to the sandblast. There's a procedure for that that is used more specifically in the pipeline industry when you're looking for cracks. So which is far more -- you take a lot of care to protect the cracks, just clean the scale. That is a process that was used.

Q. Did Blade follow industry standards in extracting the production casing?

MR. LESLIE: Vague and ambiguous.

A. Again, there's industry standard for regular extraction, and this was not industry standard. This was an RCA standard, I would say.

BY MR. LOTTERMAN:

Q. What standard did Blade follow in extracting the production casing, if any?

A. There is no standard for a situation like this. What you are dealing with here is you know the failure is at 892 at this point when I'm extracting. I know it's parted.

But I don't know what out of the top 22 joints are relevant, how relevant they are. So in a situation like that I have to treat everything as relevant until I demonstrate it's not relevant. So that's how we did it.

Q. Now, when you personally learned that the production casing had parted at roughly 890-some feet, did your suspicions of the direct cause change?

A. It changed as I looked at everything. So first it was just the circumferential parting, so when you just look at the parting, I had a hypothesis. We had various hypotheses at Blade. We had six or seven or eight or whatever, and of course, all of them were off once we saw the axial split. So it changes as you look at those.

And even then we thought there were multiple steps to the process. We didn't know the circumferential parting happened all on day one. We thought -- I thought perhaps it could have happened during the kill attempts at that stage, but then we got quite -- you know, you had to do the reservoir modeling to understand that there is no way this happened after. It had to have happened on day one only. So a lot of evolving parts.

Q. At what point of this evolution did corrosion by microbes show up?

A. When we saw the striated grooves.

Q. And when was that, roughly?

A. Right away. Because it was very unique, visible -- visible on-site. So you look at these and you say, oh, well, maybe there's some erosion, this, that, you know, a lot of various things fly around. But it's very clean, very well organized striated grooves. So that's when microbiology or microbiological corrosion came into play.

Q. So just to give ourselves a time frame, if the extraction of the production casing began in October 10 of 2017, when did at least you personally begin to suspect that corrosion by microbes was a suspect?

A. Probably by -- it was before we extracted joint 25 and 26. That much I know.

Q. Why do those two extractions stick out in your mind?

A. Because we took more microbiological samples in 25 and 26. That is the reason it sticks in my mind.

Q. Okay. I've heard two ways to describe MIC. One is microbial-induced corrosion and one is microbial-influenced corrosion. Is there a difference?

A. Yeah. One is that microbe is a direct role in the corrosion. The other one is either acts as a catalyst or enhances the corrosion.

Q. And which is which? If someone

says microbial-induced corrosion, what are they referring to? What should they be referring to?

A. Like I said, again, I'm not talking morphology now. Put the morphology aside for a second, okay? In this particular case, in our mind it's microbiologically induced. It's Type 1. I'm talking Type 1 only. Type 2, Type 3 may be influenced, okay? And our focus was the Type 1 that caused the failure.

And we are -- based on the scale analysis, based on the movement of water -- so, for example, you have to have -- this corrosion happened in the annulus of 7x11-3/4-inch. I'm talking 892, not on 11-3/4-inch.

So at 892, at 7-inch, it happened in the annulus. So that annulus, whether that fluid level rises, changes, is a relatively stagnant environment, okay? So for any other cause to play a role such as oxygen or CO2 or any other corrosion mechanism, I have to somehow introduce a corrodent, C-O-R-R-O-D-E-N-T. It's called a corrodent. You need oxygen, CO_2, hydrogen sulfide, something like that.

And they were not in large enough volume in our minds to cause it and the morphology was nothing visually, not even close to anything like that. So in that environment it has to be microbiologically introduced. There is no other corrosion vector and the morphology supports that conclusion.

Q. Now, when you use the phrase "morphology," would you explain that to a political science major?

A. The way it looks, let's put it that way.

Q. So once Blade began suspecting microbial corrosion, what different types of investigations came into play that were different from the original plan?

A. It was the sampling. It was the sampling was the biggest one. Even though we had samples from the past, we were -- that is where Liz Summer came in from a microbiologist. She's a microbiologist and we are familiar with microbial corrosion but not the microbiology, and that is a very big specialization.

And so we started looking for biofilms. And on a rig, nobody has ever started looking for biofilms. So when she was on-site, we just scraped everything that looks -- whether it looked close or not, we scraped. So time is an issue on a rig so you want to kind of sample as quickly as you can.

Q. When did Liz Summer first show up on-site?

A. A member of Liz's team was always there, even tubing extraction, Geddy was there on-site. So she herself came on-site during 25 and 26 only because Geddy left the company so she came. She's a principal of the company.

Q. Is it appropriate to a microbiological investigation as part of investigating corrosion by microbes?

A. Yes.

Q. Is it appropriate to do a chemical investigation as part of that investigation?

A. What is a chemical

investigation?

Q. All right.

A. So micro -- so let me go back. In the microbiological report, in the back of the report, Liz elegantly describes a biochemical reaction.

So a microbiological corrosion is not a chemical reaction, it's not a purely chemical reaction. It is a biochemical reaction. That is an issue most of us simple, non-microbiologists like myself have that interpretation. So it's a biochemical reaction. So the reactions are articulated in the back of the microbiology report, whichever one that is.

So there are three tests that you do, which we did. Which is called MPN, most probable number of microbes, and that was done. It was more done because it's a standard NACE test and every quote/unquote "corrosion engineer" will know what it is so that's why we did it. It doesn't add to the value, but it's a number everybody likes to look at.

And the next test is called

qPCR, which actually matches the microbes to the genus -- to the genus, G-E-N-U-S. And it is more of a population or a type of microbacteria or archaea there.

The next level of testing is amplicon metagenomics, which is again described in our report, which is a DNA testing. Now, the quality of the sample is important to that. That's why we collected 40, and at the end of the day, I believe 12 to 14 were amenable to our amplicon metagenomics. So all of that together clearly identified a methanogen situation, and that's where we...

Q. And then as part of that analysis, do you add your observations from the morphology?

A. (Nods head.)

Q. You testified yesterday that microbial corrosion can be very localized. What did you mean by that?

A. Let me rephrase that. It's localized. I don't like the word "very."

Q. Okay.

A. If I said "very," I shouldn't

be using the word "very." It's an engineer communicating with a lack of clarity that it's localized, to be specific.

So everywhere a microbe grows or archaea grows, you have corrosion locally. It is not in every meter or every inch of the pipe joint. That's what I mean by localized.

Q. Okay. And did localization have implications when you were investigating SS-25?

MR. LESLIE: Vague and ambiguous.

A. You'll have to repeat the question, please.

BY MR. LOTTERMAN:

Q. Well, you know what, I'm not going to because it was a terrible question.

Did you find localized corrosion when you examined SS-25?

A. Yes.

Q. Okay. So that didn't surprise you?

A. It surprised me. Because I didn't expect corrosion, because the first 200, 300 joints were not corroded. We already had analyzed the gas and the water and we had already internally concluded internal corrosion is impossible. So we were very clear on that.

So the modeling and the gas -- we had analyzed the gas, we had analyzed the water. So internal corrosion was eliminated on day one, even probably the first four months of the project. So our focus was external, if there was corrosion. And so we didn't see in the first 500 feet.

Q. Did that surprise you?

A. Yeah, yeah, of course. Everything surprised me about this project. It did surprise me. Yeah.

Q. Okay. Up to that point in time, had you personally ever been involved with identifying and assessing microbial corrosion --

A. Yes.

Q. -- on a wellbore?

A. Yes.

Q. Including on the OD?

A. Yes. Yes, it happened to be on the OD, yes.

Q. As part of your root cause analysis, did Blade research best practices for collecting, preserving and analyzing microbial samples?

A. Yes, we did. And we depended on a microbiologist to help us through that process because we had -- the danger in microbiological corrosion is the corrosion engineers are not microbiologists. They know microbiological engineering, they understand chemistry, but they don't understand the biological side of things. So yes.

Q. And the times that you have dealt with microbial corrosion, has it been your experience that it's seldom one type of microorganism?

A. I'm not a microbiologist, so I know microbial corrosion, though, and we normally don't focus on the microbial genus of the microbe itself. Yes, there are multiple types of microbes that communicate.

So traditionally in the oil patch, we look at what we call the sulfate-reducing bacteria. There is a more technical term for it. So that was one of the suspicious bacteria we had in this. There's a bunch of other bacteria. So yeah, it is never one type.

Q. Okay. I'm going to hand the witness -- actually, I'm going to have marked first and then I'm going to hand the witness two documents. The first one is entitled Detection, Testing, and Evaluation of Microbiologically Influenced Corrosion on Internal Surfaces of Pipelines. And I believe we'll mark that as 142-88.

(Whereupon, Deposition Exhibit 142-88, NACE Standard Test Method, Detection, Testing, and Evaluation of Microbiologically Influenced Corrosion on Internal Surfaces of Pipelines, was marked for identification.)

BY MR. LOTTERMAN:

Q. And then while we're doing that, I'd like to mark my next document entitled Detection, Testing, and Evaluation of Microbiologically Influenced Corrosion (MIC) on External Surfaces of Buried Pipelines. And I believe we'll be marking that as 142-89.

(Whereupon, Deposition Exhibit 142-89, NACE Standard TM0106-2016, Detection, Testing, and Evaluation of Microbiologically Influenced Corrosion (MIC) on External Surfaces of Buried Pipelines, was marked for identification.)

BY MR. LOTTERMAN:

Q. Dr. Krishnamurthy, do you recognize these two exhibits?

A. Yes, I do.

Q. Okay. Let's take them one at a time. Let's look at 142-88. Is this a standard issued by NACE?

A. Yes, it is.

Q. Okay. And does this attempt to represent a consensus of NACE members who have reviewed the document and its scope and provisions?

A. Yes.

Q. And have you reviewed and used this standard before?

A. Not me personally. I'm aware of the standard. I'm aware of sampling procedures because we do these samples in other cases, so you have to follow certain procedures.

Q. Okay. Let's turn to Exhibit 142-89. Do you recognize this document?

A. Yes.

Q. Is this also a NACE standard?

A. Yes.

Q. But this one -- I take it 142-88 applies to internal surfaces. Does 142-89 apply to external surfaces?

MR. LESLIE: Of pipelines, of buried pipelines?

BY MR. LOTTERMAN:

Q. Of buried pipelines.

A. Yep.

Q. Okay. Were these two standards implemented when you extracted, tested, stored, and analyzed the production casing at SS-25?

MR. LESLIE: Compound.

A. I can't recollect. We followed standard careful procedures. I'll have to refer to Liz and look at our documentation to answer that question. Because there are inherent -- these are appropriate quite often when you are pulling a pipeline and you're actually sampling it prior to killing a well, introducing all sorts of other fluids.

So the exact application of this is different from an application here. So a lot of these applications are for fluids that may contain bacteria and there are scales that may contain bacteria. So there are different standards and different approaches.

BY MR. LOTTERMAN:

Q. Okay.

A. So we reviewed all of these standards. We discussed which was practical, what was not practical, recognizing the fact that the annulus fluid that was there through the life of the well was no more there; it was displaced with other fluids.

So the fluid testing itself is not as relevant here because the fluid is not representative of the water that was there when the corrosion happened. So the procedures that some of these documents discuss, without getting into details, are not applicable necessarily directly to what we are doing here. So we've got to be careful with that.

Now, there are liquid samples we took where we followed these procedures where we wanted to confirm there was no bacterial activity. I forget where, I can't recollect where, so I'll have to -- there was a monumental amount of samples we collected in this project.

But the interpretation of SS-25 did not depend on those fluids because they were fluids after the fact. So what we had to go for was either biofilm or scale. That was the best representation of the condition of the microbiological activity on the OD of the pipe wall or casing wall. So it's a little different.

Q. Do these two standards apply to collecting, preserving and analyzing biofilm samples?

A. I have to look at it to confirm that. If there are biofilms, yes.

Q. Okay. And do these

standards -- I'm sorry.

A. If they address biofilm. I have to go back and check the details. Most of the time these refer to water samples you collect for amount of bacteria. That's what you do. And we didn't have that luxury in this case, so...

Q. And do these two standards apply to any scale that might be collected, stored, and analyzed as part of a microbial corrosion analysis?

A. Probably does, parts of it does, yeah.

Q. And to tie down your earlier question about what Ms. Summers might have relied on, I'm going to ask the court reporter to mark as Exhibit 142-90 the supplementary report entitled Analysis of Microbial Organisms Associated with the SS-25 Production Casing.

(Whereupon, Deposition Exhibit 142-90, SS-25 RCA Supplementary Report, Analysis of Microbial Organisms Associated with the SS-25 Production Casing, was marked for identification.)

BY MR. LOTTERMAN:

Q. Dr. Krishnamurthy, I'm going to ask you, if you would, on Exhibit 142-90, to turn to page 27. And I'll direct your attention to references 1 -- or 2 and 3, excuse me. Do you see those?

A. Yep.

Q. Are those identical to Exhibit 142-88 and Exhibit 142-89?

A. Probably, yes.

Q. Go ahead and take a look.

A. Yes.

Q. And I believe you mentioned earlier that one of the principal authors of Exhibit 142-90 was Ms. Summers?

A. Yes.

Q. And is it fair to assume that if Ms. Summer listed as the second and third references in this report, that she relied on those standards in her analysis?

MR. LESLIE: Leading. Lacks foundation.

A. Yes. She used -- and there is a statement in the report, I would urge you

to look at that, okay?
BY MR. LOTTERMAN:
Q. Where are we?
A. On page 8. 2.1, if you go to Section 2.1. Let me know once you're there.
Q. I am.
A. Go to the last sentence. Guidelines have to be adapted to the given situation and system.
So we have to reflect the system and the situation we are in.
Q. Right.
A. Okay.
Q. Let's look at the first sentence. It says: Testing microbial populations for corrosion potential is based on recommendations and guidelines established by the National Association of Corrosion Engineers (NACE).
Do you see that?
A. Uh-huh. Yep.
Q. And it also says in the second sentence: NACE Standard Test Methods include those described in the documents listed in Table 2.

Do you see that?

A. Yep.

Q. Okay. And if you look at Table 2, right below that, do you see Exhibits 142-88 and 142-89 listed?

A. Yep.

Q. All right.

A. Yes.

Q. All right.

MR. LESLIE: Just for the record, there's another one listed too.

MR. LOTTERMAN: You can save that for trial.

BY MR. LOTTERMAN:

Q. So let me make sure I understand your testimony, Doctor. Did Ms. Summers and Blade Energy implement the standards set out in Exhibits 142-88 and 142-89 as part of their root cause analysis?

MR. LESLIE: Vague and ambiguous.

MS. FRAZIER: Same.

MR. LESLIE: Lacks foundation.

A. I would -- I would need to go

back and confirm what aspects of it we implemented, what aspects we couldn't, because of the system, as we have discussed here. I will read the paragraph below the table, which we discussed this.

NACE recognizes that the subsurface and infrastructure systems being sampled vary greatly with respect to accessibility, as well as physical, chemical and biological traits; therefore, it is impossible to give an exact list of methods or protocols that must be followed absolutely.

And that's -- I'll leave it at that at the moment.

BY MR. LOTTERMAN:

Q. Well, let me come at it in a slightly different way. Why did Ms. Summers and Blade list as their second and third references of this report those two standards?

A. They are listed because they are guiding documents to confirm. If they can be followed explicitly, we will attempt to do that. If they cannot be because of the systems we are dealing with, we have to appropriately modify our procedures --

Q. So when --

A. -- to reflect the technical and operational reality.

So I'm not dealing with a pipeline where I have a pristine environment that was protected and failure has not yet happened. I'm not dealing with that situation. I'm dealing with a situation and event that happened a while ago, and so I have to reflect that in my analysis and collection of samples.

Q. But both your pipeline and this wellbore were buried.

MS. FRAZIER: Form.

MR. LESLIE: Vague and ambiguous. You said "your pipeline."

MS. FRAZIER: Yeah.

BY MR. LOTTERMAN:

Q. The pipelines you just talked about, right, in your past experience, was that a -- were those buried pipelines?

A. Yes.

Q. Okay. And until you extracted

the production casing from SS-25, was it below ground?

A. Yes.

Q. Okay.

A. Can I clarify further?

Q. Sure.

A. Totally different situations. In one case, you have a coated pipeline. So pipelines are generally coated, and the environment that causes the corrosion or the cracking is under the coating.

And that environment quite often, when you remove the soil, is still in place. That is a very different situation than a downhole casing where the environment is not as it was when the corrosion happened. So the analogy is not valid, in my opinion.

Q. At all?

A. No, no, no, there are aspects of it that are valid. No, not at all, but they are different situations. There are scenarios that where you learn from each other and apply to each other, absolutely, where it makes technical sense and operational sense. Absolutely.

Q. In your experience, have professionals like yourself, with your expertise, applied the standards set forth in Exhibit 142-88 and Exhibit 142-89 in investigating microbial corrosion?

MR. LESLIE: Vague and ambiguous. Lacks foundation, calls for speculation.

MS. FRAZIER: And it's also outside the scope of the notice, but I assume I still have my standing objection.

MR. LOTTERMAN: Would you read back my question, please?

(The reporter read back the following portion of the preceding record.)

"QUESTION: In your experience, have professionals like yourself, with your expertise, applied the standards set forth in Exhibit 142-88 and Exhibit 142-89 in investigating microbial corrosion?"

(End of readback.)

A. Yes, we have. Where we can, we

have. Absolutely we have.

BY MR. LOTTERMAN:

Q. And have they done that v?s-a-v?s underground storage wellbores?

A. We have done that v?s-a-v?s gas wells. We have done it with gas wells, multiple gas wells.

Q. I'd like to turn you -- turn your attention to page 7 of Exhibit 142-90. Do you see Table 1?

A. Yes.

Q. What does it represent?

A. All of these represent samples that were either collected on-site or in the warehouse to analyze for bacteria.

Q. Does this purport or at least is it intended to be a complete list?

A. It's all the reports, I believe. That's what I need to check. I'm looking for -- no, it's not a complete list. The list goes on on -- SS-25 7-inch is much greater.

Q. I'm sorry?

A. SS-25 samples are in Section 3.

Q. What page?

A. Page 15. Those are the samples I'm talking about.

Q. So combining Table 1 and Table 5 of Exhibit 142-90, are those all of the samples that Blade collected and analyzed for microbial populations?

A. I believe so. I can't be -- I can't be 100% sure on that, but I believe so.

Q. I appreciate that.

How familiar are you with the various sample sets set out in the first column of Table 1?

A. By familiar, you mean did we collect it?

Q. Meaning if I were to ask you, for example, where it was collected, could you give me the answer?

A. It's listed in the table.

Q. Good.

A. So yeah.

Q. Let's go through --

A. I don't have to do anything.

Q. Let's go through it and you can give me your best recollection. Let's start with the first column or the first row, actually, which ends with LA1.

Do you see that?

A. Yep.

Q. And is the sample type there fresh wireline samples?

A. I believe so.

Q. How do you gather a sample for a microbial population assessment through a wireline?

A. Okay. So this was July-August 2017, so I'm first trying to figure out, we would have collected it as part of the tubing. So this would have been samples collected through a wireline sample, okay?

So our concern there, we had already analyzed the ID of the casing, the modeling of the internal corrosion. Our concern was when we pulled up, if the fluid had not been conditioned appropriately when the well was killed, either the relief well or how SS-25 was left, we were concerned there would be some microbes in that that may have caused corrosion during the waiting period, during from February of 2016 to

whenever we pulled this.
So our intention at that point, our concern at that point was was that fluid appropriately conditioned, was it taken care of, are there corrosion on the ID that may have compromised the pipe. That is the intent of this analysis. Okay, so --
Q. Actually, let me just -- I think I want to focus on the OD of the production casing, and I think what you just said was -- I may be wrong, but let me ask you a question and then you can keep talking if I'm wrong.
But was the sample set collected for LA1 from the OD of the production casing?
A. I don't think so.
Q. Okay.
A. These are not production casing samples. The only relevant production samples are in that Section 3 I pointed out, on whatever page, I forgot the page number.
Q. Well, let's --
A. So that is the biggest one. So, anyway, I'll leave it at that. Go on.

Q. Let's stay on Table 1 and we'll go through this as quickly as I can. If you look at sample set ending with LA2, were those samples taken from the OD of the production casing?
A. I don't think so. Those are tubing samples.
Q. Right, okay. Let's go to LA3, third row. Were those samples taken either on or around the OD of the production casing?
A. LA3 you said or LA2?
Q. LA3.
A. LA3, no.
Q. Okay. Let's look at H1. Were those samples taken either around the OD -- yeah, around or on the OD of the production casing?
A. Yes.
Q. Okay. And there were, if I understand this correctly, 22 samples taken?
A. Uh-huh.
MS. FRAZIER: Yes? Yes?
BY MR. LOTTERMAN:
Q. Yes or no?
A. Yes.

Q. Okay. And if I understand this table correctly, those samples were gathered in March of 2018?

A. Yes.

Q. How long had the production casing been excavated by that time?

A. Extracted, you mean?

Q. Extracted, thank you.

A. Got it. Absolutely. It was a long time. We recognized that there was not a very good sample, but we took it just to double-check if there are some things that give us some guideline. So it was not taken according to the procedure that we would have liked. So yeah, we took it after the fact in the lab, in the warehouse.

Q. Okay. Let's unpack that answer if we could. It appears to me that these samples were taken roughly five months after the production casing was extracted?

A. Yes.

Q. Okay. And were they taken after the production casing had been cleaned?

A. No.

Q. And were they taken in Houston?

A. Yes.
Q. So at that point in time, had the production casing -- how long had the production casing sat at the Aliso Canyon facility?
A. I don't recall, but quite a few months.
Q. Between the time that this production casing was extracted and the samples were taken for H1, what did Blade do to preserve any microbial biofilm?
A. We didn't do anything.
Q. Okay. Is that why the description of the sample set is called dried scale?
A. Yes.
Q. And is it your testimony -- well, let me rephrase that.
Did Blade follow the standards set forth in Exhibits 142-88 and 142-89 in gathering the sample set identified as H1?
A. No.
Q. Okay. Let's go to the next row, LA4. Were those samples of the OD of the production casing?

A. Not production. It was P-34 casing at SS-9.

Q. So not even SS-25?

A. No.

Q. Okay. Let's look at H2.

A. Can I clarify before we leave that one?

Q. Please.

A. P-34, P-35 were wells I believe we saw some corrosion in the logs. I don't remember if it was P-34 or P-35, I'd have to go back and see. Both of them we suspected corrosion similar to SS-25. So the intent was to see if we could capture biofilm. That's the reason we captured this.

Q. So let's clarify that a little bit more. When Blade collected the samples set out in row LA4, did they follow the standards set forth in 142-88 and 142-89?

A. I don't recall if we followed everything, but broadly, yes, we did. I'll have to confirm with Liz. But yes.

Q. And did -- as part of that process, did the biofilm deposits dry on the OD before sampling?

A. I don't recall. I don't know whether we got biofilms because the biofilms are not easy to identify on a pipe that's been -- even in this case was sitting for a few days, so we don't know.
Q. And if a production casing -- if a pipeline like this production casing is sitting at a facility, is it possible for the winds to contaminate the samples?
A. This was downhole. This was downhole. It was being pulled when we sampled it.
Q. I see. Okay. Thank you.
Let's turn to -- I believe we're up to H2, are we?
A. Yep.
Q. Okay. This row indicates that these samples were taken at Blade in Houston. Is that right?
A. That's correct.
Q. But, now, this also says dried scale. What does that mean?
A. Again, it was sampled from pipe that was in the lab, in the warehouse.
Q. So did these samples comport

with the standards set forth in Exhibit 142-88 and Exhibit 142-89?

A. No.

Q. What about sample set H3?

A. Those are -- again, these were -- what we were trying to do, this goes back -- this is to SS-25. If it is July-August, this would have been on the 7-inch. We were trying to sample the fluid outside the 7-inch. Way below in the well.

Q. In the B annulus?

A. In the B annulus.

Q. Okay.

A. The B annulus, between the 7-inch and the formation.

Q. Why?

A. To see if we could find water. This was way below, okay? So we had the USIT log, the isolation scanner. We were looking for locations where there were liquid, and we poked holes in the casing. It's a Schlumberger tool. You pool the liquid under pressure in a container, and it's called CHDT samples. They were transported to Schlumberger and then Schlumberger would send it to Ecolyse for sampling.

Q. Were the results -- was the analysis and/or the results of those samples informative in your microbial corrosion analysis?

A. Unfortunately, no. None of these were informative.

Q. Let's skip LA5 for a moment and go on to LA6. Did LA6 test for microbial corrosion along the OD of SS-25?

A. LA6 is P-35 so it's a different well.

Q. Why did you choose to test the OD of P-35?

A. Again, because we saw corrosion in the USIT log, OD corrosion, in P-35 and we picked locations to see if it maps.

Q. How far is P-35 from SS-25?

A. I don't remember. I don't recall. I'll have to look at a map. It's not close.

Q. If microbial corrosion can be localized, why would one care about potential corrosion at another well not on the same well pad?

A. Totally two different issues. Corrosion is localized, but the fluid that causes that localized corrosion is common to the field. So that is what we -- that is our interpretation.

Q. When you say fluid, you mean drilling fluid?

A. No. In this case we are looking at water, groundwater. Nothing to do with drilling fluid here.

Q. Let's go to the last row, H4. Do you see that?

A. Yep.

Q. Okay. Did that collect samples in or around the OD of the production casing at SS-25?

A. Yeah. It says P-35 and SS-25 CHDT. So this is again the casing hole dynamic tester sampling.

Q. Well below the parted casing?

A. In this case, it's December 2018, so in SS-25 it was outside of the 11-3/4 inch.

Q. Oh.

A. So it's the OD of the 11-3/4

inch, that's what that was.

P-35 would have been the casing itself.

Q. Okay. Let's go back to LA5, I believe the last row on Table 1. When were these samples taken?

MR. LESLIE: It's not the last row.

MR. LOTTERMAN: I'm sorry, second-to-last row. Thank you.

MR. LESLIE: Third-to-the-last.

BY MR. LOTTERMAN:

Q. Third-to-the-last row. Let me start over. Let's go back to the row ending with LA5.

Do you see that?

A. Yes.

Q. When were those samples taken?

A. In August of 2018, I'm looking at the column there.

Q. And just to put that sampling collection date in context, that was after seven kill attempts?

A. Oh, yeah, yeah, yeah. It was after the well was under control.

Q. Was it roughly three years after a crater had been created around SS-25?
A. Yes.
Q. Was it roughly 12 months after the production casing had been extracted?
A. Yes.
Q. Okay. Now, when Boots & Coots and/or SoCalGas attempted to kill the uncontrolled hydrocarbon release at SS-25, would the kill fluid have gone in the B annulus between the production casing and the surface casing?
A. Possibly, yeah. Probably, yeah.
Q. And when the crater was created around SS-25, both during and after the leak, would the crater fill with rainwater, kill fluids and formation oil?
A. Was that a question? I apologize.
Q. Yes.
A. Yeah. Yes, sorry, I apologize. I didn't...
Q. And was it your observation when you visited the SS-25 well pad that the

fluids in the crater typically pooled to its deepest location?

A. Yeah.

Q. Okay. As part of your investigation, did you -- I believe you talked about the political science term "crud."

Do you remember that?

A. Ravi term, but yes. Sorry.

Q. Okay. Yeah, I'll embrace it.

As far as you know, did any of that crud go into the B annulus at SS-25?

A. I don't know. It's probably there. It was probably part of the fluid that came out, so yeah. But the crud may have formed on surface, but did it go back down, I'm speculating.

Q. So at the time you took these samples for LA5, there was kill fluid, rainwater, formation oil, and crud in the B annulus.

MR. LESLIE: Leading.

Objection.

A. Yes. Contaminated, correct.

--oOo--

BY MR. LOTTERMAN:

Q. Okay. Now, you mentioned the 42 samples taken. Is that depicted in the last column of that row?

A. Yes.

Q. Okay. How many of those samples were actually tested?

A. All of them.

Q. How many of those samples were deemed reliable?

A. I have to go back and check. I don't recollect all that.

Q. You know what, let me give you -- let me tell you it was 14. Let me tell you it was 28 -- I'm sorry. Let me back up.

I want you to assume it's 14, and I'll establish that in a minute, okay?

A. Okay.

Q. All right. What happened to the other 28?

A. I don't recall. I'll have to find out. I'll have to check.

Q. Okay. Well, I believe, if you'll look at -- yeah, here we go. If you'll look at Exhibit 142-90, which is the microbial supplemental report.

A. The same one, right?

Q. Yeah.

A. Yep.

Q. You go to page 15, and there's some narrative right above Table 5. You see that?

A. Yep.

Q. Would you read the second sentence into the record, please.

A. Due to sample drying during collection, DNA isolation efforts were successful for only 14 of the 42.

Q. Does that refresh your recollection as to how many of the samples were deemed reliable for purposes of your microbial analysis?

A. No, because what she's talking about, I have to confirm this, only 14 out of the 42 we could do amplicon metagenomics. That's what she's talking about, okay? That is my understanding. I have to go back and check.

Q. Right.

Do you have an understanding why the other 28 were not successful for DNA isolation efforts?

A. I don't know the technical reason for that. There is a reason for that.

Q. All right. Do you recall roughly where the samples were taken along the production casing for the LA5 sample set?

A. We have it documented. I don't myself recall right now, yeah. We have documented that.

Q. Would it refresh your recollection if I told you it occurred around joint 24 and joint 25?

A. Oh, you mean the joints, I remember the joints. I think it was 25 and 26, maybe. Or it was 24 and 25, one of those two joints.

Q. And can you remind us what joints were on both sides of the parted casing?

A. 22.

Q. Why did you sample two, three and four joints away?

A. Number one, those are the --

the joint that failed had so much gas around it, so much destruction around it, the failure joints, that's what you're talking about, joint 22 is what you're referencing. So we didn't sample at that point. We did scale it but we didn't do biological, microbiological sampling on that. We went to 25 and 26, the last two joints.

Q. And for the record, how far were joints 25 and 26 from the point of rupture? Just roughly.

A. 40 feet, I forget, maybe. Maybe more. I'd have to go back and check but I can find that out.

But joint 25-26 or 24-25, both of them had the Type 1 corrosion.

Q. Did you sample the surface casing, the IC of the surface casing?

A. Can you repeat?

Q. Sure. I'm sorry. I'm trying to go slow.

A. By surface casing you mean 11-3/4 inch?

Q. Yes, sir.

A. Okay.

Q. I guess my question is as follows: Did Blade sample the interior circumference of the surface casing at or around 892 feet?

A. No.

Q. Why not?

A. We didn't know how to do it. I would love to know how to do it.

Q. Why couldn't you do it after you extracted the production casing?

A. Unless I pulled it out and you can't pull it out because it's cemented partially on top, partially on bottom. I have to cut a ring from there, which is not physically feasible. We discussed this operationally with everybody, and there's a safety issue involved with extracting the surface casing. So we decided not to.

Q. All right. So maybe I don't understand the construction very well, all right? And I think I know the answer but let me ask it anyway.

What is between the production casing and the surface casing -- or what was -- at SS-25 at or around 892 feet?

A. Fluids.

Q. So no cement?

A. No cement.

Q. So what precluded Blade, after they extracted the tubing and the production casing, from reaching down into the wellbore and scraping the interior of the surface casing at or around the depth of the parting?

A. We didn't know how to do it without contaminating samples up and down. And we had samples from the SS-25 7-inch casing so we didn't -- we didn't go after it.

Q. So you considered it?

A. We considered way more than that. We were thrown out of the room for considering some of these things.

The consideration we had, just to give you insight, is we early on proposed extracting the entire 11-3/4-inch and SoCal and DOGGR district were not for it, so there were practical and safety issues for it.

So it's not an easy operation, and we agreed with that, because it's partially -- cement is bad behind the 11-3/4-inch, but it's cemented on top, cement at the bottom, there are parts of it cemented. So if we went down that pathway there was a lot of resistance to it and it is a very onerous process.

Q. Did you sample along the IC of the tubing while it was in the wellbore?

A. I think you mean OD of the tubing, correct?

Q. No, I mean IC of the tubing.

A. ID of the tubing.

Q. ID, I'm sorry, you're right.

A. Yeah, I just wanted to clarify.

Q. So let me ask the question again. Did you sample along the ID of the tubing while the tubing was in the wellbore?

A. We did some -- after we got it onto the racks, we cleaned it with rags to collect some samples.

Q. I was wondering if you actually sampled either the ID of the tubing or the production casing while it was still in place in the wellbore.

A. No, we did not. We did not. There was no reason to because we were pulling it out, right, so...

Q. So explain to me again, because I'm not quite sure I understood, why Blade did not sample the OD of the production casing at or near the parted casing.

A. We sampled it on-site. We did not do microbiological samples if that's what you're asking. We sampled everything on-site but we did not take microbiological samples.

Q. Why not?

A. At that point we had -- we really didn't think that was an issue. It was -- we didn't consider microbiology as an issue at that point.

Q. In other words, you didn't suspect microbial corrosion?

A. No, we did not at that point at all. So we took a lot of scale samples. We took numerous scale samples, but they're not micro -- which was analyzed by Liz as we discussed, but they are not true biofilm-type samples, we didn't take. We took liquid samples so we felt like we did have enough samples there.

Q. And once the production casing was extracted from the wellbore and once it sat on the facility and after it was transported to Houston and after it sat in your warehouse, was it possible to extract biofilm samples at that point in time?

A. Not biofilm samples. It was scale samples at that point.

Q. I'm asking about biofilm samples.

A. No, no, biofilm samples, it was not.

Q. Okay. There was quite a bit of talk during days 1 and 2 about grooved striated corrosion. You remember that?

A. Yes.

Q. Had you ever observed that type of corrosion before?

A. Not me personally, no.

Q. Okay. And in fact, I believe you said the morphology was unusual? Is that right?

A. Yeah.

Q. Okay. And I now know what morphology means. So did you -- did you search the literature for examples, samples, research, on grooved striated corrosion for

MIC?
A. Yes. My team did extensively.
Q. Were they successful?
A. No. There were no pictures. People talk about tunneling. Nobody had a picture of a tunnel. Until this project, I've never seen a tunnel. So the tunneling is extremely unusual.
As far as I recall, nobody had grooves. And those terminologies are used in the MIC literature. The other one that is used, which I didn't discuss yesterday, was scooping. There is a scooping process, it looks like somebody scooped a metal out (demonstrating). That's another terminology. So there's extensive terminologies on morphology that we looked at in looking for examples. There are numerous lab testing on this but very little to no in the literature physical samples, as far as we could see.
Q. Can microbes other than methanogens cause grooved striated corrosion?
A. Possibly.
Q. Which ones?
A. Since we have not seen it, I

don't -- I wouldn't dare comment on it.

Q. Okay.

A. There are three characterizations of these from a morphological point of view, which is -- now, in morphology you have striated corrosion, this tunneling. There is scooping. These are all terms used to describe. These are qualitative benchmarks for microbial corrosion in literature.

Q. Okay. Aside from microbes, are there other possible corrosive causes of grooved, striated morphology, as you saw?

A. There is always possibilities. Let's say the microstructure has some nature to it, so you have ferrite, perlite, you have something in the material that selectively corrodes and causes grooves. That's a possibility. So you can look for that. We looked for that.

Q. I realize I forgot one last question on Table 1 of Exhibit 142-90.

A. Yep.

Q. Again, focusing on the row ending LA5, the fresh casing surface

material. You see that?
A. Yep.
Q. Did Blade follow the standards set forth in 142-88 and 142-89 in collecting, preserving and analyzing those samples?
A. To the degree it could, yes, we did follow those procedures. I'll need to check with -- I'll need to confirm with Liz, but yes. The answer is yes, as much as possible.
Q. And what prevented Blade from following those standards in toto?
A. Nothing. Nothing should prevent us, other than what our objective was. So we were very clear on the three tests to be done and the amplicon metagenomics is a very advanced DNA test that is conducted today. It is not necessarily in any recommended practice.
Q. Can methanobacteria be an inhibitor of corrosion?
A. I don't know enough to say that. There are types of methanogens that will cause corrosion and there are types of methanogens that are innocuous. Whether it

inhibits is a different question. I don't know enough to say that.

But it does -- so we identify those in the report. There are other methanogens that were present that were in play as was we -- based on our understanding of methanogens, it didn't play a role in the corrosion that was present.

Q. I guess what I was wondering is did Blade do a technical literature search to determine if methanobacteria is sometimes associated with the inhibition of corrosion processes?

A. I can't answer that question. I'll need to take it back.

Q. Okay. Thank you.

Did Blade identify any methanogen-produced carbonate deposits in the failed sections?

A. No.

Q. And is Blade aware of any literature which indicates that methanogenic microbes produce carbonated deposits?

A. I have to go back. We looked at all the scales it can make. It was oxides, I believe. There are some types of oxide it can create and there are types of -- I'm not sure about a carbonate, but it may be a carbonate.

Again, as I described, it's a biochemical reaction and it's not just a chemical reaction.

Q. Okay. Let me shift a little bit and talk about surface casing for a couple of minutes.

A. Sure.

Q. Okay. What is the purpose of a surface casing in an oil production well?

A. Just to keep the hole in place and drill the next hole. It's not a pressure-carrying casing if that's what you're after. It's not intended.

Q. Okay. What is the purpose of a surface casing once a well has been repurposed for gas storage?

A. Just to isolate the aquifers, isolate any water zones from the production casing. That's the primary role in this case.

Q. Did Blade opine as to the

mechanism which caused the corrosion in the 11-3/4 surface casing?

A. We were conveniently silent, I believe, because we didn't extract the pipe, as we just discussed. We studied the holes, not all of them. Most of the 58 holes we looked at. Actually, all of them.

So we were -- so we believed some of those holes may have been through-wall; we don't know that for a fact. And some of them may have become through-wall after the 7-inch casing breached, after the breach in the 7-inch. Because there was enough OD corrosion, we addressed this in the report, so there's various things.

So other than the fact there was an aquifer, it could be oxygen corrosion, could be any mechanism. We don't know.

Q. Could the kill attempts themselves have caused holes to appear in the surface casing?

A. No.

Q. Okay.

MS. FRAZIER: You want to take a break?

THE WITNESS: No, no, I'm okay.
MR. LOTTERMAN: I thought we'd maybe go 10 more minutes and then break for lunch, if that works for you.
THE WITNESS: Sure.
MS. FRAZIER: Maybe 10 or 15? I don't know when my lunch is going to be here.
MR. LOTTERMAN: Okay. Do you want to take a short break and then we'll come back for 30 minutes?
THE WITNESS: Yeah, let's do that.
THE VIDEOGRAPHER: We are off the record. It is 11:45 a.m.
(Recess taken, 11:45 a.m. to 11:56 a.m.)
THE VIDEOGRAPHER: Okay. We are back on the record. It's 11:56 and this is the beginning of Media 15.
BY MR. LOTTERMAN:
Q. Dr. Krishnamurthy, why did Blade study the groundwater around SS-25? Briefly.

A. So I'll try to be as brief as possible because that's a big question. So there's only so many corrosion mechanisms possible in a well like this. You have pipeline sales quality gas, which means your CO_2 is low or H_2S is low.

So you're not dealing with high acid gas concentration like you would in a conventional oil and gas well. That is really the biggest difference between a natural gas storage well and a natural gas well; your acid gas concentrations are higher. By acid gas I mean CO_2 and H_2S.

So before you even look at the morphology of the corrosion, the evidence was clear that there was external corrosion on the 7-inch casing and that corrosion led to the cracking and the rupture and all that good stuff.

So the corrosion is a precursor to all of that. So then you look at it and you say what are the possible mechanisms? So there was an electric log data from 1954, which we reference in the report, I believe. I'm sure we do.

And we got data there to tell us when the drilling mud was displaced into the B annulus outside of the 7-inch casing, outside of the 7-inch casing within the 11-3/4-inch and all the way from the top of the cement all the way to the top, there is evidence to show us that there was 10 to 11 pH drilling fluid in there.

So that should not cause corrosion. That is routinely used in the industry as a fluid outside of the production casing.

Q. Because of the high pH?

A. Because of the high pH.

Q. Okay.

A. So that -- and even if there is a little bit of CO2 in there, it should cause no problems.

So then now you fast-forward to what we observed. So none of our -- so that fluid was definite -- in our mind couldn't probably cause the kind of corrosion we observed. Even if -- and so now let's step back and then say I bubbled CO2, I have CO2 leaking from the connection and it gets into the annulus, even then at a pH of 11, it's very difficult for you to cause corrosion.

So then when you eliminate all of that, then you say what else could have caused the corrosion.

So at that point we spent a lot of time in Aliso, since February of 2016, so we saw water coming down (demonstrating). You could literally see. The entire area is dry. Then you will see suddenly a small area there will be very good vegetation.

So of course we were curious where that water is, and we couldn't find any records. We delved into the records and we couldn't find anything. That told us there was an aquifer. And as we discuss in the report, we attempted to research if there were any aquifers, preexisting aquifers. It's high up in the mountains so the probability is low, but we checked all of that and there wasn't an aquifer.

Q. There was not?

A. There was not an aquifer. An aquifer is something that's preexisting that is flowing underground. There was not that.

So then that led us -- of course, this is why it's a multidisciplinary work. You've looked at a log, your geologist is telling you -- sorry. It's weathered rock so the rock is -- there is high vertical permeability, shallow, it's called vadose, on the surface, and so that was demonstrated by the logs.

And so at that point we started inquiring -- started thinking of water, how could water get there, what kind of water can get there. And that is what led us to groundwater. So we were looking for a corrosion vector, as we call it, and we couldn't find one. And there are no other corrosion vectors. We had already modeled the internal corrosion with the water that was being produced and there is no internal corrosion in these wells, in the wells -- the data we looked at. I want to be careful.

Q. So to put it in a political scientist major's vernacular, would water, whether it's groundwater -- let me back up.

So did Blade rule out an aquifer as the source of water in and around

SS-25?

A. Based on the research we did, yes.

Q. Did Blade conclude that if water were in and around SS-25, its source was likely groundwater?

A. Rainwater, rain runoff water, yes.

Q. Rainwater?

A. We call it the runoff water, I think. I forget the exact terminology for it, but it's a hydrology term, yeah.

Q. And does runoff or groundwater, does it carry microbial organisms or could it carry microbial organisms into the B annulus?

A. Not in its form that it falls as rain. But there is an ion exchange and there is an exchange with the ground as it flows down a fault or a fracture, it could capture some microbes. So that is the likely source.

Q. Right. And then if I understand your hypothesis correctly, for MIC to exist, basically there needed to be an aqueous environment in and around the parted casing.

MR. LESLIE: Objection, leading.

A. Yes. I'm sorry.

BY MR. LOTTERMAN:

Q. Let me clean up the question. Was your hypothesis that -- did your hypothesis include the assumption that in order for MIC to occur in and around the parted casing there needed to be an aqueous environment?

MR. LESLIE: Objection, leading.

A. Yeah. For MIC to occur, for any corrosion mechanism to occur, you need an aqueous environment.

BY MR. LOTTERMAN:

Q. Is that because the water will basically provide an environment for the methanogens to live?

MR. LESLIE: Objection, leading.

A. No. No, no, no, that has nothing to do with it. It's independent of that. I'm talking about for a corrosion mechanism to occur, I need an electrochemical reaction. For an electrochemical reaction, I need an aqueous environment. That is step one.

Now, microbes such as archaebacteria grow in water, and they grow at rates -- this is why looking at the liquid environment and analyzing for bacteria is not relevant because a bacteria that may be in high population in the liquid environment may not necessarily cause the corrosion.

So you are looking -- that's why you want to go after biofilm. So any sort of analysis that we talk about in bacterial analysis, that doesn't become relevant to the corrosion itself. It just tells you there is a bacteria that is in higher population in the water versus something else.

So what you're after at that point is to say you have a bacteria; the bacteria needs a nutrient. The nutrient can come from the anions and the cations in the water or other sources, CO2. CO2 can come from many places.

In this particular case we found very, very small leaks that were not detectable by the temperature logs, almost seeping gas that provide nutrients to the methanogens. That's the hypothesis.

BY MR. LOTTERMAN:

Q. Thank you.

As part of Blade's investigation, were they able to determine when groundwater first was present in the B annulus on or around the parted casing?

A. No, we did not -- we did not pursue that line to say what time it started. That goes back to the corrosion discussion we were having a couple of days ago. We didn't believe that was pertinent to our root cause; it's corroded, so we left it at that. That's a separate type of work we have to do.

Q. Was Blade able to determine a range of time in which the -- any sort of groundwater or water first arrived in the B annulus?

A. We came up with a range of corrosion rates but that's about it. Anything more than that would be pure speculation.

Q. Was Blade able to determine whether or not the amount of groundwater in the B annulus, assuming it was there, fluctuated over time?

A. Yes. We looked at temperature logs. I have to go back to the exact location in the main report. We saw a blip and there were two factors that drove our thinking on that. There was a temperature -- deviation in temperature which we discuss in the report, and also the absence of corrosion for nearly 500 feet, 500 or 600 feet on the OD of the 7-inch.

So when you put all of those factors together, yeah, there was some fluctuation.

Q. And as part of this investigation, was Blade able to determine when there was a sufficient amount of water in the B annulus to allow corrosion to commence?

A. No. It goes back to the same question. I don't have an answer for that.

Q. Now, in investigating the

presence of water at SS-25, were you able to bore for groundwater on the SS-25 pad?

A. Can you repeat, please, repeat the question?

Q. Let me get rid of the predicate. Were you able to bore or draw -- drill bores for -- on the SS-25 pad to determine whether or not groundwater was present?

A. We decided as part of the RCA not to do that. We had that in our plan at one point to drill a borehole to 1200 feet on SS-25. We drilled a hole on SS-9, which is 600 feet from SS-25, and we located water at 400 feet, 900 feet. And that is discussed in the report. So we believed that is representative of SS-25. We were comfortable with that.

Q. Okay. So I'm not quite sure I understand why you chose not to drill the borehole at SS-25. Could you give us a little explanation on that?

A. Absolutely. Absolutely, I will. As we discussed early on in your line of questioning, I thought it will be done in one year. I was in year three already, and we had extracted the pipe.

Our proposal to CPUC, DOGGR and SoCalGas was to drill two boreholes; one on SS-9 then one on SS-25. The operations on SS-25 we were extracting pipe. We were doing this, and in parallel we were drilling a borehole on -- in parallel, we were drilling a borehole on SS-9.

And so timing was an issue. And by the drilling of the borehole on SS-9 took -- was planned, I believe, for three or four weeks. It took us six to nine weeks. It was very difficult drilling, much more challenging than everybody anticipated. So at that point when we got results from SS-9, that demonstrated -- clearly demonstrated water, water at 900 feet, below 900 feet and above 400 feet. There was no doubt about groundwater at those depths.

And then we had e-line logs on SS-25 that identified water at 990, thousand feet. So there was enough evidence to tell us there was water. So in lieu of -- in lieu of getting even further data and delaying everything, we decided that was adequate for our purposes.

Q. How long after the leak was stopped did you take borehole samples at SS-9?

A. Much later.

Q. Years?

A. Three years. I forget the exact time, but it's a long time.

Q. Roughly three years?

A. Two and a half, three years, yeah.

Q. Okay. And how far from SS-25 is SS-9?

A. 600 feet, I believe.

Q. And aside from borehole sampling at SS-9 -- so did you do borehole sampling at SS-25?

A. We did boreholes to 100 feet, 120 feet, that was early on, to log and look for -- because we suspected water all along because of that low temperature zone that we discussed yesterday. So we knew there was some ice or hydrate, shallow. So we knew there was some water there, something is there.

So we were pursuing that in 2016 when we drilled those shallow boreholes. And then we used those boreholes to establish the strength on SS-25 pad to bring the rig in. So that was used for that also.

But we had e-line logs, I want to repeat myself. That log showed water zones at that depth and we discuss this in the main report. I can point to you where it is if you would like.

Q. But as far as the borehole sampling goes, was it only done at SS-25 and SS-9?

A. There were shallow boreholes at SS-25. The boreholes to 1100 feet was only at SS-9.

Q. Okay. I'd like to turn your attention to Speedtite connections.

A. Yeah.

Q. Before lunch, all right?

A. Yeah.

Q. To your knowledge or based on your investigation, were they commonly used in the 1970s?

A. I don't know that I would say -- you mean 1950s or '70s? Sorry.

Q. Let's start with the '50s, the spud date.

A. Yeah. Probably. I don't remember. I don't recall that research, whether it's common. It was definitely commonly used in Aliso, and it was not a standard buttress or a -- so just for clarification, there are API connections that are standard connections.

So this is what we call a non-API, and I don't know whether I would use the current term called "premium." It's what we would call premium connection, so it's an improved connection as compared to an API connection.

Q. Was it a non-API standard -- was it a non-API connection because the API standards didn't exist in the 1950s?

A. It's possible. But this would not be an API connection because it's better than an API connection. API connection is standard threads that anybody can make. If I remember right, Speedtite was a proprietary connection. I forget the manufacturer. We researched it, it's there in the report, but I don't remember.

Q. As part of your examination, did you evaluate what SoCalGas did as part of its conversion of the field to a gas storage operation?

A. Yes.

Q. Did those efforts include hydrostatic pressure testing?

A. Yes.

Q. Do you recall what levels the wellbores were tested hydrostatically?

A. I don't recall, but they were very high pressures. I'd have to go back to my notes, but yeah.

Q. And did Blade have any criticisms or issues or -- let me rephrase that.

Did Blade find any deficiencies in the work that SoCalGas conducted when converting the Aliso field to an underground storage facility?

MR. LESLIE: Vague and ambiguous.

A. I don't think so because we would have addressed it in the report. Anything we have, any issues we have, that would be in the report as a root cause or a cause or anything. We don't have anything.

BY MR. LOTTERMAN:

Q. Is it a common practice in the United States to use former oil production wells as natural gas storage wells?

A. Routine.

Q. Sorry?

A. It's routine. It's common.

Q. I'd like to turn briefly to the testing you did of the connections, which I'm not going to profess to understand much of, but let me take a crack at a couple of things I wanted to discuss with you.

It's my understanding that you extracted roughly 76 joints? Is that accurate?

A. (Shakes head.)

Q. How many joints?

THE WITNESS: No, sorry.

Sorry, I apologize.

MR. LOTTERMAN: The witness

gave me a pretty hearty --

THE WITNESS: No.

MR. LOTTERMAN: -- no.

THE WITNESS: We are only interested in the casing. We don't care about the tubing connection.

To casing, we only extracted 26 joints.

BY MR. LOTTERMAN

Q. I think that's what I said, but okay. So --

A. I thought you said 76.

Q. No, I'm sorry, I said 26. I may have -- I meant 26. I may have said 76.

A. Sorry, yeah.

THE WITNESS: Am I right?

MR. LESLIE: You did say 76.

THE WITNESS: Sorry.

MR. LOTTERMAN: Okay. Then majority rules. Let me rephrase the question.

BY MR. LOTTERMAN:

Q. Did you extract 76 joints as part of your RCA of production casing?

A. We extracted 26 joints. I'm

sorry.

Q. We'll move on. We'll move on. I'm having the SS-25A issue here.

MR. PETOSA: You are.

MR. LOTTERMAN: Yes.

MR. PETOSA: You definitely are, and it's before lunch.

BY MR. LOTTERMAN:

Q. How many of those 26 joints did you test?

A. I have to go back to my report. I don't remember. So probably 25, 24, some number.

Q. I have 25. Is that roughly --

A. That's roughly right.

Q. No need to look. It's not extremely relevant here.

Do you recall to what maximum pressure you tested them?

A. It depends on the connection. The connections were tested purely in pressure. We didn't put an axial load because that would be worse to put an axial load. We calculated the end loads and that was within the axial load the casing failed.

And they were tested in 500-psi increments, 500, 1,000, 1,500, and at each point we looked for leak rates. That's how we did it.

Q. Okay.

A. I'm giving you a high-level rough explanation.

Q. Do you recall, high level, what the maximum psi was used?

A. In some of them it was 3,000, 3300, much higher than the wells probably routinely saw.

Q. Okay. If you look at the main report on page 83 --

A. Sorry, yeah, I'm glad you guided me to the report because I need that.

Q. Page 83, just below Figure 77.

A. Figure 77, yeah, yeah. Table 7, yeah.

Q. Would you read that first sentence into the record, please?

A. The paragraph above?

Q. No, just the sentence that begins "25 connections."

A. Oh. "25 connections were tested with nitrogen gas in pressure level increments of 500 psi up to a maximum of 3300 psi."

Q. Does that refresh your recollection as to what maximum psi was used in the RCA?

A. Yeah.

Q. And does that refresh your recollection as to how many of the 26 extracted joints were tested?

A. Yeah. Yes.

Q. Do you know what the maximum operating pressure was at Aliso Canyon in September of 2015?

A. 2700 or 2600 or something like that.

Q. Did Blade, as part of its root cause analysis, uncover any evidence that SoCalGas ever exceeded its maximum operating pressure?

A. No.

Q. Did Blade develop an opinion one way or the other whether it was SoCalGas's practice to stay well below its maximum operating pressure?

MR. LESLIE: Assumes a fact not

in evidence, lacks foundation.

A. We never saw anything beyond its capacity at all. We have never -- that's not an issue.

BY MR. LOTTERMAN:

Q. There is a statement in your report somewhere, which I don't have a notation for, something along the lines of the intent of pressuring the connections was not to identify whether or not they leaked but to quantify flow rate if a leak occurred.

Does that sound familiar to you?

MR. LESLIE: Leading.

A. Let me rephrase that. Our intent was to quantify the leak rate if there was a leak. And there were multiple reasons for that.

The plan to test these connections was in place early on, actually, because one of the theories we were considering as a root cause was a leaking connection cooling the area and then breaking, something to that effect. So as you can imagine, we had not seen it at that point.

So the design of this test was intended to establish not just that it leaked; the quantity of the leak. And it's small, it will leak once, it won't leak. It's weeping is the word I would use rather than leak. But weeping, other than me, many people will not understand. It weeps gas. It's very little gas coming out of there. So in our lingo, it's barely a leak.

BY MR. LOTTERMAN:

Q. Okay. And are the results of those tests set forth in Table 7 on pages 83 and 84 and 85 of the main root cause analysis report?

A. Yes. Yes.

Q. All right. And if my math is correct, does Table 7 show that only 9 of 25 joints leaked?

A. That's correct.

Q. And does table 7 show that of the nine, seven had -- I believe you used the phrase "very low rates"?

A. Correct.

Q. Of the highest two leaks or

weeps, were any of them immediately around the parted casing?

A. I don't remember which ones they were. They were not around, they were below. I think one of them was below, if I'm not wrong, one of them was above. I have to go back and check that. We looked at that.

The highest leak rates came from C016B. I'm reading from page 85, first paragraph on that page below the table. It leaked at -- I'm going to the oil units. One of them, which is C016B, leaked at 57 standard cubic feet per day and C023A1C -- I'm reading it from the report right now.

Q. I'm with you.

A. -- leaked at 9,000 standard cubic feet a day, respectively. And connection C023A1C was located in the well 2.3 feet below where the 7-inch casing parted.

Q. And connection C016B, was that located above the parted casing?

A. Yes.

Q. Quite a ways?

A. Yeah. This was three, four

joints. I can give you an exact distance but --

Q. No, that's -- thank you.

You say on that very same page 85, the second -- next paragraph, you say: None of the rates were high. And then you say: There were no indications of any thread erosion as shown in Figure 78.

What did you mean by "no indications of any thread erosion"?

A. If -- sorry, I'll wait for the objection. I apologize. Sometimes --

Q. No, he's not making any, so go ahead.

MR. LESLIE: I can think of one if you want.

THE WITNESS: No, no, no.

MR. LOTTERMAN: Don't bait him.

A. So this was an important point. So this is how we come down to the mechanisms we came down to. There were a lot of evidences we were looking for.

If there was a large gas leak through a connection, and we have seen this in different other components, you will see local erosion. There will be an area that there will be a pathway for the gas if it is a high rate, okay. And the rate was very low. The connection, the pins and the threads were intact, okay? And we checked all of the leaking connections.

That is why we can comfortably say in the well it leaked, it weeped, it leaked small volumes, but it did not leak anywhere appreciable volumes to cause erosion.

BY MR. LOTTERMAN:

Q. Okay.

A. That's what we are talking about.

Q. When you tested these connections, did you retain the temperature and string gauge data?

A. I think so. Yes. Yes. All the data is there, yes. The data we collected, yes.

Q. Do you know if that data was produced as part of your efforts in this exercise?

A. I think so. I believe so.

I'll need to confirm, but I believe so.
Q. Okay. Were you able to determine through your root cause analysis when the weeping around the parted casing began?
A. No. Similar to the water question. We don't know that.
Q. Were you able to determine as part of your root cause analysis when the weeping around the parted casing was in quantities sufficient enough to feed MIC?
A. I don't. We have not quantified that.
Q. Can -- in your view, could the casing parting have impacted the integrity of the threaded connections at SS-25?
A. It's a good question. We seriously considered that.
Q. Where did you come out?
A. So in order to do that, what we did was -- I forget. It is in the casing connection report; should be there, in there. We considered that. We discussed it internally quite a bit at length.
So what we did was what we call

make and break. So we made a connection,
broke the connection, made it back up to what
it would have been if it had -- so what --
I'll have to go back and explain.
So if you look at the
corrosion, if you remember the type 3
corrosion? Remember the type 3?
Q. I do.
A. So it just so happened the
connections that were leaking large volumes
had type 3 corrosion connections. So if the
failure had any impact, that connection would
have moved and that corrosion would have
misaligned. So there's a corrosion that is
running through the connection at that
connection point and it was aligned exactly.
So we felt quite confident it didn't, there
were other calculations we did.
So what we did was we opened up
the connection, made it back up to a tighter
connection to see if it still leaked, and it
leaked. So we discuss that in the detailed
connection report.
Q. Did Blade consider whether --
actually, before we go there --

A. Sure.
Q. -- it's my understanding that you just testified that the -- one of the two connections with the highest leak rate was within a couple of feet of the parted casing. Is that right?
A. Only one.
Q. Only one. One of the two.
A. The other one was further up, we said four joints away.
Q. Did that not increase the possible correlation between parted casing and impact on threaded connection?
A. No.
MR. LESLIE: Objection, leading.
THE WITNESS: Sorry. Sorry.
MR. LOTTERMAN: Do you want to strike the answer too?
MR. LESLIE: No, my objection stands. Just pretend it was inserted before his answer since he answered very quickly.
THE WITNESS: Sorry. I apologize. Because that's a question.

MR. LESLIE: That's all right.

A. No, no, because that was a big consideration for us, because we were all discussing it's a small leak, could it have happened as a consequence of the incident. And we looked into that extensively two or three different ways, and we couldn't find evidence for that.

BY MR. LOTTERMAN:

Q. Did Blade look into the possible impact that the top kills had on the threaded connections near the parted casing?

A. We didn't explicitly do, but we looked at the loads because of the top kill. The loads were very low so we didn't see that as an issue.

Q. Did you view any video showing the wellbore, the top of the wellbore, the Christmas tree, et cetera, after the final top kill had been attempted?

A. No.

Q. Were you aware that after the final top kill had been attempted, the wellbore was "flopping around the crater"?

A. Yeah. I am aware of it from

the notes that we studied, yeah.

Q. Could that have had an impact on the shallow connections in SS-25?

A. No. The first connection that leaked large volume is 16B, which we just talked about. That is about 500 feet below. And there are other structures shallower that hold that vibrating wellhead in place, vibrating or -- I don't want to use the word "vibrating" -- moving around. So no, we don't think that had any role in it.

Q. Did Blade find any barite in the threading connections?

A. May I step back and I'll answer that question going back to the previous question of -- of -- where was I with the vibration? Yeah, the key issue is this, okay? If anything post -- post-parting caused these connections to leak, the corrosion that we saw would not be aligned the way it was aligned. That is one factor.

Then we made, break, put it back, and we saw similar leak rates in some of these connections. And I don't remember how many of them we retested. I believe we retested two or three, maybe more. I don't recollect.

So with those factors we excluded all external -- or we excluded this happening post-failure, if I may say so. Sorry.

Q. That's fine. I'll take whatever clarifications you give.

A. I wanted to clarify.

Q. Thank you.

So my next question was: Did Blade find barite in the threads of the connections it excavated at SS-25?

A. I'm assuming by threads you mean within the pin and the nose?

Q. Exactly.

A. Not on the OD. OD we did find barite. But, no, nothing, there was no -- as we showed in this picture, it was clean. These threads were quite pristine, the connections. The picture on figure -- and there are more pictures in the report, Figure 78.

Q. Right. I guess what I'm asking is maybe a little more precise question or maybe I'm not understanding. But my question is: Did the testing of the connections that you did show barite in the threads? Any barite in the threads?

A. I don't believe so. I'll have to go back and check.

Q. Could removal of the production casing, as you described earlier today, have had an impact on the casing connections?

A. No.

Q. Okay.

A. And I'll explain why again so that we took the top connection -- if you remember, it parted at 892. We pulled all of that out, which was basically very easy. You pull it out slowly, though. And one of the connections that leaked -- I'm talking of the two big ones. There's other -- six or seven of them that seeped. The one was above, C016B was above, whereas CO23AC is below because it was in the bottom half.

So the bottom half, we went in with a pawl, pulled it, and got it out. Two different connections. One connection that leaked hydrate was above, one was below. So

I don't think pulling had anything to do with extraction of the casing. Didn't have anything to do with it.

Q. Right. But I guess what I'm wondering is when you extracted the casing in, what was it, August of 2017, was weeping connections even on your radar scope?

A. Leaking connection was in our radar way early on.

Q. I'm asking about weeping connections, though.

A. Weeping, leaking, to me -- it became weeping. It was leaking initially in our mind. We were quite suspicious, especially when we saw that corrosion on the OD of the connections. We thought this would be leaking like a sieve and it was not. So, yeah, it was in our radar up front, but then we established it was a very small leak rate.

MS. FRAZIER: Whenever you're at a good stopping point.

MR. LOTTERMAN: I am very close.

MS. FRAZIER: Okay.

--oOo--

BY MR. LOTTERMAN:

Q. Last question before lunch.

A. Okay.

Q. Were any of the threaded connections on SS-25 unscrewed before the other joints were cut and removed?

A. Could you please repeat?

Q. Sure.

Were any of the threaded connections at SS-25 unscrewed before the other 25 or so joints were extracted?

A. I'm assuming you mean the 7-inch casing.

Q. Yes.

A. So the 7-inch casing, our protocol was every one of those connections. I don't think we unscrewed any connection. I'd have to go back and look. I don't believe so. We pulled it up and every one of them was cut on-site. So that's what I recollect.

MR. LOTTERMAN: Let's break for lunch.

MS. FRAZIER: All right.

THE VIDEOGRAPHER: We're off

the record. It's 12:32. It's the end
of Media 15.
(Recess taken, 12:32 p.m. to
1:34 p.m.)
THE VIDEOGRAPHER: Okay. We
are back on the record. It is
1:34 p.m. This is the beginning of
Media 16.
BY MR. LOTTERMAN:
Q. Dr. Krishnamurthy, we're back
on the record.
A. Yes.
Q. Still under oath.
A. Yes.
Q. Still same rules.
A. Yes.
Q. Okay. I think we can get done
in short order, okay? And I appreciate your
patience.
Earlier this week there was
some testimony about Blade reviewing GRC
testimony. Do you recall that?
A. Yes.
Q. Okay. And I believe you
testified that you reviewed the testimony of

Phil Baker?

A. Yes.

Q. And I believe you testified that you received and reviewed some testimony from Mr. Mansdorfer.

A. Can you repeat the last part of the question?

Q. Yeah. I'm trying to -- I think it may have been Mr. Leslie showed you two packages; one was a Phil Baker package and the second was from -- testimony by Mr. James Mansdorfer.

Do you remember that?

A. I don't recollect. Unless it's a general rate case, we didn't look at it. There was some other Mansdorfer interoffice memo, which I don't recollect looking at prior to yesterday or the day before.

Q. Why did you review the general rate case as part of a technical RCA?

A. The general rate case -- let me step back.

As we were doing the root cause analysis, it became evident that some of the causes included risk assessment, lack of risk assessment; wall thickness inspection; double barrier, dual barrier.

So at that point we wanted to understand was those ever considered, planned, or never considered, or alternatives were considered. And that is why we went to the general rate case. That was the rationale.

So it was something we started looking at, I don't remember the time frame. It was approximately after we formally started the root cause analysis process and we had all the data. And that was one of the gaps we had. So we said we need to go back. Somebody had looked at it, but we had not considered it relevant but then we revisited it after we identified some of these causes.

Q. Okay. I'd like to turn -- I have a couple of housekeeping measures I'd like to deal with first, and then we're going to finish up. So if you would turn to the main report, page 226.

A. Okay. Yes.

Q. Look at the very top, which begins during the Phase 3 evaluation.

Do you see that?

A. Yep.

Q. Now, earlier today you and I discussed the 11-3/4-inch surface casing at SS-25. Do you remember that?

A. Yep.

Q. And I believe we talked about the holes in the casing?

A. Yep.

Q. Okay. Now, if you look at the second sentence there -- well, first of all, I guess the first sentence states the holes were found between 134 feet and 300 feet.

Do you see that?

A. Yep.

Q. Okay. The next sentence says: These holes were caused by the escaping gas pressure following external corrosion because the casing was never fully cemented nor cathodically protected leaving the casing exposed to an environment conducive to corrosion.

Do you see that?

A. Yep.

Q. How were the holes caused by

escaping gas pressure?
A. So again, I have to go back to the main report. There is a section where we do some calculations. So if there is a wall loss of 70%, 80%, 60%, and the pressure of the gas in the annulus, would it cause the 11-3/4-inch to create holes.
Q. To --
A. To create holes. And we concluded, yes. And I have to go back. It is in another previous section.
Q. I'm not really concerned about the specifics.
A. Okay.
Q. I was just concerned about the hypothesis.
A. Yeah. We quantitatively established a 60, 70% corrosion hole in the 11-3/4 and the gas pressure would cause a hole. That is documented in the prior section in the report.
Q. And how, generally, did you quantifiably establish the cause between the pressure and the holes? That's my question.
A. Oh, that's easy. We knew the

amount of corrosion, wall loss on the 11-3/4, not at the location of the holes at the other areas, so we did a sensitivity on it. That's all we did.

Q. Okay.

A. Really, we didn't do anything more than that.

Q. Okay. I'm going to ask our court reporter to mark as Exhibit 142-91 a multi-page document which begins with BLADE_EMAIL Bates-stamp 32944.

(Whereupon, Deposition Exhibit 142-91, E-mail from Krishnamurthy to Kenneth Bruno and others, April 11, 2016, with Attachment(s); BLADE_EMAIL_0032944 - 2945, was marked for identification.)

A. Give me one second. I just want to check this.

Yeah, this is in Figure 109 of the report on the hole issue. So that's what I wanted to point out.

BY MR. LOTTERMAN:

Q. Okay. Before we go there, does Blade have expertise in assessing and evaluating general rate cases?

A. No, we don't. We were -- just to clarify, we were looking for data from that that would help us in the root cause. We're really not assessing any general rate case.

Q. Thank you.

I've handed the witness what's been marked as 142-91. Do you recognize this document?

A. Probably, yeah.

Q. Okay. Just do me a favor and just flip through it to make sure it's consistent with your recollection.

A. Yep.

Q. Okay. And I believe earlier we talked about, from time to time, you would be giving updates or progress reports to the CPUC and DOGGR. Is this an example of that?

A. This is the only primary example of that. There was an issue there. A couple of DOGGR folks were on-site when we were doing the sampling, and I forget the exact context. It was ages ago.

There were questions about

using, what do you call it, it's a wooden spatula to collect the oil samples or tar that we were collecting. So they were questioning whether we should do it with that, with plastic. So there was some argument about that.

So DOGGR had a lot of questions so that was the intent of this meeting early on.

Q. Okay. Let's mark as 142-91 a one-page document -- I'm sorry, 142-92 a one-page document bearing the Bates stamp BLADE_EMAIL_26427.

(Whereupon, Deposition Exhibit 142-92, E-mail from Bruno to Krishnamurthy and others, April 12, 2019; BLADE_EMAIL_0026427, was marked for identification.)

A. Yes.

BY MR. LOTTERMAN:

Q. Do you recognize this document, Doctor?

A. Yes.

Q. And did you receive this on or about April 12, 2019?

A. Yes.

Q. Do you recall the circumstances surrounding this e-mail?

A. Maybe a -- well, I'll give you some context. It was a month before this e-mail. I forget when it was. There were some CPUC discussions on somebody wanting some oil analysis. And it was not of -- as you can imagine, this is April 2019. It was of no interest to us, so we were requested to conduct this analysis by CPUC.

That's all I remember. There's some -- I ignored all the context of it, kind of ignored it, but there was some context to it, I was told by Ken or Matt. I'm guessing this was Ken.

Q. Okay. Let's mark as Exhibit 142-93 a one-page e-mail bearing Bates stamp BLADE_EMAIL_24900.

(Whereupon, Deposition Exhibit 142-93, E-mail from Bruno to Krishnamurthy, July 3, 2018; BLADE_EMAIL_0024900, was marked for identification.)

A. Yeah. Sorry.

BY MR. LOTTERMAN:
Q. I'm supposed to give you a chance to look at it.
A. I looked at it.
Q. Good.
A. I remember it, so --
Q. Good.
Do you recognize this document, sir?
A. Yes.
Q. What is it?
A. It was in the middle of extraction of 7-inch, I think we were doing, I forget the dates. We were extracting either tubing or 7-inch in that timeline. That's where we were on-site.
So there was a concern by DOGGR, I believe -- again, there were so many issues -- this particular one --
MS. FRAZIER: Do you have the attachment?
MR. LOTTERMAN: I do not. I don't think we got it.
THE WITNESS: What is that?
MS. FRAZIER: I was just asking

if he had the attachment.

THE WITNESS: It should have been there. It should have been there.

A. So but anyway, it was basically they were -- this was -- DOGGR was concerned that there were some corrosion samples during SIMP sampling that -- SIMP work, not SIMP sampling -- that they were worried was not being taken care of or identified or something to that effect.

So they wanted to do this, so they asked me just as a -- as working on the RCA to look at it. That's what this was.

BY MR. LOTTERMAN:

Q. Did you provide comments on the draft letter?

A. Yes.

Q. Okay. And did the draft letter eventually -- was it eventually sent to SoCalGas?

A. I believe so.

Q. As a final?

A. I believe so. I don't know whether my comments were taken or not taken.

The concern I had was they were asking for everything and it was vague, so I attempted to help. That's all it was.

Q. Let's mark as Exhibit 142-94 a one-page e-mail bearing the Bates stamp BLADE_EMAIL_24271.

(Whereupon, Deposition Exhibit 142-94, E-mail Chain ending with E-mail from Bruno to Krishnamurthy, February 19, 2018; BLADE_EMAIL_0024271, was marked for identification.)

BY MR. LOTTERMAN:

Q. Do you recognize this e-mail, Doctor?

A. I don't. I don't know what this is.

Q. Any reason to believe you did not receive it on or about February 19, 2018, from Mr. Bruno?

A. No, no, I received it. It does say that.

Q. Okay. So you received it, but no recollection as to what the content was?

A. No. It should have been some

of the root cause report. We were not anywhere close to writing a report in '18, so I don't know what it was.

Q. That's what I wanted to confirm. Because I believe you said earlier that at no point in time did you -- let me finish my question.

A. I'm sorry.

Q. At no point in time did you share a draft of the root cause analysis reports with anyone, including the CPUC and DOGGR. So this doesn't contradict that testimony?

A. No. We did not share anything. I don't know what this report is. I can't recollect. I'll have to look it up.

Q. And we also didn't get a copy or at least we couldn't find that attachment either.

Let's mark -- this is my last housekeeping item. Let's mark as Exhibit 142-95 a multi-page report from Ecolyse which begins with Bates stamp ILS_Blade_106897.

(Whereupon, Deposition

Exhibit 142-95, Ecolyse, Inc., Project Report, Microbial Population Analysis of Well SS25 7" Casing Samples, Final Report, March 20, 2019; ILS_Blade00106897, was marked for identification.)

BY MR. LOTTERMAN:

Q. All right. Have you had a chance to review 142-97 [sic], Doctor?

A. Me? It's been a while. You're asking --

Q. Am I losing you?

A. Yes, it's been a while.

Q. All right. I'm moving as fast as I can.

MR. LESLIE: I mean, I think "a chance to review," it's pretty fat.

MR. PETOSA: I think it was 95, right?

MR. LOTTERMAN: No, no, no.

BY MR. LOTTERMAN:

Q. So let's do this.

A. Okay. What -- help me.

Q. I will help you because I think by helping you I'll help everyone in the room. If you wouldn't mind turning to the microbial organisms supplemental report, 142-90.

A. Yep. Give me a moment.

Q. Okay.

A. I think I know where it is. Hang on. Yeah, I got it.

Q. Okay. And if -- on Exhibit 142-90, if you'd turn to page 7 back to that Table 1 we talked about.

A. Yep.

Q. All right. And if you go down to the sample set ID row that ends with LA5?

A. LA4, right? This is LA4.

Q. Well, just hang with me here.

A. Sorry.

Q. LA5, you see that?

A. Yep.

Q. On Exhibit 142-90?

A. Uh-huh.

Q. Now, if you look in the upper right-hand corner of 142-95, does it identify the casing samples as LA5?

A. Yes. Yes.

Q. Okay. I wanted to clarify that

because my initial reaction when I saw this was that it was a -- it was the LA4 casing samples, but then when I went through it --

A. It's LA5.

Q. Thank you very much.

A. It's a typo on our part.

Q. Are you able to authenticate this document as something that was generated in the course of Blade's root cause analysis?

A. Yes. I -- again, just so that I'm -- if you go to Appendix A of the report that you just referenced, 142-90, those are the reports, the reference reports containing -- are listed below, those are the final reports there. So this -- this is a typo.

Q. That's fine. I was just more concerned I understood which one it was. And to be clear, do you see the report marked as 142-95 on the list on Appendix A to 142-90?

A. Yeah, it is.

Q. Now, let's stay in that microbial organisms report if we would, and I want to go to page 15 that you pointed out to me earlier. Okay?

So you can put away the Ecolyse report. Put that aside. There you go.

And then the report right in front of you there, if you would turn to page 15. And to sort of get our bearings on this, if you recall, we talked about a number of sample sets listed on Table 1 on page 7.

And then when I asked you if that was all the sample sets, you directed me to the sample sets listed on page 15. Do you remember that?

A. Yep.

Q. Okay. Now, tell me what exactly on Table 5, page 15, what exactly was sampled on the first row, SS-25 oily material?

A. Again, these are visual qualitative assessments. So as we went on the OD of the pipe, if it looked oily or it looked like oil, crude oil that was accumulated, it was a visual assessment that was categorized as oily material.

Non-oily was categorized as scale or OD scale. That's really a visual qualitative assessment.

Q. There was no microbial analysis of that sample set?

A. The oily material you mean, right?

Q. Correct. First row.

A. I have to go back and check. We did do microbial on that also. We may not have done amplicon metagenomics on that. The samples may not have been adequate for that.

But, yeah, we did -- there was a microbial done on that. It was purely for microbial rationale, reason. That was only a qualitative categorization when we sampled them.

Q. And where was that oily material collected vis-?-vis the production casing of SS-25?

A. OD.

Q. Where? All along the OD?

A. Each of them are marked. I would have to go back to the notes. Every one of those were photographed and marked. It's not here, but it's marked, distance from the end. All that is marked.

Q. Okay. And then if you go down

a row to the sample set SS-25 Casing JSN C025?

A. Yep.

Q. What did that entail?

A. That is a scale.

Q. Okay. And if you go to the top of page 16, are there two more sample sets listed there?

A. Uh-huh.

Q. And if you look at the next category, which I believe is delineated as SS-25 Casing JSN C026, what did that sampling entail?

A. That is again scale sample from casing joint -- see, there is a numbering issue, 24 and 25, so those joint numbers are increased because of the failed joint, so the numbering changes. So that's why it's joint -- JSN 26 is joint 25. That's all it is.

Q. And lastly, if you look at the sample set labeled SS-25 background, what did that entail?

A. That is just background samples from the rig area or fluids in the rig just to kind of get a background knowledge on what is there.

Q. So in light of what I'm seeing on Table 1 and Table 5 and your answers on Exhibit 142-90, were there any reliable sample results from biofilm on the SS-25 production casing, exterior, EC?

A. If you're asking me did we visually see a biofilm, no. We saw scale and oily samples that may be part of a biofilm which we sampled and analyzed for microbiological organisms. That's really all we did. That's what we did.

Q. I guess I'm asking you kind of a bigger picture question, is can you point to any results in 142-90 analyzing the biofilm that existed on the EC of the SS-25 production casing on or near the parted casing?

A. We analyzed the scale for microbial populations and DNA of microbes.

Q. Could you --

A. We did not -- we did not visually see or capture a biofilm.

Q. And therefore, you couldn't

test them.

A. We tested the scale and the oily samples. We found microbiological organisms, which we can interpret. However, we did not see a biofilm so we didn't analyze a biofilm.

Q. Any?

A. That's correct.

Q. Okay. Yesterday you said that corrosion is a time-dependent process. Do you remember that?

A. Yes.

Q. What did you mean by that?

A. It grows over time. There is a wall loss over time. That's really what I meant.

Q. And can that rate increase or decrease?

A. Either one. It can increase or decrease, yes.

Q. Can it arrest?

A. Yes.

Q. Okay. I believe you also said that scales can form a protective layer on a pit?

A. Yes.

Q. Okay. How does that work?

A. It's very simple. When the iron dissolves -- iron meaning iron, Fe, from the casing material -- it can form a scale. It can be an iron oxide, iron carbonate, iron sulfide.

And depending on the dielectric strength and the nature of the scale, it can be protective or porous or it can break down and enhance corrosion.

Q. You also mentioned, I believe, that -- or maybe this was out of the report. You talked about there can be changes in season on corrosion? Does that ring a bell?

MR. LESLIE: Assumes a fact not in evidence.

A. I don't remember that. I'm trying to think.

BY MR. LOTTERMAN:

Q. My bad handwriting, I think.

All right. Let's turn to your well kill analysis.

A. Okay.

Q. Does Blade believe that Boots &

Coots was qualified in 2015 to address the uncontrolled release of natural gas at SS-25?

MS. FRAZIER: Outside the scope.

MR. LESLIE: Vague and ambiguous.

A. I can't answer that question. That's not my -- Boots & Coots is well known to do well control in the industry, correct.

BY MR. LOTTERMAN:

Q. But you made no independent assessment of that in the root cause analysis?

A. No.

Q. Did you assess whether it was appropriate for SoCalGas to hire Boots & Coots?

MS. FRAZIER: Outside the scope.

MR. LOTTERMAN: I'm trying to establish it as outside the scope.

A. It's outside my scope.

BY MR. LOTTERMAN:

Q. All right. Did you assess at all in the root cause analysis SoCalGas's

oversight of Boots & Coots' efforts?
A. No. Outside the scope. Technical root cause analysis, so...
Q. Did you assess SoCalGas's kill 1 attempt?
A. Again, everything was technically analyzed, the data supplied to us. That's all we did. We looked at facts and data supplied to us or collected by us.
Q. And in light of that data that you received regarding SoCalGas's attempt, the initial attempt, to kill SS-25, did you conclude it was a reasonable response?
MR. LESLIE: Vague and ambiguous. It lacks foundation.
A. The way I will characterize that is -- and this is more looking at Frew 3, I hope I got the well correct, Frew 3 and FF-34A, I believe, I hope I got the well numbers right, those were the two wells which had underground blowouts, '88 and '91, I believe, again, rough dates.
Those were successfully killed by pumping -- I'm drawing a blank -- I think 9 ppg KCl, successfully killed. So based on

that, our interpretation was it was a reasonable first attempt, yes.

BY MR. LOTTERMAN:

Q. And in fact, you say that in your main report, correct?

A. Yes.

MR. LESLIE: Leading.

BY MR. LOTTERMAN:

Q. Well, let's go to page 148 of the main report. You see right below Table 19?

A. Yeah.

Q. Did you write this, quote, "This kill attempt was a reasonable response because the extent of the failure in SS-25 was unknown"?

A. Yes.

Q. And if I understand your earlier answer to my question, that conclusion -- was that conclusion based in part on the earlier well control efforts that SoCalGas had successfully handed -- handled in other situations?

MR. LESLIE: Objection, leading.

A. Yes.
I want to clarify the dates I gave. I gave it wrong. Frew 3 was in 1984 and I mentioned 1988. It is actually 1984. FF-34A is 1990, not 1991, sorry.
BY MR. LOTTERMAN:
Q. Thank you.
Turning to Boots & Coots' attempts, their first attempt was number 2. Does that comport with your analysis and investigation?
A. Yes.
Q. Okay. Did you assess as part of your root cause analysis whether Boots & Coots violated any regulations or industry practices in its kill attempts?
A. There are no industry practices as far as we are aware of in kill attempts. There are no standards, so yes, there are no -- we didn't write any of that so it's not there.
Q. Are there industry standards for deciding when to design a well kill using modeling?
A. There are no standards.

Q. Are there industry standards for deciding what kind of modeling to use?

A. There are numerous industry commercially available packages, but there are no standards.

Q. Which package did Blade choose?

A. I believe we chose Drillbench which is Schlumberger, if I remember correct.

Q. Are you the right person to be asking these questions?

A. The details of the software or how to use that software, no.

Q. Okay. I think you just cut out about 40 questions, but we'll get to that in a minute. All right.

And is there a difference between designing a conventional well kill and a gas storage well kill?

A. Not in this case because it behaves like a gas well that is blowing on you, uncontrolled well flow. So it's similar to a conventional gas well.

Q. Does Blade Energy routinely use transient flow modeling in well kill operations?

A. "Routinely" is a big word. We used transient well kill modeling, yes. We have used Drillbench for a lot of other applications in the past.

Q. Are you aware of whether other well control companies use transient flow modeling in well kill operations?

A. My understanding is there are other softwares in the industry. I can't name them myself, but there are other softwares in the industry.

Q. Did Blade consider using other simulations or simulator models for simulating the well kill at Aliso Canyon?

A. No. We believe Drillbench is the best so we stuck with that.

Q. Did they consider OLGA?

A. OLGA is an engine that runs Drillbench, if I remember right. I'm talking from memory again. OLGA is a transient flow model which I have personally also used. It actually models transient flow, and I believe -- I'll have to confirm this -- OLGA is one of the engines within Drillbench. I'm not sure. I have to confirm that. I'll have to check that.

Q. Okay.

A. But OLGA is the engine that industry uses quite a bit for transient models.

Q. Did Blade consider using Ledaflow, L-E-D-A-F-L-O-W?

A. I can say we didn't consider any other model. We have used Drillbench in the past, and that's all.

Q. Did your team debate whether to use other models?

A. No.

Q. Have you personally designed a transient flow analysis?

A. I've personally conducted a transient flow analysis, but not a kill attempt.

Q. Okay. Let me ask you a couple of questions, and if you want to punt on them, you may.

How long does a well design using transient flow analysis typically take?

A. Can you -- you don't mean well design, you mean well kill, right?

Q. No, I mean designing the analysis itself.
A. Designing the transient analysis?
Q. Exactly.
A. Yeah, we discussed that. That's why I can attempt to answer that. It's a week or two at the most. A week or two, you can have a model running.
Q. And how long did it take Blade to design its transient flow analysis?
A. Since -- we took much longer, and the reason we took much longer was we were trying to be accurate on the well flow each time, and so we were inputting PROSPER output at various points of the kill attempts into the transient model.
Q. And how long did it take you from the moment your team sat down to begin the design to the moment when you felt comfortable with the results?
A. Again, our role here was different than designing an actual well kill. What we were trying to do is analyze the well kill. It's a little different than

designing.

So if you have -- so what we were trying to do was we modeled it first without the plug. We had a simulator for the plug. And we modeled it and we got pretty good results, and then somebody came in and said, hey, let's put a plug to make sure we are not missing something. Maybe this couldn't be killed. So we had to be ultra careful, so we actually got an even better model.

Those are not necessary. When you actually do a true well kill, you can do much more approximations. So for us it took much longer; four, five, six weeks to analyze all of the seven kills.

Q. Including with the plug?

A. With the plug. With the plug it took us six weeks, if you start -- that is every kill I'm analyzing, I'm picking, pulling things and all that stuff. If we are analyzing one kill or defining a kill, a couple of weeks.

Q. And while you were designing the kill, did any of the designs fail in the simulation process?

A. What do you mean by fail?

Q. Basically, the outputs were not reliable and you realized you had to tweak the beast.

MR. LESLIE: Vague and ambiguous.

A. I think, yes, I'm sure we had to do that. I'm not -- like I said, I wouldn't know exactly how many times, but it's a couple of weeks' work is my estimate. If you design one kill in a couple of weeks, that includes failures and everything else.

BY MR. LOTTERMAN:

Q. Who was on your modeling team?

A. There were two or three people. The primary person was Will Bacon. Will Bacon ran the models in Drillbench and Jerry Shursen supervised it with the plug. A lot of folks checked it, but those are the two key guys.

Q. And are you the right person to ask how the data on fluid properties were entered into the Drillbench?

A. No, I'm not the right guy.

Q. Okay. How about how the reservoir inflow and outflow was modeled?

A. I can talk about it at a high level, but details, Greg Asher is the right guy for that.

Q. How about how resistance of flow at the sand face when mud was entered into the model?

A. Again, that would go to Greg and -- Greg and Will.

Q. What if I wanted to know what the boundary condition settings were for all flow boundaries?

A. Greg and Will.

Q. What about if I wanted to know if those boundary conditions changed for any specific well kill?

A. Greg and Will.

Q. Do you know what impact a broach -- do you know what a broach exterior is?

A. No.

Q. Do you know if your model had any flow path limitations factored into it?

A. Yes. As far as I know, there

were. That was a key part of it, where it could flow, where it couldn't flow, how many holes, all that restrictions. All that were modeled because those were questions we discussed internally to confirm the model was as real as possible.

Q. And at some point in time, did that model use a zero back pressure for the wellbore?

A. I don't know whether we did that, but I'm assuming we did.

Q. Someone else --

A. Someone else would know. That's a detail. But just to clarify on the inflow/outflow, as we have discussed in the report, there were -- PROSPER is the way we did it, the full reservoir model.

But there are two other methods to do it, if we are doing a kill attempt. Those methods would have been quick and dirty and they would give some numbers, order of magnitude numbers.

Q. And assuming you came up with a quick-and-dirty design, was it your belief that you would have been willing to implement that at SS-25 in the middle of a well kill?

MR. LESLIE: Vague and ambiguous, calls for speculation, assumes a fact.

A. I'm not qualified to answer that.

BY MR. LOTTERMAN:

Q. All right. Do you know where the assumptions used for Blade's dynamic modeling are listed?

A. Should be listed in the supplementary report.

Q. Do you know which one of those assumptions were known at the time of the leak?

A. Good question.

Some of -- we, at the end, simulated a situation where we said we didn't know the breach was at 892 and during the well kill operations the assumption was it was at 400 feet. So we simulated that also and the conclusions didn't change. So that was one assumption I know.

Q. Okay.

A. I'm sure there are some other

assumptions we considered.

Q. Was safety a concern that was factored into your well kill modeling assessment?

MR. LESLIE: Vague and ambiguous.

A. I don't know what you mean by safety. Sorry. I apologize.

BY MR. LOTTERMAN:

Q. No problem.

A. I don't know what you mean by that.

Q. Let's talk about that. Are you aware of the dangers of well control efforts?

A. If you mean the capacity of the wellhead and its pressure capacity, yes.

Q. Okay.

A. Any failure in the wellhead, yeah. That, we considered. And that is in the tables because the wellhead I think was rated at 5,000 psi and that was taken into consideration in the outputs.

Q. And is it your view that well control efforts from time to time can make the leak worse?

A. Yes, it can.
Q. Is it your view that well control efforts can cause injuries?
A. It can. It can.
Q. Is it your view that well control efforts can cause deaths?
A. Yes, it can.
Q. Were you involved with Blade's project for Medco in South Sumatra?
A. I'm not -- I'm aware of it. I'm not...
Q. Anyone hurt or killed in that exercise?
A. I don't remember.
Q. So what does happen if, during a well kill, you overpressure the wellbore?
A. You fracture the rock.
Q. What happens?
A. You lose -- you lose fluid to the formation.
Q. And does the killing of that well become more complicated?
A. Yes.
Q. Maybe even impossible absent a relief well?

A. Yeah. It can.
Q. And did you factor into your well kill analysis the fact that at one point in time that wellbore was flopping around the crater?
A. Correct. That was in well kill number 7 and we recognized -- we identified that factor in the report, that at that point really you couldn't continue killing. Absolutely.
Q. Okay. And if I understand your earlier testimony, you weren't present at any of the well kills.
A. No, none of us were.
Q. None of your team was.
So as far as the moment-by-moment pressure readings and the decisions about safety and the decisions about overpressuring the wellbore, were you privy to any of those?
A. No. Just to clarify, we requested a lot of the data, so whatever we got -- the data we got was what we based our analysis on.
Q. Let's talk about the relief

well briefly. Did you investigate any preparatory work that SoCalGas may have done before it decided to start drilling the well on November 20, 2015?

A. Can you repeat the question?

Q. Sure. I understand we're -- it's after lunch, but --

A. No, no, no. Continue. That's not an issue. I couldn't hear you.

Q. I can tell you, we're getting --

A. I couldn't hear you. That's all.

Q. Okay. My question was, did you investigate any preparatory work that SoCalGas may have done before it decided to start drilling the relief well?

A. No, we did not.

Q. Were you aware of any decision by SoCalGas to keep a rig at the facility before that decision was made?

A. No. I think we requested SoCalGas to tell us when the decision was made and that is reflected in the report, that's all. That is the extent of what we did on the relief well.

Q. Does drilling a relief well entail permits?

A. Yes.

Q. Does it entail site preparation?

A. Yes.

Q. Does it entail design?

A. Yes.

Q. Did Blade assess the design of the well kill, the relief well, excuse me, at SS-25?

A. No, we did not.

Q. Did Blade assess the implementation of the relief well at SS-25?

A. No, we did not.

Q. Did Blade assess whether the well -- the relief well effort had any negative impact on the top kill efforts?

A. We did not. We didn't see any, but we did not.

Q. Let's switch over to the Aliso casing integrity portion of the root cause analysis, which I believe is covered in Volume 4.

A. Yep.
Q. Okay. As part of its root cause analysis, did Blade undertake any investigation as to industry standards for maintaining or operating an underground storage facility?
A. Can you repeat again?
Q. Sure.
A. I apologize.
Q. No problem.
As part of its investigation, did Blade undertake any investigation or analysis as to industry standards for maintaining or operating an underground storage facility?
A. Yes, we did. Yeah.
Q. Did that include standards for designing and drilling new wells?
A. No. We were focused on well integrity issues, so we didn't see drilling new wells as an issue.
Q. What about reservoir pressure operations and injection withdrawal management?
A. It didn't come into our horizon

as an issue so we didn't investigate that.

Q. What about evaluating reservoir integrity via shut-ins, inventory verifications and other means?

A. We reviewed it but there was nothing there for us to investigate, so we didn't investigate it.

Q. What about injecting or drawing natural gas using, among other practices, single barrier?

A. Can you repeat that last question again?

Q. Sure.

I'm wondering if Blade undertook any investigation into industry standards regarding injecting and withdrawing natural gas using a single barrier wellbore.

A. We are aware that many operators have single barriers so that is not unusual. It's not unique to California, really, so...

Q. But you had no specific findings on that?

A. No.

Q. I believe when you were

speaking with Mr. Petosa yesterday you talked about Blade's investigation of applicable regulations for underground storage.

You remember that?

A. Yeah.

Q. And I believe, isn't there a section of one of the reports which lays them out?

A. (Nods head.)

Q. Did you find an applicable regulation for whether or not an underground storage operator can use annular flow?

A. Yeah. There is no guideline against it.

Q. Did you find any guideline against dual flow generally?

A. No, we didn't find any.

Q. Did you find any guidance requiring operators to install deep set subsurface safety valves, excuse me, in fault areas?

A. No.

Q. What is a tight spot?

A. Tight spot is normally you are trying to get -- get something downhole and you hit a tight spot, you either push it through or pull it out. So it could be a collapse, it could be some restriction, it could be a bend, any number of things.

Or the stiffness of what they are trying to push through there is so high you have to put a little force on it. So various issues.

Q. Can it be caused by paraffin plugging?

A. Sure.

Q. What about hydrates?

A. Hydrates could cause it.

Q. What about accumulation of sand or other debris?

A. Yes, any number of things.

Q. Is it a common occurrence in the industry, oil and gas?

A. Yeah, depending on the type of well. Oil wells, the asphaltenes and other things are bigger issue, so it depends on the type of well. Scaling will be an issue sometimes.

Q. Is it easily fixed?

A. No. Sometimes easy, sometimes

very difficult.

Q. Did you consider tight spots as historical casing failures for the root cause analysis?

A. I don't believe so, unless somebody states it's a collapse. The only case where a tight spot is a well integrity issue is if it's a pipe collapse.

Q. I believe when you were speaking with Mr. Petosa yesterday and throughout your report, you talk about trying to find various correlations, kind of factors and correlations which may have led to casing failures at Aliso Canyon.

Do you recall generally that discussion?

A. Yes.

MR. LESLIE: Assumes facts.

BY MR. LOTTERMAN:

Q. Did you find that the casing failures at Aliso Canyon were concentrated in one specific area?

A. No.

Q. In fact, did you find that oftentimes adjacent wells showed differences?

MR. LESLIE: Objection,
leading.
A. Yes.
BY MR. LOTTERMAN:
Q. Did you see any correlation between -- this is all at Aliso. Did you see any correlation between corrosion and well location at Aliso?
A. No.
Q. What about corrosion and depth?
A. Our focus was shallow corrosion because that was the SS-25 situation. There was no correlation with depth of the well or -- if that's what you're asking.
Q. That's what I was asking.
A. Yeah.
Q. Did you find any correlation between corrosion and the age of the well?
MR. LESLIE: Vague and ambiguous as to "correlation" in all of these questions.
A. We couldn't trend casing integrity issues with age.
BY MR. LOTTERMAN:
Q. Are you comfortable with using

the word "correlation" in my questions?
A. I think I understand what you mean.
Q. Okay. Did you see any correlation between corrosion and geology at Aliso Canyon?
A. No.
Q. Did you see any patterns whatsoever?
A. No. The only pattern we saw was many wells, if you're in the shallow corrosion region, the shallow corrosion part of the report, there were a few wells that showed shallow corrosion. By shallow corrosion, I mean above 1500 feet. So -- but was it correlated to any other factor, no.
Q. And if I recall your testimony over the last couple of days, and I'm almost done, I think, you also looked for analogies between wells, did you not?
MR. LESLIE: Vague and ambiguous.
A. Yes. By analogies, what we were looking for when we undertook this of course was to understand was there any

systemic pattern that emerged that -- and part of it was undertaken prior to understanding the failure in SS-25. Mid 2016, when we undertook that, or late 2016, I forget.

The intent was to -- when you're trying to do a root cause or to see if there were other indicators that you could have found to see if there was a problem. But we didn't correlate it to age or case -- or casing shoe, the surface casing shoe depth.

BY MR. LOTTERMAN:

Q. You also looked -- did you also look at specific wells?

A. A lot of specific wells.

Q. Any correlation with FF-34A?

MR. LESLIE: Vague and ambiguous.

A. You're asking me a specific question. I don't know. I have to go back and look if you're asking me a specific well.

BY MR. LOTTERMAN:

Q. Did you find SS-25 analogous to SS-25A and 25B on the same pad?

MR. LESLIE: Vague and ambiguous.

A. No. They were different well -- well construction practices in between SS-25 and A and B. One was a packer completion and one was an annulus flow. So the operation was quite different.

But we didn't -- we were looking for shallow external corrosion on the casing and we didn't necessarily find it. The cementing practices were different so other things were different too, so...

BY MR. LOTTERMAN:

Q. My questions earlier may have been poorly phrased. Let me just back up and try to revisit those.

Did you or did Blade investigate FF-34A and Frew 3 as part of this root cause analysis?

A. We went through the detailed well files of both of those wells, yes.

Q. And did you find any correlations with those well files and SoCalGas's response in those well files and SS-25?

MR. LESLIE: Vague and ambiguous.

A. The kill attempt is the only thing we were after there, to see what the kill attempt on those two wells were. But if you're after the corrosion, I don't remember any similarities. And there was not as much data also on those, so I don't recall at this point.

BY MR. LOTTERMAN:

Q. Would you mind, in that pile that I pre-arranged for you, I think it's the very last document.

A. Okay. Hang on, I'll tell you what, just give me one minute, I'll arrange this for myself also.

Q. Okay.

A. So that way if you ask me for another one of these, I can find them easily.

Q. Well, I'm not sure there's any more.

A. 91. Oh, there it is. Okay. Give me one minute. Yep, tell me which one now. Sorry.

Q. All right. I believe it's the

one at the very bottom of the pile marked 142-27. The very last one. There you go.

A. Yep, I got it.

Q. Pull that one out, would you?

A. I got it.

Q. And would you find Figure 139?

A. Yep.

Q. All right. And I believe you spoke to, it may have been Mr. Leslie, about this. Do you recall that?

A. Yep.

Q. Okay. And by the way, is this Figure 135 [sic], did it end up in the main root cause analysis report?

A. Yes.

Q. Okay. And if I understood your discussion with Mr. Leslie, and if I understand Figure 139 correctly, you found -- this was an -- was this an analysis of a shallow external corrosion at SS-25 -- at Aliso Canyon?

A. Yes.

Q. And does Figure 139 show that aside from SS-25, you only found one well with a production casing issue above the shoe of the surface casing?

MR. LESLIE: Objection, leading.

A. Of the wells we looked at, there was only one well -- so let me step back. SS-25 had corrosion above the shoe and corrosion right around the shoe and below the shoe. That pattern was only repeated in P-50A which was that one well. The rest, all of them had, at the shoe and below the shoe, not above the shoe. That is what those 25 wells are.

BY MR. LOTTERMAN:

Q. And where was the parted casing in SS-25 v?s-a-v?s its surface casing shoe? Above or below?

A. It's above.

Q. Sorry?

A. It's above.

Q. Okay. Would you turn back to the main report, page 235.

A. Yep.

Q. And to orientate ourselves, it looks like the Table 42 begins on page 234? Is that right?

A. Yep.
Q. And I believe, if I understood your testimony earlier, this was -- or let me put it in a less leading question.
Was this Blade's attempt to articulate the root causes of the SS-25 incident? And then if you look at the last column, whether or not those root causes were addressed by regulation?
MR. LESLIE: Objection, leading, compound.
A. So let me rephrase a little bit. I think I understand what you are saying. I believe I do.
What we did on Table 42 from a process point of view, so I want to go to the process we used and then --
BY MR. LOTTERMAN:
Q. Okay.
A. The process that we used identifies solutions. So as we go on the Apollo RCA chart, if we keep going to the right, when you address a solution, let's go to the first one, cement production casing to surface.

If you identified that as a solution, that will eliminate a bunch of root causes which will eventually eliminate an incident.

So this process here was identifying the solutions that eliminated a bunch of causes to the left. So that's -- I just want to clarify that.

Q. Right.

A. Then that leads us to the root causes in the next section.

Q. Understood.

A. Okay.

Q. But as part of that process, did you also determine whether there were regulations in place to address those problems?

A. Yes.

Q. And if you go to the very last row on page 235, that addresses the need for failure analysis.

Do you see that?

A. Yep.

Q. Okay. And if I understand your table correctly, did you identify any regulations -- federal, state, California or otherwise -- that required failure analyses on casing failures?

A. None. No.

Q. And are there any such regulations today?

A. No.

MR. LOTTERMAN: Gentlemen and ladies, I'd like to take about five minutes and go through my notes and then try to wrap this up.

MR. LESLIE: Sure.

MS. FRAZIER: Sure.

THE VIDEOGRAPHER: We are off the record. It's 2:31.

(Recess taken, 2:31 p.m. to 2:43 p.m.)

THE VIDEOGRAPHER: Okay. We are back on the record. It is 2:43, and this is a continuation of Media 16.

BY MR. LOTTERMAN:

Q. Ravi --

A. Yes.

Q. No, I can't do that.

Dr. Krishnamurthy, you've been working in the oil and gas business -- have you been working in the oil and gas business since roughly 1984?

A. No, no. '91.

Q. '91, okay. And during that time, have you observed other underground storage facility operators around the country?

A. As I've worked on projects, or -- can you clarify again? What are you -- what is your question? Sorry.

Q. I'm just wondering in your career if you've had an opportunity from time to time to observe other underground storage facility operators around the country.

MR. LESLIE: Vague and ambiguous.

A. I've observed, interacted at meetings and other things, yeah, that's correct.

BY MR. LOTTERMAN:

Q. And how many times would you estimate you were -- how many days would you estimate, in whole or in part, were you at

the Aliso Canyon facility? You personally.
A. I have no idea. It's a long time. I was there for a long period. I have to look it up, but --
Q. Over the course of how many years?
A. Over the course of the last three years, yeah. Long periods. I don't have a good feel for that number, but...
Q. Have you had occasion during that time to interact with SoCalGas employees?
A. Yes. Yes. Absolutely.
Q. Have you had occasion during that time to interact with SoCalGas management?
A. Yes.
Q. Have you had occasion during that time to observe their practices?
A. Yes.
Q. Have you formed an opinion or can you assess -- have you assessed SoCalGas as an underground storage field operator?
MR. LESLIE: Vague and ambiguous, beyond the scope, lacks

foundation.

MS. FRAZIER: I'll just go with beyond the scope.

A. I can't talk about operation -- I've interacted with them on a personal or a professional basis as far as a root cause analysis goes, yes.

BY MR. LOTTERMAN:

Q. And what's your assessment in that context?

MR. LESLIE: Same objections.

A. My assessment is more from our perspective, so I was there for a specific purpose. My interactions with them were predominantly RCA related if not only RCA related. Of course, always we joked about the Dodgers losing and stuff like that, but other than that, it was --

BY MR. LOTTERMAN:

Q. I'm okay with that.

A. Other than that, it was work-related. So it has been -- it's been -- it was a very difficult project for Blade because we were in Aliso assessing a failure, and so we were -- we could -- any operational request, any data request was easy and was -- allowed us to do our job, and SoCalGas' cooperation was essential for us to complete it in the timeline we finished it.

Even though it appears long to everybody else, those who were involved understand why.

Q. And are those views -- and I assume you're saying -- you're articulating those on behalf of Blade Engineering. Are those encapsuled in this acknowledgment on page 242 of the main report?

A. Yes, they are.

MR. LOTTERMAN: I have no further questions.

MS. FRAZIER: All right.

THE WITNESS: I have one clarification, if I may. I want -- there was a question you had asked in the previous session about OLGA.

MR. LOTTERMAN: My question?

THE WITNESS: Yeah.

MR. LOTTERMAN: Okay.

THE WITNESS: You had asked about OLGA.

MR. LOTTERMAN: Yes.

THE WITNESS: So I had mentioned, I think OLGA is an engine that is used by Drillbench, and I confirmed that it is, okay. OLGA is a transient simulator that is used by itself or it is contained within Drillbench for kill modeling purposes.

So I just wanted to clarify that.

MR. LOTTERMAN: And to be clear, the model that you used, did it use OLGA in any manner?

THE WITNESS: Yes. OLGA is the engine within Drillbench. That's what I meant.

MR. LOTTERMAN: Thank you for that clarification.

THE WITNESS: I wanted to make sure I clarified that.

MR. LOTTERMAN: And thank you for your patience, on behalf of everybody.

THE WITNESS: Thank you.

MR. LESLIE: Thank you.

MS. FRAZIER: Thank you, everybody.

THE VIDEOGRAPHER: We are off the record. It is 2:48. This is the end of Media 16.

(Deposition recessed at 2:48 p.m.)

REPORTER'S NOTE: The amount of examination time used in this respective volume of testimony is:

BY MR. LOTTERMAN: 04:10:39

BY MR. PETOSA: 00:05:42

BY MR. KELLY: 00:02:58

BY MR. LESLIE: 00:01:56

--oOo--

CERTIFICATE

I, SUSAN PERRY MILLER, Registered Diplomate Reporter, Certified Realtime Reporter, Certified Court Reporter and Notary Public, do hereby certify that prior to the commencement of the examination, RAVI M. KRISHNAMURTHY, Ph.D. was duly sworn by me to testify to the truth, the whole truth and nothing but the truth;

That signature of the witness was reserved by the witness or other party before the conclusion of the deposition;

That the foregoing is a verbatim transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth, to the best of my ability.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.

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Notary Public, State of Texas
My Commission Expires 03/30/2020

Dated: 5th day of December, 2019

ACKNOWLEDGMENT OF DEPONENT

I, RAVI M. KRISHNAMURTHY, Ph.D., do hereby certify that I have read the foregoing pages and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

____

RAVI M. KRISHNAMURTHY, Ph.D. DATE

ERRATA

PAGE LINE CHANGE

______ ______ ____

REASON: ____

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LAWYER'S NOTES

PAGE LINE

Ex. III- 9

1. With regard to YOUR statement in YOUR OPENING TESTIMONY at page 38 that "SoCalGas had no well kill control plans," please respond to the following questions:

a. Define "well kill control plans" as used above.

Response: For this violation, SED relied on conclusions identified in the Blade Main Report, p. 159 Conclusion: "Kill Attempts #2-6 failed because the kill fluids used were not dense enough to kill the well. There were not data that indicated transient modeling was conducted to design these kill attempts. So calculations may have been done; however, gas flow rates were not incorporated into any kill design. Each kill attempt caused additional damage to the wellhead and well site." SED's wording "no well kill control plans" refers to the lack of transient modeling as Blade describes in the conclusion above and the fact that Blade had reviewed SoCalGas' Operations Standards and did not find any standards applicable to the SS-25 well failure. (Blade Main Report, p.A-1) At the time the testimony was produced, SED relied on no other documentation. Please refer to Blade Main Report including all relevant references and supporting documents provided by Blade.

b. Identify and describe any and all information YOU considered, evaluated, or assessed in connection with the statement above.

Response: Refer to response to 1.a

c. Produce any and all DOCUMENTS identified in response to Request 1(b) above which were not provided to YOU by SoCalGas.

Response: Refer to response to 1.a

d. If YOU contend well kill control plans, as defined in response to Request 1(a) above, were required, state all facts supporting YOUR contention.

Response: Refer to response to 1.a

e. Identify all DOCUMENTS supporting YOUR response to Request 1(d) above.

Response: Refer to response to 1.a

f. Identify all LAWS supporting YOUR response to Request 1(d) above.

Response: Refer to response to 1.a. SoCalGas has a responsibility under PU Code 451 to manage its system in a safe manner.

g. Identify all INDUSTRY STANDARDS supporting YOUR response to Request 1(d) above.

Response: Refer to response to 1.a

h. Produce all DOCUMENTS in YOUR possession that support YOUR response to Request 1(g) above.

Response: Refer to response to 1.a

2. With regard to YOUR statement in YOUR OPENING TESTIMONY at pages 38-39 that "SoCalGas's failure to provide well kill programs for relief well #2, well SS-25A and well SS-

25B each constitute one violation of Section 451, for a total of three violations," please respond to the following questions:

a. Define "well kill programs," as used above.

Response: At the time Opening Testimony was filed, SED understood from the Blade Main Report that SoCalGas had no Relief well plans in place for SS-25, SS-25A or SS-25B. Blade recommended in Solution 8, Blade Main Report p. 233, "Well Specific Detailed Well-control Plan . . . A relief well plan for each well that considers the surface location and overall approach." SED relies on the Blade Main Report, including all references and supplemental reports provided by Blade. SED uses "program" in this statement to refer to Blade's use of the term "plan." SED further understood that SoCalGas did not have a standard for planning and drilling relief wells. (Blade Main Report p. A-1, Table 43). SED considers a standard to be an overall program but also notes that a standard would not specifically provide a site specific relief well plan for each well as recommended by Blade.

b. State all facts supporting YOUR contention that SoCalGas' alleged failure to provide a "well kill program" (as defined in YOUR response to Request 2(a)) for relief well #2 constitutes a violation of Section 451).

Response: See SED response to 2.a. In addition, SED concluded that the lack of a ready, site specific plan resulted in unnecessary delays in siting and planning the relief well for SS-25, which created an additional length of time when gas was being released from the well, exposing personnel and local residents to gas elements, as well as creating hazardous air emissions that harmed the environment, thus violating Section 451.

c. Identify all DOCUMENTS supporting YOUR response to Request 2(b) above.

Response: See SED response to 2.a

d. Identify all LAWS supporting YOUR response to Request 2(b) above.

Response: See SED response to 2.b.

e. Identify all INDUSTRY STANDARDS supporting YOUR response to Request 2(b) above.

Response: See SED response to 2.a

f. Produce all DOCUMENTS in YOUR possession that support YOUR response to Request 2(e) above.

Response: See SED response to 2.a

g. State all facts supporting YOUR contention that SoCalGas' alleged failure to provide a "well kill program" (as defined in YOUR response to Request 2(a)) for well SS-25A constitutes a violation of Section 451.

Response: See SED response to 2.a. The lack of a site specific plan can lead to the same circumstances as occurred in SS-25 if the well fails. The lack of planning appropriately creates an unsafe condition in violation of Section 451.

h. Identify all DOCUMENTS supporting YOUR response to Request 2(g) above.

Response: See SED response to 2.g

i. Identify all LAWS supporting YOUR response to Request 2(g) above.
Response: See SED response to 2.g

j. Identify all INDUSTRY STANDARDS supporting YOUR response to Request 2(g) above.
Response: See SED response to 2.g

k. Produce all DOCUMENTS in YOUR possession that support YOUR response to Request 2(j) above.
Response: See SED response to 2.g

l. State all facts supporting YOUR contention that SoCalGas' alleged failure to provide a "well kill program" (as defined in YOUR response to Request 2(a)) for well SS-25B constitutes a violation of Section 451.
Response: See SED response to 2.g.

m. Identify all DOCUMENTS supporting YOUR response to Request 2(l) above.
Response: See SED response to 2.g

n. Identify all LAWS supporting YOUR response to Request 2(l) above.6
Response: See SED response to 2.g

o. Identify all INDUSTRY STANDARDS supporting YOUR response to Request 2(l) above.
Response: See SED response to 2.g

p. Produce all DOCUMENTS in YOUR possession that support YOUR response to Request 2(o) above.
Response: See SED response to 2.g

q. Do YOU contend that SoCalGas was required to "provide well kill programs" for any wells that had already been killed? If so, state all facts supporting YOUR contention.
Response. SoCalGas Question 2 refers specifically to relief wells, not wells that had already been killed. SED does not understand how question 2.q. applies to wells that have already been killed, since all Aliso wells have been killed at one time or other for routine maintenance purposes. SED acknowledges that SoCalGas had a standard for routine well kills, as identified in the Blade Main Report, p. A-1, Table 43. Please refer to SED response to 2.a.

Ex. III- 10

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

FOR DIVISION USE ONLY			
	Forms		
Bond	OGD114	OGD121	

NOTICE OF INTENTION TO DRILL NEW 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 drill well "Porter" 39A, well type Storage Well, API No. ______ (Assigned by Division),

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

Legal description of mineral-right lease, consisting of N/A acres (attach map or plat to scale), is as follows:

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) ______ and

Lat./Long. in decimal degrees, to six decimal places, NAD 83 format: Latitude: 34.312570 Longitude: -118.560352

If well is to be directionally drilled, show proposed coordinates (from surface location) and true vertical depth at total depth: 950 feet North (Direction) and 1110 feet West (Direction). Estimated true vertical depth 7800. Elevation of ground above sea level 2602 feet. All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table, or Kelly Bushing) that is 22.5 feet above ground.

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

Is a California Environmental Quality Act (CEQA) document required by a local agency? Yes☐ No☒ If yes, see next page.

PROPOSED CASING PROGRAM

SIZE OF CASING (Inches API)	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	FORMATION PRESSURE (Estimated Maximum)	CALCULATED FILL BEHIND CASING (Linear Feet)
13-3/8"	54.5#	K-55	Surface	1200'	Surface	Hydrostatic	1200'
9-5/8"	47#	L-80	Surface	7900'	Surface	Hydrostatic	7900'
7"	26#	L-80	7800'	8200'	7800'-8200'	Variable-Storage	400'

(Attach a complete drilling program including wellbore schematics in addition to the above casing program.)

Estimated depth of base of fresh water: N/A Anticipated geological markers: M-P: 8182' (Name, depth)

Intended zone(s) of completion: Sesnon - Storage Zone- Variable (Name, depth and expected pressure) Estimated total depth: 8200' MD

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: 12801 Tampa Ave.		City/State: Northridge, CA	Zip Code: 91326-1045
Name of Person Filing Notice: Todd Van de Putte	Telephone Number: [redacted]	Signature: Todd R Van de Putte	Date: 11-17-15
Individual to contact for technical questions: Todd Van de Putte	Telephone Number: [redacted]	E-Mail Address: tvandeputte@semprautilities.com	

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 the Division's receipt of the notice, this notice will be considered cancelled.

OG105 (08/09)

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.

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.

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

Southern California Gas Company - Aliso Canyon – Porter 39A

Drilling/Completion Program

DATE: November 17, 2015

OBJECTIVE: Drill and complete a storage/intercept well in the Aliso Canyon Storage Field

SURFACE LOCATION:

28 Section, Township 3N, Range 16W, S.B. B&M / GPS Coordinates (NAD 83, Zone 5): 34.312570 North; 118.560352 West

API NUMBER: TBD

DRILLING RIG:

Ensign #587 (See attached proposed Rig Equipment List) Note: Drilling rig main power to use two 1500 hp low emission-natural gas fired generators with one diesel generator backup.

ELEVATIONS:

Ground Elevation: 2602’
Estimated Rig KB: 22.5’
All depths refer to proposed kelly bushing 22.5’ above ground elevation.

BOTTOM HOLE COORDINATES (Preliminary Directional Plan, Final to be Submitted):

Bottom Hole Target: 8000’ MD, 7800’ TVD, 950’ North, 1110’ West

TOP OF ZONES (Estimated, Measured Depth):

MP: 8182’ MD

FORMATION FRACTURE GRADIENT (Estimated): 0.80 psi/ft

FIELD PRESSURE: Sesnon Storage Zone: Variable BHP – hydrostatic maximum bottom hole pressure (8.6-9.2 ppg mud planned, adjust mud weight according to actual storage zone pressure to maintain overbalance)

PROPOSED CASING PROGRAM (See attached wellbore schematic):

0’ – 1200’	13-3/8”	54.5#	K-55, Buttress, Surface casing, cemented to surface.
0’ – 7900’	9-5/8”	47.0#	L-80, Hydril 563, Production Casing cemented to surface
7800’- 8200’	7”	26#	L-80, Liner (contingency)

PROPOSED HOLE SIZES (+/-):
0' to 1200' -- 17-12" hole
1201' to 7900' -- 14" hole.
7901' to 8200' -- 8-1/2" hole.

DIRECTIONAL PROGRAM:
(Final directional plan to follow)
Drill vertical hole to 2000' MD / 2000' TVD.
Directionally Drill 14" hole from 1201' to 7900'(+/-) MD.
Directionally Drill 8-1/2" hole from 7901' MD to 8200'(+/-) MD.
Estimated Total Measured Depth: 8200'(+/-) MD.

MUD PROGRAM:

1. For drilling to the casing shoes at 1200'MD (+/-) and 7900'MD (+/-), use the GEO Drilling Fluids Polytek+ w/3%-6% Potash mud with the following properties:

    a. Weight: 8.8 – 9.6 ppg
    b. Viscosity: 45 – 55 sec. A.P.I.
    c. Yield Point: 15-25 lb/100 sqft.
    d. Fluid loss: 8 - 10 cc/ 30 min. A.P.I.
    e. % solids: 3-7 %
    f. pH: 9.0 – 9.5

    Estimated static temperatures: 80 deg F @ 1200'; 150 deg F @ 7000'; 185 deg F @ 8600' MD

    NOTES:
    - Add the equivalent of 3% KCl to inhibit clay swelling while drilling in the producing zones.
    - Use sized calcium carbonate as required to control mud losses below the 9-5/8" production casing shoe.
    - Solids Control: a Mud cleaner with 150-200 mesh (API) screens and a Centrifuge will be onsite during the drilling operations. Run the Mud Cleaner and the Centrifuge to maintain a high gravity solids content in the mud of less than 4%.
    - Mud weights to be adjusted (if possible) based Sesnon zone bottomhole pressure.
    - Hydraulics to be based on a 120-160 ft/min annular velocity.

BOPE REQUIREMENTS: (Surface Casing Hole: 20", 2M Annular Preventer, Diverter w/6" diameter lines (minimum) / Production Casing Hole, Open Hole to TD and completion operations: 13-5/8" Class IIIB 5M BOPE:

1. Annular Preventer: Bag type-hydraulic, 13-5/8", 5M.
2. Ram Preventer: Double gate-hydraulic (pipe and blind), 13-5/8", 5M.
3. Accumulator – 140 gallon (minimum) with dual station controls and secondary kill line.
4. 3" choke lines required.
5. BOP requirements in 224.05 should be fully implemented. Class IIB 5M (minimum) requirements should be followed.

6. Field reservoir inventory and pressures should be monitored during the drilling and the workover operations with a 300 psig minimum overbalance on well control fluids.

DRILLING PROGRAM:

1. Install an 8' diameter steel cellar ring and install and cement a 20" OD conductor pipe from approximately 80' to the surface. Prepare and level the well location. Install a barrier around the cellar/conductor to prevent access to the cellar. Secure/cover the conductor hole with steel plating or similar prior to the arrival of the drilling rig. Install the mousehole/rathole with sleeves per the Ensign Rig #587 footprint.

2. Move in and rig up Ensign #587 drilling rig. Rig up the natural gas fuel supply lines and the meter skid.

3. Install a 20" riser spool with a 20" 2M flange, and a diverter system; including a 20" cross w/minimum 6" outlets, 6" diverter lines (minimum) a 20", 2M annular preventer and a pitcher nipple. Orient the diverter vent lines away from the rig, operating facilities and down wind from the rig/operating facilities.
   a. Notify the DOGGR to witness the function test of the 20" annular preventer.

4. Run in the hole with a 17-1/2" button bit (Type 437 bit, or Type 117 Mill Tooth or equivalent), an 8" mud motor/MWD, a bumper sub on the 5", 19.5#, X-95 drill pipe and clean out the cement with the 17-1/2" bit to the bottom of the conductor. Circulate and condition the mud.

5. Rig up the mud loggers and the mud logging equipment. Record and collect samples are per the geologist recommendation.

6. Drill the 17-1/2" surface casing hole to 1200' (+/-).
   a. Collect surface casing hole directional surveys via a gyro survey or via the MWD after the surface casing is cemented in place.
   b. *Note: There may be gas present in the interval between approximately 800'-1000' MD. Be prepared to adjust the mud weight accordingly should some gas be encountered.*
   c. Circulate the hole clean.
   d. Verify the mud/flow line circulating temperature prior to the cementing operations and provide the circulation temperature to the cementing contractor.

7. Rig up the casing running crew and run 1200' (+/-) 13-3/8", 54.5#, K-55 surface casing with Buttress thread. Run the surface casing with a 13-3/8" guide shoe and a float collar located 40' above the casing shoe.
   a. Baker Lock the bottom three casing joints, during the casing running operations.
   b. Run the 13-3/8" x 17-1/2" hole bow spring type centralizers per the recommended program based on the drilled hole conditions.
   c. Proper make up for the 13-3/8" Buttress Casing is to the triangle stamp on the pin end.
   d. Use/apply the Weatherford thread compound to each connection during the casing make up process.

Note: Collect a sample of the mix water to be used for cementing the 13-3/8" surface casing. Supply the cementing company with the water sample for analysis and formulation with the lead and tail slurries.

8. Rig up a cementing head, cementing equipment, mix and pump per finalized cementing schedule:
   a. Cement Density: Type III, 13.5 ppg lead/14.8 ppg tail
   b. Cement Volume: 800 lineal feet lead / 400 lineal feet tail.
   c. 50% Excess cement add to the lead slurry (adjust depending on hole conditions)
   d. Adjust the cement slurry pump time based on the current hole conditions. Verify the flowline temperature to ensure the temperature is 120 deg F or less. If flowline temperatures are higher than 120 deg F, a cement blend change to Class "G" cement may be required.
   e. Condition the hole and pump the recommended fresh water, mud preflush followed by cement slurry, mud displacement and water.
   f. Reciprocate the 13-3/8" casing during the hole conditioning and the cementing operations.
   g. Bump the plug with 1000 psig maximum surface pressure.

9. Wait on the cement a minimum of 16-18 hours and remove the diverter system. Cut off the 20" conductor pipe to the cellar floor level. Cut and prepare the 13-3/8" surface casing stub. Weld on the 13-5/8", 5M SOW casing head to the surface casing stub as per the Gas Company weld procedure. Level the casing head flange and land the flange face at the ground level elevation. Orient the casing head flange bolt holes per the surface facility engineer. X-ray the casing head weld and pressure test the casing head to 3000 psig.

10. Install a 13-5/8" riser spool and a 13-5/8" Class IIIB 5M BOPE. All connections and valves must be flanged and at least 5000 psig rated. Install a test plug in the 13-5/8" 5M casing head.
    a. Pressure test the 13-5/8" 5M annular preventer to 3600 psig (high) / 300 psig (low) for 20 minutes. Test Blind Rams and the 5" Pipe Rams to 5000 psig (high) / 300 psig (low) for 20 minutes. Test all the lines and the connections to 5000 psig (high) / 300 psig (low) for 20 minutes each. All tests are to be charted and witnessed by a DOGGR representative. Remove the test plug.

11. Pressure test the 13-3/8", 54.5#, K-55 surface casing to 1000 psig surface pressure. Run a 12-1/4" cleanout bit, and 8" drill collars on the 5" drill pipe and clean out the cement and the float equipment from 1160' to 1200'. Make approximately 120-150' of rathole below the 13-3/8" surface casing shoe or to depth as recommended by the directional drilling company. Circulate the well clean, pull out of the hole and lay down the clean out BHA.

12. Pick up and run a 12-1/4" Kymera bit, and the 9-1/2" rotary steerable system, 14" Rhino Reamer and associated BHA on the 5" drill pipe. Drill 14" directional hole from 1201'MD (+/-) to 7900'MD (+/-) per the to be determined directional program. <u>Verify the final production casing shoe depth.</u>

    a. <u>*Note:*</u> The 9-5/8" production casing will likely be set and cemented into or above the MP caprock and a 7", 26#, L-80 liner may be cemented with a 100' lap above the 9-5/8" production casing shoe with the 7" shoe set at a preferred location for well intercept.

    b. If the 9-5/8" production casing is set early as an intermediate string, then all the BHAs, directional tools and drill pipe sizes will have to be adjusted accordingly to accommodate drilling through the 7" cemented liner to TD or intercept point.

13. Condition the mud for the open hole logging runs. Note the salinity and other mud properties from the daily mud report. Pull out of the hole and lay down the 12-1/4" Kymera bit, the 9-1/2" rotary steerable system and the 14" Rhino Reamer.

Note: Collect a sample of the mix water to be used for cementing the 9-5/8" production casing. Supply cementing company with the water sample for analysis and formulation with the lead and tail slurries.

14. Move in and rig up the wireline logging crew and run a Platform Express Log from 1201' to 7900' (+/-). Rig down and move out the wireline logging crew.

15. Run a 12-1/4" cleanout bit with jets removed below one stand of 8" drill collars and a 14" Rhino reamer and clean out the well to bottom. Condition the mud for casing running/cementing operations. Pull out of the well and lay down the cleanout BHA.

16. Rig up the casing running crew and WEA Jam Unit and run 9-5/8", 47#/ft., L-80, Hydril 563 connection, casing to 7900' (+/-). Production casing string to include a 9-5/8" casing differential fill float shoe, and a differential float collar with an 80' shoe track.

    a. The 9-5/8" x 14" centralizers will be run spaced and run according to the hole conditions and as per recommended centralizer plan.
    b. Baker Lock the bottom 3 joints of casing.
    c. During casing running operations, rig up the top drive / Hydril 563 casing cross over as required and reciprocate the casing, if possible.
    d. Make up the Hydril 563 connection per the recommended thread compound application and optimum make up torque requirements.

17. Rig up to the top drive with a cross over sub and circulate the hole clean. Stage circulate the well while running in the hole to maintain good mud properties. Attempt to reciprocate the 9-5/8" casing while conditioning the 14" hole.

18. Rig up a cementing head, cementing equipment, mix and pump per finalized cementing schedule. Cement the 9-5/8", 47#/ft, L-80 production casing.
    a. Cement Density: Class "G", 13.5 ppg lead/14.8 ppg tail w/gas migration additive
    b. Cement Volume: 4900 lineal feet lead / 3000 lineal feet tail.
    c. 20%-30% Excess cement in the lead slurry (adjust amount of excess depending on hole conditions).
    d. Adjust the pump time of the cement slurry based on the current hole conditions.
    e. Use top and bottom wiper plugs.
    f. Condition the hole and pump the recommended fresh water, mud preflush followed by cement slurry, mud displacement and water.
    g. Reciprocate the 9-5/8" casing during hole conditioning and casing cementing operations.
    h. Bump the plug with 1000 psig maximum surface pressure.

19. After the 9-5/8" production casing cement slurry has setup (approximately 18-24 hrs), use a lift kit to pick up the 13-5/8" Class IIIB 5M BOPE stack.
    a. Land the 9-5/8" casing in a minimum of 100,000 lb tension in the 13-5/8" casing head with the 13-5/8" x 9-5/8" non automatic slips and independent pack off assembly.
    b. Cut off the 9-5/8" casing stub in preparation for the installation of the 13-5/8"x 13-5/8" 5M seal flange.
        i. Verify 9-5/8" casing stub height to ensure the 9-5/8" casing stub will pack off in the lower tubing head seal assembly.

ii. Install the 13-5/8" x 13-5/8" 5M seal flange.
iii. Install the 13-5/8" x 11" 5M tubing head.
iv. NOTE: If the rig sub base beams allow, orient the tubing head to align with the other wellheads on the location and with the existing production header.
v. Energize all seals and pressure test to 5000 psig.

20. Install an 11" x 13-5/8" 5M DSA and reinstall the 13-5/8" Class IIIB 5M BOPE stack and nipple up the same.

21. A repeat BOPE pressure test or function test may be required by DOGGR, if so, use procedures outlines in Step #9 in the program.
    a. Pressure test the 9-5/8" production casing to 1000 psig surface pressure.

22. Run in the hole with an 8-1/2" cleanout bit with jets removed and 9-5/8" casing scraper 30' above bit on one stand of heavy weight drill pipe.
    a. Clean out the cement 10 ft past the 9-5/8" production casing shoe. **Do not let scraper go out of shoe.**
    b. Pull up inside the production casing and circulate the hole clean.

23. Pull out of the hole and lay down the 8-1/2" cleanout bit, the 9-5/8" casing scraper and the 5" heavy weight drill pipe.

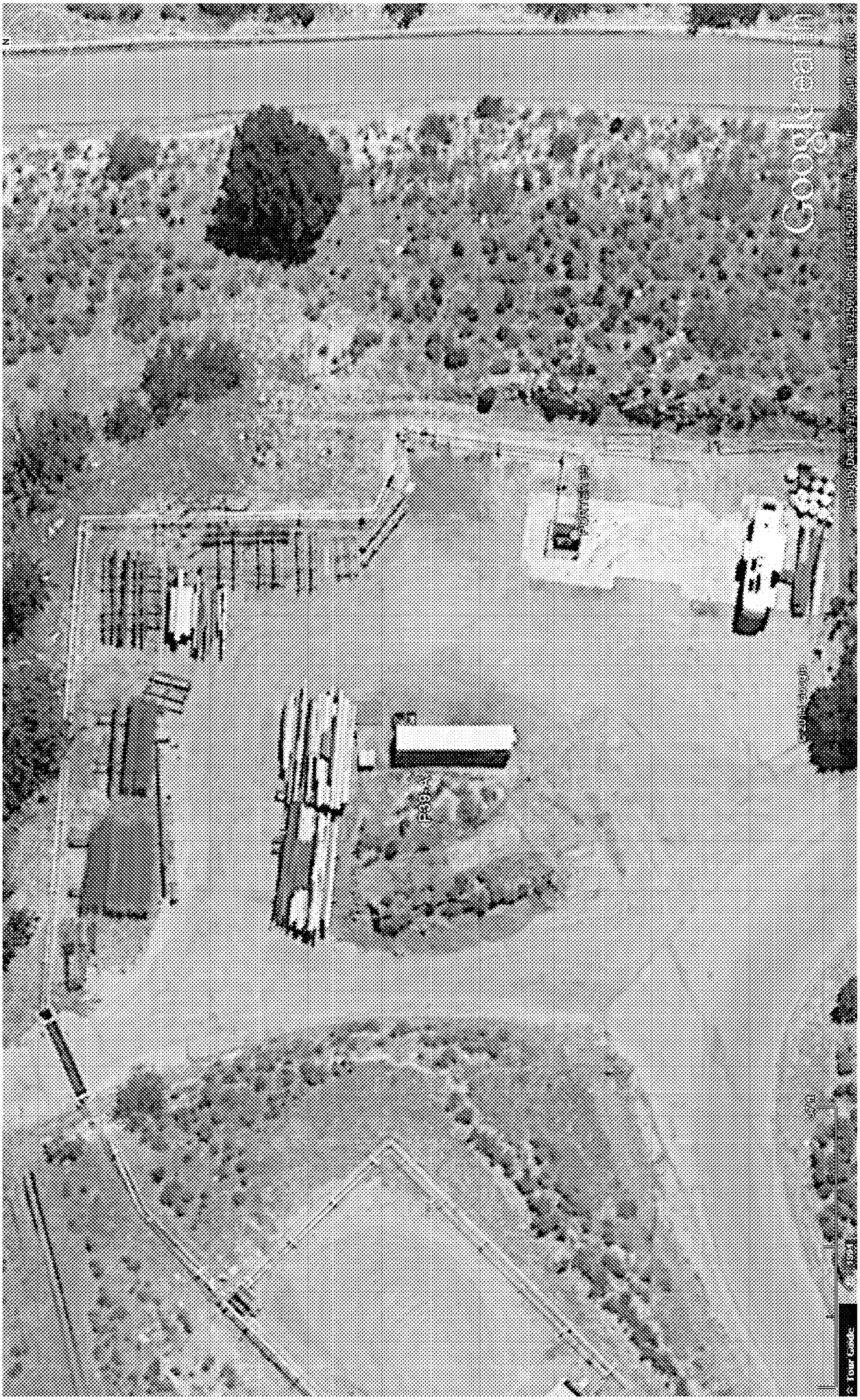
24. Rig up the cased hole wireline unit with lubricator and run a cement bond / USIT / Neutron Log or equivalent from the 9-5/8" production casing shoe to the surface to verify the 9-5/8" cement bond. Rig down and move out the wireline unit. Note: If drilling operations do not allow for the timely or efficient running of the USIT log, the log may be run with the workover rig during the final well completion process.

25. Pick up and run an 8-1/2" (Type 517 or Kymera or equivalent) bit and the 6-3/4" steerable tools and associated BHA on 5" drill pipe. Drill an 8-1/2" hole with the steerable/intercept tools to 8200'MD (+/-) as per the directional plan and to intercept the SS-25 wellbore. Circulate the well clean and condition the polymer mud. Note the mud properties before drilling into the SS-25 wellbore. Mix and pump the recommended amount of minimum 14.8 ppg, Class "G" cement with additives into the SS-25 wellbore to secure the well. Monitor the SS-25 well.

26. Rig down the mud loggers and mud logging equipment.

27. Pull out of the well and run back in the well with a 9-5/8" bridge plug on 5" drill pipe and set the bridge plug at approximately 7800' (+/-). Pressure test the 9-5/8" bridge plug to 1000 psig surface pressure. Verify the hole is full of 3% KCl brine.

28. Secure the well, rig down and move the Ensign #587 drilling rig.


Google earth

Porter 39A

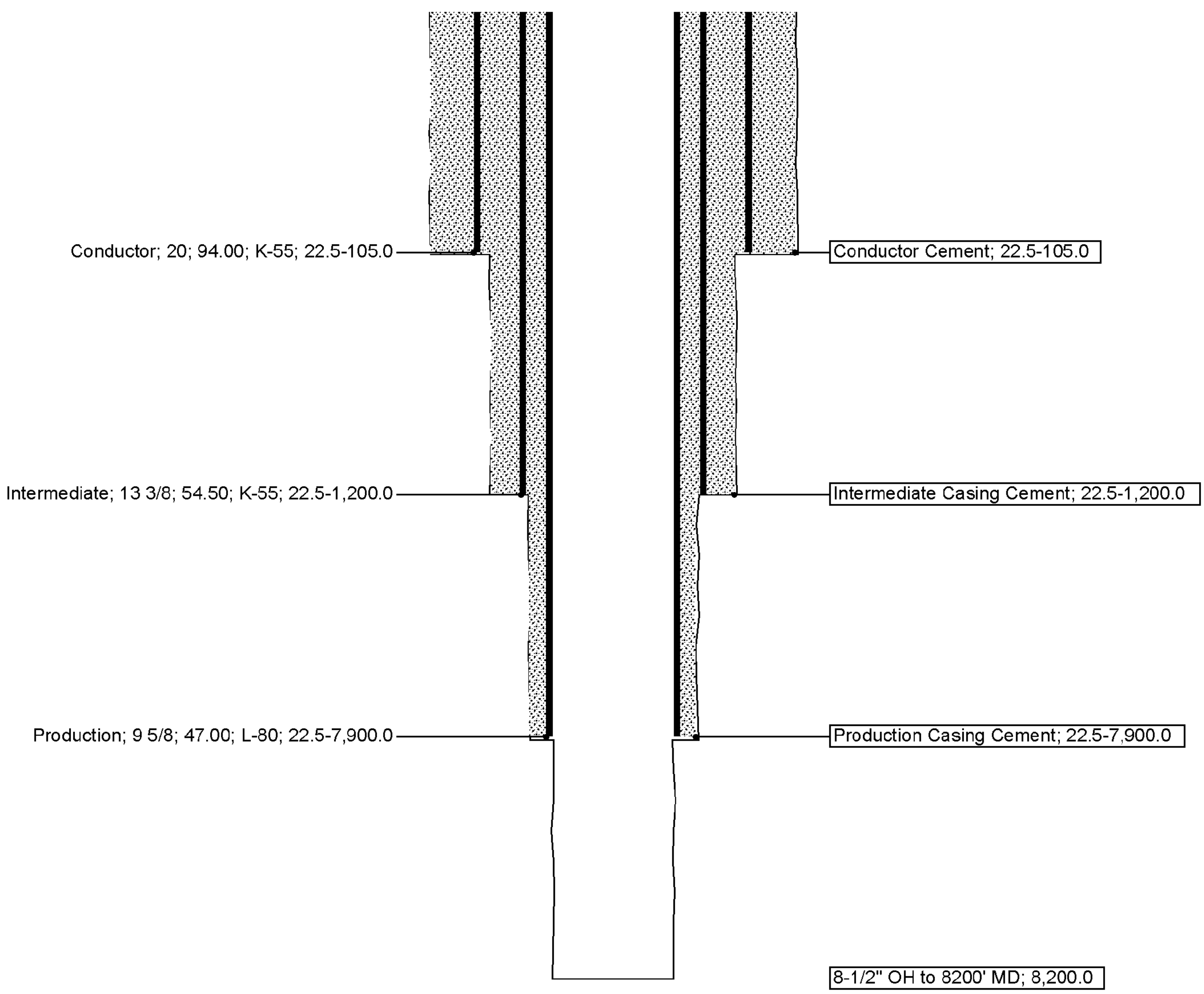
Gas Company Schematic

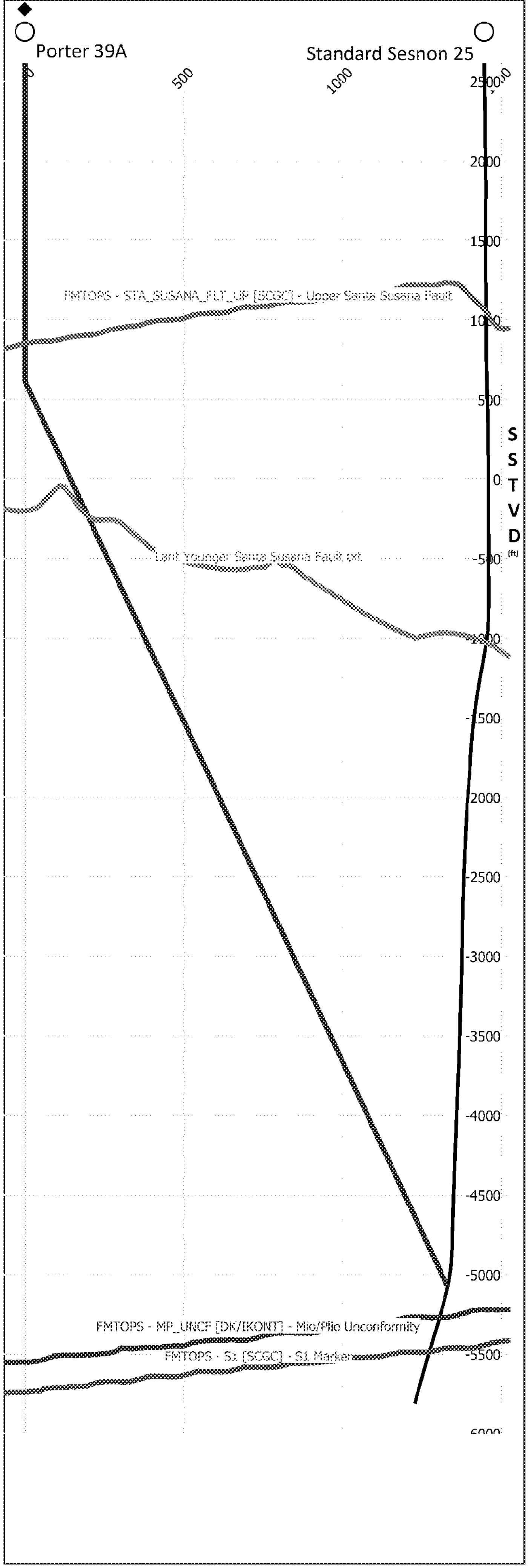
API	Field Name	Operator	County	State
123456789	Aliso Canyon	Southern California Gas Company	Los Angeles	California

Ground Elevation (ft)	KB-Ground Distance (ft)	Spud Date
2,602.00	22.50	

Original Hole, 11/17/2015 12:07:39 PM

Vertical schematic (actual)




Porter 39A
Standard Sesnon 25
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500
1000
2500.0
2000
1500
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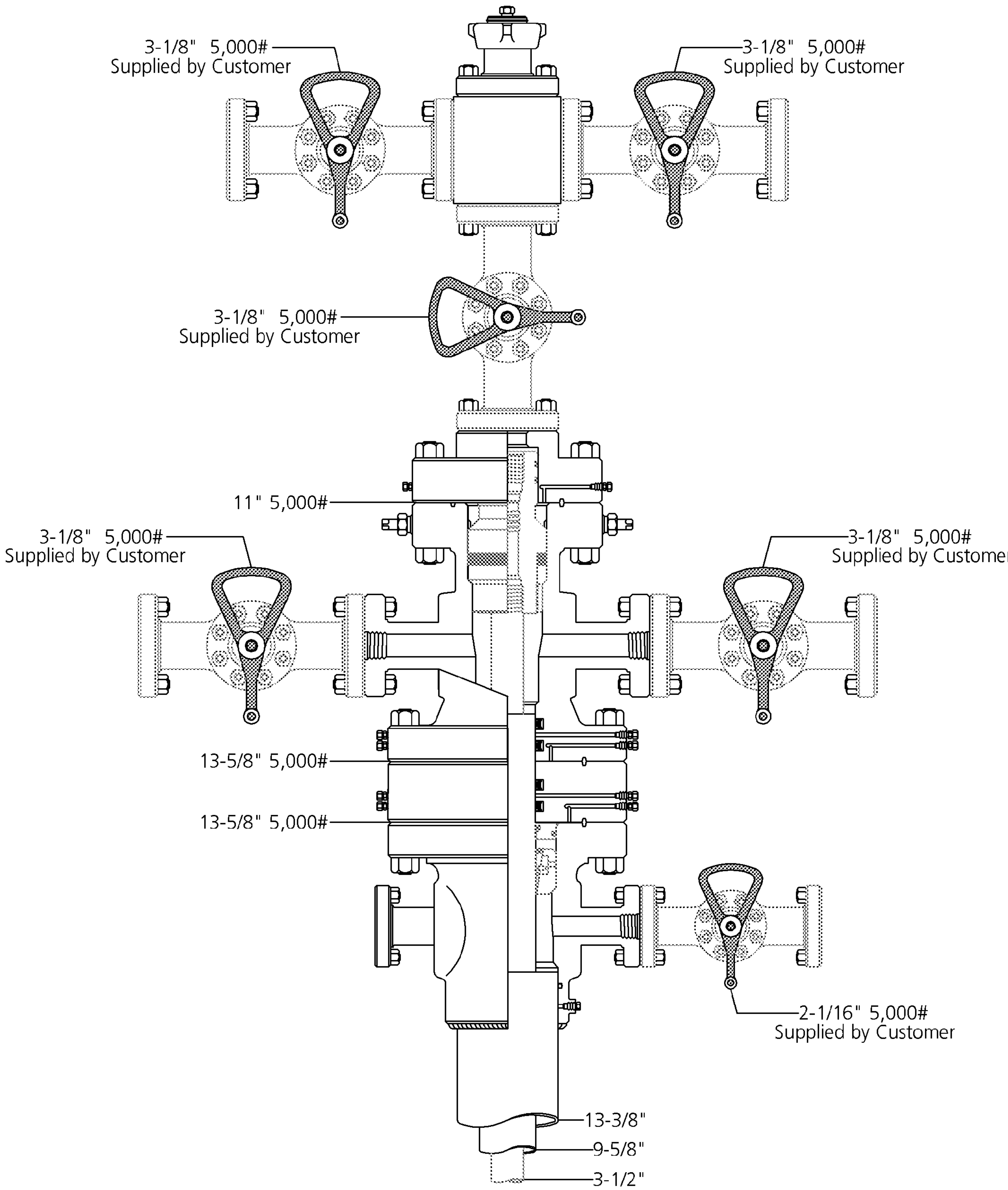
-6000
SSTVD (ft)
FMTOPS - STA_SUSANA_FLT_UP [SCGC] - Upper Santa Susana Fault
Lant Younger Santa Susana Fault txt
FMTOPS - MP_UNCF [DK/IKONT] - Mio/Plio Unconformity
FMTOPS - S1 [SCGC] - S1 Marker



Southern California Gas
Gas Storage / Production Wells
La Goleta & Aliso Canyon

CAMERON

Name: Jeanette	Date: 6-16-14	Working Pressure:	#	20602012-C

ENSIGN
United States Drilling (California) Inc

Ensign 587 EQUIPMENT LIST
15,000'

DRAWWORKS

- *Gardner Denver 800; 1000 Hp drawworks with a Elmago 5032 Aux. Brake.*

DRAWWORKS POWER

- *One GE 752; 1000 Hp Traction Motor*

MAST

- *Pyramid 146'; 820 GNC, 590,000# Hook Load with six sheave cluster and 1 ¼" drilling line.*
- *Traveling Blocks; BJ 350 Ton with BJ 350 Ton Hook.*
- *Swivel; Oilwell PC 300, 300 ton with a 5 ¼" Hex Kelly with Varco HDS Kelly Bushings.*

ROTARY TABLE

- *Gardner Denver; 27 ½" Table*

SUBBASE

- *Pyramid; 24'6" K.B. with 18'9" Rotary Beam Clearance*

MUD PUMPS

- *Main Pump; Gardner Denver PZ10, 1350 Hp 6 1/2"x10" triplex powered by two GE752 Traction Motors*
- *Stand By Pump; Gardner Denver PZ10, 1350Hp 6 1/2"x10" triplex powered by two GE752 Traction Motor*

MUD SYSTEM

- *600 bbl. Shaker Pit with three Agitators and twin shakers, Swaco Linear Motion*
- *600 bbl. Main Pit with five agitators and two 5" X 6" mixing pumps powered by 50 Hp motors at 1750 RPM.*

POWER PLANT

2 3516G Caterpillar 1500hp each natural gas fired

- *1 1000 KW Power by Series 16V2000 at 1500 Hp diesel back up*

WATER TANK

- *500 bbl water tank*

DRILL PIPE/DRILL COLLARS

- *383 Jts of 5"; 41/2"IF 19.50 # Grade X 95*
- *90 Jts of 5" 41/2"IF 25.60 # Grade X 95*
- *(4) 61/2 " x 2 1/4" Drill Collars with 4 ½" XH Thread*

B.O.P.

- *Two 11" 5,000 PSI Single Hydraulic Gates and 11" 5,000 PSI Annular*

Preventor with 140 Gallon Wagner Accumulator

- *TOP DRIVE TESCO EXI 350 ELECTRIC*

Ex. III- 11

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

No. P 215-0237

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

PERMIT TO CONDUCT WELL OPERATIONS

Emergency Relief Well – "Standard-Sesnon" 25 – 037-00776
Sesnon-Frew

Ventura, California
November 23, 2015

Thomas W. Schroeder, Agent
Southern California Gas Company (S4700)
9400 Oakdale Avenue
Chatsworth, CA 91313

Your proposal to **Drill** well **"Porter" 39A**, A.P.I. No. **037-30471**, Section **28**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **11/19/2015**, received **11/19/2015** has been examined in conjunction with records filed in this office. (Lat: **34.312570** Long: **-118.560352** 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. A **6" diverter system** on the **20"** casing.
   b. Class **IIIB 5M**, with hydraulic controls, on the **13 3/8"** casing.
   c. Class **IIIB 5M**, with hydraulic controls, on the **9 5/8"** casing.
   d. A **5M** lubricator for **any wireline** operations
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. The drilling fluid weight, the weight and volume of any heavy slug or pill, and the fact that the annulus was checked for fluid movement shall be noted on the driller's log.
4. A hole-filling program shall be posted and followed to maintain satisfactory pressure overbalance conditions.
5. Sufficient material to control lost circulation of hole fluid shall be available for immediate use at the well site.
6. 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.
7. The **13 3/8"** casing is cemented with sufficient cement to fill behind the casing from the shoe to the surface.
8. A cement bond log is run on the **13 3/8"** and **9 5/8"** casings to ensure adequate bonding after casing cementing operations and before drilling ahead.
9. The **9 5/8"** casing is cemented with sufficient cement to fill behind the casing from the shoe to the surface. In order to ensure adequate cement lift and prevent lost circulation, a cementing port device shall be installed at 3000'± and sufficient cement shall be pumped through it to bring cement to surface.
10. A **lap** test shall be performed to demonstrate that no gas or fluid has access to the well between the 9 5/8" and 7" casings after cleaning out below the top of the 7" casing.

CONTINUED ON PAGE 2

Steven Bohlen
State Oil and Gas Supervisor

Blanket Bond Dated: 7/6/1999

Engineer Kris Gustafson
Office (805) 654-4761

By [signature]
FOR Patricia A. Abel, District Deputy

KG/kg

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)

11. A directional survey of **"Porter" 39A** shall be made and filed with this division prior to attempting to intercept the **"Standard-Sesnon" 25** wellbore.
12. A directional survey and bottom hole location for the "**Standard-Sesnon" 25** well shall be filed with this Division prior to **interception** operations.
13. The Division shall require a Supplementary Notice of Intention for the proposed interception of the **"Standard-Sesnon" 25** well.
14. A daily log of the drilling operations shall be available for Division inspection at the drill rig, and daily copies of the tour sheet shall be electronically submitted to the Division.
15. Copies of all logs and wellbore diagnostics shall be immediately submitted to the Division in electronic format as soon as they are available.
16. This well is to be drilled for relief operations. A notice to rework will be submitted to the Division if this well is to be completed to production or injection.
17. Once drilled the well location shall be surveyed and the survey shall be filed with this office, latitude and longitude in decimal degrees, to six decimal place, NAD 83.
18. If well work operations have the potential to compromise casing integrity the Division must be notified.
19. No program changes are made without prior Division approval.
20. **THIS DIVISION SHALL BE NOTIFIED TO:**
    a. Inspect and function test the diverter system prior to commencing **drilling** operations.
    b. Witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the **13 3/8"** casing.
    c. Witness a pressure test of the **13 3/8"** casing
    d. Review the cement bond log prior to drilling out the shoe of the **13 3/8"** casing.
    e. Witness a leak-off test at the **13 3/8"** casing shoe.
    f. Witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the **9 5/8"** casing.
    g. Witness a pressure test of the **9 5/8"** casing.
    h. Review the cement bond log prior to drilling out the shoe of the **9 5/8"** casing.
    i. Witness a leak-off test at the **9 5/8"** casing shoe.
    j. Witness a test to demonstrate there is not fluid access to the well between the **9 5/8"** and **7"** casings, after cleaning out below the top of the casing lap.

NOTE:
1. No operation shall be undertaken or continued that will contaminate or otherwise damage the environment.
2. Prior to commencing operations, an updated spill contingency plan shall be filed with this office and in effect that includes provisions for rapid deployment of containment and recovery equipment, as well as fire suppression capabilities. In addition, a blowout prevention and control plan, including provisions for the duties, training, supervision, and schedule for testing equipment and personnel drills shall be submitted for approval.
3. The diverter line shall be secured and discharge into adequate containment. Appropriate gas monitoring equipment shall be installed to monitor discharge from the line.
4. If it is necessary to drill without circulation a gas monitor shall be placed at the pitcher nipple.
5. A charged gas zone in the Topanga Formation, as a result of the "Standard-Sesnon" 25 well leak maybe encountered during drilling operations. Additional safety precautions should be considered, which includes but is not limited to, circulating bottoms up prior to making a connection if there is significant ditch gas.
6. A lost circulation sweep ahead of cementing operations may increase the success of cementing operations
7. Proposed mud weight ranging from 8.8 to 9.6 ppg may not be adequate to control subsurface pressures. Mud weights previously used during drilling of wells in the area were increased to 10.4 ppg. In addition, there is a potential to encounter gas and heavy oil emulsion at approximately 5500' between the Aliso and Porter zones.
8. 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 in charge.