

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

No. T216-0079

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

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

Ventura, California  
May 10, 2016

Your operations at well "**Porter**" 50C, A.P.I. No. 037-24337, Sec. 27, T. 03N, R. 16W, SB B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on 3/8/2016, by **Clifford R. Knight**, a representative of the supervisor.

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

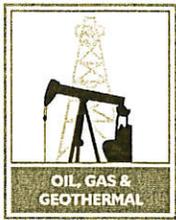
**DECISION:**

DEFERRED PENDING REVIEW BY THE DIVISION'S SAFETY TEAM.

Kenneth A. Harris Jr.  
State Oil and Gas Supervisor

By   
Patricia A. Abel  
District Deputy

CRK/tkc  
OG109



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**REPORT ON OPERATIONS**

No. T216-0078

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"Sesnon-Frew" - Modelo (Miocene-Eocene)

Amy Kitson  
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12801 Tampa Ave., SC9382  
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May 10, 2016

Your operations at well **"Porter" 50C**, A.P.I. No. **037-24337**, Sec. **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/8/2016**, by **Clifford R. Knight**, a representative of the supervisor.

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OG109

216-0078  
 No. T 216-0079  
 15,3

### MECHANICAL INTEGRITY TEST (MIT)

Operator: So. Cal Gas					Well: Porter 50C				
Sec. 27	T. 3N	R. 16W	B.&M. 5B	API No.: 035-24337		Field: Aliso Canyon			
County: Los Angeles					Witnessed/Reviewed on: C. Knight 13-8-16				
C. Knight, representative of the supervisor, was present from 0930 to 1145.									
Also present were: Nick Arbour (Inter Act), Duane Prokuski, Greg Fisher									
Casing record of the well:  liner 5 7/8" liner 5 1/2" shoe lining 8749' sliding sleeve 7140' (open) WXD sliding sleeve 7011' - 250' interval for noise log (investigation @ 20' not including anomaly) - 100'/min temp survey speed									
The MIT was performed for the purpose of perform temperature survey and noise log with any anomaly detected on temperature survey									
<input type="checkbox"/> The MIT is approved since it indicates that all of the injection fluid is confined to the formations below 7087 feet at this time.									
<input type="checkbox"/> The MIT is not approved due to the following reasons: (specify)									

Well: <u>Porter 50C</u>		Date: <u>3/8/16</u>		Time: <u>0930</u>	
Observed rate: _____ B/D		Meter rate: _____ B/D		Fluid level: <u>none</u> feet	
Injection pressure: <u>1057</u> psi		MASP:		Pick-up depth: <u>713</u> feet <i>could not enter liner to P</i>	
Initial annulus pressure: <u>1057</u> psi			Pressure after bleed-off: <u>no bleed off</u> psi		
Casing vented during test (Y/N) <u>No</u>		Survey company: <u>Well Analysis Corp.</u>			
<b>SPINNER COUNTS</b>					
<del>DEPTH</del>	<del>COUNTS</del>	<del>RATE</del>	<del>DEPTH</del>	<del>COUNTS</del>	<del>RATE</del>
COMMENTS:					
<b>TRACER CASING AND TUBING RATE CHECKS</b>					
Interval	Time (sec.)	Rate (B/D)	Background log: <u>NA</u> to <u>NA</u>		
COMMENTS: <u>Temp anomaly:</u> <u>3655 - 4655 4150 peak</u> <u>water flood interference? water flood is not active on injection.</u> <u>Noise log:</u> <u>Noise noted: 3700-4450 (see noise log)</u>					
<b>TOP PERFORATION CHECK</b>					
Top perforation depth: <u>7315 - 8744 (WWS)</u>		Wait at: _____ for _____		seconds	Beads: (Y/N)
Casing shoe at:	WSO holes at:		Arrival time: <u>Calculated</u>	<u>Actual</u>	
LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @
COMMENTS:					
<b>PACKER CHECK</b>					
Packer at: <u>7087 9 5/8</u>		Wait at: _____ for _____		seconds	Beads: (Y/N)
Tubing tail at: <u>7096</u> <i>Bell Collar</i>		Tubing size: <u>3/2</u>	2nd Packer at: <u>9 5/8" x 6"</u> <u>7130</u>		Mandrel:
LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @
COMMENTS:					
COMMENTS: <u>4150' Temp. anomaly peak</u> <u>3700 - 4450 temp. anomaly begin - end</u> <u>4900 - 5020' temp survey leveled off</u> <u>6380 - 6500' temp survey leveled out @ 158°F</u>					

Basic Schematic (Full Scale)

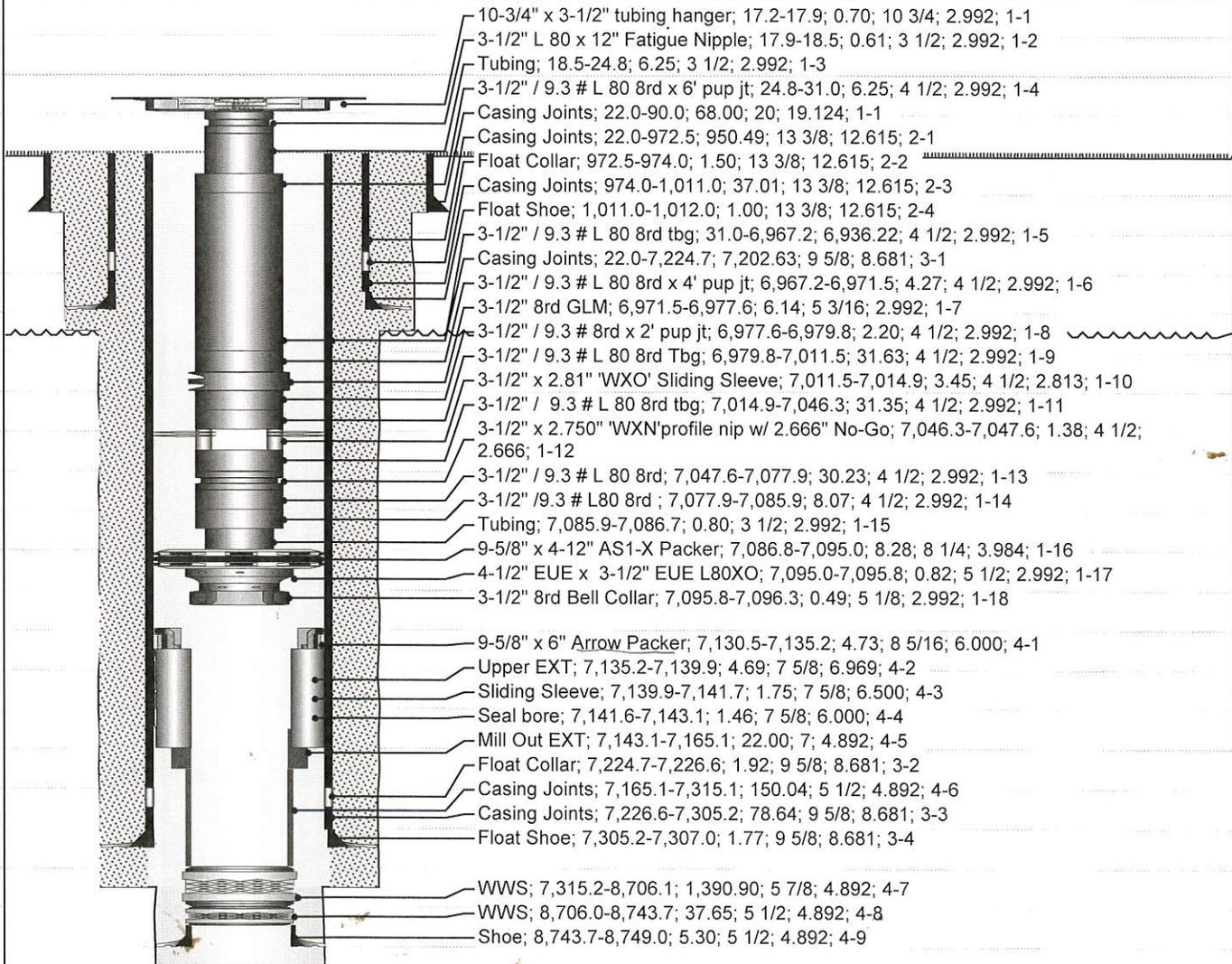
Horizontal - Original Hole, 3/8/2016 6:52:09 AM

MD (ftKB)

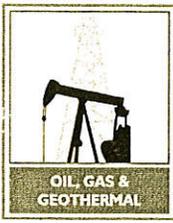
Vertical schematic (actual)

-3,778.5  
 -3,134.2  
 -463.3  
 -279.2  
 -245.4  
 -214.6  
 -170.6  
 -138.5  
 -122.7  
 -74.8  
 -55.1  
 -44.0  
 -29.2  
 -13.8  
 -11.8  
 -7.2  
 0.0  
 18.0  
 22.0  
 31.2  
 210.0  
 974.1  
 1,012.1  
 6,967.2  
 6,977.7  
 7,011.5  
 7,046.3  
 7,077.8  
 7,086.6  
 7,095.8  
 7,130.6  
 7,135.2  
 7,141.7  
 7,149.6  
 7,224.7  
 7,305.1  
 7,315.3  
 8,706.0  
 8,749.0

*14-1100*  
*4150*  
*7142*



- 10-3/4" x 3-1/2" tubing hanger; 17.2-17.9; 0.70; 10 3/4; 2.992; 1-1
- 3-1/2" L 80 x 12" Fatigue Nipple; 17.9-18.5; 0.61; 3 1/2; 2.992; 1-2
- Tubing; 18.5-24.8; 6.25; 3 1/2; 2.992; 1-3
- 3-1/2" / 9.3 # L 80 8rd x 6' pup jt; 24.8-31.0; 6.25; 4 1/2; 2.992; 1-4
- Casing Joints; 22.0-90.0; 68.00; 20; 19.124; 1-1
- Casing Joints; 22.0-972.5; 950.49; 13 3/8; 12.615; 2-1
- Float Collar; 972.5-974.0; 1.50; 13 3/8; 12.615; 2-2
- Casing Joints; 974.0-1,011.0; 37.01; 13 3/8; 12.615; 2-3
- Float Shoe; 1,011.0-1,012.0; 1.00; 13 3/8; 12.615; 2-4
- 3-1/2" / 9.3 # L 80 8rd tbg; 31.0-6,967.2; 6,936.22; 4 1/2; 2.992; 1-5
- Casing Joints; 22.0-7,224.7; 7,202.63; 9 5/8; 8.681; 3-1
- 3-1/2" / 9.3 # L 80 8rd x 4' pup jt; 6,967.2-6,971.5; 4.27; 4 1/2; 2.992; 1-6
- 3-1/2" 8rd GLM; 6,971.5-6,977.6; 6.14; 5 3/16; 2.992; 1-7
- 3-1/2" / 9.3 # 8rd x 2' pup jt; 6,977.6-6,979.8; 2.20; 4 1/2; 2.992; 1-8
- 3-1/2" / 9.3 # L 80 8rd Tbg; 6,979.8-7,011.5; 31.63; 4 1/2; 2.992; 1-9
- 3-1/2" x 2.81" 'WXO' Sliding Sleeve; 7,011.5-7,014.9; 3.45; 4 1/2; 2.813; 1-10
- 3-1/2" / 9.3 # L 80 8rd tbg; 7,014.9-7,046.3; 31.35; 4 1/2; 2.992; 1-11
- 3-1/2" x 2.750" 'WXN' profile nip w/ 2.666" No-Go; 7,046.3-7,047.6; 1.38; 4 1/2; 2.666; 1-12
- 3-1/2" / 9.3 # L 80 8rd; 7,047.6-7,077.9; 30.23; 4 1/2; 2.992; 1-13
- 3-1/2" / 9.3 # L80 8rd ; 7,077.9-7,085.9; 8.07; 4 1/2; 2.992; 1-14
- Tubing; 7,085.9-7,086.7; 0.80; 3 1/2; 2.992; 1-15
- 9-5/8" x 4-12" AS1-X Packer; 7,086.8-7,095.0; 8.28; 8 1/4; 3.984; 1-16
- 4-1/2" EUE x 3-1/2" EUE L80XO; 7,095.0-7,095.8; 0.82; 5 1/2; 2.992; 1-17
- 3-1/2" 8rd Bell Collar; 7,095.8-7,096.3; 0.49; 5 1/8; 2.992; 1-18
- 9-5/8" x 6" Arrow Packer; 7,130.5-7,135.2; 4.73; 8 5/16; 6.000; 4-1
- Upper EXT; 7,135.2-7,139.9; 4.69; 7 5/8; 6.969; 4-2
- Sliding Sleeve; 7,139.9-7,141.7; 1.75; 7 5/8; 6.500; 4-3
- Seal bore; 7,141.6-7,143.1; 1.46; 7 5/8; 6.000; 4-4
- Mill Out EXT; 7,143.1-7,165.1; 22.00; 7; 4.892; 4-5
- Float Collar; 7,224.7-7,226.6; 1.92; 9 5/8; 8.681; 3-2
- Casing Joints; 7,165.1-7,315.1; 150.04; 5 1/2; 4.892; 4-6
- Casing Joints; 7,226.6-7,305.2; 78.64; 9 5/8; 8.681; 3-3
- Float Shoe; 7,305.2-7,307.0; 1.77; 9 5/8; 8.681; 3-4
- WWS; 7,315.2-8,706.1; 1,390.90; 5 7/8; 4.892; 4-7
- WWS; 8,706.0-8,743.7; 37.65; 5 1/2; 4.892; 4-8
- Shoe; 8,743.7-8,749.0; 5.30; 5 1/2; 4.892; 4-9



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No. T216-0110

**REPORT ON OPERATIONS**

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

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

Ventura, California  
April 11, 2016

Your operations at well "**Porter**" 50C, A.P.I. No. **037-24337**, Sec. **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **4/6/2016**. **Ernest Blevins**, a representative of the supervisor.

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

**DECISION:**

APPROVED

Kenneth A. Harris Jr.  
State Oil and Gas Supervisor

By   
Patricia A. Abel  
District Deputy

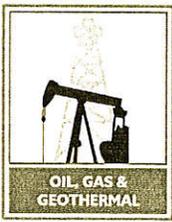
EB/tkc  
OG109

No. T 216-0110  
#16, 1

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

Operator: <u>So CA Gas</u>				Well: <u>"Porter" 50 C</u>	
Sec. <u>27</u>	T. <u>3N</u>	R. <u>16W</u>	B.&M. <u>SB</u>	API No.: <u>037-24337</u>	Field: <u>Aliso Canyon</u>
County: <u>Los Angeles</u>				Witnessed/Reviewed on: <u>4-6-16</u>	
<u>Ernie Blevins</u> , representative of the supervisor, was present from <u>1210</u> to <u>1815</u> .					
Also present were: <u>Jeff Mosher - Consultant w/ So CA Gas Ensign Rig #331</u>					
Casing record of the well: <u>3 1/2" - L80</u> <u>TOP Completion Pressure Test</u> <u>HEC Polymer 8.5 lb/gall</u> <u>9 5/8" Casing L-80</u> <u>47#</u> Pressure 1600 - Casing - 7090' 3700 - Tubing - 7074'					
The Internal MIT was performed for the purpose of pressure testing the <u>9 5/8"</u> casing above <u>7090'</u> (2) (prior to injecting fluid)					
<input checked="" type="checkbox"/> The Internal MIT is approved since it indicates that the <u>9 5/8"</u> casing has mechanical integrity above <u>both depths</u> at this time. <u>7090' + 7074'</u>					
<input type="checkbox"/> The Internal MIT is not approved due to the following reasons: (specify)					
INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.					
<u>Packer @ 7090' Time: 1251-1351</u> <u>Pressure: 1112 Test: 1171</u> <u>(459 psi) in 60 min. (86° = outside Temp)</u> <u>Tubing was opened + vented during test. (in direct sun)</u>					
<u>2nd Test 3 1/2" Tubing: 7074' N-test Tool</u> <u>Start Plug depth Plug end of Tubing</u> <u>Finish</u> <u>3828 psi → 3858</u> <u>30psi Climb 1550 → 1650</u> <u>82° outside Temp in direct sun</u> <u>PASS</u>					

1st Test - Annulus



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**REPORT ON OPERATIONS**

No. T216-0071

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

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Ventura, California  
April 11, 2016

Your operations at well "**Porter**" **50C**, A.P.I. No. **037-24337**, Sec. **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **3/18/2016**. **Ernest Blevins**, a representative of the supervisor.

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

**DECISION:**

APPROVED

Kenneth A. Harris Jr.  
State Oil and Gas Supervisor

By   
Patricia A. Abel  
District Deputy

EB/tkc  
OG109

No. T 216-0071

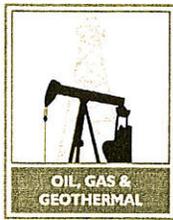
16, 1

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

Operator: <u>So CA Gas</u>				Well: <u>"Porter" 50 C</u>			
Sec. <u>27</u>	T. <u>3N</u>	R. <u>16W</u>	B.&M. <u>SB</u>	API No.: <u>037-24337</u>	Field: <u>Aliso Canyon</u>		
County: <u>Los Angeles</u>				Witnessed/Reviewed on: <u>3-18-16</u>			
<u>Ernie Blevins</u> , representative of the supervisor, was present from <u>0900</u> to <u>1430</u> .							
Also present were: <u>Jeff Mosier - Companyman w/ So CA Gas</u>							
Casing record of the well:							
<p style="text-align: right;">1st Test</p> The Internal MIT was performed for the purpose of pressure testing the <u>9 5/8</u> " casing above <u>3500'</u> (2) (prior to injecting fluid) <u>47#</u>							
<input checked="" type="checkbox"/> The Internal MIT is approved since it indicates that the <u>9 5/8</u> " casing has mechanical integrity above <u>7128</u> ' at this time..							
<input type="checkbox"/> The Internal MIT is not approved due to the following reasons: (specify)							

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

Pressure - 3625 psi @ surface B.P. - 7128 7112' Sand  
 Packer - 3500' (5172 psi) 3500 - 0  
 Polymer 8.5# (1547 lbs)  
 Testing 9 5/8" 3500' - 7128' 2328 psi @ surface  
 10:20 - 3670 → 11:20 am = 3659  
 60 min Tests = Good 11 psi bleed off  
 Lower Test through the 3/8" Tubing to below Packer. 12 psi bleed off  
 7112' = Sand 12:00 → 13:00 → 2316



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**REPORT ON OPERATIONS**

No. T216-0070

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

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

**DECISION:**

APPROVED

Kenneth A. Harris Jr.  
State Oil and Gas Supervisor

By   
Patricia A. Abel  
District Deputy

EB/tkc  
OG109

API No. 037-24337

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

T 216-0070

**BLOWOUT PREVENTION EQUIPMENT MEMO #12,1**

Operator So CA Gas Well "Porter" 50 C Sec. 27 T. 03N R. 16W  
 Field Aliso Canyon County Los Angeles Spud Date \_\_\_\_\_

VISITS: Date Engineer Time Operator's Rep. Title  
 1st 3-17-16 Ernie Blevins (1230 to 1300) \_\_\_\_\_  
 2nd \_\_\_\_\_ ( \_\_\_\_\_ to \_\_\_\_\_ ) \_\_\_\_\_  
 Contractor Ensign Rig # 331 Contractor's Rep. & Title  
 Casing record of well: \_\_\_\_\_  
Terry Vargovich - P.S.S.  
Jeff Mosier - Consultant

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

Proposed Well Opns: RWDTK . MACP: \_\_\_\_\_ psi  
 Hole size: \_\_\_\_\_ " fr. \_\_\_\_\_ " to \_\_\_\_\_ " to \_\_\_\_\_ " & \_\_\_\_\_ " to \_\_\_\_\_ " **REQUIRED BOPE CLASS: III 5M**

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

BOP STACK							TEST DATA						
API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul	Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
A	3 1/2	Hydril	LXT		5K		18.67					3-11-16	5K
Rd	CSO				L		3					L	L

ACTUATING SYSTEM				TOTAL:	AUXILIARY EQUIPMENT							
Accumulator Unit(s) Working Pressure <u>3200</u> psi				<u>24.67</u>	No.	Size (in.)	Rated Press.	Connections			Test Press.	
Total Rated Pump Output _____ gpm		Fluid Level _____						Weld	Flange	Thread		
Distance from Well Bore <u>50</u> ft.												
Accum. Manufacturer	Capacity	Precharge	psi	Fill-up Line								
1 <u>Weatherford</u>	<u>70</u> gal.			✓ Kill Line								
2				✓ Control Valve(s)	<u>2</u>	<u>2"</u>	<u>5K</u>					

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

EMERG. BACKUP SYSTEM				Press.	Wkg. Fluid	AUXILIARY EQUIPMENT								
4	N <sub>2</sub> Cylinders	1	L=	"	<u>2970</u>	<u>7.8</u> gal.	Pressure Gauge							
	Other:	2	L=	"	<u>2650</u>	<u>8.8</u> gal.	Adjustable Choke(s)							
		3	L=	"	<u>2650</u>	<u>8.8</u> gal.	Bleed Line							
		4	L=	"	<u>2700</u>	<u>9.08</u> gal.	Upper Kelly Cock							
		5	L=	"			Lower Kelly Cock							
		6	L=	"			Standpipe Valve							
							Standpipe Press. Gau.							
					TOTAL:	<u>34.48</u> ga	✓ Pipe Safety Valve	<u>3/2</u>	<u>5K</u>					
							✓ Internal Preventer	<u>3/2</u>	<u>5K</u>					

HOLE FLUID MONITORING			Alarm Type		Class	Hole Fluid Type	Weight	Storage Pits (Type & Size)
	Calibrated Mud Pit				A	<u>Polymer mix</u>	<u>8.5</u>	<u>700 bbls</u>
	Pit Level Indicator							
	Pump Stroke Counter				B			
	Pit Level Recorder							
	Flow Sensor				C			
	Mud Totalizer							
	Calibrated Trip Tank							
	Other:							

**DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES**

**CHECK LIST-RECORDS RECEIVED AND WELL STATUS**

Operator: Southern California Gas Company WELL DESIGNATION "Porter" 50C

API No. 03724337 SE 27 T: 3N R.: 16W , SB B. and M.

County: Los Angeles FIELD: Aliso Canyon

Type of Notice: Rework Date 3/7/2016 Report Number: P216-0030

**RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)**

**NEW STATUS**

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
<i>MIT</i>				
<i>Deferred approval due to Senior inst review</i>				

DATE: \_\_\_\_\_

**NOTICE OF RECORDS DUE**

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**WELL STATUS INQUIRY**

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**Well Stat**

Change Required: \_\_\_\_\_

Change Done: \_\_\_\_\_

**ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS**

CalWims Abandonment Form: \_\_\_\_\_ SURFACE INSPECTION NEEDED \_\_\_\_\_ COMPLETED \_\_\_\_\_  
Date and Inspector

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

**ENGINEER'S CHECK LIST**

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

Calwims Location \_\_\_\_\_ Calwims ELEVATION: \_\_\_\_\_ CONFIDENTIAL RELEASE DATE: \_\_\_\_\_ PERMIT REQUIREMENTS MET \_\_\_\_\_

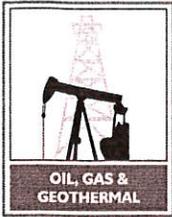
**CLERICAL CHECK LIST**

LOCATION CHANGE (OG165) \_\_\_\_\_ ELEVATION CHANGE (OG165) \_\_\_\_\_ RELEASE OF BOND (OG150) \_\_\_\_\_

**REMARKS**

RECORDS SCANNED: \_\_\_\_\_  
(Date)

RECORDS APPROVED: D.O.  
(Date and Engineer)



JRAL 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 216-0030**

**PERMIT TO CONDUCT WELL OPERATIONS**

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

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

Ventura, California  
 March 18, 2016

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

Your proposal to **Rework** well "**Porter**" **50C**, A.P.I. No. **037-24337**, Section **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **3/7/2016**, received **3/8/2016** has been examined in conjunction with records filed in this office. (Lat: **34.315049** Long: **-118.547282** Datum:**83**)

**THE PROPOSAL IS APPROVED PROVIDED:**

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

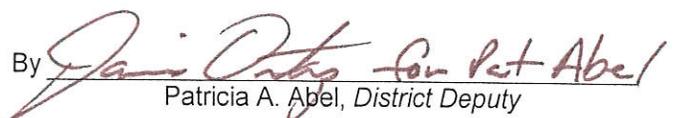
**Continued on Next Page**

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

Engineer Kris Gustafson  
 Office (805) 654-4761

KG/kg

Kenneth A. Harris Jr.  
 State Oil and Gas Supervisor

By   
 Patricia A. Abel, District Deputy

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

Page 2

Well #: "Porter" 50C

API #: 037-24337

Permit : P 216-0030

Date: March 18, 2016

**NOTE:**

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

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

**ATTACHMENT 1  
TO DOGGR ORDER 1109**

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

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

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

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

**REQUIRED TESTS FOR EACH WELL IN THE FACILITY**

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

a. Temperature Log:

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

b. Noise Log:

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

- Step 2:** The results of the Temperature Logs and Noise Logs will be independently reviewed by Division engineers. Any unexplained abnormal findings in this set of tests shall be addressed by the Operator in one of the following ways:
- Conduct further investigation and demonstrate to the Division's satisfaction that the abnormal finding is not an indicator of a lack mechanical integrity;
  - Remediate the well to the Division's satisfaction; or
  - With Division review and approval, remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

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

- Step 3:** After these tests are completed on the well, and all required action has been completed, the operator shall either:
- Conduct the additional tests and evaluations on the well, outlined in Steps 4a through 7a below, in order to gain approval for injecting gas through that well; or
  - Remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

#### **REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS**

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

**Step 4a:** The Operator shall conduct a **Casing Inspection log**.

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

**Step 5a:** The Operator shall conduct a **Cement Bond Log** for the well.

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

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

**Step 6a:** The Operator shall conduct a **Multi-Arm Caliper Inspection** of the well.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON**

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



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

FOR DIVISION USE ONLY	
Forms	
Bond	OGD 114 / OGD 121
	CALV WWS 115V

P216-0030

## NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: [www.conservation.ca.gov/dog/](http://www.conservation.ca.gov/dog/)

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework  / redrill  well Porter 50C, API No. 037-24337,  
(Check one)

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

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

- 13-3/8", 54.5#, K-55 BTC casing cemented at 1012'.
- 9-5/8", 47#, L-80 Hydril 563 casing cemented at 7307'.
- 5-1/2", 17#, L-80 SLHT wire wrapped screen hung at 8749', top at 7131'.
- 5-1/2" WWS 0.008". from 7315'-8744'.

The total depth is: 8751 feet. The effective depth is: 8749 feet.

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

Present zone pressure: <3500 psi. Anticipated/existing new zone pressure: Same psi.

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

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

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

See attached program.

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

Will the Field and/or Area change? Yes  No  If yes, specify New Field: \_\_\_\_\_ New Area: \_\_\_\_\_

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

Name of Operator Southern California Gas Company			
Address P. O. Box 2300		City/State Chatsworth	Zip Code 91313-2300
Name of Person Filing Notice Charles Jackle	Telephone Number: (310) 578-2693	Signature 	Date 3/7/16
Individual to contact for technical questions: Charles Jackle	Telephone Number: (310) 578-2693	E-Mail Address: cjackle@semprautilities.com	

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

Sent 5:39pm 03-07-16 Rec'd 03-08-16 DOGGR Vta

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

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

### CRITICAL WELL DEFINITION

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

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

### WELL OPERATIONS REQUIRING BONDING

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

This form may be printed from the DOGGR website at [www.conservation.ca.gov/dog/](http://www.conservation.ca.gov/dog/)

# WORKOVER PROGRAM

## Porter 50C – Well Inspection

**DATE:** March 7, 2016  
**OPERATOR:** SOUTHERN CALIFORNIA GAS COMPANY  
**FIELD:** ALISO CANYON  
**WELL:** PORTER 50C  
**API NUMBER:** 037-24337  
**ELEVATION:** All depths based on original KB, 22.05' above GL.  
**SURFACE LOCATION:** SEC 27, T3N, R16W, S.B. B&M

### OBJECTIVE

The intent of this program is to inspect the well integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP). This program will include pulling 3-1/2" completion string, running gyro surveys, casing inspection logs, pressure testing casing and well laterals, installing a new completion string, converting well to tubing flow, and installing pressure monitors. Baseline assessment data will be gathered on vertical casing pipe and other well components.

### WELL RECORD

Current Status:	Shut-in
ECOD:	8749' MD (Bottom of 5-1/2" Liner).
Special Conditions:	9/29/15, Wireline survey tagged down at 7158' (1591' above ECOD).
Casing Record:	13-3/8", 54.5#, K-55 BTC casing cemented at 1012'. 9-5/8", 47#, L-80 Hydril 563 casing cemented at 7307'. 5-1/2", 17#, L-80 SLHT wire wrapped hung at 8749', TOL at 7131'. 5-1/2" WWS 8 ga. from 7315'-8744'.
Tubing Record:	See Attached Tubing Detail.

### GEOLOGIC MARKERS

M-P: 6869' MD, 4732' VSS  
S-1: 7272' MD, 4996' VSS  
S-2: 7333' MD, 5029' VSS  
S-4: 7446' MD, 5089' VSS  
S-6: 7491' MD, 5110' VSS  
S-8: 7716' MD, 5198' VSS  
S-10: 8400' MD, 5304' VSS

Estimated Field Pressure: 1034 psi on 3/7/2016 PSI (Variable)

Estimated Bottomhole Temperature: 167 DEG F

**PROGRAM NOTES:**

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

**PRE-RIG WORK**

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

**WELLWORK PROGRAM**

1. MIRU production rig and associated equipment.
2. Spot 500 bbl Baker tank and fill with 8.6 ppg KCl brine.
  - 2.1 Connect pump to the tubing and vent the casing through the choke manifold to the SoCalGas system.
  - 2.2 Treat all brine fluids with Biocide, 5 gals/100 bbls
3. If the hole is not standing full of brine, then kill the well with an HEC polymer pill with approximately 8.6 ppg KCl brine. The liner volume is approximately 38 bbls. The tubing volume is approximately 62 bbls, and the casing volume is approximately 522 bbls.

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

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

5. Unland 3-1/2", 9.3#, L-80 tubing string and POOH with the completion tubing and packer assembly.
6. Pick up 9-5/8", 47# casing scraper on tubing and scrape to 5-1/2" TLH at 7131'. Circulate well clean. POOH.
7. Rig up wireline unit and run gyro survey from ECOD (or deepest depth) to surface. RDMO wireline unit.
8. Make up and run 9-5/8" RBP and set at 7126'± (5' above 5-1/2" TLH). Place sand cap on top.
9. Rig up Schlumberger wireline unit and run high resolution USIT/Neutron/CBL/GR casing inspection survey in 9-5/8" casing from top of RBP to surface to evaluate casing integrity.
10. Rig up Baker wireline unit and run high resolution Vertilog casing inspection survey, followed by 60-arm real-time caliper survey. RDMO wireline unit.
11. Perform Pressure Integrity Test on 9-5/8" casing from RBP to surface as per pressure test schedule to a minimum pressure of 3625 psi.

NOTE: Engineering team to analyze casing inspection and pressure test results and may recommend additional remediation work.

12. Inspect wellhead and pressure test the wellhead seals to a minimum pressure of 3625 psi.
  - a.) If wellhead seals do not test, remove Class III 5M BOPE, crossover spool, and primary pack-off.
  - b.) Replace pack-off seals and reinstall a tubing head, refurbished as necessary.
  - c.) Pressure test all wellhead seals to 5000 psi.
  - d.) Reinstall Class III 5M BOPE and function test.
13. Cleanout sand cap on top of RBP and run retrieving tool assembly. Recover 9-5/8" RBP. POOH, laying down tubing.

14. PU and RIH with new completion string as follows:

- a. Full joint 2-7/8", N-80 EUE 8RD tubing with Bell Collar
- b. 2-7/8" Ball Seat Catcher
- c. 5-1/2" x 9-5/8" Hydraulic Packer to be set at 7090'±.
- d. Crossover Pup Joint
- e. Full joint 3-1/2", N-80 EUE 8RD tubing
- f. 3-1/2" XN No-Go nipple
- g. Full joint 3-1/2", N-80 tubing
- h. 3-1/2" EUE 8RD Sliding Sleeve (Closed Position)
- i. 3-1/2" x 5-1/2" Crossover Pup Joint
- j. 5-1/2", N-80 EUE 8RD tubing to surface.
- k. Pup Joints: 5-1/2" N-80 EUE 8RD for space out
- l. Tubing Hanger and Fatigue Nipple

15. Set packer at 7090'± as per manufacturer's specifications.

16. Rig up slickline unit. RIH with slickline and set tubing plug in XN Nipple. POOH.

17. Pressure test the 5-1/2" x 9-5/8" casing annulus to 2250 psi and tubing 3625 psi.

NOTE: Notify the DOGGR to witness pressure test.

18. RIH with slickline and pull tubing plug from XN Nipple, POOH. RIH with slickline and shift sliding sleeve open, POOH.

19. Rig up nitrogen unit. Reverse circulate nitrogen, pumping down annulus and taking returns out of the tubing. RDMO nitrogen unit.

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

21. Fill annulus with packer fluid treated with corrosion inhibitor.

NOTE: Vent nitrogen returns as needed and monitor annulus fluid level. Refill with packer fluid as needed.

22. Remove Class III 5M BOPE and install the wellhead tree - test to 5000 psig.

23. RDMO production rig.

**WELL LATERAL HYDROTESTING**

24. Per Gas Company Standard 182.0170, pressure test the tubing and casing kill laterals from the wellhead to the remote tie-in to 3625 psig. Pressure test the tubing and casing withdrawal/injection laterals from wellhead to operating valves to 3625 psig.
25. Reinstall the hydrotested laterals.
26. Install the well safety systems and instrumentation. Install pressure transmitters on tubing, casing, and surface casing.
27. Release well to operations.

**EXTERNAL CORROSION PROTECTION**

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

7  
PORTER SOC

Depth (TVD)	External Casing Backup Pressure			Pressure Test								Tubing Leak Net Burst Pressure @ Depth	Test Pressure > 85% of Burst	Test Pressure < Tubing Leak - (Gas-filled annulus)						
	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Net Burst Pressure @ Depth																
				Internal Water Hydrostatic	1	2	3	4	5	6	7				8	Final				
0	5840	0.00	0	Test Packer Depth	3625															
500	5840	0.00	0	Bridge Plug Depth	3500															
1000	5840	0.00	0	0	3625															
1500	5840	0.00	0	221	3846															
2000	5840	0.00	0	442	4067															
2500	5840	0.00	0	663	4288															
3000	5840	0.00	0	884	4509															
3500	5840	0.00	0	1105	4730															
4000	5840	0.00	0	1326	4951															
4500	5840	0.00	0	1547	5172															
5000	5840	0.00	0	1768	-															
5500	5840	0.00	0	1989	-															
6000	5840	0.00	0	2210	-															
6500	5840	0.00	0	2431	-															
7000	5840	0.00	0	2652	-															
7126	5840	0.00	0	2873	-															
				3094	-															
				3150	-															

0.091

psi/ft  
int. grad.

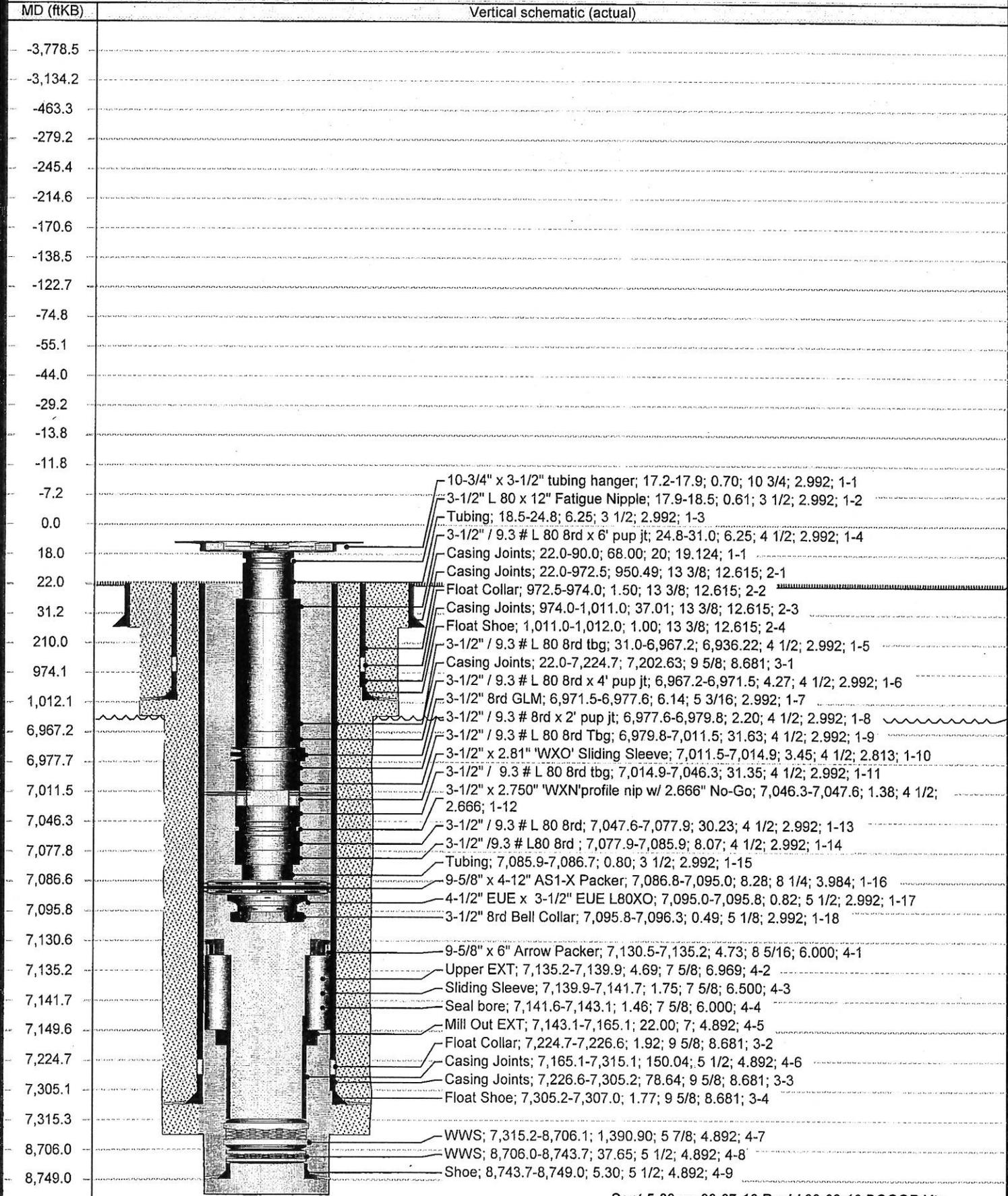
0.442

psi/ft  
int. grad.

### Basic Schematic (Full Scale)

Horizontal - Original Hole, 3/7/2016 10:45:47 AM

Vertical schematic (actual)



Sent 5:39pm 03-07-16 Rec'd 03-08-16 DOGGR Vta

# Gas Company Tubing Detail



API 03724337	Field Name Aliso Canyon	KB-Grd (ft) 22.50	Area Southern California	Operator Southern California Gas Company	County Los Angeles	State California
Original KB Elevation (ft) 1,975.50	Ground Elevation (ft) 1,953.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 22.50	KB-Casing Flange Distance (ft)	Spud Date 6/7/2014	

**Other In Hole**

Des	OD (in)	ID (in)	Make	Model	Typ	Top (ftKB)	Btn (ftKB)
6" tieback seal section	8 1/2	4.892				7,133.5	7,149.5

**Production Tubing set at 7,096.3ftKB on 1/6/2015 00:00**

Tubing Description		Set Depth (ftKB)		Run Date		Pull Date		
Production Tubing		7,096.3		1/6/2015				
Jts	Item Des	OD (in)	ID (in)	Wl (lb/ft)	Grade	Len (ft)	Top (ftKB)	Btn (ftKB)
	10-3/4" x 3-1/2" tubing hanger	10 3/4	2.992	9.30	L-80	0.70	17.2	17.9
	3-1/2" L 80 x 12" Fatigue Nipple	3 1/2	2.992	9.30	L-80	0.61	17.9	18.5
	Tubing	3 1/2	2.992	9.30	L-80	6.25	18.5	24.8
	3-1/2" / 9.3 # L 80 8rd x 6' pup jt	4 1/2	2.992	9.30	L-80	6.25	24.8	31.0
221	3-1/2" / 9.3 # L 80 8rd tbg	4 1/2	2.992	9.30	L-80	6,936.22	31.0	6,967.2
	3-1/2" / 9.3 # L 80 8rd x 4' pup jt	4 1/2	2.992	9.30	L-80	4.27	6,967.2	6,971.5
	3-1/2" 8rd GLM	5 3/16	2.992		L-80	6.14	6,971.5	6,977.6
	3-1/2" / 9.3 # 8rd x 2' pup jt	4 1/2	2.992	9.30	L-80	2.20	6,977.6	6,979.8
1	3-1/2" / 9.3 # L 80 8rd Tbg	4 1/2	2.992	9.30	L-80	31.63	6,979.8	7,011.5
	3-1/2" x 2.81" WWO Sliding Sleeve	4 1/2	2.813		L-80	3.45	7,011.5	7,014.9
1	3-1/2" / 9.3 # L 80 8rd tbg	4 1/2	2.992	9.30	L-80	31.35	7,014.9	7,046.3
	3-1/2" x 2.750" WXN profile nip w/ 2.666" No-Go	4 1/2	2.666		L-80	1.38	7,046.3	7,047.7
1	3-1/2" / 9.3 # L 80 8rd	4 1/2	2.992	9.30	L-80	30.23	7,047.7	7,077.9
	3-1/2" / 9.3 # L80 8rd	4 1/2	2.992	9.30	L-80	8.07	7,077.9	7,086.0
	Tubing	3 1/2	2.992	9.30	L-80	0.80	7,086.0	7,086.8
	9-5/8" x 4-12" AS1-X Packer	8 1/4	3.984		L-80	8.28	7,086.8	7,095.0
	4-1/2" EUE x 3-1/2" EUE L80XO	5 1/2	2.992	9.30	L-80	0.82	7,095.0	7,095.9
	3-1/2" 8rd Bell Collar	5 1/8	2.992		L-80	0.49	7,095.9	7,096.3

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: Southern California Gas Company WELL DESIGNATION "Porter" 50C

API No. 03724337 SE 27 T: 3N R.: 16W , SB B. and M.

County: Los Angeles FIELD: Aliso Canyon

Type of Notice: Supplementary Date 7/25/2013 Report Number: P213-0344

**RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)**

**NEW STATUS**

	Date	OK	NEED	Remarks
Well Summary (OG100)	4-14-13	✓		
History (OG103)	4-14-13	✓		
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				
<u>LOGS - See</u>				
<u>SUMMARY REPORT</u>		✓		

DATE: \_\_\_\_\_

**NOTICE OF RECORDS DUE**

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**WELL STATUS INQUIRY**

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**Well Stat**

Change Required: \_\_\_\_\_

Change Done: \_\_\_\_\_

**ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS**

CalWims Abandonment Form: \_\_\_\_\_ SURFACE INSPECTION NEEDED \_\_\_\_\_ COMPLETED \_\_\_\_\_  
Date and Inspector

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

**ENGINEER'S CHECK LIST**

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

Calwims Location \_\_\_\_\_ Calwims ELEVATION: \_\_\_\_\_ CONFIDENTIAL RELEASE DATE: \_\_\_\_\_ PERMIT REQUIREMENTS MET \_\_\_\_\_

**CLERICAL CHECK LIST**

LOCATION CHANGE (OG165) \_\_\_\_\_ ELEVATION CHANGE (OG165) \_\_\_\_\_ RELEASE OF BOND (OG150) \_\_\_\_\_

**REMARKS**

RECORDS SCANNED: \_\_\_\_\_

(Date)

RECORDS APPROVED: 6-16-13 DA

(Date and Engineer)

# WELL SUMMARY REPORT

API No. 037-24337

Operator <b>Southern California Gas Company</b>		Well <b>Porter 50C</b>				
Field (and Area, if applicable) <b>Aliso Canyon, Sesnon-Frew Pool</b>		County <b>Los Angeles</b>	Sec. <b>27</b>	T. <b>3N</b>	R. <b>16W</b>	B.&M. <b>S.B.</b>
Location of well (Give surface location from property or section corner, street center line)					Elevation of ground above sea level: <b>1953'</b>	
Lat./Long. in decimal degrees, to six decimal places, NAD 83 format: Lat: <b>34.315049N</b> Long: <b>-118.547282W</b>						

Was the well directionally drilled?  Yes  No If yes, show coordinates (from surface location) and true vertical depth at total depth.  
**554.22' South, 1713.58' West, 7322.7' TVD**

Commenced drilling (date) <b>6/7/2014</b>	(1st hole) <b>8751'</b>	Total depth (2nd)	(3rd)	Depth measurements taken from top of: <input type="checkbox"/> Derrick Floor <input type="checkbox"/> Rotary Table <input checked="" type="checkbox"/> Kelly Bushing																									
Completed drilling (date) <b>7/26/2014</b>	Present effective depth <b>8749'</b>			Which is <b>22.5</b> feet above ground.																									
Commenced production/injection (date) <b>Currently Not in Service</b>	Junk? Describe: <b>N/A</b>			<table border="1"> <tr> <th colspan="2">GEOLOGICAL MARKERS</th> <th>DEPTH</th> </tr> <tr> <td>M-P</td> <td></td> <td><b>6869'</b></td> </tr> <tr> <td>S-1</td> <td></td> <td><b>7272'</b></td> </tr> <tr> <td>S-2</td> <td></td> <td><b>7333'</b></td> </tr> <tr> <td>S-4</td> <td></td> <td><b>7446'</b></td> </tr> <tr> <td>S-6</td> <td></td> <td><b>7491'</b></td> </tr> <tr> <td>S-8</td> <td></td> <td><b>7716'</b></td> </tr> <tr> <td>S-10</td> <td></td> <td><b>8400'</b></td> </tr> </table>		GEOLOGICAL MARKERS		DEPTH	M-P		<b>6869'</b>	S-1		<b>7272'</b>	S-2		<b>7333'</b>	S-4		<b>7446'</b>	S-6		<b>7491'</b>	S-8		<b>7716'</b>	S-10		<b>8400'</b>
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Production mode: <input checked="" type="checkbox"/> Flowing  <input type="checkbox"/> Pumping <input type="checkbox"/> Gas lift				Formation and age at total depth <b>Sesnon, Miocene</b>	Base of fresh water <b>N/A</b>																								
Name of production/injection zone(s) <b>S-4, S-6, S-8, S-10</b>																													

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

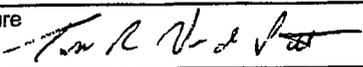
### CASING AND CEMENTING RECORD (Present Hole)

Size of Casing (Inches API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New (N) or Used (U)	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementing (if through perforations)	Top(s) of Cement in Annulus
13-3/8"	Surface	1012'	54.5#/ft	K-55	N	17-1/2"	1078 cu ft		Surface
9-5/8"	Surface	7307'	47#/ft	L-80	N	14"	4727 cu ft		Surface
5-1/2"	7130'	8749'	17#/ft	L-80	N	8-1/2"	N/A	N/A	Liner

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforations, and method.)  
**5-1/2", 17#, L-80 blank liner and wirewrapped screen from 7130'-8749', 0.08" Ga screen from 7315'-8706' gravel packed w/98 cuft of 30-50 resin coated sand**

Logs/surveys run?  Yes  No If yes, list type(s) and depth(s).  
**Resistivity/Gamma Ray - 1140'-8752' Induction/SP/Gamma Ray/Neutron/Density/Caliper - 1009'-7292' USIT/Gamma Ray - 36'-980', 50'-1009', 12'-7305' Mud log - 90'-8751'**

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

Name of person filing report <b>Todd Van de Putte</b>	Telephone Number <b>818-701-3339</b>	Signature 	Date <b>4-13-2015</b>
Address <b>12801 Tampa Ave</b>		City/State <b>Northridge, CA</b>	Zip Code <b>91326-1045</b>
Individual to contact for technical questions: <b>Todd Van de Putte</b>	Telephone Number <b>818-701-3339</b>	E-Mail Address: <b>tvandeputte@semprautilities.com</b>	

## HISTORY OF OIL OR GAS WELL

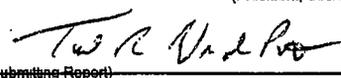
Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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, balling tests, and initial production data.

Start Date	Ops. DOGGR Rpt
6/7/2014	Completed the move in and rig up of the Ensign #587 rig. Made up the 8" directional tools on 5" drill pipe. Spudded the 17-1/2" hole at 02:00. Made up a 17-1/2" bit on a 8" mud motor with 5" drill pipe and directionally drilled 17-1/2" hole from 90' to 487'. MW 9.2 ppg, V 41 sec, PV 12 cps, YP 8, Sol 3%
6/8/2014	Directional drilled the 17-1/2" hole from 487' to 634'. W 9.2 ppg, V 40 sec, PV 12 cps, YP 10, Sol 3%.
6/9/2014	Directional drilled the 17-1/2" hole from 634' to 800'. W 9.2 ppg, V 39 sec, PV 12 cps, YP 10, Sol 3%.
6/10/2014	Directional drilled the 17-1/2" hole from 800' to 965'. W 9.2, ppg V 38 sec, PV 10 cps, YP 10, Sol 5%
6/11/2014	Directional drilled the 17-1/2" hole with an 8" mud motor from 965' to 1017'. Ran 28 jts, 1014' of 13-3/8" 54.5#/ft K-55 BTC casing, shoe at 1012', Pumped 50 bbl mud flush ahead followed by 131 bbl (360 sx) of 13.5 ppg lead Class "G" cement, 61 bbl (190 sx) of 14.8 ppg tail Class "G" cement and displaced with 151 bbl of 9.2 ppg drilling mud. Bumped the plug with 500 psig over with 17 bbl of cement returns to the surface. The plug held with CIP at 22:30 hrs, MW 9.2 ppg, V 38 sec, PV 10 cps, YP 10, Sol 5%
6/12/2014	Waited on the cement, slacked off of the 13-3/8" surface casing, made a rough cut and prepped the 13-3/8" surface casing stub.
6/13/2014	Welded the 13-5/8" 5M SOW casing head, pressure tested welds to 4000 psig for 10 mins, witnessed by K. Katolas. Xrayed casing head welds (ok). Flanged up the Class III 5M BOPE and fabricated the lines. Function tested the Class III 5M BOPE and laid down the flow nipple, test plug wouldn't pass flow nipple. Pressure tested the blind rams, lines and pumps to 5000 psig (high) and 300 psig (low). DOGGR rep E. Blevins on location. Replaced the door gasket seal on the pipe rams.
6/14/2014	Continued to pressure test the Class III 5M BOPE and the lines to 5000 psig (high), 300 psig (low) for the pipe ram for 15 minutes each. Pressure tested the Annular preventer to 3000 psig (high), 300 psig (low) for 15 minutes each. BOPE tests approved by DOGGR, E. Blevins. Made up a cleanout BHA with a 12-1/4" bit on the 5" drill pipe. Cleaned out the 13-3/8" shoe track and cement from 974' to 1017'. Rotary drilled a 12-1/4" pilot hole from 1017' to 1140'. MW 9.2 ppg, V 40 sec, PV 12 cps, YP 12, Sol 3%
6/15/2014	Made up a 13-3/8" casing scraper on the 5" drill pipe. Made a scraper run to 1000' and pulled of the well. Moved in and rigged up the Schlumberger wireline unit. Made up the USIT/GR tools on wireline and logged the 13-3/8" surface casing from 980' to 36' (77 hrs from CIP). Rigged down and moved out the Schlumberger wireline unit. Ran in the hole with the 9-1/2" x 8" Autotrak rotary steerable system, 12-1/4" Kymera and 14" Rhino Reamer on the 5" drill pipe and directionally drilled 12-1/4" hole opened to 14" from 1140' to 1171'. MW 9.1 ppg, V 41 sec, PV 15 cps, YP 11, Sol 3%
6/16/2014	Directional drilled 12-1/4" hole and opened to 14" from 1171' to 2070', W 9.3 ppg, V 46 sec, PV 18 cps, YP 19, Sol 4%
6/17/2014	Directional drilled 12-1/4" hole and opened to 14" from 2070' to 2545', W 9.4 ppg, V 42 sec, PV 17 cps, YP 15, Sol 5%
6/18/2014	Directional drilled 12-1/4" hole and opened to 14" from 2545' to 3281', W 9.5 ppg, V 42 sec, PV 18 cps, YP 13, Sol 5%
6/19/2014	Tripped for rotary steerable tool failure, made up NB#4 12-1/4" Kymera Hybrid and ran in the well to the 13-3/8" surface casing shoe. Tested the MWD tool failed, pulled out of the well and repaired the tool. Ran in the well and safety reamed 30' to bottom. W 9.3 ppg, V 46 sec, PV 20 cps, YP 15, Sol 4%
6/20/2014	Directional drilled 12-1/4" hole and opened to 14" from 3281' to 3794', W 9.4 ppg, V 41 sec, PV 16 cps, YP 11, Sol 5%
6/21/2014	Directional drilled 12-1/4" hole and opened to 14" from 3794' to 4263'. W 9.5 ppg, V 41 sec, PV 15 cps, YP 11, Sol 5%
6/22/2014	Directional drilled 12-1/4" hole and opened to 14" from 4263' to 4930'. W 9.4 ppg, V 42 sec, PV 15 cps, YP 10, Sol 5%

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

Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

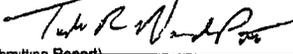
Operator: Southern California Gas Company  
Well: Porter 50 C  
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Field: Aliso Canyon  
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Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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. DOGGR Rpt
6/23/2014	Directional drilled 12-1/4" hole and opened to 14" from 4930' to 5429'. SCR breaker failed, regained partial power, circulated the well clean and pulled to the surface casing shoe. Back reamed 1 stand at 2500'. Replaced the SCR breaker and pulled out the hole for a new 12-1/4" bit. W 9.4 ppg, V 44 sec, PV 17 cps, YP 14, Sol 5%
6/24/2014	Ran in the well with a new 12-1/4" hybrid bit (NB#5). Directional drilled 12-1/4" hole and opened to 14" from 5429' to 5513'. Pulled out of the hole to the surface casing shoe to service and repair top drive unit. W 9.3 ppg, V 45 sec, PV 15 cps, YP 15, Sol 5%
6/25/2014	Repaired the top drive unit. Ran in the well and directional drilled 12-1/4" hole and opened to 14" from 5513' to 5547'. W 9.2 ppg, V 45 sec, PV 15 cps, YP 14, Sol 4%
6/26/2014	Directional drilled 12-1/4" hole and opened to 14" from 5547' to 5622'. Circulated the hole clean and pulled out of the well for top drive replacement. W 9.3 ppg, V 43 sec, PV 12 cps, YP 12, Sol 4%
6/27/2014	Replaced the top drive unit. Made up the directional tools/BHA on 5" drill pipe and ran in the well to 2043'. W 9.2 ppg, V 45 sec, PV 12 cps, YP 14, Sol 4%
6/28/2014	Ran in the well from 2043' to 5622' and directional drilled 12-1/4" hole and opened to 14" from 5622' to 5827'. W 9.3 ppg, V 45 sec, PV 14 cps, YP 14, Sol 4%
6/29/2014	Directional drilled 12-1/4" hole and opened to 14" from 5827' to 6245'. W 9.3 ppg, V 44 sec, PV 16 cps, YP 9, Sol 4%
6/30/2014	Directional drilled 12-1/4" hole and opened to 14" from 6245' to 6515'. Rig pump #2 failed. Circulated the well clean, pulled out of the well for a new 12-1/4" bit. W 9.4 ppg, V 45 sec, PV 15 cps, YP 13, Sol 4%
7/1/2014	Made up a new 12-1/4" hybrid bit (NB#6) on the 9-1/2" x 8" rotary steerable BHA and ran in the well to 6515'. Directional drilled 12-1/4" hole and opened to 14" from 6515' to 6688'. W 9.5 ppg, V 48 sec, PV 20 cps, YP 15, Sol 5%
7/2/2014	Directional drilled 12-1/4" hole and opened to 14" from 6688' to 7008'. W 9.5 ppg, V 48 sec, PV 21 cps, YP 15, Sol 6%
7/3/2014	Directional drilled 12-1/4 inch hole opened to 14 inch from 7008 ft to 7317 ft. Circulated the well for 6 hours and pulled out of the well. Laid down/replaced the 5" drill pipe with bad hard banding. W 9.5 ppg, V 50 sec, PV 23 cps, YP 16, Sol 6%
7/4/2014	Continued to lay down/replace the 5" drill pipe with bad hard banding. Laid down the directional tools/BHA. Made up the 14" Rhino and bullnose cleanout assembly on the 5" drill pipe. Ran in the well. W 9.2 ppg, V 53 sec, PV 22 cps, YP 18, Sol 4%
7/5/2014	Ran in the well with bullnose and 14" Rhino reamer on the 5" drill pipe, tagged at 7190', and reamed to 7212'. Opened the hole to 14" from 7212' to 7317' (7305' reamer depth). Pulled out the well with the cleanout assembly and laid down the BHA. Moved in and rigged up the Schlumberger wireline unit. Made the Schlumberger Quad Combo wireline logs, (AIT/CNL/TLD/BHC/GR). Ran Quad Combo log from 7292' to 1009'. W 9.5 ppg, V 50 sec, PV 21 cps, YP 17, Sol 6%
7/6/2014	Rigged up the USIT logging tool on the wireline unit. Ran the Schlumberger USIT log on 13-3/8" casing from 1009' to the surface, Rigged down and moved out the Schlumberger wireline unit. Made up the 14" Rhino reamer and bullnose on the 5" drill pipe. Ran in the well to TD and circulated the well clean. Pulled out of the well and laid down the 14" Rhino cleanout BHA and laid down the 8" BHA/tools. Moved and rigged up the casing running equipment. W 9.4 ppg, V 50 sec, PV 24 cps, YP 17, Sol 5%

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF CONSERVATION  
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Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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

Telephone Number: 818-701-3339

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Start Date	Ops. DOGGR Rpt
7/7/2014	Picked up and ran the 9-5/8", 47#/ft L-80 Hydril 563 casing with a float collar and float shoe to 7307'. Moved in and rigged up the Halliburton cementing equipment. Cemented the 9-5/8" production casing with 50 bbl of mud flush ahead followed by 535 bbl of 13.5 ppg Class "G" lead, 307 bbl of 14.8 ppg Class "G" (with additives) tail and displaced with 529 bbl of 9.5 ppg drilling mud. The plug did not the bump, the floats held, no cement returns to the surface. Waited on the top job cement. MW 9.5 ppg, V 55 sec, PV 23 cps, YP 17, Sol 6%
7/8/2014	Waited on the top job cement delivery. Moved in the Halliburton cementing equipment, mixed and pumped 14 bbl of 14 ppg Type III cement (approximately 210 lineal feet). Cement returns to the surface. Jacked up the Class III 5M BOP stack and could not set the slips. Waited on the machined ring plate. MW 9.5 ppg, V 54 sec, PV 23 cps, YP 18, Sol 6%
7/9/2014	Cut off the 13-5/8" 5M casing head and removed the slips. Installed the new 13-5/8" 5M casing head, x-rayed the welds, and pressure tested the casing head to 4000 psig., Set the slips and installed the packoff and the 13-5/8" x 13-5/8" 5M DSA seal flange and pressure tested to 5000 psig for 5 minutes. Prepared the 9-5/8" production casing stub, and installed the 13-5/8" x 11" 5M tubing head. MW 9.1 ppg, V 51 sec, PV 20 cps, YP 18, Sol 3%
7/10/2014	Rigged up the Class III 5M BOPE, pressure tested the pipe rams and the blind rams to 5000 psig (high) and 300 psig (low) for 15 minutes each. Pressure tested the 9-5/8" production casing to 1000 psig for 15 mins. Testing was witnessed by DOGGR rep K. Gustafson. Made up an 8-1/2" bit and cleanout BHA on the 5" drill pipe. Ran in the well and tagged cement at 6623'. Cleaned out the cement with 8-1/2" bit from 6623' to 6733'. W 9.1 ppg, V 51 sec, PV 20 cps, YP 18, Sol 3%
7/11/2014	Continued to clean out the cement with the 8-1/2" bit and cleanout BHA from 6733' to 7317'. Circulated the well clean and cleaned the mud pits. W 9.1 ppg, V 51 sec, PV 20 cps, YP 18, Sol 3%
7/12/2014	Continued to clean the mud pits and mixed the 8.6 ppg KCl/Polymer drill in fluid. Ran in the well and changed over the well to KCl polymer mud. Made a 9-5/8" casing scraper run to 7300'. Circulated and conditioned the mud and pulled out of the well for USIT logs. W 8.6 ppg, V 42 sec, PV 7 cps, YP 20, Sol 1%
7/13/2014	Continued to pull of the well with the casing scraper. Moved in and rigged up the Schlumberger wireline unit. Made up the USIT tools on wireline and logged from 7305' to the surface. Rigged down and moved out the Schlumberger wireline unit. Made up the rotary steerable directional tools on the 5" drill pipe. Ran in the well to 7317' and directional drilled 8-1/2" hole from 7317' to 7549'. W 8.5 ppg, V 40 sec, PV 4 cps, YP 15, Sol 1%
7/14/2014	Directional drilled 8-1/2" hole from 7549' to 7710'. Lost communication with directional tools and circulated the well clean. Pulled out of the well with the directional BHA. StarTrak tool had unscrewed at the service break. Built screw in sub and made up the sub on the 5" drill pipe. Ran in the well to fish the directional BHA. W 8.5 ppg, V 40 sec, PV 6 cps, YP 17, Sol 1%
7/15/2014	Ran in the well to the top of the directional tools and screwed into the directional BHA with the sub. Pulled out of the well with full recovery of the directional BHA and the bit. Made up a new set of directional tools on the 5" drill pipe. Ran in the well to 7710' and directional drilled 8-1/2" hole from 7710' to 7781'. Circulated the well clean and pulled to the 9-5/8" casing shoe for a top drive unit heating problem. W 8.5 ppg, V 37 sec, PV 7 cps, YP 12, Sol 1%
7/16/2014	Repaired the top drive unit. Ran in the well from the 9-5/8" casing shoe to 7781' and directional drilled 8-1/2" hole from 7781' to 8157'. Lost 300 psig pump pressure and pumped carbide with no results. Pulled up the well to 5542' and found washed out 5" drill pipe in the slip area on the pipe body. Ran in the well from 5542' and directional drilled 8-1/2" hole from 8157' to 8249'. W 8.5 ppg, V 39 sec, PV 7 cps, YP 15, Sol 1%

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

Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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

Telephone Number: 818-701-3339

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Start Date	Ops. DOGGR Rpt
7/17/2014	Directional drilled 8-1/2" hole from 8249' to 8391', Lost 150 psig pump pressure, pulled out of the well to 4131' and found washed out drill pipe. Ran in the well from 4131' to 8391' and directional drilled 8-1/2" hole from 8391' to 8393'. Lost 300 psig pump pressure, pulled out of the well to 4068' and found washed out pipe. Laid down and replaced 90 joints of the 5" drill pipe above the HWDP with 5", 25.60 lb/ft drill pipe. Ran in the well and directional drilled 8-1/2" hole from 8249' to 8393'. W 8.5 ppg, V 39 sec, PV 7 cps, YP 17, Sol 1%
7/18/2014	Finished replacing the 90 joints of 5", 19.5 lb drill pipe with 5", 25.6 lb drill pipe. Directional drilled 8-1/2 inch hole from 8393' to 8633'. Lost 250 psig pump pressure, pulled out of the well to 6860' and laid down the washed out 5" drill pipe. Tested the directional tools and pulled out of the well for Star Trak failure. Picked up a new directional BHA on the 5" drill pipe. W 8.5 ppg, V 38 sec, PV 8 cps, YP 15, Sol 1%
7/19/2014	Made up a new Star Trak steerable tool/BHA on the 5" drill pipe. Ran in the well to 8633' and directional drilled 8-1/2" hole from 8633' to 8719'. Lost 150 psig pump pressure, pulled up the well to 7045' and laid down the washed out 5" drill pipe. Replaced washed out 5" drill pipe, ran in the well to 8719' and directional drilled 8-1/2" hole from 8719' to 8751'. Circulated the well clean, pulled out of the well and laid down the directional tools/BHA. W 8.5 ppg, V 39 sec, PV 8 cps, YP 16, Sol 1%
7/20/2014	Made up an 8-1/2" bullnose hole opener/BHA on the 5" drill pipe. Ran in the well and cleaned out to TD with the BNHO. Circulated the well clean. Stage circulated the hole at 8751', 7200' and 5000'. Spotted a high vis pill in the 8-1/2" open hole, dropped a 1-7/8" drift down the 5" drill pipe, Pulled out of the well and flushed the lines with clean 3% KCl brine. W 8.5 ppg, V 38 sec, PV 8 cps, YP 15, Sol 1%
7/21/2014	Rigged up the casing running crew. Picked up and ran the 5-1/2" 17#.ft. L-80 SLHT wire wrapped screen liner to 8749' with the liner hanger at 7130'. The 8 ga wirewrapped screen from 7315'-8706'. Rigged down and moved out the casing running crew. Gravel packed the upper position with clean 3% KCl brine at 8 bbl/min 0.50 PPA with 750 psig and screened out early after 77 cuft of 30/50 resin coated sand in place. Reverse circulated the excess sand from the well and pulled out of the hole for a tubing tool change. MW 8.5 ppg, V 39 sec, PV 9 cps, YP 15, Sol 1%
7/22/2014	Replaced the tubing tools, ran back in the hole with the new gravel packing tools/innerstring on the 5" drill pipe and attempted to gravel pack from the bottom up. Pumped clean 3% KCl brine at 4 bbl/min, 0.25 PPA at 250 psig and screened out. Reverse circulated the excess resin coated sand and pulled the gravel packing tools. Made up the wash tools on the 5" drill pipe and ran in the well to 3000'. MW 8.5 ppg, V 38 sec, PV 8 cps, YP 16, Sol 1%
7/23/2014	Ran in the well with the liner wash tools and washed the 5-1/2" liner. Circulated the well clean and pulled out of the well. Made up a new set of gravel pack tool on the 5" drill pipe. Ran in the well to 8676'. W 8.5 ppg, V 27 sec, PV 1 cps, YP 1, Sol 1%
7/24/2014	Gravel packed 10 cuft of 30/50 resin coated sand through the upper position, 6 bbl/min 0.25 PPA at 480 psig and screened out. Pulled out of the well and changed out the tubing/gravel pack tools. Ran in the well, stabbed in, and gravel packed 11 cuft from bottom position, 7 bbl/min 0.25 PPA at 325 psig and screened out. A total of 98 cuft of 30/50 resin coated sand was packed for the job to date (37% of calculated annular volume). W 8.5 ppg, V 27 sec, PV 1 cps, YP 1, Sol 1%
7/25/2014	Pulled out of the well and laid down the gravel packing tools. Made up a 9-5/8" retrievable bridge plug on the 5" drill pipe. Ran in the well to 6995', set the bridge plug, and pressure tested to 500 psig for 15 minutes. Changed over the well to fresh 3% KCl brine. Began to lay down the 5" drill pipe.
7/26/2014	Laid down the 5" drill pipe and rigged down the Class III 5M BOPE. Capped the wellhead and secured the well.. Released the Ensign Rig #587 at 18:00 hrs.
9/11/2014	x
10/13/2014	Moved in and rigged up the Ensign Rig #321 production rig. Rigged up the rig equipment and spotted the pump. Moved in the hoist rigged up and tied down the hoist. Opened the well with 0 psig surface pressure. Rigged down the wellhead flange, rigged up the Class III 5M BOPE and secured the well.

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Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

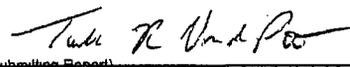
Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte  
Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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

Telephone Number: 818-701-3339

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Start Date	Ops. DOGGR Rpt
10/14/2014	Moved in and rigged up the WEA test truck. Pressure tested the blind rams to 300 psig (low) and 5000 psig (high) for twenty minutes (test good). Rigged up and pressure tested the pipe rams to 300 psig (low) and 5000 psig (high) for twenty minutes (test good). Pressure tested the Hydril annular preventer to 300 psig (low) and 3500 psig (high) for twenty minutes (test good). Pressure tested the choke manifold and all the control valves to 300 psig (low) and 5000 psig (high) for twenty minutes (All tests good; E Blevins DOGGR witnessed and approved test). Rigged down and moved out the WEA test truck. Rigged up the working floor and the tubing equipment. Made up the 9-5/8" bridge plug retrieving tool, measured and picked up the 2-7/8", 6.5# P-110 workstring tubing to 1500' and secured the well.
10/15/2014	Rig repairs for 2 hours. Measured and picked up the 2-7/8" workstring tubing to 6925' and secured the well.
10/16/2014	Cut off the mousehole piping and capped. Installed two 3-1/8", 5M casing wing valves and pressure tested to 5000 psig for twenty minutes. Opened the well with 0 psig surface pressure on the tubing and the casing. Ran in the well to 7023', engaged/equalized the retrievable bridge plug. The well began flowing, shut in the well, monitored the pressure and secured the well.
10/17/2014	Opened the well with 1800 psig surface pressure on the tubing and 250 psig on the casing casing. Rigged up and circulated the well with 570 bbl of 9.0 ppg NaCl brine with the well still flowing. Rigged up and closed the H valve, released from the 9-5/8" retrievable bridge plug and secured the well.
10/20/2014	Opened the well with 1500 psig surface pressure on the tubing and 1000 psig on the casing. Bled down the pressure to 0 psig. Rigged up and changed over the well with 570 bbl of 9.1 ppg NaCl brine. Rigged up and engaged the retrievable bridge plug, pulled 130', well will not fill. Released the retrievable bridge plug, pulled 120', well the started flowing and shut in the well. Rigged up and circulated the well (well taking brine). Shut in the well with 300 psig surface pressure on the casing and 0 psig on the tubing.
10/21/2014	Opened the well with 2650 psig surface pressure on the casing and 2300 psig on the tubing. Rigged up and pumped 70 bbl of Hi-vis polymer and displaced with 60 bbl of 9.5 ppg NaCl brine. Started the well kill per schedule and pumped 500 bbl of 9.5 NaCl and circulated the well; gas cut brine returns to the surface and secured the well.
10/22/2014	Opened the well with 350 psig surface pressure on the tubing and 1500 psig on the casing. Rigged up and circulated the well with 772 bbl of 9.5 ppg NaCl brine, shut in the well with 400 psig on the casing and 0 psig on the tubing. Installed the PGSR, set the 9-5/8" retrievable bridge plug at 6886', bled down the pressure from the well and secured the well.
10/23/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. Circulated the well with 9.5 ppg NaCl brine, opened the "H" valve on the retrievable bridge plug and pumped 50 bbl of brine (well did not fill). Monitored the well pressure for 30 mins and pumped 50 bbl of 9.5 ppg brine down the workstring/casing annulus. Released the retrievable bridge plug and attempted to circulate the well with 50 bbl of NaCl brine. The tubing and the casing pressure at 0 psig. Pulled out of the well to 6060' with the well flowing, shut in and pumped 50 bbl of brine down the workstring/casing annulus. Rigged up and pumped brine down the tubing, then down the casing (casing building pressure). Shut in the well with 244 psig surface pressure on the casing and 0 psig on the tubing; secured the well.
10/24/2014	The well had 1000 psig surface pressure on the tubing and 870 psig on the casing. Rigged up and pumped 160 bbl of 9.5 ppg NaCl brine. Returns on the annulus with 0 psig tubing and 142 psig on the casing. Rigged up the PGSR, ran in the well with the retrievable bridge plug to 6950'. Rigged up and circulated the well with 450 bbl of 9.5 ppg brine and secured the well.
10/27/2014	The well had 300 psig surface pressure on the tubing and the casing. Bled down the pressure and circulated the well with 250 bbl of NaCl brine. Released the 9-5/8" retrievable bridge plug and pumped 300 bbl of brine. Pulled out of the well, pumping brine at 1 bpm, and laid down the 9-5/8" RBP. Made up saw tooth collar on the 2-7/8" workstring. Ran in the well with 2-7/8" workstring to 7107' and secured the well.
10/28/2014	The well had 500 psig surface pressure on the casing and 100 psig on the tubing. Rigged up and pumped 100 bbl of 9.5 ppg brine down the tubing, bled down the casing to 250 psig. Rigged up and pumped 200 bbl of brine down the casing, bled down the tubing to 0 psig. Attempted to circulate the well. Stripped on the PGSR and pumped 50 bbl of 9.5 ppg brine down the casing and the tubing. Measured and ran in the well thru the PGSR to 8722'. Rigged up and pumped 150 bbl of 9.5 ppg brine down the tubing (with no circulation) and secured the well.

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Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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

Telephone Number: 818-701-3339

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Start Date	Ops. DOGGR Rpt
10/29/2014	The well had 1800 psig on the casing and 0 psig on the tubing. Rigged up and pumped 473 bbl of 9.5 ppg NaCl brine down the tubing and bled the casing thru the choke at 10 psig per minute. Bled down the casing to 0 psig. Opened the well and pulled out of well. Made up a WEA 5-1/2" bridge plug on the 2-7/8" workstring. Ran in the well to 7289', set the 5-1/2" retrievable bridge plug in the blank 5-1/2" liner, released and secured the well.
10/30/2014	Opened the well with 100 psig surface pressure on the tubing and 400 psig on the casing. Bled down the tubing and the casing to 0 psig. The casing started flowing and closed in the well. The shut in casing pressure was 500 psig and climbing. Circulated 9.5 ppg brine down the tubing at 3 bpm. Started getting pressure on the tubing after pumping for 10 minutes. The casing pressure was 1687 psig. Pumped a total of 432 bbl of 9.5 ppg NaCl brine and bleeding pressure from the casing to 0 psig. Returned 306 bbl of brine; Lost 126 bbl. Strip on the PGSR rubber. Attempt to release the 5-1/2" bridge plug set at 7296'. Tagged fill at 7276'. Pulled out of well with 229 joints of 2-7/8" P-110 KC workstring tubing. Laid down the bridge plug retrieving tool. Pumped 5 bbl of 9.5 ppg brine for every 10 stands pulled from the well. Made up the 5-1/2" Weatherford AS1X test packer on the 2-7/8" workstring. Ran in the well and tagged fill (probable gravel pack sand) at 7175'. Pulled up the well to 6994' and secured the well.
10/31/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. Filled the annulus with 36 bbl of 9.5 ppg NaCl brine. Fluid level at 552'. Ran the well and tagged at 7175'. Pulled out of well and found the 5-1/2" AS1X Packer in the set position. Made up the Weatherford seal assembly with sliding sleeve closing tool for 9-5/8" x 6" seal bore packer on the 2-7/8" workstring. Ran in the well and found the top of the 9-5/8" seal bore packer at 7137'. Landed the seal assembly with 27 klb down onto the packer. (Note: the tubing was displacing kill fluid over the top of the BOP during the trip in on this run.) Filled and pressure tested the annulus to 500 psig for 10 minutes; recorded on a test chart (good test). Pressure tested down the tubing at 1000 psig (bled to zero in less than one minute). Pulled the closing tool through the sliding sleeve six times attempting to close the liner sliding sleeve. Each pass through the sliding sleeve took a 15 klb to 20 klb over pull. Landed the seal assembly across the sliding sleeve and pressure tested down the tubing (test no good; Pressure bled off in less than one minute). Pulled the seal assembly 10' above the seal bore packer at 7137'. Filled the well and pressure tested to 500 psig; Bled to 0 psig in 2 minutes. Laid down the swivel joint and pulled one stand. Tail hanging at 7058' and secured the well.
11/3/2014	Opened the well with 97 psig surface pressure on the tubing and the casing. Circulated the well with 500 bbl of 9.5 ppg NaCl brine. Pulled out of the well and laid the down test assembly. Made up a 5-1/2" test packer on the 2-7/8" workstring. Ran in the well to 6000' and secured the well.
11/4/2014	The well had 0 psig surface pressure on the tubing and the casing. The well as filled with 34 bbl of 9.5 ppg NaCl brine. Ran in the well to 7189' and set the test packer. Filled the workstring x casing annulus and pressure tested below the packer to 700 psig for twenty minutes. Released the test packer, pulled out of the well and laid down the test packer. Ran in the well with an open ended workstring to 4000' and secured the well.
11/5/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. The well was filled with 36 bbl of 9.5 ppg NaCl brine. Pulled out of the well with the kill string. Made up the WEA 9-5/8 x 5-1/2" hydraulic packer/liner sleeve assembly on the 2-7/8" workstring. Ran in the well to 7100', rigged up and circulated the well with 60 bbl of brine. Made up the tubing swivel, dropped the ball, slid down and engaged the gravel pack liner top seal bore at 7131'. Pressured the tubing to 1400 psig, set the hydraulic packer with the top at 7123'. Released from the packer/sleeve assembly, filled the well and pressure tested the annulus to 500 psig (bled to 0 psig in two minutes) and secured the well.
11/6/2014	The well had 0 psig surface pressure on the tubing and 50 psig on the casing. Bled down the pressure and filled the annulus with 20 bbl of 9.5 ppg NaCl brine. Pull out of the well with the setting tool. The annulus flowed and shut in the well. Circulated 433 bbl of 9.5 ppg brine while holding 350 psig on the annulus with the choke. The well still flowed; The tubing and the casing pressure equalized at 500 psig. Bled down the pressure to 300 psig. Pumped 190 bbl of 9.5 ppg of brine down the tubing. Annulus pressure at 1414 psig. Shut down the pump and the pressure fell slowly. Stripped on the PGSR bowl and stripped in the well and maintained 600 psig on the annulus using the choke. The Weatherford setting tool was at 7090'. Filled the tubing with 20 bbl of 9.5 ppg NaCl brine and secured the well.

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Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

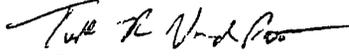
Operator: Southern California Gas Company  
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Start Date	Ops. DOGGR Rpt
11/7/2014	Opened the well with 571 psig surface pressure on the casing. Rigged up and pumped 541 bbl of 9.5 ppg NaCl brine per schedule; tubing and casing at 0 psig. Pulled out of the well and laid down the WEA running tools. Made up a WEA 5-1/2" test packer on the 2-7/8" workstring. Ran in the well to 7127', set the packer and filled the well. Pressure tested the workstring x casing annulus to 500 psig (bled down to 250 psig in 5 minutes). Rigged up and pressure tested down the tubing to 500 psig (Bled to 0 psig). Released the test packer, pulled to 7058' and secured the well.
11/10/2014	Held a safety meeting with rig crew. The well had 0 psig on the tubing and 193 psig on the casing. Work as directed.
11/11/2014	The well had 0 psig on the tubing and 240 psig on the annulus. Ran the 5-1/2" Model R Packer into the top of the 9-5/8" Tie Back Packer (Bottom of the packer at 7118'). Moved in and rigged the Weatherford wireline unit. Made up the CCL tools on the wireline. Ran in the well and tagged fill on top of the 5-1/2" bridge plug at 7277'. Logged up through the linger hanger and tie-back assembly into the 2-7/8" workstring to 6975'. Correlated the CCL log to the bottom of the mill out extension at 7165'. Lowered the CCL tool down to 7277'. Picked up the tubing and the Model R packer 30'. Re-ran the CCL log from 7277' to 6975'. Found the top of the tie-back packer at 7114' (11' high). Pulled up the well to 7059' and secured the well.
11/12/2014	Opened the well with 310 psig surface pressure on the tubing and the casing. Rigged up and circulated the gas cut brine from the well with 510 bbl of 9.5 ppg NaCl brine. Opened the well with 0 psig surface pressure on the tubing and the casing. Filled the well with 2 bbl of brine. Started pulling out of the well (main drum brakes not working; shut down rig for repairs) Secured the well.
11/13/2014	Opened the well with 20 psig surface pressure on the tubing and the casing. Bled down the pressure and filled the well with 45 bbl of 9.5 ppg brine. Rigged up and circulated with 200 bbl of 9.5 ppg NaCl brine. Pulled out of the well and laid down the 5-1/2" test packer. Measured and picked up 8' -4" shoe, (2) junk baskets, and (4) 4-3/4" drill collars on the 2-7/8" workstring. Ran in the well to 7097' and secured the well.
11/14/2014	Filled the well with 41 bbl of 9.5 ppg brine. Installed the PGSR and picked the power swivel. Milled the WEA packer from 7118' to 7120', reverse circulated the well clean with 150 bbl of 9.5 ppg brine and secured the well.
11/17/2014	Opened the well with 250 psig surface pressure on the tubing and the casing. Rigged up and circulated the well with 455 bbl of 9.5 ppg NaCl brine. Rigged up the PGSR and the power swivel. Milled from 7118' to 7121', reverse circulated the well with 150 bbl of 9.5 ppg brine and secured the well.
11/18/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. Filled the well with 45 bbl of 9.5 ppg NaCl brine. Milled on the WEA packer from 7122' to 7125' (Made 4'). Reverse circulated the well clean, laid down the power swivel and secured the well.
11/19/2014	The well had 50 psig surface pressure on the tubing and the casing. Rigged up and circulated the well with 400 bbl of 9.5 ppg brine. Pulled out of the well, stood back the BHA and laid down the mill shoe. Made up a 5.5" spear extension with stop, a bumper sub, a set of jars, (2) 4-3/4" drill collars and an instensifer on the 2-7/8" workstring. Ran in the well to 7064' and secured the well.
11/20/2014	The well had 0 psig surface pressure on the tubing and the casing. Filled the well with 32 bbl of 9.5 ppg NaCl brine. Ran in the well to 7113', tagged top of the packer, and engaged the packer at 7119'. Jarred on the packer at 50,000 lb over string weight and moved up the hole. Jarred up the hole 150', dragging at 20,000 lb over and pulled out of the well. Pulled into the BOPE (slips fell) and laid down the recovered packer/assembly. Made up a 5.5" reverse circulating junk sub on the 2-7/8" workstring. Ran in the well to 7124' and secured the well.
11/21/2014	Filled the well with 37 bbl of 9.5 ppg brine. Ran in the well with the reverse circulating junk sub to 7133'. Rigged up and circulated with brine at 4 bpm for 10 minutes. Pulled out of the well and laid down the junk sub (no recovery). Made up an 8-1/2" WEA Magnet on the 2-7/8" workstring. Ran in the well to 7050' and secured the well.
11/24/2014	Filled the well with 47 bbl of 9.5 ppg NaCl brine. Rigged up and circulated the well with 200 bbl of 9.5 ppg brine. Ran in the well and tagged the liner top with the magnet at 7137'. Worked the magnet on the liner top and pulled out of well (Recovered one slip segment). Ran in the well with the 8.5" magnet to 7137'. Rigged up, circulated and worked the magnet up and down to the liner top. Pulled out of the well to 7050' and secured the well.
11/25/2014	The well was filled with 47 bbl of 9.5 ppg NaCl brine. The rig engine shut down during the regen process. Secured the well.

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

Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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. DOGGR Rpt
11/26/2014	Opened the well with 0 psig surface pressure on the tubing and 27 psig on the casing. Bled the casing through the choke. Filled the well with 37 bbl of 9.5 ppg NaCl brine. The well flowed and shut in the well with the pipe rams. Rigged up and circulated 224 bbl of 9.5 ppg brine at 3.5 bpm at 1,400 psig; holding 350 psig to 400 psig on the annulus with the choke. Shut in the well (recovered 178 bbl of brine; lost 46 bbl of brine to the well). Pulled out of the well and laid down the 8" magnet (No recovery). Made up a 3-3/4" magnet on the 2-7/8" workstring. Ran in well to 7109' and secured the well.
12/1/2014	The well had 0 psig surface pressure on the tubing and 47 psig on the casing. Bled the casing through the choke. Filled the well with 30 bbl of 9.5 ppg NaCl brine. Circulated 326 bbl of 9.5 ppg brine at 3.5 bpm at 1,400 psig; holding 900 psig to 1000 psig on the choke. Shut down the pump and filled the well with 4 bbl of 9.5 ppg NaCl brine. Ran in the well with the 3-3/4" magnet and tagged junk at 7263' (previous tag on sand was at 7270'). Pulled out of the well and laid down the 3-3/4" magnet (No recovery, metal shavings only). Made up an 4-1/2" o.d. rotary shoe with a finger catcher inside on the 2-7/8" workstring. Ran in the well to 7110' and secured the well.
12/2/2014	Filled the well with 47 bbl of 9.5 ppg NaCl brine. Picked up the power swivel and ran in the well to 7262'. Worked down with the reverse the circulating junk sub to 7268'. Circulated one tubing volume and worked back down to 7288'. Reverse circulated the well clean and laid down the power swivel. Pulled out of the well and laid down the shoe (recovery of two slip segments, rubber and metal). Made up a WEA reverse circulating junk sub on the 2-7/8" workstring. Ran in the well to 7114' and secured the well.
12/4/2014	Filled the well with 45 bbl of 9.5 ppg NaCl brine. Ran in the well with the junk sub to 7270'. Rigged up the power swivel, cleaned out to 7278' and reverse circulated 80 bbl of brine. Pulled out of the well and laid down the junk sub (recovered 4 chunks of rubber and 1 slip segment). Made up a new junk sub on the 2-7/8" workstring. Ran in the well to 7110' and secured the well.
12/5/2014	The well was filled with 40 bbl of 9.5 ppg brine. Ran in the well to 7280', rigged up the power swivel and cored down to 7284'. Reversed circulated the well with 120 bbl of 9.5 ppg NaCl brine. Pulled out of the well and laid down the junk sub/shoe (no recovery). Made up a 4" magnet on the 2-7/8" workstring. Ran in the well to 7109' and secured the well.
12/8/2014	The well required 45 bbl of 9.5 NaCl brine to fill. Rigged up and circulated the well with 200 bbl of 9.5 ppg brine. Ran in the well with the magnet to 7284'. Pulled out of the well (recovered one slip segment). Ran in the well with the 4" magnet (Rig shut down). Ran in the well to 7100' and secured the well. Rig shut down rig for repairs.
12/10/2014	Opened the well with 17 psig surface pressure on the tubing and the casing. Bled down the pressure and filled the well with 51 bbl of 9.5 ppg NaCl brine. Ran in the well to 7184', tagged and pulled out of the well to 4600' (well flowed). Shut in the well and circulated the well with 200 bbl of 9.5 ppg NaCl brine. Pulled out of the well with magnet (Recovered 1 slip segment). Ran in the well with the magnet to 7109' and secured the well.
12/11/2014	Opened the well with 0 psig surface pressure on the tubing and the casing. Filled the well with 50 bbl of 9.5 ppg NaCl brine. Ran in the well with the magnet to 7284', tagged, and pulled out of the well (No recovery). Laid down the magnet and made up a seal bore test with latch on the 2-7/8" workstring. Ran in the well to 7137', stabbed into the packer and pulled 15,000 lb over to check the latch. Rigged up and pressure tested the workstring x casing annulus to 1000 psig for twenty minutes (testgood.) Pressure tested down the workstring to 1000 psig for twenty minutes (lost 200 psig in twenty minutes). Released from the latch, pulled to 7100' and secured the well.
12/12/2014	The well was filled with 52 bbl of 9.5 ppg NaCl brine. Pulled out of the well and laid down the seal assembly and sent the seal assembly in for redress. Made up a 4" reverse circulating junk sub on the 2-7/8" workstring. Ran in the well to 7100' and secured the well.
12/15/2014	Opened the well with 20 psig surface pressure on the tubing and the casing. The well required 50 bbl of 9.5 ppg brine to fill. Rigged up and circulated the well with 200 bbl of 9.5 ppg brine. Ran in the well to 7272', picked up the power swivel and cored down to 7288'. Reverse circulated with 125 bbl of 9.5 ppg brine. Rigged down the power swivel. Pulled out of the well and laid down the junk sub (no recovery). Made up a bridge plug retrieving tool on the 2-7/8" workstring. Ran in the well to 7117' and secured the well.

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

Rec'd 05-08-15 DOGGR D2 Ventura

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
Well: Porter 50 C  
A.P.I. No. 03724337

Field: Aliso Canyon  
Surface Location: 34.315049 North. 118.547282 West  
Todd Van de Putte Title: Drilling Manager

County: Los Angeles

(President, Secretary, or Agent)

Date: 5/8/2015

Signature: 

(Person Submitting Report)

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, balling tests, and initial production data.

Start Date	Ops. DOGGR Rpt
12/16/2014	The well was filled with 48 bbl of 9.5 ppg NaCl brine. Ran in the well to 7298', rigged up and reverse circulated over the bridge plug. Attempted to release the bridge plug, released from the bridge plug and picked up the power swivel. Attempted to latch the bridge plug (could not latch the BP). Laid down the power swivel and pumped 70 bbl of 9.5 ppg brine (well would not fill). Pulled out of the well and laid down the bridge plug retrieving tool (found the top stem from the BP parted at threads). Ran in the well open ended to 7109' and secured the well.
12/17/2014	Opened the well with 150 psig surface pressure on the tubing and 700 psig on the casing. Rigged up and pumped 360 bbl of 9.5 ppg NaCl brine and bled down the casing (no brine returns to the surface). Pulled out of the well. Measured and picked up a 4-3/4" mill shoe, a set of jars, and (4) 3-1/8" drill collars on the 2-7/8" workstring. Ran in the well to 7111' and secured the well.
12/18/2014	The well was opened with 700 psig surface pressure on the casing and 100 psig on the tubing. Rigged up and pumped 200 bbl of 9.5 ppg brine, bled down the casing to 0 psig, and pumped 45 bbl of brine. Ran in the well to 7293', picked up the power swivel and milled down to 7250'. Laid down the power swivel and secured the well.
12/19/2014	The well was opened with 400 psig surface pressure on the casing and 100 psig on the tubing. Rigged up and pumped 120 bbl of 9.5 ppg NaCl brine and bled down the casing to 0 psig and pumped 50 bbl of brine. Pulled out of the well and laid down the mill shoe. Made up a 4-11/16" over shot with a 3-3/16" grapple, a bumper sub, and a set of jars. (2) 3-1/8" drill collars, and an intensifier on the 2-7/8" workstring. Ran in the well to 7100' and secured the well.
12/22/2014	Opened the well with 1100 psig surface pressure on the casing and 100 psig on the tubing. Rigged up and pumped 40 bbl of 9.5 ppg NaCl brine down the tubing and bled down the casing. Pumped 200 bbl of 9.5 ppg brine down the tubing with the casing at 0 psig. Opened BOP pumped 50 bbls down casing. Ran in the well to 7298', engaged and attempted to release the 5-1/2" bridge plug. Jarred on the bridge plug at 100 klb and pulled free. Pulled up the well to 7130' and the well flowed. Shut in the well with 500 psig surface pressure on the casing. Pumped 50 bbl of 9.5 ppg brine and killed the well per schedule with 300 bbl of 9.5 ppg brine. Opened the well with 0 psig surface pressure on the tubing and the casing. Pumped 50 bbl of 9.5 ppg brine down the casing with no returns to the surface. Pulled out of the well and laid down the fishing tools (recovered the 5-1/2" WEA bridge plug). Made up a WEA 5.6" x 6.5" seal bore assembly with latch ran on the 2-7/8" workstring. Ran in the well to 7137', engaged the seal bore and latched into the liner top. Pulled 20 klb over to check the latch. Dropped the ball and pressured to 2000 psig to release from the assembly. Pulled up the well to 7118' and secured the well.
12/23/2014	The well was opened with 1500 psig surface pressure on the tubing and the casing. Rigged up and pumped 40 bbl of 9.5 ppg NaCl brine down the tubing. Circulated the gas cut brine from the well with 334 bbl of 9.5 ppg brine. Pulled out of the well and laid down the liner setting tools. Made up an WEA 9-5/8" retrievable bridge plug on the 2-7/8" workstring. Ran in the well to 7100', set the bridge plug and filled the well with 100 bbl of 9.5 ppg brine. Pressure tested the workstring x casing annulus to 700 psig for ten minutes and secured the well.
12/29/2014	The well was opened with 300 psig surface pressure on the tubing and the casing. Bled down the well and filled the well with 8 bbl of 9.5 ppg brine. Loaded the fishing tools and the associated equipment. Pulled out of the well and laid down 222 joints of the 2-7/8", 6.5#, P-110 workstring tubing. Laid down (2) 3-1/8" drill collars and (4) 4-3/4" drill collars. Ran in the well to open ended to 600' and secured the well.
12/30/2014	The well was standing full of 9.5 ppg brine. Laid down 32 joints of the 2-7/8" workstring tubing. Changed the pipe rams from 2-7/8" to 3-1/2" and changed the pipe trailers. Made up the bridge plug retrieving tool on the 3-1/2", 9.3#, L-80 completion tubing. Measured and picked up the 3-1/2" completion tubing to 3600' and secured the well.
12/31/2014	The well was standing full of 9.5 ppg brine. Replaced the tubing trailers. Measured and picked up the 3-1/2", 9.3#, L-80 completion tubing, ran in the well to 7046' and secured the well.
1/5/2015	Installed the PGSR and waited on the high wind conditions. Shut down the operations due to high winds and secured the well.

## HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company  
 Well: Porter 50 C  
 A.P.I. No. 03724337

Field: Aliso Canyon  
 Surface Location: 34.315049 North. 118.547282 West  
 Todd Van de Putte Title: Drilling Manager

County: Los Angeles

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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. DOGGR Rpt
1/6/2015	The well was standing full of 9.5 ppg NaCl brine. Rigged up and reverse circulated the sand from 7094' to 7100' and opened the bridge plug unloader. Pumped 70 bbl of 9.5 ppg brine through the unloader, released the 9-5/8" retrievable bridge plug, and pumped 60 bbl of 9.5 ppg brine. Pulled out of the well and laid down the 9-5/8" retrievable bridge plug. The well flowed at 98 psig. Shut in the well and pumped 150 bbl of 9.5 ppg brine and opened the well with 0 psig. Made up a WEA 9-5/8" production packer, (1) joint of 3-1/2" tubing, a 3-1/2" No/Go with 2.75 profile, (1) joint of 3-1/2" tubing, a 3-1/2" Sliding sleeve, (1) joint of 3-1/2" tubing and a Gas lift mandrel. Ran in the well to 3100'. Well flowed and shut in the well. Pumped 50 bbl of 9.5 ppg brine. Ran in the well to 7083'. Picked up the tubing hanger and the landing joint. Set the 9-5/8" production packer with 12,000 lb compression at 7083' and secured the well.
1/7/2015	Opened the well with 1100 psig surface pressure on the casing, bled down and filled the well with 90 bbl of 9.5 ppg brine. Replaced the tubing hanger seals and landed the completion tubing in the hanger with 12,000 lb compression. Pressure tested the 3-1/2" x 9-5/8" annulus to 1000 psig for ten minutes. Moved in and rigged up the WAC wireline unit. Made up a PXN plug on wireline. Ran in the well, set the plug in the no/go at 7046'. Pulled out of the well. Made up a shifting tool on wireline. Ran in the well and attempted to shift the sliding sleeve and sheared off. Pulled out of the well with the wireline. Added weight bars to the tool string, ran in the well and attempted to shift the sliding sleeve. Pulled out of the well and secured the well.
1/8/2015	Opened the well with 0 psig surface pressure on the tubing and the casing. Rigged up the WAC slickline unit. Made up a "B" shifting tool and extra weight bars on the wireline. Ran in the well to 7020' and shifted the sliding sleeve open. Rigged down and moved out the slickline unit. Rigged down the working floor and rigged down the Class III 5M BOPE. Rigged up the production tree and pressure tested the tree to 450 psig (low) and 5000 psig (high) for twenty minutes (test good). Rigged down the hoist and loaded the rig equipment. Secured the well and the location.
1/9/2015	Held a safety meeting with the rig crew. Moved the Ensign #321 fluid tanks and the pump, and the associated equipment.



Sempra Energy utility

# SOUTHERN CALIFORNIA GAS COMPANY

Location: CALIFORNIA\_2  
Field: Aliso Canyon (Grid)  
Facility: Standard Sesnon (Grid)

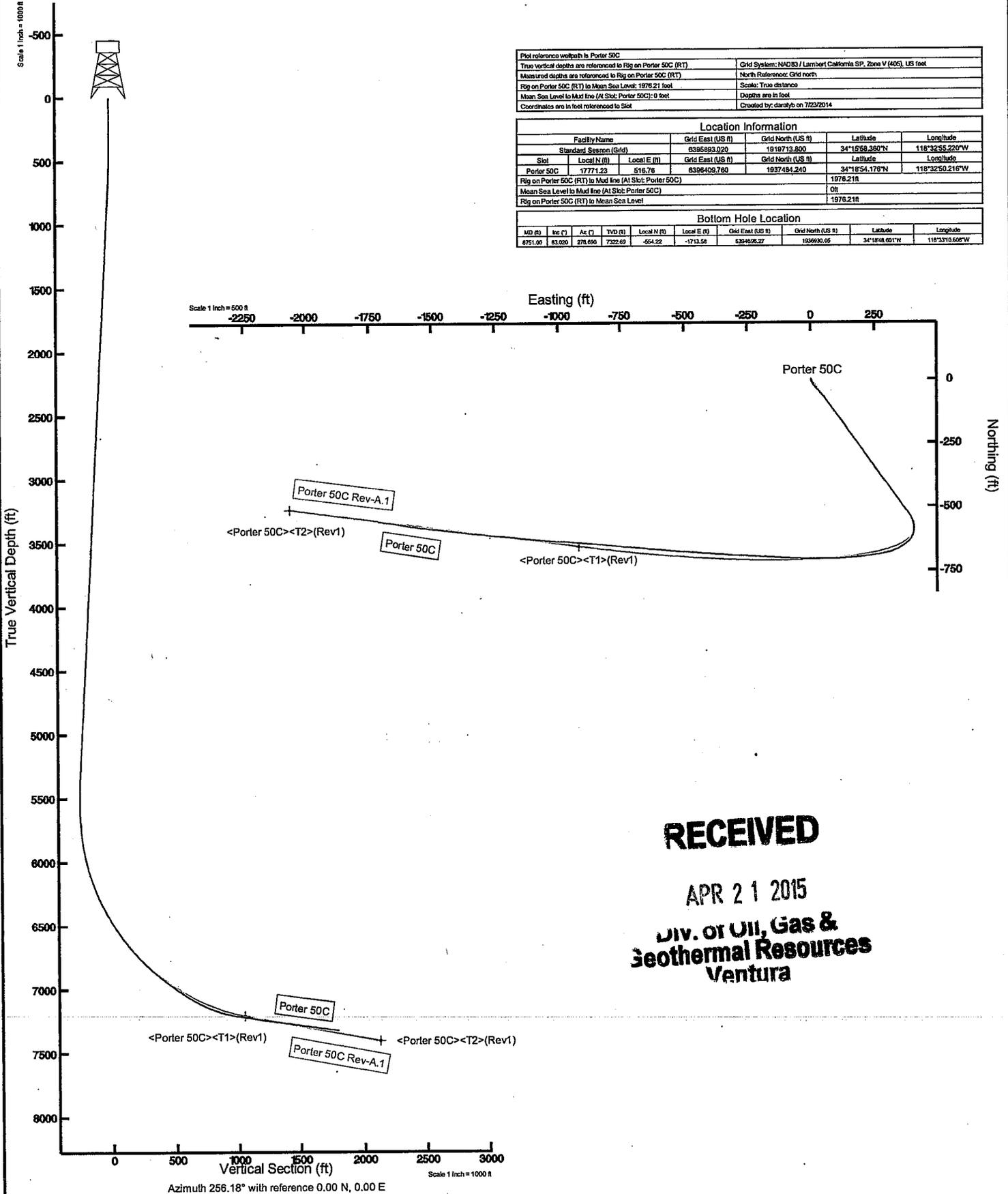
Slot: Porter 50C  
Well: Porter 50C  
Wellbore: Porter 50C



Plot reference wellpath is Porter 50C	
True vertical depths are referenced to Rig on Porter 50C (RT)	Grid System: NAD83 / Lambert California SP, Zone V (405), US feet
Measured depths are referenced to Rig on Porter 50C (RT)	North Reference: Grid north
Rig on Porter 50C (RT) to Mean Sea Level: 1976.21 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Porter 50C): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: darsby on 7/23/2014

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Standard Sesnon (Grid)	6395893.020	1919713.800	34°18'59.260"N	118°32'55.220"W
Slot	Local N (ft)	Local E (ft)	Latitude	Longitude
Porter 50C	1774.23	516.78	34°18'54.176"N	118°32'50.218"W
Rig on Porter 50C (RT) to Mud line (At Slot: Porter 50C)	8396409.760	1937484.240	1976.21ft	
Rig on Porter 50C (RT) to Mud line (At Slot: Porter 50C)			0ft	
Mean Sea Level to Mud line (At Slot: Porter 50C)			1976.21ft	
Rig on Porter 50C (RT) to Mean Sea Level				

Bottom Hole Location							
MD (ft)	Inc (°)	Ac (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
8751.00	83.020	278.690	7322.69	-654.22	-1713.56	6394696.27	1936930.05
							34°18'58.691"N
							118°33'10.608"W



**RECEIVED**  
 APR 21 2015  
 Div. of Oil, Gas &  
 Geothermal Resources  
 Ventura



# Survey Approval Report

Porter 50C

Page 1 of 4



A Sempra Energy utility<sup>®</sup>

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHERN CALIFORNIA GAS COMPANY	Slot	Porter 50C
Area	CALIFORNIA_2	Well	Porter 50C
Field	Aliso Canyon (Grid)	Wellbore	Porter 50C
Facility	Standard Sesnon (Grid)		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert California SP, Zone V (405), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Daratyb
Scale	0.999951	Report Generated	7/23/2014 at 10:30:08 AM
Convergence at slot	0.31° West	Database/Source file	Shafter_DB/Porter_50C.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	17771.23	516.76	6396409.76	1937484.24	34°18'54.176"N	118°32'50.216"W
Facility Reference Pt			6395893.02	1919713.80	34°15'58.360"N	118°32'55.220"W
Field Reference Pt			6395893.02	1919713.80	34°15'58.360"N	118°32'55.220"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on Porter 50C (RT) to Facility Vertical Datum	1976.21ft
Horizontal Reference Pt	Slot	Rig on Porter 50C (RT) to Mean Sea Level	1976.21ft
Vertical Reference Pt	Rig on Porter 50C (RT)	Rig on Porter 50C (RT) to Mud Line at Slot (Porter 50C)	1976.21ft
MD Reference Pt	Rig on Porter 50C (RT)		
Field Vertical Reference	Mean Sea Level		



# Survey Approval Report

Porter 50C  
Page 2 of 4



A Sempra Energy utility®

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHERN CALIFORNIA GAS COMPANY	Slot	Porter 50C
Area	CALIFORNIA 2	Well	Porter 50C
Field	Aliso Canyon (Grid)	Wellbore	Porter 50C
Facility	Standard Sesnon (Grid)		

WELLPATH DATA (97 stations)					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	North [ft]	East [ft]
0.00	0.000	161.730	0.00	0.00	0.00
463.00	2.420	161.730	462.86	-9.28	3.06
586.00	6.270	153.260	585.49	-17.75	6.90
681.00	7.070	145.640	679.84	-27.21	12.54
772.00	6.210	132.170	770.24	-35.14	19.35
865.00	6.340	134.290	862.68	-42.10	26.75
945.00	6.270	138.270	942.20	-48.45	32.82
1096.00	5.830	138.900	1092.36	-60.38	43.35
1155.00	6.340	139.210	1151.02	-65.10	47.45
1250.00	7.030	141.830	1245.38	-73.64	54.47
1344.00	8.010	143.930	1338.57	-83.46	61.88
1437.00	8.050	144.560	1430.66	-94.00	69.47
1530.00	8.170	146.200	1522.73	-104.80	76.92
1622.00	8.020	146.940	1613.81	-115.61	84.06
1715.00	8.160	141.310	1705.89	-126.20	91.72
1809.00	8.180	142.200	1798.93	-136.69	99.99
1901.00	7.730	141.460	1890.05	-146.70	107.86
1995.00	7.770	141.520	1983.19	-156.62	115.75
2087.00	8.050	143.320	2074.31	-166.66	123.47
2180.00	8.100	144.840	2166.39	-177.24	131.13
2273.00	8.100	148.160	2258.46	-188.16	138.36
2366.00	8.090	146.790	2350.54	-199.20	145.40
2459.00	8.090	144.950	2442.61	-210.03	152.74
2551.00	8.110	144.380	2533.69	-220.61	160.24
2643.00	8.060	144.260	2624.78	-231.12	167.79
2736.00	8.110	144.420	2716.86	-241.74	175.41
2828.00	8.070	144.360	2807.94	-252.27	182.95
2921.00	8.120	144.100	2900.01	-262.89	190.61
3013.00	8.060	144.630	2991.10	-273.42	198.15
3106.00	8.110	144.850	3083.17	-284.10	205.70
3199.00	8.080	144.400	3175.25	-294.78	213.28
3292.00	7.750	144.560	3267.36	-305.20	220.72
3388.00	7.480	145.550	3362.51	-315.62	228.01
3480.00	7.510	144.860	3453.73	-325.48	234.86
3575.00	7.430	144.840	3547.92	-335.58	241.97
3667.00	8.130	146.070	3639.07	-345.84	249.03
3760.00	8.090	145.310	3731.14	-356.68	256.42
3852.00	8.060	144.140	3822.23	-367.23	263.88
3945.00	8.090	142.890	3914.31	-377.73	271.65
4036.00	8.060	142.490	4004.41	-387.89	279.40
4127.00	8.020	141.400	4094.51	-397.92	287.24
4220.00	8.050	141.300	4186.60	-408.07	295.36
4342.00	8.070	143.120	4307.40	-421.59	305.84
4467.00	8.070	145.000	4431.16	-435.79	316.14
4590.00	8.050	145.200	4552.94	-449.93	326.01



# Survey Approval Report

Porter 50C  
Page 3 of 4



A Sempra Energy utility®

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHERN CALIFORNIA GAS COMPANY	Slot	Porter 50C
Area	CALIFORNIA_2	Well	Porter 50C
Field	Aliso Canyon (Grid)	Wellbore	Porter 50C
Facility	Standard Sesnon (Grid)		

WELLPATH DATA (97 stations)					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	North [ft]	East [ft]
4713.00	8.060	145.250	4674.73	-464.09	335.84
4837.00	8.060	144.120	4797.50	-478.28	345.89
4960.00	8.440	143.960	4919.23	-492.56	356.25
5084.00	8.470	143.650	5041.88	-507.28	367.02
5208.00	8.380	143.760	5164.55	-521.92	377.77
5332.00	8.460	144.410	5287.21	-536.62	388.42
5456.00	9.390	157.590	5409.72	-553.40	397.59
5580.00	9.920	169.900	5531.98	-573.27	403.32
5673.00	9.880	179.000	5623.60	-589.13	404.86
5735.00	10.110	184.910	5684.66	-599.87	404.49
5796.00	10.230	196.360	5744.70	-610.40	402.51
5858.00	10.290	207.460	5805.72	-620.60	398.40
5920.00	10.830	218.070	5866.67	-630.10	392.26
5982.00	12.170	225.260	5927.43	-639.29	384.02
6043.00	14.190	231.470	5986.82	-648.47	373.60
6105.00	16.570	236.970	6046.60	-658.03	360.24
6166.00	18.310	242.880	6104.80	-667.14	344.42
6228.00	19.560	250.470	6163.45	-675.05	325.97
6290.00	21.800	255.710	6221.46	-681.36	305.03
6352.00	24.580	259.490	6278.45	-686.56	281.19
6413.00	26.990	261.600	6333.37	-690.89	255.01
6474.00	28.050	262.920	6387.47	-694.68	227.09
6536.00	30.500	263.510	6441.55	-698.26	196.98
6598.00	32.890	264.970	6494.30	-701.51	164.58
6660.00	34.920	266.610	6545.75	-704.04	130.09
6721.00	37.180	268.140	6595.07	-705.67	94.23
6783.00	39.310	269.530	6643.76	-706.44	55.86
6844.00	41.580	270.840	6690.18	-706.30	16.30
6906.00	43.900	271.530	6735.71	-705.43	-25.77
6968.00	45.700	272.250	6779.71	-703.98	-69.43
7031.00	47.780	272.920	6822.88	-701.91	-115.26
7091.00	49.660	273.490	6862.46	-699.38	-160.28
7152.00	51.610	273.670	6901.15	-696.44	-207.34
7214.00	53.850	273.640	6938.69	-693.29	-256.58
7272.00	56.420	273.140	6971.85	-690.48	-304.08
7315.00	56.070	274.370	6995.74	-688.14	-339.75
7377.00	57.620	273.910	7029.65	-684.40	-391.52
7470.00	61.170	274.340	7076.99	-678.63	-471.35
7562.00	64.870	274.650	7118.72	-672.20	-553.07
7655.00	69.130	274.810	7155.05	-665.15	-638.36
7756.00	75.010	275.120	7186.13	-656.83	-734.05
7850.00	80.320	275.360	7206.20	-648.44	-825.47
7942.00	83.360	274.470	7219.26	-640.64	-916.19
8035.00	81.370	273.980	7231.61	-633.85	-1008.11
8128.00	81.370	275.080	7245.57	-626.59	-1099.77



# Survey Approval Report

Porter 50C

Page 4 of 4



A Sempra Energy utility®

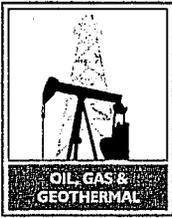
REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHERN CALIFORNIA GAS COMPANY	Slot	Porter 50C
Area	CALIFORNIA 2	Well	Porter 50C
Field	Aliso Canyon (Grid)	Wellbore	Porter 50C
Facility	Standard Sesnon (Grid)		

WELLPATH DATA (97 stations)						
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	North [ft]	East [ft]	
8221.00	82.990	275.760	7258.22	-617.89	-1191.49	
8314.00	83.020	275.410	7269.55	-608.90	-1283.36	
8423.00	82.990	277.000	7282.82	-597.21	-1390.91	
8516.00	83.030	276.110	7294.14	-586.67	-1482.61	
8609.00	83.020	278.230	7305.44	-575.15	-1574.20	
8702.00	83.020	278.690	7316.74	-561.57	-1665.50	
8751.00	83.020	278.690	7322.69	-554.22	-1713.58	

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
<Porter 50C><T1>(Rev1)		7209.21	-654.27	-918.81	6395491.00	1936830.00	34°18'47.655"N	118°33'01.127"W	point
<Porter 50C><T2>(Rev1)		7405.21	-507.27	-2062.87	6394347.00	1936977.00	34°18'49.047"N	118°33'14.775"W	point

WELLPATH COMPOSITION - Ref Wellbore: Porter 50C					Ref Wellpath: Porter 50C				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore				
0.00	945.00	NaviTrak (Standard)	BHI / MWD 17.5 Hole Sec <463-945>		Porter 50C				
945.00	7272.00	NaviTrak (Standard)	BHI / MWD w/ 14" Hole Opener <1096-7272>		Porter 50C				
7272.00	8702.00	OnTrak (Standard)	BHI / MWD 8-1/2" Hole <7315-8702>		Porter 50C				
8702.00	8751.00	Blind Drilling	Projection to Bit		Porter 50C				

APPROVAL			
Baker Hughes Representatives			
Prepared by		Reviewed by	
Signature		Signature	
Position		Position	
Date		Date	
SOUTHERN CALIFORNIA GAS COMPANY Representative			
Approved by		Position	
Signature		Date	



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

No. T214-0412

**REPORT ON OPERATIONS**

Thomas W. Schroeder  
Southern California Gas Company (S4700)  
9400 Oakdale Avenue  
Chatsworth, CA 91313

Ventura, California  
October 21, 2014

Your operations at well "**Porter**" 50C, A.P.I. No. 037-24337, Sec. 27, T. 03N, R. 16W, SB B. & M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on 10/14/2014. **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **testing the subsurface safety valve system.**

**DECISION:**

APPROVED

Steven Bohlen  
State Oil and Gas Supervisor

By   
Bruce Hesson  
District Deputy

EB/tkc  
OG109

API No. 037-24337

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

T 214-0412

# BLOWOUT PREVENTION EQUIPMENT MEMO #10, 1

Operator Southern CA Gas Co. Well "Porter" 50C Sec. 27 T. 03N R. 16W  
Field Aliso Canyon County Los Angeles Spud Date \_\_\_\_\_

VISITS: Date 10-14-14 Engineer Ernie Blevins Time (1045 to 1545) Operator's Rep. \_\_\_\_\_ Title \_\_\_\_\_  
1st \_\_\_\_\_  
2nd \_\_\_\_\_

Contractor Ensign Rig # 321 Contractor's Rep. & Title Riley Hill - RSM  
Casing record of well: \_\_\_\_\_  
Mike V. - WSM  
Consultant

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

Proposed Well Opns: Completion MACP: \_\_\_\_\_ psi  
Hole size: \_\_\_\_\_ " fr. \_\_\_\_\_ " to \_\_\_\_\_ " to \_\_\_\_\_ " & \_\_\_\_\_ " to \_\_\_\_\_ " **REQUIRED BOPE CLASS: III 5M**

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

BOP STACK							TEST DATA						
API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul	Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
AP	2 1/8"	Hydril			5M							10-14-14	3500
Ed	CSO	Shaffer			L								5K
Rd		Shaffer											5K

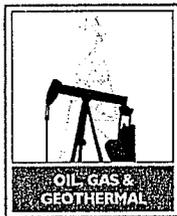
ACTUATING SYSTEM				TOTAL:		AUXILIARY EQUIPMENT							
Accumulator Unit(s) Working Pressure <u>2700</u> psi						Connections							
Total Rated Pump Output _____ gpm				Fluid Level _____		No.	Size (in.)	Rated Press.	Weld	Flange	Thread	Test Press.	
Distance from Well Bore <u>~50</u> ft.													
Accum. Manufacturer	Capacity	Precharge	Fill-up Line										
1 Weatherford	80 gal.	1750 psi	✓ Kill Line									5M	
2			✓ Control Valve(s)	2								L	
CONTROL STATIONS				Elec.	Hyd.	Pneu.	✓ Check Valve(s)	2					L
✓ Manifold at accumulator unit							Aux. Pump Connect.						
✓ Remote at Driller's station							✓ Choke Line		4"	5M			L
Other:							Control Valve(s)	10					
EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid									
4 N2 Cylinders	1 L=	"	2600	8.5 gal.	Pressure Gauge								
Other:	2 L=	"	1900	4.49 gal.	Adjustable Choke(s)								
	3 L=	"	2600	8.5 gal.	Bleed Line								
	4 L=	"	2550	8.2 gal.	Upper Kelly Cock								
	5 L=	"		gal.	Lower Kelly Cock								
	6 L=	"		gal.	Standpipe Valve								
					gal.	Standpipe Press. Gau.							
TOTAL:				ga	✓ Pipe Safety Valve	2 1/8, 3 1/2" 5M						5K	
					✓ Internal Preventer	2 1/8, 3 1/2" 5M						5K	

NOT Drilling

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

Hole Fluid Type 3% KCl Weight 8.5 # Storage Pits (Type & Size) 600 bbl

REMARKS AND DEFICIENCIES:  
Weatherford - Jeremy  
3rd party testers



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

No. T214-0276

Thomas W. Schroeder  
Southern California Gas Company (S4700)  
9400 Oakdale Avenue  
Chatsworth, CA 91313

Ventura, California  
July 11, 2014

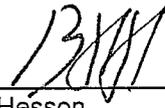
Your operations at well "Porter" 50C, A.P.I. No. 037-24337, Sec. 27, T. 03N, R. 16W, SB B. & M., Aliso Canyon field, in Los Angeles County, were witnessed on 7/10/2014 by , a representative of the supervisor.

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

**DECISION:**

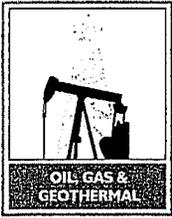
APPROVED

Steven Bohlen  
State Oil and Gas Supervisor

By   
Bruce Hesson  
District Deputy

/tkc  
OG109





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

No. T214-0252

Thomas W. Schroeder  
Southern California Gas Company (S4700)  
9400 Oakdale Avenue  
Chatsworth, CA 91313

Ventura, California  
June 18, 2014

Your operations at well **"Porter" 50C**, A.P.I. No. **037-24337**, Sec. **27**, T. **03N**, R. **16W**, **SB B. & M.**, **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **6/13/2014**. **Ernest Blevins**, a representative of the supervisor.

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

**DECISION:**

APPROVED

Steven Bohlen  
State Oil and Gas Supervisor

By   
Bruce Hesson  
District Deputy

EB/tkc  
OG109

API No. 037-24337

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

T 214-0252

# BLOWOUT PREVENTION EQUIPMENT MEMO

Operator Southern CA Gas Co. Well "Porter" 5D C Sec. 27 T. 03N R. 16W  
Field Aliso Canyon County Los Angeles Spud Date \_\_\_\_\_

VISITS: Date 6-13-14 Engineer Ernie Blevins Time 2030 to 0300 Operator's Rep. \_\_\_\_\_ Title \_\_\_\_\_  
1st \_\_\_\_\_  
2nd \_\_\_\_\_

Contractor Ensign Rig # 587 Contractor's Rep. & Title Tool Pusher - Felipe Stallion  
Casing record of well: \_\_\_\_\_  
Companyman - Kevin Katolas

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

Proposed Well Opns: Drill MACP: \_\_\_\_\_ psi  
Hole size: \_\_\_\_\_ " fr. \_\_\_\_\_ " to \_\_\_\_\_ " to \_\_\_\_\_ " & \_\_\_\_\_ " to \_\_\_\_\_ " REQUIRED BOPE CLASS: III B 5M

CASING RECORD OF BOPE ANCHOR STRING					35% silica Cement Details		Class		Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at	Lead - bbls	Weight	G cement	Casing	Annulus	
20"	94 #	J55	90'		131	13.5 #				
13 3/8"	54.5 #	K55	1012'		61	14.8 #				

17 bbls surface returns (50% excess)

BOP STACK						TEST DATA							
API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul	Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
AP	5"	Shaffer			5M							6/14/14	3K
Kd	CSD	L			L							6-14-14	5M
												6-13-14	5M

ACTUATING SYSTEM				TOTAL:		AUXILIARY EQUIPMENT			
Accumulator Unit(s) Working Pressure <u>2100</u> psi				Fluid Level <u>1/2</u>		Connections			
Total Rated Pump Output _____ gpm				Distance from Well Bore <u>100</u> ft.		No. Size (in.) Rated Press. Weld Flange Thread Test Press.			
Accum. Manufacturer		Capacity		Precharge		Fill-up Line			
1 Wagner Koomal		140 gal.		1750 psi		✓ Kill Line			
2		TYPE gal.		psi		✓ Control Valve(s) 2 3" 5M			
CONTROL STATIONS				Elec. Hyd. Pneu.		✓ Check Valve(s) 1			
✓ Manifold at accumulator unit				✓		Aux. Pump Connect.			
✓ Remote at Driller's station				✓		✓ Choke Line 3			
Other:						✓ Control Valve(s) 2			
EMERG. BACKUP SYSTEM				Press. Wkg. Fluid		Pressure Gauge			
6 N2 Cylinders		1 L= " 2550 10 gal.		✓ Adjustable Choke(s) 2 3" 5M		5M			
Other:		2 L= " 2500 gal.		Bleed Line					
		3 L= " 2550 gal.		✓ Upper Kelly Cock		5M			
		4 L= " 2550 gal.		✓ Lower Kelly Cock		IBOP			
		5 L= " 2500 gal.		Standpipe Valve		L			
		6 L= " 2500 gal.		Standpipe Press. Gau.					
TOTAL:				ga		✓ Pipe Safety Valve 5" 5M			
						✓ Internal Preventer 5" 5M			

HOLE FLUID MONITORING			Alarm Type		Class		Hole Fluid Type		Weight		Storage Pits (Type & Size)	
✓	Audible	Visual					H2O based MUD		~9.3#		750 Dbt	
✓	✓	✓			A		Poly Tek					
✓	✓	✓			B							
✓	✓	✓			C							
✓	✓	✓										
✓	✓	✓										
✓	✓	✓										
Other:												

REMARKS AND DEFICIENCIES:  
Remote Kill Available in Kill line  
UNL Test crew out of BAKO.





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 213-0344**

<u>Old</u>	<u>New</u>
10	010
FIELD CODE	
00	00
AREA CODE	
30	30
POOL CODE	

**PERMIT TO CONDUCT WELL OPERATIONS**

Ventura, California  
 October 3, 2013

James D. Mansdorfer, Agent  
 Southern California Gas Company (S4700)  
 9400 Oakdale Avenue  
 Chatsworth, CA 91313

Your **Supplementary** proposal to **DRILL** well "**Porter**" **50C**, A.P.I. No. **037-24337**, Section **27**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Sesnon-Frew** pool, **Los Angeles** County, dated **7/25/2013**, received **9/25/2013** has been examined in conjunction with records filed in this office.

**THE PROPOSAL IS APPROVED PROVIDED:**

1. Blowout prevention equipment, as defined by this Division's publication No. MO7, shall be installed and maintained in operating condition and meet the following minimum requirements:  
**Conductor: Class II 2M**  
**Surface Casing: Class IIIB 5M**  
**Production String: Class IIIB 5M and 5M lubricator for logging operations.**  
**Completion Operations: Class III 5M**
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. The conductor and 13-3/8" casing are cemented with sufficient cement to fill behind the casing from the shoe to the surface.
4. The 9-5/8" casings are cemented with sufficient cement to fill behind the casings to at least 500' above all oil, gas zones, and/or anomalous pressure intervals and to at least 100' above the base of freshwater zone, if present.
5. This well shall conform to the provisions set forth in our letter dated April 18, 1989 approving the project.
6. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
7. THIS DIVISION SHALL BE NOTIFIED TO:
  - a. Witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the 13-3/8" and 9-5/8" casings.
  - b. Witness a test of the installed blowout prevention equipment prior to commencing completion operations.

Blanket Bond Dated: 7/6/1999

Engineer Bruce Hesson  
 Office (805) 654-4761

BH/bh

Tim Kustic  
 \_\_\_\_\_  
 State Oil and Gas Supervisor

By   
 \_\_\_\_\_  
 Bruce Hesson, District Deputy

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

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

1000 S. Hill Rd, Suite 116  
 Ventura, CA 93003-4458  
 Date: 7/17/2013

**RECEIVED**

**SEP 25 2013**

**DIV. OF OIL, Gas &  
 Geothermal Resources  
 Ventura**

P213-0344

To: ~~James D. Mansdorfer~~  
 Southern California Gas Company (S4700)  
 9400 Oakdale Avenue  
 Chatsworth, CA 91313

In a notice dated 8/12/2012, you propose to Drill  
 Well "Porter" 50C API Number (037-24337)  
 Field Aliso Canyon, County Los Angeles, Sec. 27, T. 03N, R. 16W, SB B.&M.

Please indicate below conditions or intentions regarding this proposed work and return the completed form to this office within 10 days.

Tim Kustic  
 State Oil and Gas Supervisor

MAP	MAP BOOK	CARDS	BOND	EDP	FORMS	By
					CALL WIMS	121 ✓
					615 ✓	

Bruce Hesson  
 District Deputy

- PROPOSED WORK HAS BEEN DONE. (If you check this box, please file the required well records on this work in duplicate within 60 days after work was completed.)\*
- PROPOSED WORK IS IN PROGRESS AND SHOULD BE COMPLETED ABOUT \_\_\_\_\_
- PROPOSED WORK HAS NOT BEEN DONE, BUT WE STILL INTEND TO DO THE WORK.\*\* IF YOU CHECK THIS BOX YOU MUST CHECK ONE OF THE TWO BOXES BELOW:
  - THERE ARE NO PROGRAM CHANGES. PLEASE CONSIDER THIS FORM AS A SUPPLEMENTARY NOTICE. (The Division may approve a one-year extension of the original notice and permit, with or without issuing a permit in response to your submitted Supplementary Notice.)
  - OUR PROGRAM HAS CHANGED. SUPPLEMENTARY NOTICE (Form OG123) ATTACHED. (A new permit will be issued by the Division in response to your submitted Supplementary Notice.)
- WE DO NOT INTEND TO DO THIS WORK. Please cancel our notice to \_\_\_\_\_ dated \_\_\_\_\_
- OTHER: \_\_\_\_\_

Name <b>TODD R. VANDEPUTTE</b>	Telephone Number: <b>661-305-5387</b>	Signature <i>Todd R. VanDePutte</i>	Date <b>7-25-2013</b>
Individual to contact for technical questions: <b>AS ABOVE</b>	Telephone Number: <b>SAME AS ABOVE</b>	E-mail Address: <b>tvandeputte@semprauti.com</b>	

\* Division 3 of the Public Resources Code states in part:  
 Section 3215, ...Well records shall be filed 60 days after completion or suspension of proposed work.

\*\* If operations have not commenced or if you do not return this form within one year of receipt of the notice, the notice will be Considered Cancelled.



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

No. P 212-273

**PERMIT TO CONDUCT WELL OPERATIONS**

**Gas Storage  
Supplementary**

010                      010  
(Old) Field Code (New)  
00                      00  
(Old) Area Code (New)  
30                      30  
(Old) Pool Code (New)

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

Ventura, California  
August 21, 2012

Your proposal to **drill** well "**Porter**" **50C**, A.P.I. No. **037-24337**, Section **27**, T. **3N**, R. **16W**, **S.B. B. & M.**, **Aliso Canyon** Field, **Sesno-Frew** Pool, **Los Angeles** County, dated **8/1/12**, received **8/1/12** has been examined in conjunction with records filed in this office.

**THE PROPOSAL IS APPROVED PROVIDED:**

1. Blowout prevention equipment, as defined by this Division's publication No. MO7, shall be installed and maintained in operating condition and meet the following minimum requirements:

Conductor: Class II 2M  
Surface Casing: Class IIIB 5M  
Production String: Class IIIB 5M and 5M lubricator for logging operations.  
Completion Operations: Class III 5M

2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. The conductor and 13-3/8" casing are cemented with sufficient cement to fill behind the casing from the shoe to the surface.
4. The 9-5/8" casings are cemented with sufficient cement to fill behind the casings to at least 500' above all oil, gas zones, and/or anomalous pressure intervals and to at least 100' above the base of freshwater zone, if present.
5. This well shall conform to the provisions set forth in our letter dated April 18, 1989 approving the project.
6. No program changes are made without Division approval.
7. **THIS DIVISION SHALL BE NOTIFIED TO:**
  - a. Witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the 13-3/8" and 9-5/8" casings.
  - b. Witness a test of the installed blowout prevention equipment prior to commencing completion operations.

Engineer: Steve Fields

Phone: (805) 654-4761

Tim Kustic  
State Oil and Gas Supervisor  
By Bruce Hesson  
Bruce Hesson, Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work is completed or the operations have been suspended. Issuance of this permit does not preclude the recipient from the obligation of being in compliance with all applicable Federal, State and Local laws, regulations and ordinances.

RECEIVED

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

AUG - 6 2012

Div. of Oil, Gas &  
Geothermal Resources  
Ventura  
Ventura, Calif.

WELL STATUS INQUIRY

Date: July 30, 2012

To: James D. Mansdorfer, Agent  
Southern California Gas Co.  
9400 Oakdale Ave.  
Chatsworth CA 91313

P212-273

In a notice dated 08/03/11, you propose to drill  
Well "Porter" 50C API number 037-24337  
Field Aliso Canyon, County Los Angeles, Sec. 27, T. 3N, R. 16W, SB B.&M.

Please indicate below the conditions or intentions regarding this proposed work, and return completed form to this office within 10 days.

MAP	MAP BOOK	CARDS	BOND	EDP	FORMS	By	Tim Kustic State Oil and Gas Supervisor
			1000 000		✓	BJM	

EB/ms

GS

- PROPOSED WORK HAS BEEN DONE. (If you check this box, please file the required well records in duplicate for this work. Records are due within 60 days after completion or suspension of proposed work.)
- PROPOSED WORK IS IN PROGRESS AND SHOULD BE COMPLETED ABOUT \_\_\_\_\_ (date)
- PROPOSED WORK HAS NOT BEEN DONE, BUT WE STILL INTEND TO DO THE WORK.\* IF YOU CHECK THIS BOX, YOU MUST CHECK ONE OF THE TWO BOXES BELOW:
  - THERE ARE NO PROGRAM CHANGES. PLEASE CONSIDER THIS FORM AS A SUPPLEMENTARY NOTICE. (The Division may approve a one-year extension of the original notice and permit, with or without issuing a permit in response to your submitted Supplementary Notice.)
  - OUR PROGRAM HAS CHANGED. A SUPPLEMENTARY NOTICE (Form OG123) IS ATTACHED. (A new permit will be issued by the Division in response to your submitted Supplementary Notice.)
- WE DO NOT INTEND TO DO THE PROPOSED WORK. Please cancel our notice dated \_\_\_\_\_
- OTHER: \_\_\_\_\_

Name James Mansdorfer	Telephone Number: 818-701-3473	Signature <i>James Mansdorfer</i>	Date 8-1-12
Individual to contact for technical questions: Todd Van de Putte	Telephone Number: 661-305-5387	E-Mail Address: TVandePutte@semprautilities.com	

\* If operations have not commenced or if you do not return this form to the Division within one year of receipt of the notice, the notice will be considered canceled.

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

## WELL STATUS INQUIRY

Ventura, Calif.

Date: July 30, 2012

To: James D. Mansdorfer, Agent  
Southern California Gas Co.  
9400 Oakdale Ave.  
Chatsworth CA 91313

In a notice dated 08/03/11, you propose to drill  
Well "Porter" 50C API number 037-24337  
Field Aliso Canyon, County Los Angeles, Sec. 27, T. 3N, R. 16W, SB B&M.

Please indicate below the conditions or intentions regarding this proposed work, and return completed form to this office within 10 days.

Tim Kustic  
State Oil and Gas Supervisor

EB/ms

By [Signature]  
Deputy Supervisor

- PROPOSED WORK HAS BEEN DONE. (If you check this box, please file the required well records in duplicate for this work. Records are due within 60 days after completion or suspension of proposed work.)
- PROPOSED WORK IS IN PROGRESS AND SHOULD BE COMPLETED ABOUT \_\_\_\_\_ (date)
- PROPOSED WORK HAS NOT BEEN DONE, BUT WE STILL INTEND TO DO THE WORK. IF YOU CHECK THIS BOX, YOU MUST CHECK ONE OF THE TWO BOXES BELOW:
- THERE ARE NO PROGRAM CHANGES. PLEASE CONSIDER THIS FORM AS A SUPPLEMENTARY NOTICE. (The Division may approve a one-year extension of the original notice and permit, with or without issuing a permit in response to your submitted Supplementary Notice.)
  - OUR PROGRAM HAS CHANGED. A SUPPLEMENTARY NOTICE (Form OG123) IS ATTACHED. (A new permit will be issued by the Division in response to your submitted Supplementary Notice.)
- WE DO NOT INTEND TO DO THE PROPOSED WORK. Please cancel our notice dated \_\_\_\_\_
- OTHER: \_\_\_\_\_

SCANNED

Name	Telephone Number:	Signature	Date
Individual to contact for technical questions:	Telephone Number:	E-Mail Address:	

\* If operations have not commenced or if you do not return this form to the Division within one year of receipt of the notice, the notice will be considered canceled.



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

No. P 211-246

**PERMIT TO CONDUCT WELL OPERATIONS**

010 010  
(Old) Field Code (New)  
00 00  
(Old) Area Code (New)  
30 30  
(Old) Pool Code (New)

**Gas Storage  
Supplementary**

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

Ventura, California  
August 3, 2011

Your proposal to drill well "Porter" 50C, A.P.I. No. 037-24337, Section 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Sesno-Frew Pool, Los Angeles County, dated 7/19/2011, received 07/29/2011 has been examined in conjunction with records filed in this office.

**THE PROPOSAL IS APPROVED PROVIDED:**

1. Blowout prevention equipment, as defined by this Division's publication No. MO7, shall be installed and maintained in operating condition and meet the following minimum requirements:
  - Conductor: Class II 2M
  - Surface Casing: Class IIIB 5M
  - Production String: Class IIIB 5M and 5M lubricator for logging operations.
  - Completion Operations: Class III 5M
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. The conductor and 13-3/8" casing are cemented with sufficient cement to fill behind the casing from the shoe to the surface.
4. The 9-5/8" casings are cemented with sufficient cement to fill behind the casings to at least 500' above all oil, gas zones, and/or anomalous pressure intervals and to at least 100' above the base of freshwater zone, if present.
5. This well shall conform to the provisions set forth in our letter dated April 18, 1989 approving the project.
6. No program changes are made without Division approval.
7. **THIS DIVISION SHALL BE NOTIFIED TO:**
  - a. Witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the 13-3/8" and 9-5/8" casings.
  - b. Witness a test of the installed blowout prevention equipment prior to commencing completion operations.

Engineer: Steve Fields

Phone: (805) 654-4761

Elena M. Miller  
State Oil and Gas Supervisor  
By [Signature]  
Bruce Hesson, Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work is completed or the operations have been suspended. Issuance of this permit does not preclude the recipient from the obligation of being in compliance with all applicable Federal, State and Local laws, regulations and ordinances.

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

**WELL STATUS INQUIRY**

Ventura, Calif.

Date: July 15, 2011

To: James D. Mansdorfer, Agent  
Southern California Gas Co.  
9400 Oakdale Ave.  
Chatsworth CA 91313

P211-246

In a notice dated 06/16/10, you propose to drill  
Well "Porter" 50C API number 037-24337  
Field Aliso Canyon, County Los Angeles Sec. 27, T. 3N, R. 16W, SB B.&M.

Please indicate below the conditions or intentions regarding this proposed work, and return completed form to this office within 10 days.

M&P	M&P BOOK	CARDS	BOND	EDP	FORMS	Elena M. Miller State Oil and Gas Supervisor
			1000 CGU		TV4 111V 115V	By <u>B. Miller</u> Deputy Supervisor

GS

- PROPOSED WORK HAS BEEN DONE. (If you check this box, please file the required well records in duplicate for this work. Records are due within 60 days after completion or suspension of proposed work.)
- PROPOSED WORK IS IN PROGRESS AND SHOULD BE COMPLETED ABOUT \_\_\_\_\_ (date)
- PROPOSED WORK HAS NOT BEEN DONE, BUT WE STILL INTEND TO DO THE WORK.\* IF YOU CHECK THIS BOX, YOU MUST CHECK ONE OF THE TWO BOXES BELOW:
- THERE ARE NO PROGRAM CHANGES. PLEASE CONSIDER THIS FORM AS A SUPPLEMENTARY NOTICE. (The Division may approve a one-year extension of the original notice and permit, with or without issuing a permit in response to your submitted Supplementary Notice.)
- OUR PROGRAM HAS CHANGED. A SUPPLEMENTARY NOTICE (Form OG123) IS ATTACHED. (A new permit will be issued by the Division in response to your submitted Supplementary Notice.)
- WE DO NOT INTEND TO DO THE PROPOSED WORK. Please cancel our notice dated \_\_\_\_\_
- OTHER: \_\_\_\_\_

Name <u>James Mansdorfer</u>	Telephone Number: <u>818-701-3473</u>	Signature <u>James Mansdorfer</u>	Date <u>7-19-11</u>
Individual to contact for technical questions: <u>Todd Vande Putte</u>	Telephone Number: <u>661-305-5387</u>	E-Mail Address: <u>TVandePutte@semprautilities.com</u>	

\* If operations have not commenced or if you do not return this form to the Division within one year of receipt of the notice, the notice will be considered canceled.

**RECEIVED**

JUL 29 2011

**Div. of Oil, Gas &  
Geothermal Resources  
Ventura**



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

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage

No. P 210-143

--- 01  
(Old) Field Code (Ne

-- 0  
(Old) Area Code (Ne

-- 3  
(Old) Pool Code (Ne

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

Ventura, California  
June 16, 2010

Your proposal to drill well "Porter" 50C, A.P.I. No. 037-24337, Section 27, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Sesno-Frew Pool, Los Angeles County, dated 06/ 6/10, received 06/16/10 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. MO7, shall be installed and maintained in operating condition and meet the following minimum requirements:
  - Conductor: Class II 2M
  - Surface Casing: Class IIIB 5M
  - Production String: Class IIIB 5M and 5M lubricator for logging operations.
  - Completion Operations: Class III 5M
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. The conductor and 13-3/8" casing are cemented with sufficient cement to fill behind the casing from the shoe to the surface.
4. The 9-5/8" casings are cemented with sufficient cement to fill behind the casings to at least 500' above all oil, gas zones, and/or anomalous pressure intervals and to at least 100' above the base of freshwater zone, if present.
5. This well shall conform to the provisions set forth in our letter dated April 18, 1989 approving the project.
6. No program changes are made without Division approval.
7. **THIS DIVISION SHALL BE NOTIFIED TO:**
  - a. Witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the 13-3/8" and 9-5/8" casings.
  - b. Witness a test of the installed blowout prevention equipment prior to commencing completion operations.

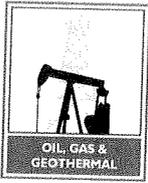
Engineer: Steve Fields

Phone: (805) 654-4761

Elena M. Miller  
State Oil and Gas Supervisor

By BH  
Bruce Hesson, Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work is completed or the operations have been suspended. Issuance of this permit does not preclude the recipient from the obligation of being in compliance with all applicable Federal, State and Local laws, regulations and ordinances.



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

FOR DIVISION USE ONLY		
Bond	Forms	
	OGD#14	OGD#21
1800 000	111V	115V

### NOTICE OF INTENTION TO DRILL NEW WELL

Detailed instructions can be found at: [www.conservation.ca.gov/dog/](http://www.conservation.ca.gov/dog/)

*P210-143*

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to drill well "Porter" 50C, well type Storage Well, API No. 037-24337,  
Sec. 27, T.3N, R. 16W, S.B. B&M, Aliso Canyon Storage Field, Los Angeles County.  
(Assigned by Division)

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 \_\_\_\_\_ along section  / property  line and \_\_\_\_\_ feet \_\_\_\_\_  
(Direction) (Check one) (Direction)  
at right angles to said line from the \_\_\_\_\_ corner of section  / property  and  
(Check one)

Lat./Long. in decimal degrees, to six decimal places, NAD 83 format: Latitude: 34.315049 North Longitude: 118.547282 West

If well is to be directionally drilled, show proposed coordinates (from surface location) and true vertical depth at total depth:  
541.2 feet South and 2013.7 feet West. Estimated true vertical depth 7306'. Elevation of ground  
(Direction) (Direction)  
above sea level 1953 feet. All depth measurements taken from top of Kelly Bushing that is 22.5 feet above ground.  
(Derrick Floor, Rotary Table, or Kelly Bushing)

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	900'	Surface	Hydrostatic	900'
9-5/8"	47#	L-80	Surface	7500'	Surface	Hydrostatic	7500'
5"	15.5#	L-80	7400'	9165'	None	Variable-Storage	0'

(Attach a complete drilling program including wellbore schematics in addition to the above casing program.)

Estimated depth of base of fresh water: N/A 1200' Anticipated geological markers: M-P: 6900', S-1: 7450', S-4: 7620' MD  
(Name, depth)

Intended zone(s) of completion: Sesnon - Storage Zone- Variable Estimated total depth: 9170'  
(Name, depth and expected pressure)

**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 <u>Southern California Gas Company</u>		JUN 16 2010	
Address <u>9400 Oakdale Ave.</u>		City/State <u>Chatsworth, CA</u>	Zip Code <u>91313</u>
Name of Person Filing Notice <u>Todd Van de Putte</u>	Telephone Number: <u>661-305-5387</u>	Signature <i>Todd R Van de Putte</i>	Date <u>6-16-10</u>
Individual to contact for technical questions: <u>Todd Van de Putte</u>	Telephone Number: <u>661-305-5387</u>	E-Mail Address: <u>tvandeputte@semprautilities.com</u>	

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.

*010/00/30 Sesnon Field*

## 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/](http://www.conservation.ca.gov/dog/)

JUN 16 2010

**Southern California Gas Company - Aliso Canyon - Porter 50C**  
**Drilling/Completion Program**

**PROGRAM REVISED: June 14, 2010**

**OBJECTIVE:** Drill and complete a new replacement high angle storage well in the Aliso Canyon Storage Field

**SURFACE LOCATION:** Section 27, Township 3N, Range 16W, S.B. B&M / GPS Coordinates (NAD 83): 34.315049 North; 118.547282 West

**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: 1953'

Estimated Rig KB: 22.5'

All depths refer to proposed kelly bushing 22.5' above ground.

**BOTTOM HOLE COORDINATES:**

Intermediate Target: 8147' MD, 7154' TVD, 591' South, 1004' West, 1122' VSS.

Bottom Hole Target: 9170' MD, 7307' TVD, 541' South, 2013' West, 2085' VSS.

**TOP OF ZONES:** Storage Zone(Sesnon): M-P: 6900'MD/6660'TVD, S-1: 7450'MD/6930'TVD, S-4: 7620'MD/7014'TVD

**ESTIMATED FORMATION FRACTURE GRADIENT:** 0.80 psi/ft

**FIELD PRESSURE:** Sesnon Storage Zone: Variable BHP – hydrostatic maximum bottom hole pressure (8.9-9.2 ppg mud planned, adjust mud weight according to actual storage zone pressure to maintain overbalance)

**PROPOSED CASING PROGRAM (See attached wellbore schematic):**

0' – 900'	13-3/8"	54.5#	K-55, Buttress, Surface casing, cemented to surface.
0' – 7500'	9-5/8"	47.0#	L-80, Hunting Seal Lock GS, Production Casing cemented to surface
7400' - 9165'	5"	15.5#	L-80, Premium Connection, Wire Wrapped Screen (0.012") gravel pack liner (perforated from 8100'-9160')

**PROPOSED HOLE SIZES (+/-):**

0' to 900' -- 17-12" hole  
901' to 7500' -- 12-1/4" hole.  
7501' to 9170' -- 8-1/2" hole.

JUN 16 2010

**DIRECTIONAL PROGRAM:**

(See attached plan)

Drill vertical hole to 1000' MD, 1000' TVD.

Directionally Drill 12-1/4" hole from 900' to 7500' (+/-) MD, 8-1/2" hole to 9170' (+/-) MD.

Estimated Total Measured Depth: 9170' (+/-) MD

**MUD PROGRAM:**

1. For drilling to the casing shoes at 900' MD (+/-) and 7500' MD (+/-), use fresh water/gel base mud with the following properties:
  - a. Weight: 8.8 – 9.2 ppg
  - b. Viscosity: 40 – 60 sec. A.P.I.
  - c. Fluid loss: 5 - 7 cc/ 30 min. A.P.I.
  - d. % solids: 2 - 4 %
  - e. pH: 7.5 – 8.5
  
2. For drilling and scraping liner interval, use a 3% KCL/polymer Drill-In mud with the following properties:
  - a. Weight: 8.6– 9.2 ppg
  - b. Viscosity: 40 – 50 sec. A.P.I.
  - c. Plastic visc: 6 - 10 cps
  - d. Yield point: 15 – 25 lb/100 cf
  - e. Fluid loss: < 5 cc / 30 min. A.P.I.
  - f. % solids: < 4 %

Estimated static temperature at total depth, 7400' TVD, is 185°F

**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 while drilling high angle section below the 9-5/8" production casing shoe.
- 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 Sennon zone bottomhole pressure.
- Hydraulics to be based on a 120-160 ft/min annular velocity.

JUN 16 2010

**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 IIIB 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 60'-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.
2. Move in and rig up Ensign #587 drilling rig.
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" bit and clean out the cement with a 17-1/2" bit to the bottom of the conductor. Circulate and condition the mud.
5. Drill the 17-1/2" surface casing hole to 900'(+/-).
  - a. Collect surface casing hole directional surveys (approximately 100' intervals) for directional program tie-in from the surface casing shoe.
  - b. Circulate the hole clean.
6. Rig up the casing running crew and run 900' (+/-) 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 bow spring type centralizers per the recommended program.
  - c. Proper make up for the 13-3/8" Buttress Casing is to the triangle stamp on the pin end.

**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.

7. Rig up a cementing head, cementing equipment, mix and pump per finalized cementing schedule:
    - a. Cement Density: 12.5 ppg lead/14.8 ppg tail w/gas migration additives
    - b. Cement Volume: 600 lineal feet lead / 300 lineal feet tail.
    - c. 50% Excess cement (adjust depending on hole conditions)
    - d. Condition the hole and pump the recommended fresh water, mud preflush followed by cement slurry, mud displacement and water.
    - e. Reciprocate the 13-3/8" casing during the hole conditioning and cementing operations.
    - f. Bump the plug with 1000 psig maximum surface pressure.
  8. Wait on the cement for 8 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. 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 4000 psig.
  9. 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 3000 psig for 15 minutes. Test Blind Rams and the 5" Pipe Rams to 5000 psig for 15 minutes. Test all lines and connections to 5000 psig. All tests are to be charted and witnessed by a DOGGR representative. Remove the test plug.
  10. Pressure test 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 and clean out cement and float equipment from 860' to 900'. Pull out of the hole and lay down the clean out BHA.
  11. Rig up the mud loggers and mud logging equipment.
  12. Pick up and run a 12-1/4", 5 blade PDC bit and the 8" GEO Pilot rotary steerable system and associated BHA. Drill 12-1/4" directional hole from 1000'MD (+/-) to 7500'MD (+/-) per the attached directional program. Verify the final production casing shoe depth.
  13. Condition the mud for the open hole logging runs. Note the salinity and other mud properties from the daily mud report. Pull out and lay down the 12-1/4" PDC bit and the 8" GEO Pilot rotary steerable system.
- 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 Triple Combo Log from 1000' to 7500'(+/-). 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 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, Hunting Seal Lock GS connection, casing to 7500' (+/-). Production casing string to include a 12-1/4" x 9-5/8" EZREAM casing shoe, differential fill float collar, and a differential float collar two joints up from shoe. Rotating type centralizers to be used according to the recommended centralizer plan. **Note: Make up torque 10,500 ft-lb minimum, 14,200 ft-lb maximum, 12,400 ft-lb optimum, with torque turn chart for each connection. Minimum Yield Torque on the connection is 32,900 ft-lb.**
  - a. Baker Lock the bottom 3 joints of casing.
  - b. During casing running operations, rig up the top drive/casing cross over as required and work/rotate the casing in the hole if required.
  - c. Minimum yield torque on the Hunting Seal Lock GS connection is 32,900 ft-lb. Do not allow the top drive torque setting to exceed 75% of this value or approximately 25,000 ft-lb of torque.
17. Rig up to the top drive with a cross over sub and circulate the hole clean. Stage circulate while running in the hole to maintain good mud properties. Rotate the 9-5/8" casing while conditioning the 12-1/4" hole. Do not exceed 25,000 ft-lb torque value specified in Step 16c during the top drive casing rotating operations.
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: 12.5 ppg lead/14.8 ppg tail w/gas migration additive
  - b. Cement Volume: 4500 lineal feet lead / 3000 lineal feet tail.
  - c. 20% Excess cement (adjust depending on hole conditions).
  - d. Use top and bottom wiper plugs
  - e. Condition the hole and pump the recommended fresh water, mud preflush followed by cement slurry, mud displacement and water.
  - f. Rotate the 9-5/8" casing during hole conditioning and cementing operations.
  - g. Bump the plug with 1000 psig maximum surface pressure.
  - h. Leave small volume of cement on top of the wiper plug.
  - i. Cement company to have screens cleaned and in place so no debris is pulled into mixing system
19. After the 9-5/8" production casing cement slurry has setup (approximately 12-16 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 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 11" 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. If the seal flange is not installed at this stage, a bit guide/wear bushing should be installed on the 9-5/8" casing stub for protection against drilling operation damage.
20. Set down 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 or 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. Change the wellbore over to a 3%KCl/XC polymer based Drill-In mud system. Verify the current storage field pressure while building the mud system to determine whether or not the overbalance is excessive and requires the addition of sized calcium carbonate to the mud in order to control mud losses.
24. Pull out of the hole and lay down the 8-1/2" cleanout bit, the casing scraper and the heavy weight drill pipe.
25. Rig up the cased hole wireline unit with lubricator and run a cement bond 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.
26. Pick up and run an 8-1/2", 5 blade PDC bit and the 6-3/4" LWD (Resistivity-GR)/GEO Pilot rotary steerable tools and associated BHA. Drill an 8-1/2" hole with LWD tools to 9170'MD (+/-) as per the directional plan. Circulate the hole clean and condition the mud. Note the mud properties before drilling into the zone and at total depth. Pull out of the hole and lay down the directional tools/BHA.
27. Rig down the mud loggers and mud logging equipment.
28. Run in the hole with open ended 5" drill pipe to bottom. Circulate hole clean, **rotating the 5" drill pipe and working the pipe continuously**. Stage circulate the hole at 8400', 6000', 4500' and repeat same procedure.
29. Lower the 5" drill pipe to bottom. **Do not circulate bottoms up.** Spot a high viscosity polymer pill on bottom calculated to fill the open hole volume plus 200' above the 9-5/8" production casing shoe. Keep the hole full while pulling out of the hole.

### **COMPLETION: PHASE I (Drilling Rig):**

30. Rig up the casing running crew and run approximately 1000'(+/-) of 5", 0.012" WWS liner consisting of the following:
  - a. 9-5/8"x 5" hydraulic set liner hanger/packer
  - b. 5", 15.5 lb/ft, L-80 with premium thread blank liner
  - c. 5", 15.5 lb/ft, L-80 with premium thread semi-perf liner (2 joints)
  - d. 5", 15.5 lb/ft, L-80 with premium thread, wire wrapped screen to be equipped with centralizers.
  - e. 5", circulating shoe with a double flapper.
24. Position the 5", WWS liner for gravel packing operations.
25. Set the 9-5/8" x 5" hydraulic set packer/packer hanger. Gravel pack with 20-40 Ottawa resin coated gravel and filtered 3% KCl water until packed off. Retain a sample of gravel to be sent to lab for sieve analysis.

26. Reverse circulate out the excess 20-40 resin coated gravel. Wait 2 hours for the gravel pack to settle, and bump down if possible.
27. Restress gravel pack and repack if necessary. Release from the 5" liner and pull out of the hole with the gravel packing tools. Pressure test the 5" x 9-5/8" packer/hanger to 1000 psig for 15 minutes.
28. Run in the hole with a 2-3/8" tubing tail to the bottom of the 5" liner and place polymer breaker across the 5" liner. Inhibit the reaction time of polymer breaker by 12 hours.
29. Immediately pull out of the well and run back in the well with the 9-5/8" completion packer. Note: The production tubing may be either 2-7/8" or 3-1/2", L-80 tubing pending the final design determination.
30. Pick up 9-5/8" HES G-6 packer assembly as follows:
  - a. 9-5/8" production HES G-6 packer
  - b. 3-1/2" - 8' L-80 pup joint
  - c. 3-1/2" HES LH release on/off tool with XN profile with PXN plug in place in profile
  - d. Pressure test the 9-5/8" HES G-6 packer to 1000 psig for 10 minutes.
  - e. Release from 3-1/2" HES on/off tool and pull out of the hole laying down the drillpipe.
31. Verify the hole is full of fluid. Secure the well, rig down and move the Ensign #587 drilling rig.

### **COMPLETION: PHASE II (Production Rig):**

32. Move in and rig up the Ensign #321 workover rig.
33. Verify there is no pressure on the well, the hole is full of fluid and nipple down the 13-5/8" Class IIIB, 5M BOPE.
34. Remove the 9-5/8" bit guide from the 9-5/8" casing stub. Measure and prepare the 9-5/8" casing stub for the seal flange/tubing head installation.
35. Install the 13-5/8" 5M x 11" 5M Double P-Seal seal flange and the 11" 5M x 11" 5M tubing head on the 13-5/8" 5M casing head. Pressure test the seals to 5000 psig. Chart and file the seal pressure tests.
36. Nipple up a 11" Class IIIB 5M BOPE (per Gas Company Procedure) on the 11" 5M tubing head.
  - a. Fit the 5M BOPE with 2-7/8" pipe rams and CSO.
  - b. The 5M BOPE must have connection and valve below the blind rams. Fit with 5000 psig minimum rated valve.
  - c. Test the 11" 5M BOPE system to assure the integrity of connections.
  - d. Test the pipe rams and blind ram to 5000 psig. Test the Annular Preventer to 3500 psig.
  - e. Notify the DOGGR prior to the BOPE test.

37. Pick up and run the completion tubing string:
  - a. Top half of the HES on/off tool
  - b. 1 joint of 3-1/2" EUE 8R L-80 tubing
  - c. 3-1/2" HES Durasleeve X profile - sliding sleeve (closed)
  - d. 1 joint of 3-1/2" EUE 8R L-80 tubing
  - e. 3-1/2" gas lift mandrel with dummy valve
  - f. 3-1/2" EUE 8R L-80 tubing to the surface.
38. Land the 3-1/2" production tubing string in compression as per tube move recommendation.
39. Latch on to the 3-1/2" on/off tool. Release and place packer fluid. Space out and land the tubing hanger. Run in all hold down studs and pressure test packer to 1500 psig for 15 minutes. Pressure test the production tubing to 1500 psig for 10 minutes. Record pressure tests on charts and file the original charts.
40. Install the BPV. Remove the 11" Class IIIB 5M BOPE and install the 5M rated production tree. Pressure test the production tree to 5000 psig. Remove the BPV.
41. Rig down and move out the Ensign #321 workover rig. Clean the location.

# **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 1/4" drilling line.
- ◆ Traveling Blocks; BJ 350 Ton with BJ 350 Ton Hook.
- ◆ Swivel; Oilwell PC 300, 300 ton with a 5 1/4" Hex Kelly with Varco HDS Kelly Bushings.

### **ROTARY TABLE**

- ◆ Gardner Denver; 27 1/2" 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"; 4 1/2" IF 19.50 # Grade X 95
- ◆ 90 Jts of 5" 4 1/2" IF 25.60 # Grade X 95
- ◆ (4) 6 1/2" x 2 1/4" Drill Collars with 4 1/2" XH Thread

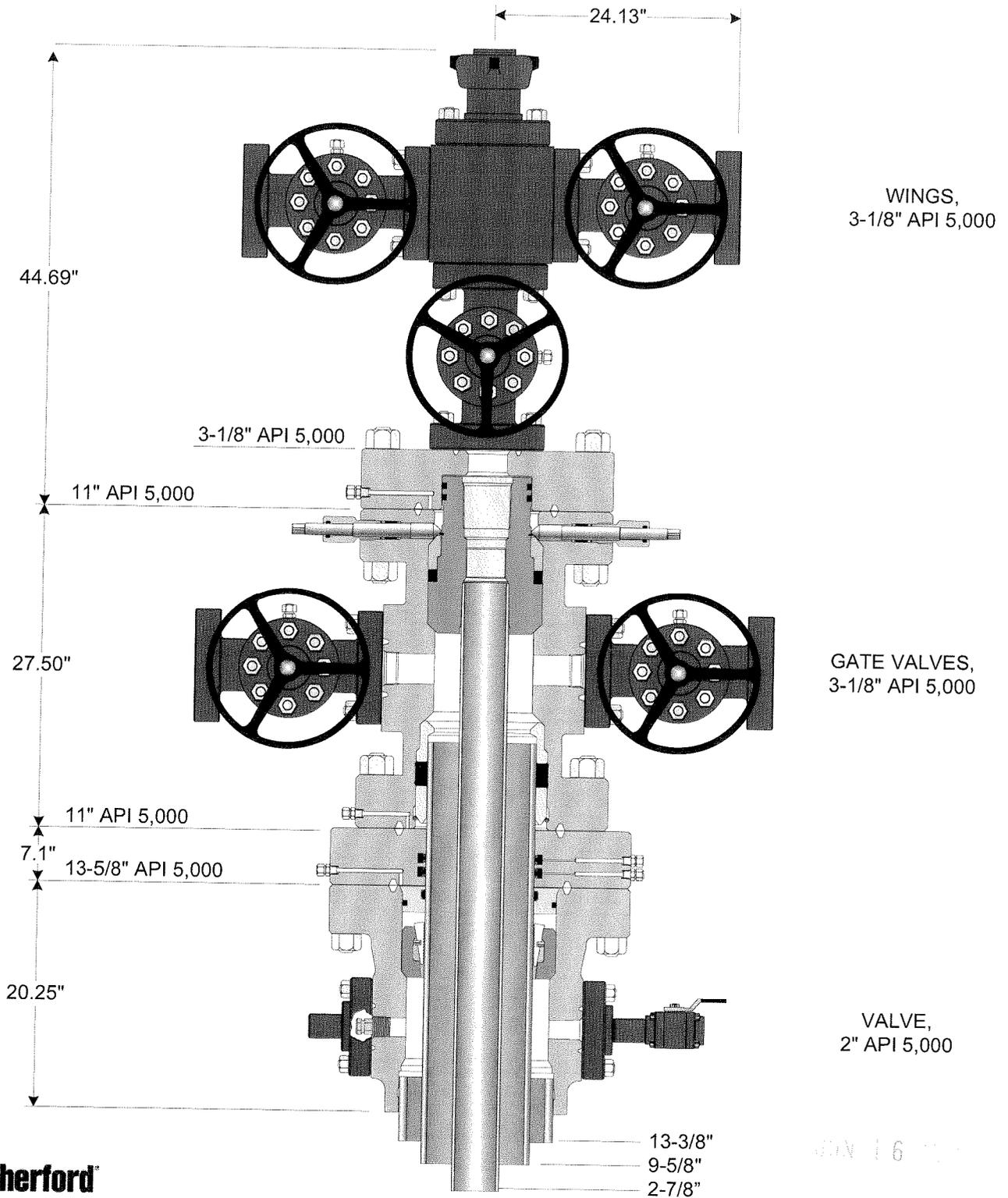
### **B.O.P.**

- ◆ 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**

16 11

THIS DRAWING IS NOT TO SCALE. THE DIMENSIONS REFLECTED ON THIS DRAWING ARE ESTIMATED DIMENSIONS AND ARE FOR REFERENCE ONLY.



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Customer: SOUTHERN CALIFORNIA GAS CO.	Project: TBD	Quote: TBD
Tender, Project or Well: ALISO CANYON – PORTER 50C	Date: 04-27-2010	Drawn By: JJ

Proposed Porter 50 C

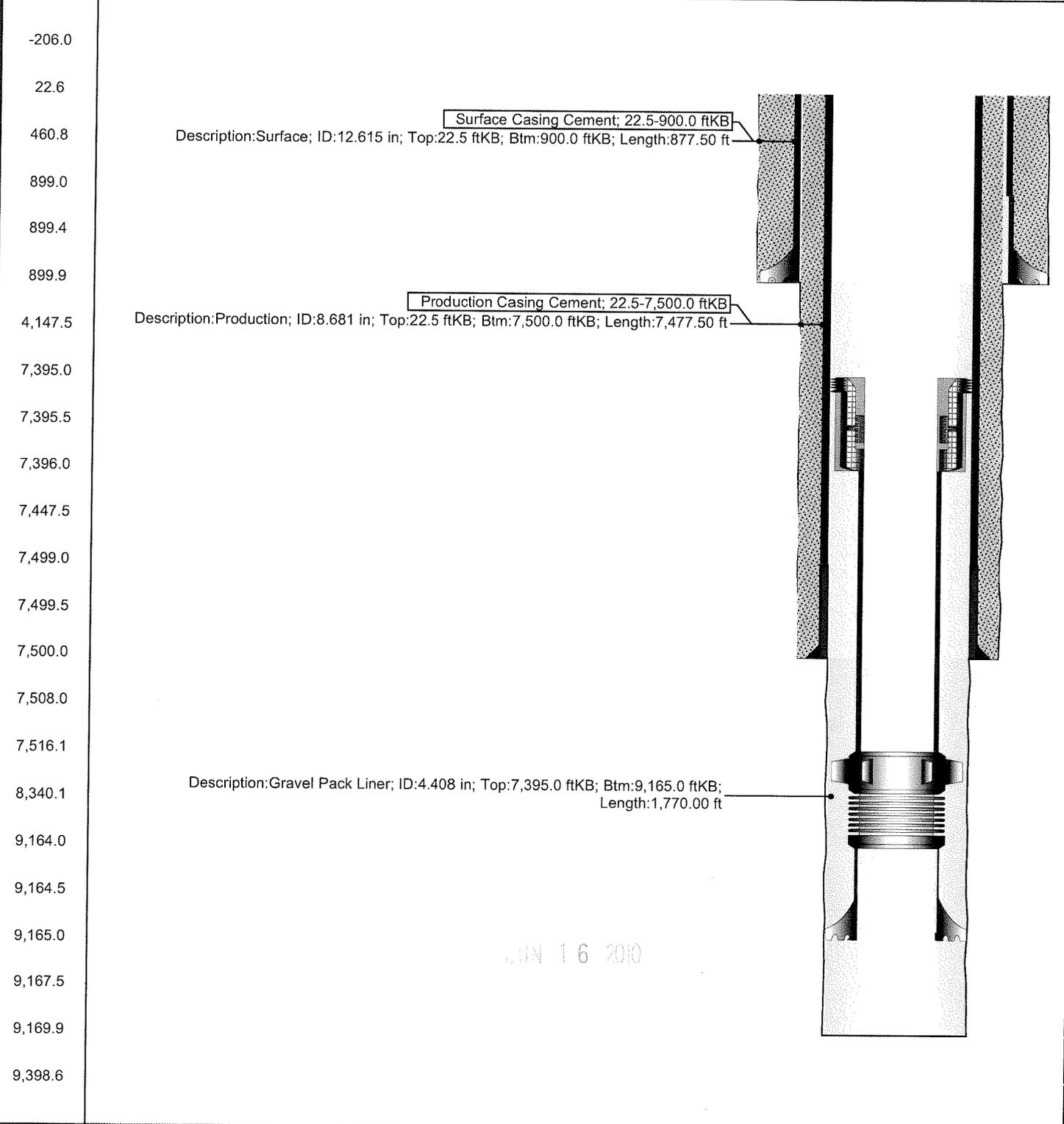
Gas Company Schematic

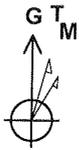


API TBD	Field Name Aliso Canyon	Operator Southern California Gas Company	County Los Angeles	State California
Ground Elevation (ft) 1,953.70		KB-Ground Distance (ft) 22.50	Spud Date	

Original Hole, 6/16/2010 7:04:42 AM

MD (ftKB) Vertical schematic (actual)





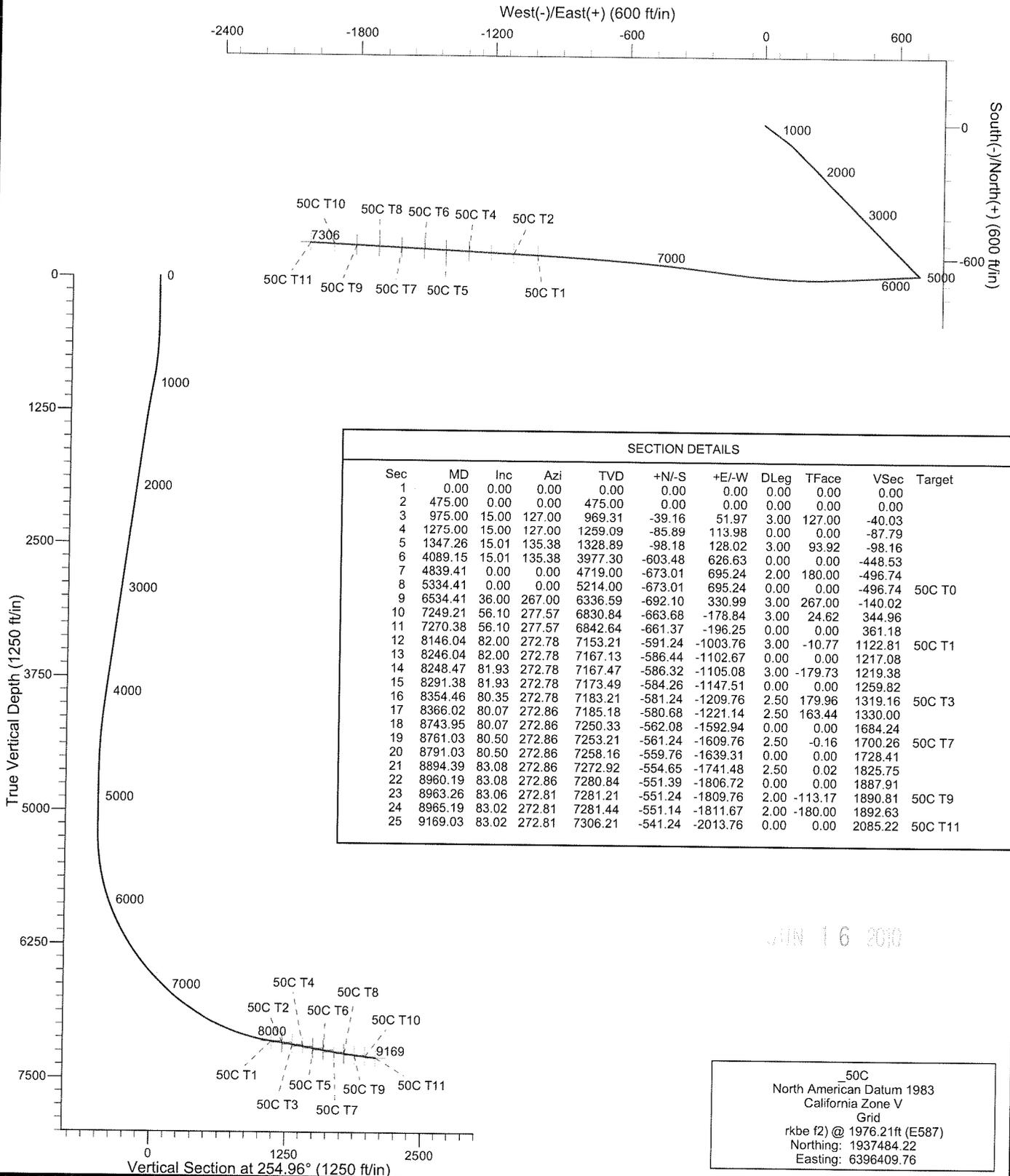
Azimuths to Grid North  
 True North: 0.31°  
 Magnetic North: 13.13°

Magnetic Field  
 Strength: 47659.1nT  
 Dip Angle: 59.06°  
 Date: 6/14/2010  
 Model: IGRF2010

Southern California Gas

Project: Aliso Canyon  
 Site: Porter  
 Well: 50C  
 Wellbore: Wellbore #1  
 Design: Plan #4 (14-Jun-10)

**HALLIBURTON**  
**Sperry Drilling Services**



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	475.00	0.00	0.00	475.00	0.00	0.00	0.00	0.00	0.00	
3	975.00	15.00	127.00	969.31	-39.16	51.97	3.00	127.00	-40.03	
4	1275.00	15.00	127.00	1259.09	-85.89	113.98	0.00	0.00	-87.79	
5	1347.26	15.01	135.38	1328.89	-98.18	128.02	3.00	93.92	-98.16	
6	4089.15	15.01	135.38	3977.30	-603.48	626.63	0.00	0.00	-448.53	
7	4839.41	0.00	0.00	4719.00	-673.01	695.24	2.00	180.00	-496.74	
8	5334.41	0.00	0.00	5214.00	-673.01	695.24	0.00	0.00	-496.74	50C T0
9	6534.41	36.00	267.00	6336.59	-692.10	330.99	3.00	267.00	-140.02	
10	7249.21	56.10	277.57	6830.84	-663.68	-178.84	3.00	24.62	344.96	
11	7270.38	56.10	277.57	6842.64	-661.37	-196.25	0.00	0.00	361.18	
12	8146.04	82.00	272.78	7153.21	-591.24	-1003.76	3.00	-10.77	1122.81	50C T1
13	8246.04	82.00	272.78	7167.13	-586.44	-1102.67	0.00	0.00	1217.08	
14	8248.47	81.93	272.78	7167.47	-586.32	-1105.08	3.00	-179.73	1219.38	
15	8291.38	81.93	272.78	7173.49	-584.26	-1147.51	0.00	0.00	1259.82	
16	8354.46	80.35	272.78	7183.21	-581.24	-1209.76	2.50	179.96	1319.16	50C T3
17	8366.02	80.07	272.86	7185.18	-580.68	-1221.14	2.50	163.44	1330.00	
18	8743.95	80.07	272.86	7250.33	-562.08	-1592.94	0.00	0.00	1684.24	
19	8761.03	80.50	272.86	7253.21	-561.24	-1609.76	2.50	-0.16	1700.26	50C T7
20	8791.03	80.50	272.86	7258.16	-559.76	-1639.31	0.00	0.00	1728.41	
21	8894.39	83.08	272.86	7272.92	-554.65	-1741.48	2.50	0.02	1825.75	
22	8960.19	83.08	272.86	7280.84	-551.39	-1806.72	0.00	0.00	1887.91	
23	8963.26	83.06	272.81	7281.21	-551.24	-1809.76	2.00	-113.17	1890.81	50C T9
24	8965.19	83.02	272.81	7281.44	-551.14	-1811.67	2.00	-180.00	1892.63	
25	9169.03	83.02	272.81	7306.21	-541.24	-2013.76	0.00	0.00	2085.22	50C T11

JUN 16 2010

50C  
 North American Datum 1983  
 California Zone V  
 Grid  
 rkbe f2) @ 1976.21ft (E587)  
 Northing: 1937484.22  
 Easting: 6396409.76

# Southern California Gas

Aliso Canyon

Porter

\_50C

Wellbore #1

Plan: Plan #4 (14-Jun-10)

Job No. Plan #4 (14-Jun-10)

## Sperry Drilling Services Combo Report

14 June, 2010

Well Coordinates: 1,937,484.22 N, 6,396,409.76 E (34° 18' 54.18" N, 118° 32' 50.22" W)  
Ground Level: 1,953.71 ft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well \_50C  
rkbe f2) @ 1976.21ft (E587)

N

Grid

API - US Survey Feet

JUN 16 2010

Version: 2003.14 Build: 82

HALLIBURTON

## Plan Report for \_50C - Plan #4 (14-Jun-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft) Easting (ft)	Map Coordinates Northing (ft) Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	1,976.21	0.00	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	
22.50	0.00	0.00	1,953.71	22.50	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	GL
100.00	0.00	0.00	1,876.21	100.00	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	
200.00	0.00	0.00	1,776.21	200.00	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	
300.00	0.00	0.00	1,676.21	300.00	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	
400.00	0.00	0.00	1,576.21	400.00	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	
475.00	0.00	0.00	1,501.21	475.00	0.00 N 0.00 W	1,937,484.24 6,396,409.76	0.00	0.00	Start Build 3.00
500.00	0.75	127.00	1,476.21	500.00	0.10 S 0.13 E	1,937,484.14 6,396,409.89	3.00	-0.11	
600.00	3.75	127.00	1,376.30	599.91	2.46 S 7.97 S	1,937,481.78 6,396,413.02	3.00	-2.52	
700.00	6.75	127.00	1,276.73	699.48	10.57 E 22.03 E	1,937,476.27 6,396,420.33	3.00	-8.15	
800.00	9.75	127.00	1,177.78	798.43	16.60 S 37.61 E	1,937,467.64 6,396,431.79	3.00	-16.97	
900.00	12.75	127.00	1,079.71	896.50	28.34 S 51.97 E	1,937,455.90 6,396,447.37	3.00	-28.97	
975.00	15.00	127.00	1,006.90	969.31	39.16 S 57.14 E	1,937,445.07 6,396,461.73	3.00	-40.03	Start 300.00 hold at 975.00 MD
1,000.00	15.00	127.00	982.75	993.46	43.06 S 77.81 E	1,937,441.18 6,396,466.90	0.00	-44.01	
1,100.00	15.00	127.00	886.16	1,090.05	58.63 S 98.48 E	1,937,425.60 6,396,487.57	0.00	-59.93	
1,200.00	15.00	127.00	789.57	1,186.64	74.21 S 113.98 E	1,937,410.03 6,396,508.24	0.00	-75.85	
1,275.00	15.00	127.00	717.12	1,259.09	85.89 S 119.04 E	1,937,398.35 6,396,523.74	0.00	-87.79	Start DLS 3.00 TFO 93.92
1,300.00	14.97	129.90	692.97	1,283.24	89.91 S 128.02 E	1,937,394.33 6,396,528.80	3.00	-91.63	
1,347.26	15.01	135.38	647.32	1,328.89	98.18 S 137.61 E	1,937,386.06 6,396,537.78	3.00	-98.16	Start 2741.89 hold at 1347.26 MD
1,400.00	15.01	135.38	596.38	1,379.83	107.90 S 155.80 E	1,937,376.34 6,396,547.37	0.00	-104.90	
1,500.00	15.01	135.38	499.79	1,476.42	126.33 S 173.98 E	1,937,357.91 6,396,565.56	0.00	-117.68	
1,600.00	15.01	135.38	403.20	1,573.01	144.76 S 192.17 E	1,937,339.48 6,396,583.74	0.00	-130.45	
1,700.00	15.01	135.38	306.61	1,669.60	163.19 S 210.35 E	1,937,321.05 6,396,601.93	0.00	-143.23	
1,800.00	15.01	135.38	210.02	1,766.19	181.61 S 228.54 E	1,937,302.62 6,396,620.11	0.00	-156.01	
1,900.00	15.01	135.38	113.43	1,862.78	200.04 S 246.72 E	1,937,284.19 6,396,638.30	0.00	-168.79	
2,000.00	15.01	135.38	16.84	1,959.37	218.47 S 337.65 E	1,937,265.77 6,396,656.48	0.00	-181.57	
2,100.00	15.01	135.38	-79.75	2,055.96	236.90 S 355.83 E	1,937,247.34 6,396,674.67	0.00	-194.35	
2,200.00	15.01	135.38	-176.35	2,152.56	255.33 S 374.02 E	1,937,228.91 6,396,692.85	0.00	-207.13	
2,300.00	15.01	135.38	-272.94	2,249.15	273.76 S 392.20 E	1,937,210.48 6,396,711.04	0.00	-219.90	
2,400.00	15.01	135.38	-369.53	2,345.74	292.19 S 410.39 E	1,937,192.05 6,396,729.22	0.00	-232.68	
2,500.00	15.01	135.38	-466.12	2,442.33	310.62 S 428.57 E	1,937,173.62 6,396,747.41	0.00	-245.46	
2,600.00	15.01	135.38	-562.71	2,538.92	329.05 S 446.76 E	1,937,155.19 6,396,765.59	0.00	-258.24	
2,700.00	15.01	135.38	-659.30	2,635.51	347.47 S 464.94 E	1,937,136.76 6,396,783.78	0.00	-271.02	
2,800.00	15.01	135.38	-755.89	2,732.10	365.90 S 483.13 E	1,937,118.34 6,396,801.96	0.00	-283.80	
2,900.00	15.01	135.38	-852.48	2,828.69	384.33 S 501.31 E	1,937,099.91 6,396,820.15	0.00	-296.57	
3,000.00	15.01	135.38	-949.07	2,925.28	402.76 S 519.50 E	1,937,081.48 6,396,838.33	0.00	-309.35	
3,100.00	15.01	135.38	-1,045.66	3,021.87	421.19 S 537.69 E	1,937,063.05 6,396,856.52	0.00	-322.13	
3,200.00	15.01	135.38	-1,142.25	3,118.46	439.62 S 555.88 E	1,937,044.62 6,396,874.70	0.00	-334.91	
3,300.00	15.01	135.38	-1,238.84	3,215.05	458.05 S 574.07 E	1,937,026.19 6,396,892.88	0.00	-347.69	
3,400.00	15.01	135.38	-1,335.43	3,311.64	476.48 S 592.26 E	1,937,007.76 6,396,911.07	0.00	-360.47	

Plan Report for \_50C - Plan #4 (14-Jun-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,500.00	15.01	135.38	-1,432.02	3,408.23	494.90 S	519.50 E	1,936,989.33	6,396,929.25	0.00	-373.24	
3,600.00	15.01	135.38	-1,528.61	3,504.82	513.33 S	537.68 E	1,936,970.90	6,396,947.44	0.00	-386.02	
3,700.00	15.01	135.38	-1,625.20	3,601.41	531.76 S	555.87 E	1,936,952.48	6,396,965.62	0.00	-398.80	
3,800.00	15.01	135.38	-1,721.79	3,698.00	550.19 S	574.05 E	1,936,934.05	6,396,983.81	0.00	-411.58	
3,900.00	15.01	135.38	-1,818.38	3,794.59	568.62 S	592.24 E	1,936,915.62	6,397,001.99	0.00	-424.36	
4,000.00	15.01	135.38	-1,914.97	3,891.18	587.05 S	610.42 E	1,936,897.19	6,397,020.18	0.00	-437.14	
4,089.15	15.01	135.38	-2,001.09	3,977.30	603.48 S	626.63 E	1,936,880.76	6,397,036.39	0.00	-448.53	Start Drop -2.00
4,100.00	14.79	135.38	-2,011.57	3,987.78	605.46 S	628.59 E	1,936,878.77	6,397,038.35	2.00	-449.91	
4,200.00	12.79	135.38	-2,108.68	4,084.89	622.43 S	645.33 E	1,936,861.81	6,397,055.09	2.00	-461.67	
4,300.00	10.79	135.38	-2,206.57	4,182.78	636.97 S	659.68 E	1,936,847.27	6,397,069.44	2.00	-471.75	
4,400.00	8.79	135.38	-2,305.11	4,281.32	649.07 S	671.62 E	1,936,835.17	6,397,081.38	2.00	-480.14	
4,500.00	6.79	135.38	-2,404.18	4,380.39	658.71 S	681.14 E	1,936,825.52	6,397,090.89	2.00	-486.83	
4,600.00	4.79	135.38	-2,503.66	4,479.87	665.89 S	688.22 E	1,936,818.35	6,397,097.98	2.00	-491.81	
4,700.00	2.79	135.38	-2,603.44	4,579.65	670.59 S	692.86 E	1,936,813.64	6,397,102.62	2.00	-495.07	
4,800.00	0.79	135.38	-2,703.39	4,679.60	672.82 S	695.05 E	1,936,811.42	6,397,104.81	2.00	-496.61	
4,839.41	0.00	0.00	-2,742.79	4,719.00	673.01 S	695.24 E	1,936,811.23	6,397,105.00	2.00	-496.74	Start 495.00 hold at 4839.41 MD
4,900.00	0.00	0.00	-2,803.38	4,779.59	673.01 S	695.24 E	1,936,811.23	6,397,105.00	0.00	-496.74	
5,000.00	0.00	0.00	-2,903.38	4,879.59	673.01 S	695.24 E	1,936,811.23	6,397,105.00	0.00	-496.74	
5,100.00	0.00	0.00	-3,003.38	4,979.59	673.01 S	695.24 E	1,936,811.23	6,397,105.00	0.00	-496.74	
5,200.00	0.00	0.00	-3,103.38	5,079.59	673.01 S	695.24 E	1,936,811.23	6,397,105.00	0.00	-496.74	
5,300.00	0.00	0.00	-3,203.38	5,179.59	673.01 S	695.24 E	1,936,811.23	6,397,105.00	0.00	-496.74	
5,334.41	0.00	0.00	-3,237.79	5,214.00	673.01 S	695.24 E	1,936,811.23	6,397,105.00	0.00	-496.74	Start Build 3.00 - 50C TO
5,400.00	1.97	267.00	-3,303.37	5,279.58	673.07 S	694.12 E	1,936,811.17	6,397,103.88	3.00	-495.64	
5,500.00	4.97	267.00	-3,403.18	5,379.39	673.38 S	688.08 E	1,936,810.85	6,397,097.84	3.00	-489.72	
5,600.00	7.97	267.00	-3,502.53	5,478.74	673.97 S	676.83 E	1,936,810.26	6,397,086.59	3.00	-478.71	
5,700.00	10.97	267.00	-3,601.16	5,577.37	674.83 S	660.40 E	1,936,809.40	6,397,070.16	3.00	-462.62	
5,800.00	13.97	267.00	-3,698.79	5,675.00	675.96 S	638.85 E	1,936,808.27	6,397,048.61	3.00	-441.51	
5,900.00	16.97	267.00	-3,795.15	5,771.36	677.36 S	612.22 E	1,936,806.88	6,397,021.98	3.00	-415.43	
6,000.00	19.97	267.00	-3,889.99	5,866.20	679.02 S	580.59 E	1,936,805.22	6,396,990.35	3.00	-384.46	
6,100.00	22.97	267.00	-3,983.04	5,959.25	680.93 S	544.04 E	1,936,803.31	6,396,953.80	3.00	-348.67	
6,200.00	25.97	267.00	-4,074.05	6,050.26	683.10 S	502.69 E	1,936,801.14	6,396,912.44	3.00	-308.17	
6,300.00	28.97	267.00	-4,162.77	6,138.98	685.51 S	456.63 E	1,936,798.72	6,396,866.39	3.00	-263.06	
6,400.00	31.97	267.00	-4,248.95	6,225.16	688.17 S	406.00 E	1,936,796.07	6,396,815.76	3.00	-213.48	
6,500.00	34.97	267.00	-4,332.36	6,308.57	691.05 S	350.93 E	1,936,793.19	6,396,760.69	3.00	-159.55	
6,534.41	36.00	267.00	-4,360.38	6,336.59	692.10 S	330.99 E	1,936,792.14	6,396,740.75	3.00	-140.02	Start DLS 3.00 TFO 24.62
6,600.00	37.80	268.34	-4,412.83	6,389.04	693.69 S	291.64 E	1,936,790.55	6,396,701.40	3.00	-101.61	
6,700.00	40.56	270.18	-4,490.34	6,466.55	694.48 S	228.49 E	1,936,789.76	6,396,638.24	3.00	-40.41	
6,800.00	43.35	271.82	-4,564.70	6,540.91	693.28 S	161.65 E	1,936,790.95	6,396,571.41	3.00	23.83	
6,900.00	46.16	273.31	-4,635.71	6,611.92	690.11 S	91.32 E	1,936,794.13	6,396,501.08	3.00	90.92	

## Plan Report for \_50C - Plan #4 (14-Jun-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft) Easting (ft)	Map Coordinates Northing (ft) Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
7,000.00	48.99	274.66	-4,703.16	6,679.37	684.97 S 17.69 E	1,936,799.27 6,396,427.45	3.00	160.69	
7,100.00	51.84	275.89	-4,766.87	6,743.08	677.87 S 59.04 W	1,936,806.37 6,396,350.72	3.00	232.95	
7,200.00	54.69	277.04	-4,826.68	6,802.89	668.83 S 138.66 W	1,936,815.41 6,396,271.10	3.00	307.50	
7,249.21	56.10	277.57	-4,854.63	6,830.68	663.68 S 178.84 W	1,936,820.56 6,396,230.92	3.00	344.96	Start 21.16 hold at 7249.21 MD
7,270.38	56.10	277.57	-4,866.43	6,842.64	661.37 S 196.25 W	1,936,822.87 6,396,213.51	3.00	361.18	Start DLS 3.00 TFO -10.77
7,300.00	56.98	277.37	-4,882.76	6,858.97	658.15 S 220.76 W	1,936,826.08 6,396,189.00	3.00	384.01	
7,400.00	59.93	276.73	-4,935.08	6,911.29	647.70 S 305.32 W	1,936,836.54 6,396,104.44	3.00	462.96	
7,500.00	62.88	276.13	-4,982.94	6,959.15	637.88 S 392.56 W	1,936,846.36 6,396,017.20	3.00	544.66	
7,600.00	65.83	275.55	-5,026.21	7,002.42	628.71 S 482.23 W	1,936,855.53 6,395,927.52	3.00	628.88	
7,700.00	68.79	275.01	-5,064.78	7,040.99	620.22 S 574.10 W	1,936,864.01 6,395,835.66	3.00	715.40	
7,800.00	71.75	274.48	-5,098.53	7,074.74	612.44 S 667.89 W	1,936,871.79 6,395,741.87	3.00	803.96	
7,900.00	74.71	273.97	-5,127.38	7,103.59	605.39 S 763.37 W	1,936,878.85 6,395,646.39	3.00	894.33	
8,000.00	77.67	273.48	-5,151.24	7,127.45	599.08 S 860.26 W	1,936,885.16 6,395,549.50	3.00	986.27	
8,100.00	80.64	273.00	-5,170.06	7,146.27	593.53 S 958.31 W	1,936,890.71 6,395,451.45	3.00	1,079.51	
8,146.04	82.00	272.78	-5,177.00	7,153.21	591.24 S 1,003.76 W	1,936,893.00 6,395,406.00	3.00	1,122.81	Start 100.00 hold at 8146.04 MD - 50C T1
8,200.00	82.00	272.78	-5,184.51	7,160.72	588.65 S 1,057.13 W	1,936,895.59 6,395,352.62	0.00	1,173.68	
8,246.04	82.00	272.78	-5,190.92	7,167.13	586.44 S 1,102.67 W	1,936,897.80 6,395,307.09	0.00	1,217.08	Start DLS 3.00 TFO -179.73
8,246.63	81.98	272.78	-5,191.00	7,167.21	586.41 S 1,103.26 W	1,936,897.83 6,395,306.50	3.00	1,217.64	50C T2
8,248.47	81.93	272.78	-5,191.26	7,167.47	586.32 S 1,105.08 W	1,936,897.92 6,395,304.68	3.00	1,219.38	Start 42.91 hold at 8248.47 MD
8,291.38	81.93	272.78	-5,197.28	7,173.49	584.26 S 1,147.51 W	1,936,899.98 6,395,262.25	0.00	1,259.82	Start DLS 2.50 TFO 179.96
8,300.00	81.71	272.78	-5,198.51	7,174.72	583.85 S 1,156.03 W	1,936,900.39 6,395,253.73	2.50	1,267.95	
8,354.46	80.35	272.78	-5,207.00	7,183.21	581.24 S 1,209.76 W	1,936,903.00 6,395,200.00	2.50	1,319.16	Start DLS 2.50 TFO 163.44 - 50C T3
8,366.02	80.07	272.86	-5,208.97	7,185.18	580.68 S 1,221.14 W	1,936,903.56 6,395,188.62	2.50	1,330.00	Start 377.93 hold at 8366.02 MD
8,400.00	80.07	272.86	-5,214.82	7,191.03	579.00 S 1,254.57 W	1,936,905.23 6,395,155.19	0.00	1,361.85	
8,459.03	80.07	272.86	-5,225.00	7,201.21	576.10 S 1,312.64 W	1,936,908.14 6,395,097.12	0.00	1,417.18	50C T4
8,500.00	80.07	272.86	-5,232.06	7,208.27	574.08 S 1,352.95 W	1,936,910.15 6,395,056.81	0.00	1,455.58	
8,557.64	80.07	272.86	-5,242.00	7,218.21	571.25 S 1,409.66 W	1,936,912.99 6,395,000.10	0.00	1,509.61	50C T5
8,600.00	80.07	272.86	-5,249.30	7,225.51	569.16 S 1,451.33 W	1,936,915.08 6,394,958.43	0.00	1,549.31	
8,662.05	80.07	272.86	-5,260.00	7,236.21	566.11 S 1,512.38 W	1,936,918.13 6,394,897.38	0.00	1,607.48	50C T6
8,700.00	80.07	272.86	-5,266.54	7,242.75	564.24 S 1,549.71 W	1,936,920.00 6,394,860.05	0.00	1,643.04	
8,743.95	80.07	272.86	-5,274.12	7,250.33	562.08 S 1,592.94 W	1,936,922.16 6,394,816.81	0.00	1,684.24	Start DLS 2.50 TFO -0.16
8,761.03	80.50	272.86	-5,277.00	7,253.21	561.24 S 1,609.76 W	1,936,923.00 6,394,800.00	2.50	1,700.26	Start 30.00 hold at 8761.03 MD - 50C T7
8,791.03	80.50	272.86	-5,281.95	7,258.16	559.76 S 1,639.31 W	1,936,924.48 6,394,770.45	0.00	1,728.41	Start DLS 2.50 TFO 0.02
8,800.00	80.72	272.86	-5,283.41	7,259.62	559.32 S 1,648.15 W	1,936,924.92 6,394,761.61	2.50	1,736.83	
8,865.14	82.35	272.86	-5,293.00	7,269.21	556.10 S 1,712.50 W	1,936,928.14 6,394,697.26	2.50	1,798.15	50C T8
8,894.39	83.08	272.86	-5,296.71	7,272.92	554.65 S 1,741.48 W	1,936,929.59 6,394,668.28	2.50	1,825.75	Start 65.80 hold at 8894.39 MD
8,900.00	83.08	272.86	-5,297.38	7,273.59	554.37 S 1,747.04 W	1,936,929.86 6,394,662.72	0.00	1,831.05	
8,960.19	83.08	272.86	-5,304.63	7,280.84	551.39 S 1,806.72 W	1,936,932.85 6,394,603.04	0.00	1,887.91	Start DLS 2.00 TFO -113.17

## Plan Report for \_50C - Plan #4 (14-Jun-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
8,963.26	83.06	272.81	-5,305.00	7,281.21	551.24 S	1,809.76 W	1,936,933.00	6,394,600.00	2.00	1,890.81	Start DLS 2.00 TFO -180.00 - 50C T9
8,965.19	83.02	272.81	-5,305.23	7,281.44	551.14 S	1,811.67 W	1,936,933.09	6,394,598.09	2.00	1,892.63	Start 203.84 hold at 8965.19 MD
9,000.00	83.02	272.81	-5,309.46	7,285.67	549.45 S	1,846.19 W	1,936,934.79	6,394,563.57	0.00	1,925.52	
9,062.03	83.02	272.81	-5,317.00	7,293.21	546.44 S	1,907.68 W	1,936,937.80	6,394,502.08	0.00	1,984.13	50C T10
9,100.00	83.02	272.81	-5,321.61	7,297.82	544.59 S	1,945.33 W	1,936,939.65	6,394,464.43	0.00	2,020.00	
9,169.03	83.02	272.81	-5,330.00	7,306.21	541.24 S	2,013.76 W	1,936,943.00	6,394,396.00	0.00	2,085.22	TD at 9169.03 - 50C T11

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
22.50	22.50	0.00	0.00	GL
475.00	475.00	0.00	0.00	Start Build 3.00
975.00	969.31	-39.16	51.97	Start 300.00 hold at 975.00 MD
1,275.00	1,259.09	-85.89	113.98	Start DLS 3.00 TFO 93.92
1,347.26	1,328.89	-98.18	128.02	Start 2741.89 hold at 1347.26 MD
4,089.15	3,977.30	-603.48	626.63	Start Drop -2.00
4,839.41	4,719.00	-673.01	695.24	Start 495.00 hold at 4839.41 MD
5,334.41	5,214.00	-673.01	695.24	Start Build 3.00
6,534.41	6,336.59	-692.10	330.99	Start DLS 3.00 TFO 24.62
7,249.21	6,830.84	-663.68	-178.84	Start 21.16 hold at 7249.21 MD
7,270.38	6,842.64	-661.37	-196.25	Start DLS 3.00 TFO -10.77
8,146.04	7,153.21	-591.24	-1,003.76	Start 100.00 hold at 8146.04 MD
8,246.04	7,167.13	-586.44	-1,102.67	Start DLS 3.00 TFO -179.73
8,248.47	7,167.47	-586.32	-1,105.08	Start 42.91 hold at 8248.47 MD
8,291.38	7,173.49	-584.26	-1,147.51	Start DLS 2.50 TFO 179.96
8,354.46	7,183.21	-581.24	-1,209.76	Start DLS 2.50 TFO 163.44
8,366.02	7,185.18	-580.68	-1,221.14	Start 377.93 hold at 8366.02 MD
8,743.95	7,250.33	-562.08	-1,592.94	Start DLS 2.50 TFO -0.16
8,761.03	7,253.21	-561.24	-1,609.76	Start 30.00 hold at 8761.03 MD
8,791.03	7,258.16	-559.76	-1,639.31	Start DLS 2.50 TFO 0.02
8,894.39	7,272.92	-554.65	-1,741.48	Start 65.80 hold at 8894.39 MD
8,960.19	7,280.84	-551.39	-1,806.72	Start DLS 2.00 TFO -113.17
8,963.26	7,281.21	-551.24	-1,809.76	Start DLS 2.00 TFO -180.00
8,965.19	7,281.44	-551.14	-1,811.67	Start 203.84 hold at 8965.19 MD
9,169.03	7,306.21	-541.24	-2,013.76	TD at 9169.03

# HALLIBURTON

## Plan Report for \_50C - Plan #4 (14-Jun-10)

### Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	254.96	Slot	-0.02	0.00	-1.00

### Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	9,168.99	Plan #4 (14-Jun-10)	MWD ISCWSA

# HALLIBURTON

Southern California Gas  
Aliso Canyon

## Plan Report for \_50C - Plan #4 (14-Jun-10)

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
50C T0 - hit/miss target - Shape - plan hits target - Point	0.00	360.00	5,214.00	-673.01	695.24	1,936,811.23	6,397,105.00	34.3132100	-118.5449678
50C T11 - plan hits target - Point	0.00	0.00	7,306.21	-541.24	-2,013.76	1,936,943.00	6,394,396.00	34.3135314	-118.5539412
50C T8 - plan hits target - Point	0.00	360.00	7,269.21	-556.24	-1,709.76	1,936,928.00	6,394,700.00	34.3134948	-118.5529342
50C T10 - plan hits target - Point	0.00	0.00	7,293.21	-546.24	-1,909.76	1,936,938.00	6,394,500.00	34.3135192	-118.5535967
50C T2 - plan hits target - Point	0.00	0.00	7,167.21	-586.24	-1,109.76	1,936,898.00	6,395,300.00	34.3134214	-118.5509467
50C T5 - plan hits target - Point	0.00	0.00	7,218.21	-571.24	-1,409.76	1,936,913.00	6,395,000.00	34.3134581	-118.5519405
50C T3 - plan hits target - Point	0.00	0.00	7,183.21	-581.24	-1,209.76	1,936,903.00	6,395,200.00	34.3134336	-118.5512780
50C T9 - plan hits target - Point	0.00	0.00	7,281.21	-551.24	-1,809.76	1,936,933.00	6,394,600.00	34.3135070	-118.5532654
50C T7 - plan hits target - Point	0.00	360.00	7,253.21	-561.24	-1,609.76	1,936,923.00	6,394,800.00	34.3134826	-118.5526030
50C T1 - plan hits target - Point	0.00	360.00	7,153.21	-591.24	-1,003.76	1,936,893.00	6,395,406.00	34.3134093	-118.5505956
50C T4 - plan hits target - Point	0.00	360.00	7,201.21	-576.24	-1,309.76	1,936,908.00	6,395,100.00	34.3134459	-118.5516092
50C T6 - plan hits target - Point	0.00	0.00	7,236.21	-566.24	-1,509.76	1,936,918.00	6,394,900.00	34.3134703	-118.5522717

# HALLIBURTON

Southern California Gas  
Aliso Canyon

Plan Report for \_50C - Plan #4 (14-Jun-10)

- Point

JUN 16 2010

## North Reference Sheet for Porter - \_50C - Wellbore #1

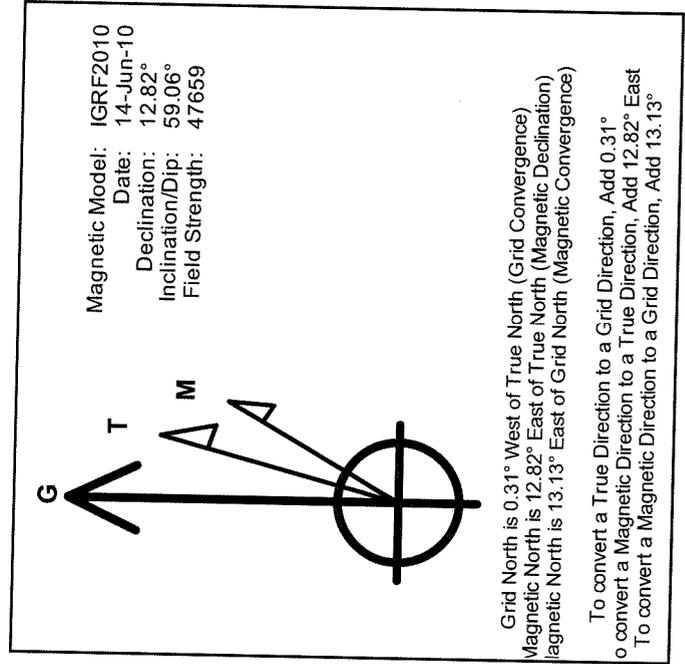
All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference. Vertical Depths are relative to rkb2 @ 1976.21ft (E587). Northing and Easting are relative to \_50C

Coordinate System is US State Plane 1983, California Zone V using datum North American Datum 1983, ellipsoid GRS 1980  
Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -118.0000000°, Longitude Origin:0.0000000°, Latitude Origin:35.4666667°  
False Easting: 6,561,666.67ft, False Northing: 1,640,416.67ft, Scale Reduction: 0.99995090

Grid Coordinates of Well: 1,937,484.22 ft N, 6,396,409.76 ft E  
Geographical Coordinates of Well: 34° 18' 54.18" N, 118° 32' 50.22" W  
Grid Convergence at Surface is: -0.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 9,169.03ft the Bottom Hole Displacement is 2,085.22ft in the Direction of 254.96° (Grid).  
Magnetic Convergence at surface is: -13.13° (14 June 2010, , IGRF2010)



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