State of California • Natural Resources Agency
Department of Conservation
Division of Oil, Gas, and Geothermal Resources
801 K Street • MS 18-05
Sacramento, CA 95814
(916) 445-9686 • FAX (916) 319-9533

Edmund G. Brown Jr., *Governor*
Kenneth A. Harris Jr., *State Oil and Gas Supervisor*

January 3, 2017

SENT VIA EMAIL

Mr. Rodger Schwecke
Vice President
Transmission and Storage
Southern California Gas Company
RSchwecke@semprautilities.com

FINDING THAT WELL MISSION ADRIAN 1A (API NO. 03721891) HAS PASSED THE FIRST BATTERY OF TESTS AND WAS TAKEN OUT OF SERVICE AND ISOLATED FROM THE UNDERGROUND GAS STORAGE RESERVOIR

Dear Mr. Schwecke:

I am writing regarding the safety review results of one of the 114 wells at the Aliso Canyon gas storage facility (Facility). Each of the wells are subject to the comprehensive safety review that State Oil and Gas Supervisor Order 1109 and SB 380[1] require to be completed before the Division of Oil, Gas, and Geothermal Resources (Division) may authorize resumption of injection operations at the Facility. Order 1109 describes two batteries of well tests. To complete the review, each well must (1) pass both batteries of tests, (2) pass the first battery of tests and be taken out of service and isolated from the underground gas storage reservoir, or (3) be properly plugged and abandoned.

The first battery of tests assesses the casing using temperature and noise logs to ensure that there is no migration of fluids near the wellbore. If a well passes those tests, it may (1) undergo the second battery of tests for potential approval to use for injection if and when injections may resume, or (2) be taken out of service and isolated from the underground gas storage reservoir as specified in Steps 4b through 7b of the Safety Review Testing Regime of Order 1109 (Testing Regime). The Division posts the current status and testing results for each of the 114 wells on its website at http://www.conservation.ca.gov/dog/AlisoCanyon/Pages/Well-Detail.aspx.

After receiving and evaluating all test results and other data concerning the well, I find for purposes of Order 1109 and SB 380, that well Mission Adrian 1A (API No. 03721891) has completed the first battery of the Testing Regime and was taken out of service and, on October 5, 2016, the well was isolated from the underground gas storage reservoir as specified in Step 6b of the Testing Regime. Monitoring and testing of the well must continue as required by Order 1109 and any applicable law. If the well does not pass the second battery of tests within one year of being isolated from the reservoir, then the well must be plugged and abandoned in accordance with Public Resources Code section 3208.

Sincerely,

Kenneth A. Harris Jr.,
State Oil and Gas Supervisor

[1] Senate Bill 380 (Pavley, Chapter 14, Statutes of 2016) codified in part at Public Resources Code section 3217.

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

No. T **216-0509**

REPORT ON OPERATIONS

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

Roberto (Bob) Dentici
Southern California Gas Company (S4700)
555 West 5th Street, ML 17G4
Los Angeles, CA 90013

Ventura, California
October 27, 2016

Your operations at well **"Mission Adrian" 1A**, A.P.I. No. **037-21891**, Sec. **34**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **10/3/2016**, by **Randall Morlan**, a representative of the supervisor.

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

DECISION:

APPROVED

RM/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

KG106.

T 216-0509
#16,1

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

Casing and Tubing Pressure Test

Operator: So. Cal. Gas Co. Well Designation: Mission Adrian 1A

Sec. 34, T. 03N, R. 16W, S. B. B.M. API No. 037-21891 Field: Aliso Canyon

County. Los Angeles Witnessed on: 3-Oct-2016. Randall Morlan, representative

of the supervisor, was present from 1330 to 1500.

Also Present were Dave Driskill - WSM

Casing Record of the Well:

See NOI

The operations were performed for the purpose of Pressure testing 2-7/8" tubing and 8-5/8" casing

Pressure Test of the Casing

Packer/ Bridge Plug at Packer at 7100'
Casing Pressured with 8.5 #/gal KCl polymer
Casing Pressure Start PSI: 1092
Casing Pressure End PSI: 1098
Pressure Held 60 Min. Total ~~drop~~ increase in Pressure 6 psi 5.5 %.

Well Type Gas Storage
Volume
Start Time: 1340
End Time: 1440

Test Result: X Good ____ Not Good

Pressure Test of the Tubing

Packer/ Bridge Plug at
Tubing Pressured with
Tubing Pressure Start PSI:
Tubing Pressure End PSI:
Pressure Held ____ Min. Total drop in Pressure ____ psi ____ %.

Well Type
Volume
Start Time:
End Time:

Test Result: ____ Good ____ Not Good

Remarks: Tubing Plug at 7089', Sliding sleeve in open position at 7055'

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Mission Adrian" 1A**

API No. **03721891** SE **34** T: **3N** R.: **16W** , **SB** B. and M.

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

Type of Notice: **Rework** **Date** **8/9/2016** **Report Number:** **P216-0193**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

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

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

ENGINEER'S CHECK LIST

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

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

CLERICAL CHECK LIST

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

REMARKS

RECORDS SCANNED: _____ RECORDS APPROVED: _____
(Date) (Date and Engineer)

Modfied OGD2

AOR Datbase _____

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

No. P 216-0193

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

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage
Plugback and Suspend for One Year
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Ventura, California
August 18, 2016

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

Your proposal to **Rework** well **"Mission Adrian" 1A**, A.P.I. No. **037-21891**, Section **34**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **8/9/2016**, received **8/10/2016** has been examined in conjunction with records filed in this office. (Lat: **34.305328** Long: **-118.542964** 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 **I** **Note: work to be completed without the removal of the injection assembly.**
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. A pressure test is conducted to demonstrate the mechanical integrity of the **8 5/8"** casing.
4. This well is to be taken out of service and isolated from the storage reservoir. The well shall be re-evaluated or abandoned within 1 year of the completion of the pressure testing pursuant to Order #1109 and its amendments.
5. In all other respects, the provisions of Division Order #1109 and its amendments shall remain in effect.
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 pressure test of the **8 5/8"** casing and tubing plug.

Continued on Next Page

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

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

Engineer Kris Gustafson
Office (805) 654-4761

By _____
Patricia A. Abel, *District Deputy*

KG/kg

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

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:

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

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

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

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

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

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

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

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

P216-0193

NOTICE OF INTENTION TO REWORK / REDRILL WELL

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well Mission Adrian 1A, API No. 037-21891,

Sec. 34, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

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

See attached wellbore schematic and completed work summary.

The total depth is: 7645 feet. The effective depth is: 7555 feet.

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

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

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

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

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

The SCGC plans to take this well out of operation and isolate from the gas storage reservoir as per the First Amended Safety Review Testing Regime: Steps 4b-7b.
5b - Set plug set in No-Go nipple at 7089' and open SSD at 7055'.
6b - Circulate well with 8.5 ppg KCL brine down tbg. through SSD at 7055' and back to surface to completely fill well.
7b - With casing valve closed, pressure-up on tubing to 1000 psi. for 1 hour (will test csg., packer and tubing plug all at same time).

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

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

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

Name of Operator			
Southern California Gas Company			
Address P. O. Box 2300		City/State Chatsworth	Zip Code 91313-2300
Name of Person Filing Notice A.J. Alshammasi	Telephone Number: (818) 700-3887	Signature	Date 8/9/16
Individual to contact for technical questions: Mike Giuliani	Telephone Number: (805) 290-2074	E-Mail Address: mike.giuliani@interactprojects.com	

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

Rec'd 08-10-16 DOGGR Ventura.

Well
Mission Adrian 1A RD2

API #: 04-037-21891-02
Sec 34, T3N, R16W

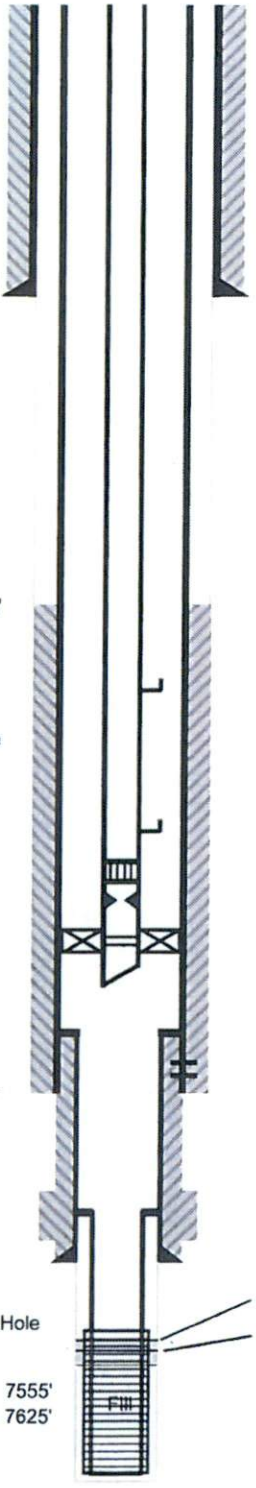
Operator: So. California Gas Co.

Lease: Mission Adrian
Field: Aliso Canyon
Status: Idle Gas Storage
BFW:
USDW:

Ground Elevation: 1725' asl
Datum to Ground: 21' KB

Spud Date: 10/28/1979
Redrill (RD2) Kick-off Date: 6/6/2006
Completion Date: 8/7/2006

Junk: None



13-3/8" TOC Surface

17-1/2" Hole

Surface Casing
13-3/8", 54.5#, K-55
0' - 1000'

CMT'D w/ 800 CF + 250 SKS,
+ 40 SKS Top Job

1000'

8-5/8" ETOC 3313'

12-1/4" Hole

Production Casing
8-5/8"
0' - 21' 40#, N-80
21' - 5504' 36#, N-80
5504' - 7189' 40#, N-80

CMT'D w/ 1853 CF
(from 7379 in OH)

(Top of Window) 7189'

Scab Liner
7", 26#
7154' - 7385'

7321'

CMT'D w/ 14.84 BBLS,
CMT Returns @ TOL 7385'

Liner
5-1/2" 7321' - 7497' 15.5#
4-1/2" 7497' - 7640'**

6-1/8" Hole

Top of Collapsed ESS (8/7/2006) 7555'
Obstruction in Liner (6/21/2006) 7572' - 7625'

7640'

TD 7645'
TVD (7318')
Directionally Drilled: Yes (TD is 628' W, 1588' N of Surf)

Tubing (8/7/2006)
2-7/8"
0' - 4386' 6.4#, L-80
4386' - 4400' 6.4#, N-80
4400' - 7011' 6.4#, L-80
7011' - 7025' 6.4#, N-80
7025' - 7091' 6.4#, L-80
7091' - 7106' 6.4#, N-80

4393' GLM Mandrel

7017' GLM Mandrel

7055' HES "XD" Sliding Sleeve (Opens Down)
7089' HES On / Off Tool (w/ "XN" No-Go Nipple)

7100' Halliburton G-6 PCKR (6/22/2006)

7106' Bell Guide

7154' TOC & TOC
7184' - 7185' Eight (8) 1/2" Holes (11/17/1984)*
7185' - 7186' Four (4) 1/2" Holes (11/16/1984)*

(7189' - 7300') 7-5/8" Hole

(7300' - 7380') 10" Hole

(7380' - 7385') 7-5/8" Hole

7523' - 7528' CMT Plug***

7528' - 7533' CMT Plug****

7533' Tagged (10/10/2007)

Liner Perfs:
7497' - 7640' ESS Sand Screen**

Wellbore History
Orig. Hole (OH) TD @ 7640'
(See Mission Adrian 1A OH)
RD1 KOP @ 7189'
TD @ 7645'
(See Mission Adrian 1A RD1)
RD2 KOP @ 7189'
TD @ 7645'

Notes
*25 SKS CMT SQZ'D, 11/191984
**"Did not open last 8' of ESS Liner."
***Vol. Not Reported, 10/10/2007
****Vol. Not Reported, TOC Est. per well File, 10/10/07

Top of Zone Markers	md (tvd)
A1	4103' (4074')
UP	5179' (5077')
LP	5585' (5440')
UDA1	6104' (5904')
LDA	6781' (6522')
MP	7115' (6829')
S1	7320' (7016')
S4	7407' (7096')
S8	7500' (7180')
S14	7627' (7296')
(Markers of Orig. Hole Completion)	

Prepared by: CAM ()

InterAct

Rec'd 08-10-16 DOGGR Ventura.

Completed Work Summary - Mission Adrian 1A		
Step	Work Completed	Date
4b	CBL shows TOC at 3838' and good bond from well above packer at 7100' across MP to bottom of log at 7240'.	1/31/2006
5b	Packer set at 7100'.	6/22/2006

Casing Pressure Test Safety Check (1000 psi)

Well	Packer Depth MD/TVD	Casing Size/Grade/Weight	Depth MD	Burst PSI	85% of Burst PSI	Pressure at Depth w/1000 psi Surface Pressure	Press < 85% of Burst
Mission Adrian 1A	7100' / 6814'	8-5/8", 40#, N-80	21	7300	6205	1009	Yes
		8-5/8", 36#, N-80	5504	6490	5517	3433	Yes
		8-5/8", 40#, N-80	7100	7300	6205	4138	Yes

OPERATOR SoCal GAS
WELL NO. "MISSION ADRIAN" 1A
MAP 254

A.P.I. 037-21891
SECTION 34, T. 3 N, R. 16 W

SUPP

INTENTION	REDRILL	REWORK				
NOTICE DATED	05/30/2006	09/26/07				
P-REPORT NUMBER	P206-111	P257-246				
CHECKED BY/DATE						
MAP LETTER DATED						
SYMBOL	D/C	N/C				

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	05/30/06		09/28/07									
HISTORY	3/16/10	✓	10/17/07									
SUMMARY												
E-LOG												
MUD LOG												
DIPMETER												
DIRECTIONAL	7/16/07											
CORE/SWS												
CBL	12/22/06											
ULTRASONIC IMAGER GAMMA RAY - CCL	12/22/06											
A 1 PG	3/16/10											
9												
CBL												
CCL												
			10/17/07									

ENGINEERING CHECK

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

FINAL LETTER OK
MAILED
RELEASED BOND

INJECTION BOOK
IDLE WELL LIST
SURFACE INSP. CARD
OK TO RELEASE FROM CONFIDENTIAL
ABANDONED-REMOVED FROM E.D.P.

REMARKS:

OPERATOR So. Cal. Gas
WELL & NO. Ezu MA-1A
MAP 254

	(1)	( )			( )	SUPP
OPERATION	[illegible]	ALTER CASING	Remark	EVALUATE CONDITION OF WELL	DRILL A MULTILATERAL IN	REDRILL
NOTICE DATED	3-29-[illegible]	9-28-84	12-12-89	01/18/2006	04/03/2006	05/12/2006
REPORT NUMBER	27[illegible]-6[illegible]	284-380	289-472	P206-10	P206-92	P206-103
CHECKED BY/DATE						
MAP LETTER DATED	*	N/C	NC	D/C		
SYMBOL	3-1-80					

	REC'D	USED	REC'D	USED	REC'D	USED	REC'D	USED	REC'D	USED	REC'D	USED
NOTICE	4-11-79		10-23-84		12/14/89		01/18/06		04/07/06		05/12/06	
HISTORY	[illegible]		[illegible]		5/18/90		4/3/06		3/16/07		—	
SUMMARY	[illegible]											
IES/ELECTRIC LOG	[illegible]											
DIRECTIONAL SURV	[illegible]											
CORE/SWS DESCRIP												
OTHER	[illegible]		CALIPER 5-6-85 CALIPER 5-6-85		Vert log ☑ 1-5-90 [illegible] ☑							
RECORDS COMPLETE	[illegible]		BW		DH							

ENGINEERING CHECK

L-REPORTS	✓
OPERATOR'S NAME	✓
WELL DESIGNATION	✓
LOCATION & ELEV	
SIGNATURE	
SURFACE INSPECTION	
FINAL LETTER OK	

CLERICAL CHECK

POSTED TO 121 ______ 150 MAILED ______ FINAL LETTER MAILED ______

RELEASED BOND ______

REMARKS: ______

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

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Mission Adrian 1 A
A.P.I. No. 037-21891

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec. 34, T3N, R16W S.B.B.&M.

Title: ENGINEER
(President, Secretary, or Agent)

Date: 10/15/2007

Signature: Richard Jacobson
(Person Submitting Report)

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

Telephone Number: 818 7013251

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
10/10/2007	Moved in Halliburton Energy Services and rigged up with mast and 5000psi lubricator. Run 1) Picked up 2" dump bailer and made up feeler run to tag at 7533'.Ran collar log. Run 2) Loaded dump bailer and placed cement plug from 7533' to theo top at 7528'. Run 3) Loaded dump bailer and placed cement plug from 7528' to 7523'. Tag and check collars. Rig down

OCT 17 2007

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

No. P 207-246

PERMIT TO CONDUCT WELL OPERATIONS

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

Gas Storage

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

Ventura, California
Septemeber 28, 2007

Your _____ proposal to rework well "Mission Adrian" 1A,
A.P.I. No. 037-21891 Sec. 34, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon Frew pool
Los Angeles County, dated 09/26/07 received 09/28/07 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Wire line operations are conducted through at least a 5M lubricator.
2. The proposed sand/cement plug does not fulfill the abandonment of the lower portion of the well at without further considerations.
3. This office shall be consulted before initiating any changes or additions to this proposed operation or if operations are to be suspended.

Engineer Steven A. Fields

Phone (805) 654-4761

Hal Bopp, State Oil and Gas Supervisor

By _____ Deputy Supervisor

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

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

OG111 (6/96/GSR/5M) Printed on recycled paper.

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

NOTICE OF INTENTION TO REWORK / REDRILL WELL P207-246

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

FOR DIVISION USE ONLY			
	Forms		EDP Well
Bond	OGD114	OGD121	File
1000 GW	✓	✓	

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

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

rework *(Circle one)* well Mission Adrian 1A *(Well designation)* API No. 037-21891

Sec. 34 T. 3N R. 16W S.B.B.&M. Aliso Canyon Field

Los Angeles County.

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
0'-1000' 13-3/8" 54.5# K-55 casing cemented with 1134cf in 17" hole.
0'-7379' 8-5/8" 36&40# N-80 Buttress casing cemented with 1853cf in 12-1/4" hole Top of window at 7189'.
7154' – 7385' 7" 26# FJ casing cemented
7321' – 7497' 5-1/2" 15.5# blank
7497' – 7640' 4.5" Weatherford ESS expandable sand screen (4.75" ID)

Top of S-4 at 7410' (7089'TVD)

2. The total depth is: 7640' feet. The effective depth is: 7630' feet.

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

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

5. Last produced: 12-05 *(Date)* _____ *(Oil, B/D)* _____ *(Water, B/D)* Storage *(Gas, Mcf/D)*

(or)

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

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

The proposed work is as follows: *(A complete program is preferred and may be attached.)*
Place cement plug on top of sand fill in well at 7533' to exclude sand production.
See attached program.

SEP 28 2007

_____ *(Proposed bottom-hole coordinates)* _____ *(Estimated true vertical depth)*

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

Name of Operator	Telephone Number:	
Southern California Gas Company	818 701-3251	
Address: 9400 Oakdale Ave	City: Chatsworth	Zip Code: 91313
Name of Person Filing Notice: Richard Jackson	Signature: Richard Jackson	Date: 9/26/2007

File In Duplicate

OG107 (7/97/GSR/5M)

Mission Adrian 1A

Program to Place Cement Plug through tubing

Operator: Southern California Gas Company

Field: Aliso Canyon Gas Storage Field

Well: Mission-Adrian Fee 1A

Date: 9-26-2007
Revisions:

API Number: 037-00691

Work Order Authorization Number:

Objective: Place a cement plug through tubing with dump bailer to exclude sand production from failed connection in liner.

WELL STATUS

Current Status:	Well is currently out of service
Elevation:	All depths based on original KB, which is 21.00' above tubing hanger.
Max hole angle:	27° @5817'. - S4 is at 7410' drilled depth (7098' TVD).
Effective clean out dept	7640' bottom of liner
Casing Record:	0' – 1000' 13-3/8", 54.5#, K-55 Buttress casing cemented w/1134cf. 0' – 21' 8-5/8", 40#, N-80 Buttress casing 21'- 5504' 8-5/8", 36#, N-80 Buttress casing 5504-7379' 8-5/8", 40#, N-80 Buttress casing cemented in 12-1/4" hole with 1835cf 7154' – 7385' 7" 26# cemented flush joint liner
Liner	7321' – 7407 5-1/2" Blank 7407' – 7640' Weatherford ESS expandable sand screen Parted connection/damage at 7600' approximate. Top of fill at 7533'
Tubing Record:	No tubing in well.

Well Kill Requirements:

- Top of producing zone = 7410' MD (7098' TVD).
- Bottom hole pressure must be monitored daily.
- Well will be worked on with full 5000psi lubricator.

SEP 28 2007

Other considerations:

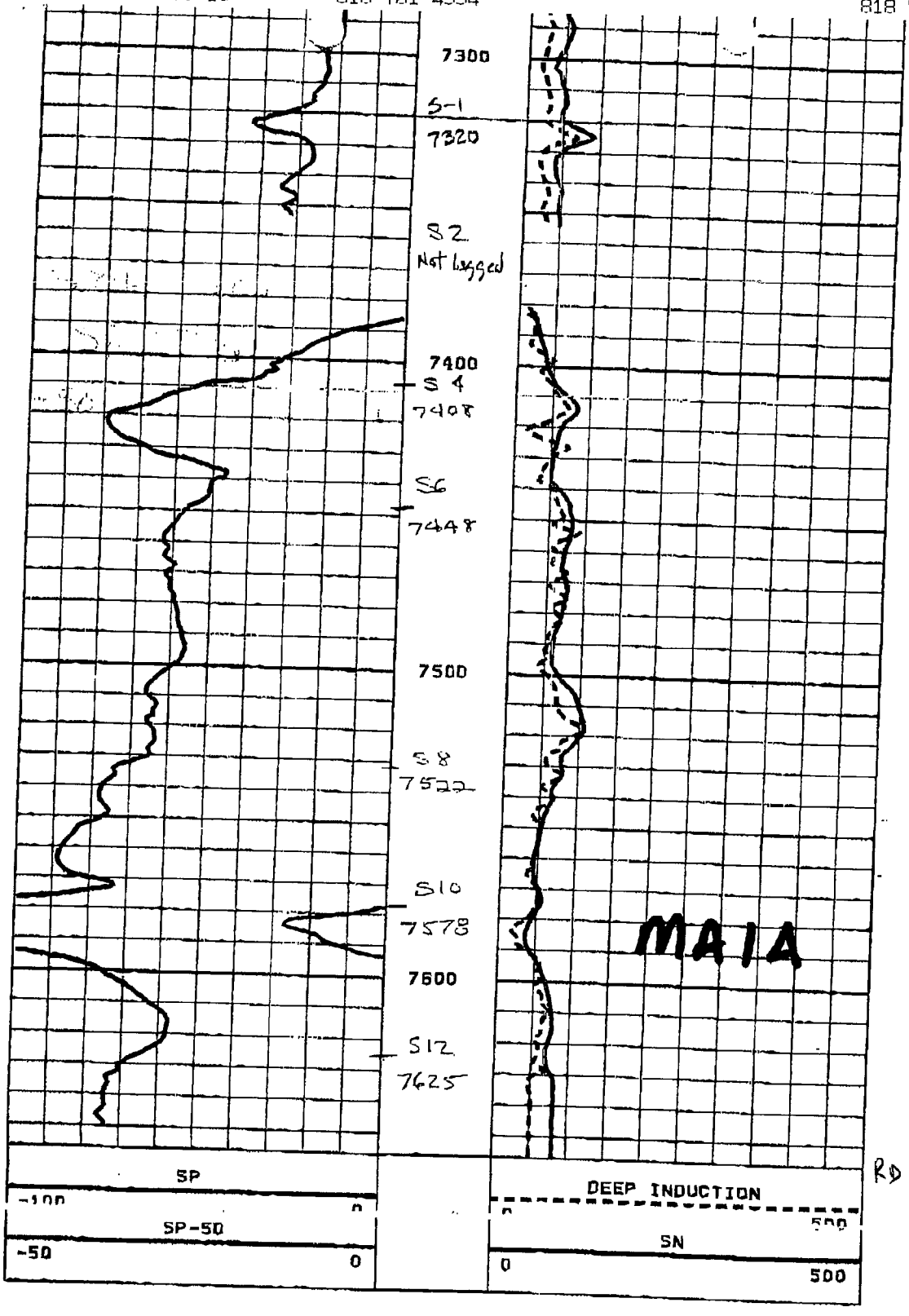
Aliso Canyon is a Title V Facility. Check with the onsite environmental specialist, confirm that all required permits and procedures are properly recorded.

Permits: Permit from the Ca DOGGR will be required for the operations described in this well work program.

WELL WORK PROGRAM

1. Move in wire line truck with mast. Install wire rams, CSO and full lubricator. Use small diameter wire and grease injection as required.
2. Run collar log with weight bar and gage ring to locate tubing components, packer and top of liner.
3. Locate fill and tie to original hole electric log.
4. Run through tubing cement dump bailer (use bailer with surface fired dump) and place 8' to 10' cement plug on top of sand fill in hole at approximately 7533'.
5. Rig down dump bailer.
6. Tag cement with weight bar and CCL. Confirm cement fill.

Richard Jackson
9-27-2007



RD TD 7640 TD

SEP 28 2007

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

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Mission Adrian 1 A
A.P.I. No. 037-21891

MAR 16 2007

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec. 34, T3N, R16W S.B.B.&M.

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

Date: 3/14/2007

Signature: Mike Dozier
(Person Submitting Report)

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

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

Start Date	Ops. DOGGR Rpt
1/19/2006	Move in
1/20/2006	Rig up
1/21/2006	Pumped 50 bbls. hi-vis polymer pill diplaced with 42 bbls., 9.1 ppg. kill fluid. Killed well per schedule with 397 bbls. 9.1 ppg. kill fluid. No returns to surface. Installed back pressure plug, removed production tree. Nippled up class III BOP.
1/22/2006	Nippled up Class III BOP.
1/23/2006	Test class III BOP. Test pipe rams and out side valves to 5000 psi. Test hydril to 3000 psi.
1/24/2006	Pumped 50 bbls. dou-vis pill, displaced with 41 bbls. of 9.1 kill fluid. Killed well per schedule with 367 bbls. established returns to surface. Tested blind rams and choke manifold to 5000 psi. for twenty minutes S. Fields DOGGR waived witness of test. Rigged up tubing equipment attempted to released from packer at 7130'.
1/25/2006	Filled well with 60 bbls. Rigged up swivel released from permetrieve packer at 7130'. Pulled out of well laid down production equipment. Ran in well to 6500'.
1/26/2006	Filled well with 60 bbls. Ran in well to 7000', changed breaks, pulled out of well. Made up 8-5/8" casing scraper bumper sub. Ran in well to 7000'.
1/27/2006	Filled well with 64 bbls. Ran in well to 7127', tagged packer. Pulled out of well laid down casing scraper. Made up retieving tool, drain sub, bumper sub, jars (2) 4-3/4" drill collars. Ran in well to 7020'.
1/28/2006	Filled well with 64 bbls. Ran in well to 7127' engaged packer with retrieving tool. Worked packer jarred at 20,000# over string weight. Packer released, pulled out of well laid down packer and jars. Made up 8-5/8" casing scraper and bumper. Ran in well to 7305', tagged liner top pulled out of well to 6990'.
1/29/2006	Filled well with 60 bbls. Pulled out of well laid down 8-5/8" casing scraper. Made up 5-1/2" casing scraper, 4-3/4" bit and bumper sub. Ran in well to 7619', pulled out of well to 7260' secured well.
1/30/2006	Filled well with 65 bbls. Ran in well to 7619' rigged up and pumped 50 bbls. hi- vis polymer pill, displaced with 38 bbls. Pulled out of well laid down 5-1/2" scraper and bumper sub. Made up WEA 8-5/8" bridge plug. Ran in well to 2050', set BP and tested casing to 2200 psi. for ten minutes. Ran in well to 6000' set BP and tested casing to 310 psi. for ten minutes. Ran in well to 7267' set BP tested casing to 100 psi. for ten minutes. Pulled out of well to 7200'.
1/31/2006	Well standing full. Pulled out of well laid down retieving tool. Rigged up Schlumberger loggers. Made up USIT/CBL combo tools ran in well to 7267' logged to surface. Rigged down loggers ran in well to 1600' kill string. .
2/1/2006	Pulled out of well with kill string. Nippled down BOP attempt to pull tubing head. Cut bolts and remove tubing head.
2/3/2006	Removed and replaced primary seals. Installed seal flange with new PS seals, installed tubing head with new PS seals. Tested all seals to 5000 psi. for twenty minutes. Nippled up class III BOP tested to 2500 psi. Ran in well to 6300'.
2/6/2006	Laid down 2-7/8" tubing. Ran in well with tubing and laid down total 234 joints. Laid down (2) 4-3/4" drill collars. Rigged down tubing equipment nippled down BOP.
2/7/2006	Open well, installed tubing hanger and BPV nippled down BOP. Nippled up production tree. Rigged down pump and hoses, loaded out equipment.
4/6/2006	Move rig and equipment.
4/7/2006	Move rig and equipment.
4/8/2006	Rigged up eqiupment. Nippled up Class III BOP.
4/10/2006	Continue rigging up eqiupment. Start testing B.O.P.E.
4/11/2006	Continue testing B.O.P.E. DOGGR witness test. Test to 5000 psi. high for 15 min. and 5 min. 250 psi. low.
4/12/2006	Finish testing B.O.P.E. Made up packer retrieving tool. Pick up 20 joints 3-1/2 H.W.D.P. Picking up 3-1/2 drill pipe.
4/13/2006	Continue picking up drill pipe.
4/17/2006	Open well, lower retrieving tool to 7230'. Pump 50 bbl. H.E.C. pill and displace with 47 bbls. of 9.1 ppg 3% KCL. Lower drill pipe and latch on to bridge plug at 7267'. Equalize well for 30 min, gas bubble moving up well. Release from plug and circulate out gas from well bore. Completely displace drill pipe and annulus with 9.1ppg., 3% KCL. Well stable. Latch plug and pull free. Monitor well 30 min, O.K. Pull out of hole to 5335'.

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

MAR 16 2007

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Mission Adrian 1 A
A.P.I. No. 037-21891

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec. 34, T3N, R16W S.B.B.&M.

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

Date: 3/14/2007

Signature:
(Person Submitting Report)

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

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

Start Date	Ops. DOGGR Rpt
4/18/2006	Filled well with 90 bbls. of 3% KCL, 9.1ppg. Continue pulling out of hole. Laid down bridge plug. Rig up Schluberger wire line. Run in hole with collar locator and gage ring with junk basket. Tag top of liner @ 7305'. Found all collars as indicated in well program. Pull out of hole. Made up wireline T.I.W. packer. Set packer @ 7284' bottom of packer. Packer did not set, fell to top of 5-1/2" liner. Pulled out of hole, rig out of wireline. Found collet on setting tool was not properly put together, setting screws were not in the right place.
4/19/2006	Run in hole with packer retrieving tool. Attempt to latch on packer. Could not latch, pull out of hole. Could not find problem with packer or latch.
4/20/2006	Held job meeting in drilling office. Rig on standby.
4/21/2006	Filled well with 52 bbls. of 3% KCL. Pulled out of hole with 3-1/2" drill pipe. Made up 3-1/2" collar and 3-1/2", 8rd 4' pup to stab into packer. Run in hole. Rabbit all pipe to 2-3/8". Ran in to 7227'.
4/22/2006	Stab into packer at 7303'. Rig up PPS wire line. Run in hole pull PXN plug. Rig out wireline. Close in well. Note, well standing full of fluid, slight blow after pulling plug.
4/24/2006	Filled well with 80 bbls., 3% kcl. Run in hole to 7304'. Stab into packer. Rig up slickline. Run in hole retrieve prong from plug. Run in hole retrieve plug. Rig out wireline. Laid down 2 joints. Fill well with 45 bbls. of 3%, 9.5 ppg. KCL water.
4/25/2006	Filled well with 80 bbls. of 3%, 9.5 ppg. KCL water. Pulled out and laid down 16 joints of 3-1/2" drill pipe.
4/26/2006	Move eqiupment and clean locations.
5/1/2006	Check well. 800 psi. on drill pipe and 1000 psi. on annulus. Assist Schlumberger with packer assembly. Commence kill operations on well with 9.5 ppg. 3% KCL water.
5/2/2006	Check well, drill pipe on vacuum and annulus very light blow. Filled well with 84 bbls. of 9.5ppg., 3% KCL water. Pull out of hole with 3-1/2" drill pipe. Rig up Schlumberger wireline unit to set whipstock packer. Run in hole with junk basket and 7" gage ring. Correlate to exsiting cased and open hole logs. Found exsiting packer top at 7291'. Pull out of hole, rig out wireline. Run in hole with 29 stands kill string.
5/3/2006	Check well drill pipe on vacuum, annulus small blow, no pressure. Filled well with 67 bbls. of 3%, KCL water. Pull out of hole with kill string. Rig up wireline. Run in hole with 2-1/8 o.d. sinker bar. Unable to get into packer at 7292'. Ran in with 1-11/16" sinker bar, unable to get into packer. Run in with CCL & centerlizers. Run past packer and "XN" nipple. Pull out of hole. Make up new T.I.W. whipstock packer for 8-5/8", 40 lb. casing. Run in hole to 7247', packer hung up. Unable to pull or run deeper in well. Set packer and release from packer. Pull up hole and run into tag packer at 7247'. Pull out of hole. Test packer and casing from surface to 500 psi. for 15 minutes and record. Bleed well and run in with orienting tool on gyro. Tag top of packer, pull out of hole found knot in line.
5/4/2006	Install 5/16" wireline clamp, cut line. Laid down lubricator. Pull 100' of line from well and laid down tools. Did not find pins sheared in orienting tool. Rehead wireline and run gyro with orienting tool after installing more weight bars. Run in hole tag top of packer. Pull out of hole still no pins sheared.
5/5/2006	Made up latch and orienting sub on 3-1/2" drill pipe. Run in hole to 7242'. Latch into packer and over pull 20,000 pounds. Rig up wireline. Run in hole with gyro, stopped at top of heavy weight, pull out of hole and remove centerlizers. Run in hole orient for tool face. Tool face showing 40 degrees to the right side of high side of well bore. Pull out of hole and rig out wireline. Unlatch from packer with 90,000 lbs. over pull. Pump 50 bbl., HEC pill and displace. Pull 20 stands.
5/6/2006	Continue pulling out of hole with latch and orienting assembly. Laid down latch and orienting sub, check alignment O.K. Send latch to town to be installed on whipstock.
5/8/2006	Made up 8-5/8" whipstock on one joint 3-1/2" drill pipe with Schlumberger's packer orienting latch assembly on bottom of whipstock. Run in hole slowly to 7242'. Latch into packer and over pull drill string by 10,000 lbs. to ensure engagement. Sheared whipstock pin. Changed over to flo-pro mud system and condition mud.
5/9/2006	Start milling with starting mill. Milled 16". Pull out of hole. Make up window mill and watermelon mill 7-1/2" o.d., 1 joint drill pipe, (6) 4-3/4" drill collars and 20 joints heavy wieght drill pipe Run in hole to 7232'. Mill from 7232' to 7235'. Mill stopped, pull out of hole. Pressure test hole to 800 psi. for 5 minutes after drilling out with mill, held solid.

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

MAR 16 2007

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Mission Adrian 1 A
A.P.I. No. 037-21891

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec. 34, T3N, R16W S.B.B.&M.

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

Date: 3/14/2007

Signature:
(Person Submitting Report)

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

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

Start Date	Ops. DOGGR Rpt
5/10/2006	Make up new mill with 10" sub above mill and run hole. Run in to 7234'. Milling on window. Lots of metal in returns. Mill for 6 hours made 6". Very little metal returns last two hours. Circulate and pull out hole.
5/11/2006	Continue pulling out of hole. Laid down mills. Made up 7" die collar to retrieve whipstock with jars and bumper sub. Run in hole, latch on to whipstock, pull 30,000 lbs. over sting wieght. Tool slipped off, re-atempt, whipstock turning. Change over well to KCL water for video camera. Rig up DHV and run in hole with 1-11/16" o.d. camera. Log fishing tools and well bore and top of whipstock. Pulled out of hole and rig down wireline.
5/12/2006	Pull out of hole, laid down die collar. Rig up Tiger wireline. Run in hole with packer setting sleeve 1-1/8" o.d. Run to 7215'. Pull out of hole, found line with knots. Cut and pull line from 2900'. Make 8-5/8" positive scraper. Run in hole to 3500' reverse circulate.
5/13/2006	Continue running hole with scraper to 7214'. Reverse circulate well. Pull out of hole to 1800'.
5/15/2006	Pulled out of hole with kill string and scraper. Rig up Schlumberger wireline. Run in hole with 8-5/"8 drillable bridge plug and set at 7198'. Pull out of hole. Rig out wireline. Make up 7-1/8" o.d. bottom trip whipstock and starting mill with orienting sub on top of number one joint of 3-1/2" drill pipe. Run in hole.
5/16/2006	Continue running in hole with whipstock to 7147'. Run in hole with sand line and single shot survey. Get survey, pull out of hole and make 60 degree adjustment to the right of high side of well. Re-run survey and pull survey tool. Found bottom of survey tool left in drill pipe. Run fishing tools and re-cover fish. Re-run survey, tool face set 60 degees to right of high side of well. Slide down and set bottom of whipstock at 7198', top at 7185'. Change over to Flo-pro mud system. Start milling with starting mill, milled 16". pull out of hole.
5/17/2006	Held safety meeting. Continue pulling out of hole with starting mill. Made up window mill and watermelon mill. Run in hole to 7189'. Milling window, cut 14' to 7203'. Pressure test hole and casing to 500 psi. for 20 minutes on chart. Pull out of hole.
5/18/2006	Made up 7-1/2" bit HS-X20J, 7-1/2" near bit stabilizer, 1 drill collar, string stabilizer, 1 drill collar, string stabilizer, (4) 4 3/4 drill collars. Run in hole to 7201'. Drilling from 7201' to 7239'. Circulate for survey, survey at 7232'. 24 degrees. Pull to 7050'.
5/22/2006	Run in hole to 7239'. Condition mud. Drilling from 7239' to 7380'.
5/23/2006	Made wiper trip from 7380' back to 7150'. Run in hole circulate for survey. 28 degrees. Continue drilling from 7380' to 7600'. Mud 9.35 ppg., solids7.5%, YP-25# 100 ft., Visc 45. String wieght down 85,000# up 120,000#
5/24/2006	Continue drilling 7-1/2" hole from 7600' to 7645'. Circulate and condition mud. Pull out of hole, laid down 7-1/2" drilling assembly. Made up 7-1/4" x 12" hole opener. Run in hole. Hole opener stopped at 7200'. Pull out of hole.
5/25/2006	Continue pulling out of hole. Tong back up broke. Use rotary tong to break drill pipe. Laid down hole opener. Pick up 7" x 12" hole opener and run in hole. Mud wieght 9.35 ppg.
5/26/2006	Run in hole to 7380'. Open 7-1/2" hole to 12" from 7380' to 7492', hole very sticky, ream and circulate to condition mud. Attempt to pull to shoe for wiper trip. Pipe stuck at 7452'. Work stuck pipe. Rig up wireline. Mud wieght 9.4ppg.
5/27/2006	Run in hole with string shot. Back 3-1/2" drill pipe off at 7132'. Pull out with wireline and rig out. Pull out of hole with drill pipe. Laid down two joints heavy wieght drill pipe. Make up 3-1/2 , I.F. screw in sub and run in hole. Screw into fish and jar on stuck pipe. Circulate and jar at 200,000 lbs.. Rig up wire line for free point survey.
5/28/2006	Run free point. Found pipe stuck at 7326'. Pull out of hole, rig out wireline. work stuck pipe. Spot 30.bbl. mineral oil in open hole section. Work stuck pipe. Rig up wire line. Run string shot and back off at 7163'.
5/29/2006	Continue working stuck pipe. Pull out to change assembly. Make up (6) 4-3/4" collars and up & down jars with intensifier. Run in hole screw on fish and jar on fish up and down.
5/30/2006	Continue jarring on fish. Rig up Baker wireline. Run free point tool, free at 7252'. Pull out of hole. Run string shot and back off pipe at 7252'. Rig out wireline. Pull out of hole with drill pipe. Laid down shot joint. Make up drill assembly, 7-5/8" bit, near bit stabilizer, 7-1/2" , (6) 4-3/4" drill collars and jars. Run in hole.

RESOURCES AGENCY OF CALIFORN.
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

MAR 16 2007

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Mission Adrian 1 A
A.P.I. No. 037-21891

Field: Aliso Canyon
County: Los Angeles
Surface Location: Sec. 34, T3N, R16W S.B.B.&M.

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

Date: 3/14/2007

Signature:
(Person Submitting Report)

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

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

Start Date	Ops. DOGGR Rpt
5/31/2006	Continue running in hole with drilling assembly. Ream hole from 7183' to 7252'. Circulate and condition mud. Pull out of hole. Laid down drilling assembly. Make up 7" x 10" hole opener. Open hole to 10" from 7111' to7252'. Top of fish. Circulate hole and pull out of hole.
6/1/2006	Continue pulling out of hole. Laid down hole opener. Made up 5 joints 2-7/8" tubing on bottom of drill pipe and run in hole to 7252'. Ciculate and change over to KCL, 3%, 8.6 ppg. Work pipe and rig up Halliburton. Test line to 2500 psi. O.K. Held safety meeting. With tail at 7252' pump 10 bbl. fresh water ahead, mix and pump 10 bbl., 17 ppg, slurry followed by 2 bbl. fresh water and displace with 50 bbl. 3% KCL water. Max pressure 600 psi. at 4.5 bpm. Estimated top of cement 7115'. Rig out Halliburton and pull 10 stands of 3-1/2" drill pipe. Reverse ciculate 2 drill pipe volumes, no cement returns. Pull out of hole with drill string. Laid down 2-7/8" tubing tail and made up new BHA. 7-5/8" rock bit, 8-5/8" positive scraper and bumper sub. Ran in hole. Tagged top of cement at 7124'. Cement, 35% SSA-1 / 5%MICROLITE / 0.75% CFR-3 / 0.5% UCS ADDITIVE, YIELD 1.36 17 PPG.
6/2/2006	Drilling out cement from 7124' to 7189'. Circulate hole clean and pull up to 7069'. .
6/5/2006	Change over at 7198' from 3% KCL to 9.2 ppg. Flo-pro mud. Pull out of hole. Laid down bit and scraper. Make up mud motor with 7-5/8" MX-20G bit, 1-1/2 degree bent housing with stabilizers on bottom and top. Make up MWD tools and 4 joints of 3-1/2" HWDP, drilling jars and 13 joints 3-1/2 HWDP. Run in hole.
6/6/2006	Continue running in hole with mud motor. Run to 7189', circulate well and orient tool to 70 degrees to right side of high side of hole. Drilling from 7189' to 7206', time drilling at 1 foot per hour. Turn tool face to 110 degrees to right and continue drilling. Mud wight 9.2 ppg.
6/7/2006	Continue drilling with mud motor and MWD tools From 7206' to 7225'. Mud wieght 9.3 ppg.
6/8/2006	Continue drilling 7-5/8" hole from 7225' to 7276'. Pulled out and laid down MWD tools and mud motor. Make up 7-5/8" bit and 7-1/2" stabilizers at 30' and 60' from bit. Run (6) 4-3/4" drill collars and drilling jars. Run in hole to 7276' drilling from 7276' to 7287'. Run single shot survey. Showed 23.5 degrees. Continue drilling. Mud wieght 9.3 ppg.
6/9/2006	Drilling 7 5/8 hole from 7287' to 7385'. Circulate hole clean. Make wiper trip to window at 7201'. Run back in hole, circulate hole clean. Rig up wireline, run gyro magnetic-shot survey. Survey from 7086' to 7325'. Pull out of hole rig out wireline and pull out of hole with drill pipe. Laid down bit and stabilizers. Mud wieght 9.2 ppg.
6/10/2006	Made up 7" x 10" hole opener with jars and 4-3/4" drill collars. Run in hole and open hole to 10" from 7300' to 7380'. Circulate hole clean. Pull out of hole make 7" casing and running tools and run in hole. Rabbit all pipe.
6/11/2006	Continue running 7" casing to 7385'. Circulate well. Rig up Halliburton and held safety meeting. Test line to 3000 psi. O.K. Mix and pump 10 bbl mud flush and 20 spacer 12.4ppg followed by 14.84 bbl. gas stop cement at 15.6ppg., yield 1.56 cu. ft. per sack, mix water 6.58 gps. Max pump rate 4 bbl. / min, max pressure 800 psi. Displace with 60.36 bbl. mud gel at 9.2ppg. Work casing while pumping. Plug did not bump, pump extra 2 bbls, bleed back 1bbl. Rig out Halliburton and pull 10 stands. Reverse out two drill pipe volumes, no cement returns. Pull out of hole. Make up 8-5/8" positive casing scraper and 7-5/8" rock bit. Run in hole, tag top of cement at 7010'. Drill out to 7067'. Mud weight 9.2 ppg., gas storage pressure 2250 psi., hydrostatic well pressure 3300 psi. Spacer additives 12.4 ppg weighted Sepiolite, 15lbs/ per bbl of Sepiolite, 215lbs/per bbl of barite, 35.5 gal/ per bbl water. Cement additives, 35%silica flour, 3%kcl bwow, 0.8 % halad322, 0.25 % halad 344, 0.25% halad 413, 0.5 % d-air 3000, 0.25 % super cbl, 0.1 % hr-5.
6/12/2006	Continue drilling from 7067' to 7154' - top of 7" casing, circulate clean. Test lap to 1000 psi. for 20 minutes. Record on chart and DOGGR witness test. Pulled out of hole and laid down 7-5/8" bit and scraper. Make up 6-1/8" bit and 7" positive scraper and run in hole. Tag cement at 7254', ream and drill to 7345'
6/13/2006	Continue 12 hour operation. Continue rigging out eqiupment. Rig down move off location. Nipple up laterals and test. E.O.T.

RESOURCES AGENCY OF CALIFORNIA
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HISTORY OF OIL OR GAS WELL

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A.P.I. No. 037-21891

Field: Aliso Canyon County: Los Angeles
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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
6/14/2006	Continue 24 hour operations. Service rig and eqiupment. Held safety meeting. Continue drilling from 7345' to 7380'. Drilling on shoe. E.O.T.
6/15/2006	Pull out of hole change drill assembly to 6-1/8" bit 6-1/8" stabilizer at 30' and 60'. Install jars at top of collars. Run in hole and drill out shoe at 7385'. Test lap and casing to 800 psi. for 5 min O.K. Pull in shoe and change well over to new flo-pro carbonate system.
6/16/2006	Held safety meeting. Start drilling 6-1/8" hole from 7388' to 7490'. Pump down, pull to casing shoe.
6/17/2006	Continue 24 hour operatios. Service rig and eqiupment. Held safety meeting. Continue drilling from 7490' to 7645'. Make wiper trip back to 7" casing shoe. Run into 7645'. Rig up wire line for gyro survey. Hole very sticky. Losing fluid 65 bbl total. Mix and condition mud. Rig out wire line and pull out 5 joints and ream to bottom, still sticky. Drop single shot survey and pull out of hole with drill string. E.O.T. Note's, loss 65 bbl + fluid today to formation. Mud wieght 9.2 ppg.
6/18/2006	Held safety meeting. Continue pulling out of hole. Rig up wire line unit. Ran 4 arm caliper log from 7385' to 7645'. Hole is in gauge to run expandable liner. Run in hole with drilling assembly to 7645'. Pull to 7340' change over well to solids free gel system. Pull out of hole. Mud wieght 9 ppg.
6/19/2006	Continue pulling out of hole. Lay down drill collars and stabilizers. Make up 5" expandable liner. Run in hole. Rabbit and fill pipe running in hole. Drop ball and set liner hanger with 3200 psi. at 7325' - top of PBR at 7321', shoe at 7630' Release from liner and pull out of hole. Mud wieght 8.9ppg.
6/20/2006	Continue pulling out of hole, laid down liner running tool. Make up liner expanding tool. Expand liner as per Weatherford supervision. Pull out hole laying down drill pipe. Did not open last 8' of ESS liner.
6/21/2006	Continue laying down drill pipe. Lay down drill collars and deployment tool. Pick up 2-3/8" 12 joints CS Hydril with bull nose on bottom. Pick up and tally 2-7/8", N-80, 8rd production string. Tag obstruction in liner at 7572'. Bottom is 7625'. Spot breaker as per M I Swaco spec's.
6/22/2006	Pull out of hole lay down 2-3/8" Hydril tail. Made up 8-5/8" 40#, G-6 packer with plug in place in on / off tool with "XN" profile. Set at 7100' and test to 500 psi. for 15 min. O.K. Pull out of hole. Make up top half of on/off tool, sliding sleeve and gas lift mandrels, run in hole.
6/23/2006	Continue running in hole. Change over to 3 % KCL water. Latch on/off tool with 15,000# compression on packer. Space out and land tubing. Tear out equipment and nipple down B.O.P.E. Nipple up tree and test to 500 psi.
6/26/2006	Load out eqiupment and rig out eqiupment.
8/3/2006	MIRU Schlumber N2 truck. Pumped 350,000 CF of N2 down casing and unloaded fluid from annulus through the tubing. Shut down w/ 2000 psi. wellhead pressure and recovered ~350 bbls. of fluid.
8/7/2006	MIRU PPS W/L. RIH w/ shifting tool and closed the 'XD' SSD @ 7055'. Ran back in hole and pulled prong @ 7089'. POOH w/ body of 'PXN' plug. RIH w/ 1-1/2" impression block and tagged the top of the collasped ESS @ 7555'.POOH with impression block. RDMO.

California Dept. of Conservation
DOGGR
1000 S Hill Road, Ste 116
Ventura, Ca. 93003-4458

13 July 2007

Dear Sirs,

Enclosed please find 2 copies for the directional work done on well "Mission Adrian 1A". We wanted to make sure the name of the well was correct in your file and ours. The original well bore is known as MA1A or MA1A OH (original hole API No. 037-21891). The first attempt at sidetrack resulted in a lost hole opener that required a sidetrack. This hole is referred to as MA1A RD1 (API No. 037-21891-1). The fish was cemented in place and the well was sidetracked in open hole above the fish as is shown in the submitted history. This well bore which is the current completion is known as MA1A RD2 (API No. 037-21891-2). You will find this well designation used on the accompanying directional documents.

Thanks for you patience with this issue as the directional was a bit difficult to reconstruct.

Sincerely,

Richard Jackson
So. California Gas Co.
9400 Oakdale Av.
Chatsworth, Ca. 91313.

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:23:39 Page: 1 Date: 7/11/2007
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North Co-ordinate(NE)
Site: ALISO CANYON
Reference: MA-1A 1758.0 Vertical (TVD)
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi) Section (VS)
Wellpath: MISSION ADRIAN 1A RD2
Method: Minimum Curvature Db: Sybase Survey Calculation

Survey: MISSION ADRIAN 1A RD2 Start Date:
6/8/2006
TIE ON TO EXIST. SURVEY/ PROJ. BELOW 7385'
Company: Scientific Drilling Engineer:
Chandler Smith
Tool: MSS;MAGNETIC SINGLE SHOT Tied-to:
From Surface

Field: ALISO CANYON NAD 83
ALISO CANYON
CALIFORNIA
Map System:US State Plane Coordinate System 1983 Map Zone:
California, Zone V
Geo Datum: GRS 1980 Coordinate System:
Well Centre
Sys Datum: Mean Sea Level Geomagnetic Model:
igrf2005

Site: ALISO CANYON
CALIFORNIA, U.S.A.
ALISO CANYON
Site Position: Northing: 1937000.00 ft Latitude:
34 18 49.216 N
From: Map Easting: 6394000.00 ft Longitude:
118 33 19.065 W
Position Uncertainty: 0.00 ft North Reference:
Grid
Ground Level: 0.00 ft Grid Convergence:
-0.31 deg

Well: MISSION ADRIAN 1A Slot Name:
SUR. N 1933940.90, E 6397698.17 SOCALGAS
Well Position: +N/-S-3059.10 ft Northing: 1933940.90 ft Latitude:
34 18 19.155 N
+E/-W 3698.17 ft Easting : 6397698.17 ft Longitude:
118 32 34.780 W
Position Uncertainty: 0.00 ft

Wellpath: MISSION ADRIAN 1A RD2 Drilled From:
Surface
TIE ON TO EXIST. SURVEY/ PROJ. BELOW 7385' Tie-on Depth:
0.00 ft
Current Datum: MA-1A Height 1758.00 ft Above System
Datum: Mean Sea Level

Magnetic Data: 6/8/2006 Declination: 13.22 deg

Field Strength: 48017 nT Mag Dip Angle: 59.09 deg

Vertical Section: Direction	Depth From (TVD)	+N/-S	+E/-W
deg	ft	ft	ft
338.00	0.00	0.00	0.00

Plan:

Principal:

Date Composed:
Version:
Tied-to:

Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target

Survey

MD	Incl	Azim	TVD	N/S	E/W	VS	DLS
MapN ft	deg	MapE deg	Sys TVD ft	ft	ft	ft	deg/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1933940.90	ft	6397698.17	-1758.00				
137.00	0.25	266.00	137.00	-0.02	-0.30	0.09	0.18
1933940.88	ft	6397697.87	-1621.00				
211.00	0.50	341.00	211.00	0.27	-0.56	0.46	0.67
1933941.17	ft	6397697.61	-1547.00				
342.00	0.50	311.00	341.99	1.19	-1.18	1.54	0.20
1933942.09	ft	6397696.99	-1416.01				
433.00	1.00	311.00	432.99	1.97	-2.08	2.61	0.55
1933942.87	ft	6397696.09	-1325.01				
524.00	1.25	304.00	523.97	3.05	-3.50	4.14	0.31
1933943.95	ft	6397694.67	-1234.03				
649.00	1.75	339.00	648.93	5.59	-5.32	7.18	0.82
1933946.49	ft	6397692.85	-1109.07				
737.00	1.75	326.00	736.89	7.96	-6.55	9.83	0.45
1933948.86	ft	6397691.62	-1021.11				
832.00	1.50	322.00	831.85	10.14	-8.13	12.45	0.29
1933951.04	ft	6397690.04	-926.15				
925.00	2.00	284.00	924.81	11.49	-10.45	14.57	1.33
1933952.39	ft	6397687.72	-833.19				
1004.00	2.75	287.00	1003.74	12.38	-13.60	16.57	0.96
1933953.28	ft	6397684.57	-754.26				
1092.00	4.50	281.00	1091.56	13.66	-19.01	19.78	2.03
1933954.56	ft	6397679.16	-666.44				
1184.00	6.50	270.00	1183.13	14.35	-27.76	23.70	2.45
1933955.25	ft	6397670.41	-574.87				
1254.00	7.50	259.00	1252.61	13.47	-36.21	26.06	2.38
1933954.37	ft	6397661.96	-505.39				
1319.00	7.75	266.00	1317.04	12.36	-44.74	28.22	1.48
1933953.26	ft	6397653.43	-440.96				
1412.00	9.00	265.00	1409.05	11.29	-58.25	32.28	1.35
1933952.19	ft	6397639.92	-348.95				

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
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Reference: Well: MISSION ADRIAN 1A, Grid North
Site: ALISO CANYON
Reference: MA-1A 1758.0
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Reference: Well (0.00N,0.00E,338.00Azi)
Wellpath: MISSION ADRIAN 1A RD2
Method: Minimum Curvature Db: Sybase

Date: 7/11/2007
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD ft	Incl deg	Azim MapE deg	TVD Sys TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft
1503.00	8.00	269.00	1499.05	10.56	-71.67	36.64	1.28
1933951.46		6397626.50	-258.95				
1595.00	7.50	283.00	1590.22	11.80	-83.92	42.37	2.12
1933952.70		6397614.25	-167.78				
1657.00	5.75	287.00	1651.80	13.61	-90.83	46.65	2.92
1933954.51		6397607.34	-106.20				
1720.00	4.00	302.00	1714.57	15.70	-95.72	50.41	3.41
1933956.60		6397602.45	-43.43				
1752.00	3.50	309.00	1746.50	16.91	-97.42	52.17	2.12
1933957.81		6397600.75	-11.50				
1869.00	1.50	314.00	1863.39	20.22	-101.30	56.69	1.72
1933961.12		6397596.87	105.39				
1961.00	2.00	302.00	1955.34	21.91	-103.53	59.09	0.67
1933962.81		6397594.64	197.34				
2084.00	2.00	319.00	2078.27	24.66	-106.76	62.86	0.48
1933965.56		6397591.41	320.27				
2214.00	1.25	300.00	2208.22	27.08	-109.47	66.12	0.70
1933967.98		6397588.70	450.22				
2373.00	1.25	301.00	2367.18	28.84	-112.46	68.87	0.01
1933969.74		6397585.71	609.18				
2495.00	1.50	290.00	2489.14	30.08	-115.10	71.00	0.30
1933970.98		6397583.07	731.14				
2621.00	1.25	286.00	2615.11	31.02	-117.97	72.95	0.21
1933971.92		6397580.20	857.11				
2691.00	2.00	303.00	2685.08	31.89	-119.73	74.42	1.26
1933972.79		6397578.44	927.08				
2754.00	2.50	323.00	2748.03	33.59	-121.48	76.65	1.47
1933974.49		6397576.69	990.03				
2812.00	4.00	326.00	2805.94	36.28	-123.37	79.85	

2.60	1933977.18	6397574.80	1047.94				
	2911.00	5.00	353.00	2904.64	43.42	-125.83	87.40
2.34	1933984.32	6397572.34	1146.64				
	3003.00	6.00	13.00	2996.22	52.09	-125.24	95.21
2.33	1933992.99	6397572.93	1238.22				
	3066.00	7.00	14.00	3058.82	59.02	-123.57	101.01
1.60	1933999.92	6397574.60	1300.82				
	3126.00	6.25	1.00	3118.42	65.84	-122.63	106.98
2.79	1934006.74	6397575.54	1360.42				
	3223.00	7.00	339.00	3214.79	76.64	-124.65	117.75
2.71	1934017.54	6397573.52	1456.79				
	3287.00	8.50	336.00	3278.20	84.60	-127.97	126.38
2.43	1934025.50	6397570.20	1520.20				
	3391.00	10.25	341.00	3380.81	100.37	-134.11	143.30
1.85	1934041.27	6397564.06	1622.81				
	3482.00	11.00	341.00	3470.25	116.23	-139.57	160.06
0.82	1934057.13	6397558.60	1712.25				
	3576.00	11.50	342.00	3562.44	133.63	-145.39	178.36
0.57	1934074.53	6397552.78	1804.44				
	3669.00	12.00	343.00	3653.49	151.69	-151.08	197.24
0.58	1934092.59	6397547.09	1895.49				
	3763.00	12.75	343.00	3745.31	170.95	-156.97	217.31
0.80	1934111.85	6397541.20	1987.31				
	3857.00	13.75	346.00	3836.81	191.71	-162.71	238.70
1.29	1934132.61	6397535.46	2078.81				
	3949.00	14.50	348.00	3926.03	213.59	-167.75	260.87
0.97	1934154.49	6397530.42	2168.03				
	4013.00	15.00	348.00	3987.92	229.53	-171.13	276.92
0.78	1934170.43	6397527.04	2229.92				
	4104.00	17.50	350.00	4075.28	254.52	-175.96	301.91
2.81	1934195.42	6397522.21	2317.28				
	4197.00	20.00	353.00	4163.33	284.08	-180.33	330.95
2.88	1934224.98	6397517.84	2405.33				
	4291.00	23.75	352.00	4250.55	318.80	-184.92	364.86
4.01	1934259.70	6397513.25	2492.55				
	4342.00	22.25	344.00	4297.51	338.25	-189.01	384.43
6.79	1934279.15	6397509.16	2539.51				
	4372.00	21.00	342.00	4325.40	348.83	-192.24	395.44
4.84	1934289.73	6397505.93	2567.40				
	4404.00	19.75	339.00	4355.39	359.33	-195.95	406.57
5.09	1934300.23	6397502.22	2597.39				
	4512.00	18.25	335.00	4457.51	391.69	-209.64	441.70
1.84	1934332.59	6397488.53	2699.51				
	4609.00	18.25	335.00	4549.63	419.22	-222.48	472.04
0.00	1934360.12	6397475.69	2791.63				
	4701.00	18.00	334.00	4637.07	445.06	-234.80	500.60
0.43	1934385.96	6397463.37	2879.07				
	4795.00	20.00	337.00	4725.94	472.91	-247.44	531.17
2.37	1934413.81	6397450.73	2967.94				
	4900.00	23.00	338.00	4823.63	508.47	-262.15	569.65
2.88	1934449.37	6397436.02	3065.63				
	4962.00	24.75	338.00	4880.32	531.73	-271.55	594.74
2.82	1934472.63	6397426.62	3122.32				
	5101.00	25.25	339.00	5006.30	586.39	-293.07	653.48
0.47	1934527.29	6397405.10	3248.30				
	5195.00	26.00	340.00	5091.05	624.47	-307.30	694.12
0.92	1934565.37	6397390.87	3333.05				

	5288.00	26.00	341.00	5174.64	662.90	-320.91	734.84
0.47	1934603.80		6397377.26	3416.64			
	5377.00	26.25	341.00	5254.55	699.95	-333.67	773.98
0.28	1934640.85		6397364.50	3496.55			
	5473.00	26.75	341.00	5340.46	740.45	-347.62	816.76
0.52	1934681.35		6397350.55	3582.46			
	5568.00	27.00	341.00	5425.20	781.06	-361.60	859.64
0.26	1934721.96		6397336.57	3667.20			
	5663.00	27.00	341.00	5509.84	821.84	-375.64	902.71
0.00	1934762.74		6397322.53	3751.84			
	5757.00	26.75	341.00	5593.69	862.01	-389.47	945.14
0.27	1934802.91		6397308.70	3835.69			
	5817.00	27.25	342.00	5647.15	887.85	-398.12	972.33
1.13	1934828.75		6397300.05	3889.15			
	5874.00	27.25	342.00	5697.83	912.67	-406.18	998.37
0.00	1934853.57		6397291.99	3939.83			
	5968.00	26.50	342.00	5781.67	953.08	-419.31	1040.76
0.80	1934893.98		6397278.86	4023.67			
	6057.00	26.00	342.00	5861.49	990.52	-431.48	1080.02
0.56	1934931.42		6397266.69	4103.49			

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:23:39 Page: 3
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North
Site: ALISO CANYON
Reference: MA-1A 1758.0
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi)
Wellpath: MISSION ADRIAN 1A RD2
Method: Minimum Curvature Db: Sybase

Date: 7/11/2007
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD	Incl	Azim	TVD	N/S	E/W	VS	DLS
MapN		MapE	Sys TVD				
ft	deg	deg	ft	ft	ft	ft	
deg/100ft	ft	ft	ft				
6180.00	25.50	342.00	5972.28	1041.34	-447.99	1133.33	
0.41	1934982.24	6397250.18	4214.28				
6275.00	25.00	342.00	6058.20	1079.88	-460.51	1173.76	
0.53	1935020.78	6397237.66	4300.20				
6504.00	23.25	338.00	6267.21	1167.82	-492.40	1267.24	
1.05	1935108.72	6397205.77	4509.21				
6537.00	23.25	338.00	6297.53	1179.90	-497.28	1280.27	
0.00	1935120.80	6397200.89	4539.53				
6628.00	23.25	338.00	6381.14	1213.20	-510.74	1316.19	

0.00	1935154.10	6397187.43	4623.14			
	6719.00 23.00	338.00	6464.83	1246.34	-524.12	1351.93
0.27	1935187.24	6397174.05	4706.83			
	6815.00 23.00	337.00	6553.19	1280.99	-538.48	1389.43
0.41	1935221.89	6397159.69	4795.19			
	6876.00 23.00	337.00	6609.35	1302.93	-547.79	1413.27
0.00	1935243.83	6397150.38	4851.35			
	6968.00 23.00	337.00	6694.03	1336.02	-561.84	1449.21
0.00	1935276.92	6397136.33	4936.03			
	7086.00 23.75	336.00	6802.35	1378.95	-580.51	1496.00
0.72	1935319.85	6397117.66	5044.35			
	7181.00 23.75	336.78	6889.30	1414.01	-595.83	1534.25
0.33	1935354.91	6397102.34	5131.30			
	7225.00 24.71	342.56	6929.43	1430.93	-602.08	1552.28
5.81	1935371.83	6397096.09	5171.43			
	7250.00 24.28	345.77	6952.18	1440.90	-604.91	1562.58
5.59	1935381.80	6397093.26	5194.18			
	7275.00 23.37	347.84	6975.05	1450.73	-607.22	1572.56
4.94	1935391.63	6397090.95	5217.05			
	7300.00 23.13	348.94	6998.02	1460.39	-609.21	1582.27
1.98	1935401.29	6397088.96	5240.02			
	7325.00 23.11	350.02	7021.01	1470.04	-611.00	1591.89
1.70	1935410.94	6397087.17	5263.01			
	7350.00 22.55	350.74	7044.05	1479.61	-612.62	1601.36
2.50	1935420.51	6397085.55	5286.05			
	7385.00 21.76	351.86	7076.47	1492.65	-614.62	1614.20
2.56	1935433.55	6397083.55	5318.47			
	7640.00 21.76	351.86	7313.30	1586.23	-628.01	1705.99
0.00	1935527.13	6397070.16	5555.30			

The Gas Company
A Sempra Energy company

FINAL PLOT

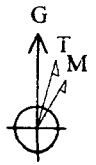
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A OH
Survey: MISSION ADRIAN 1A OH

WELLPATH DETAILS

MISSION ADRIAN 1A OH
ORIGINAL HOLE FROM EXISTING DATA

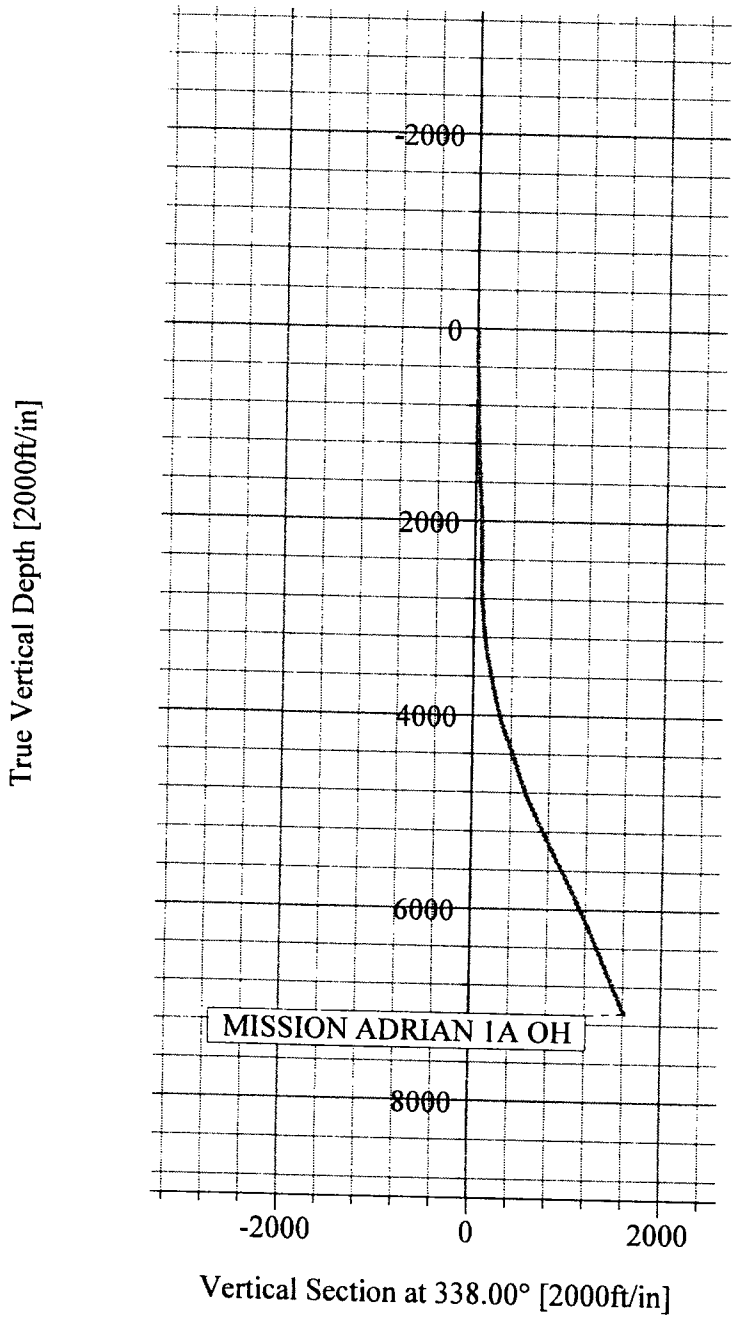
Rig:	CO. RIG	
Ref. Datum:	MA-1A	1758.00ft

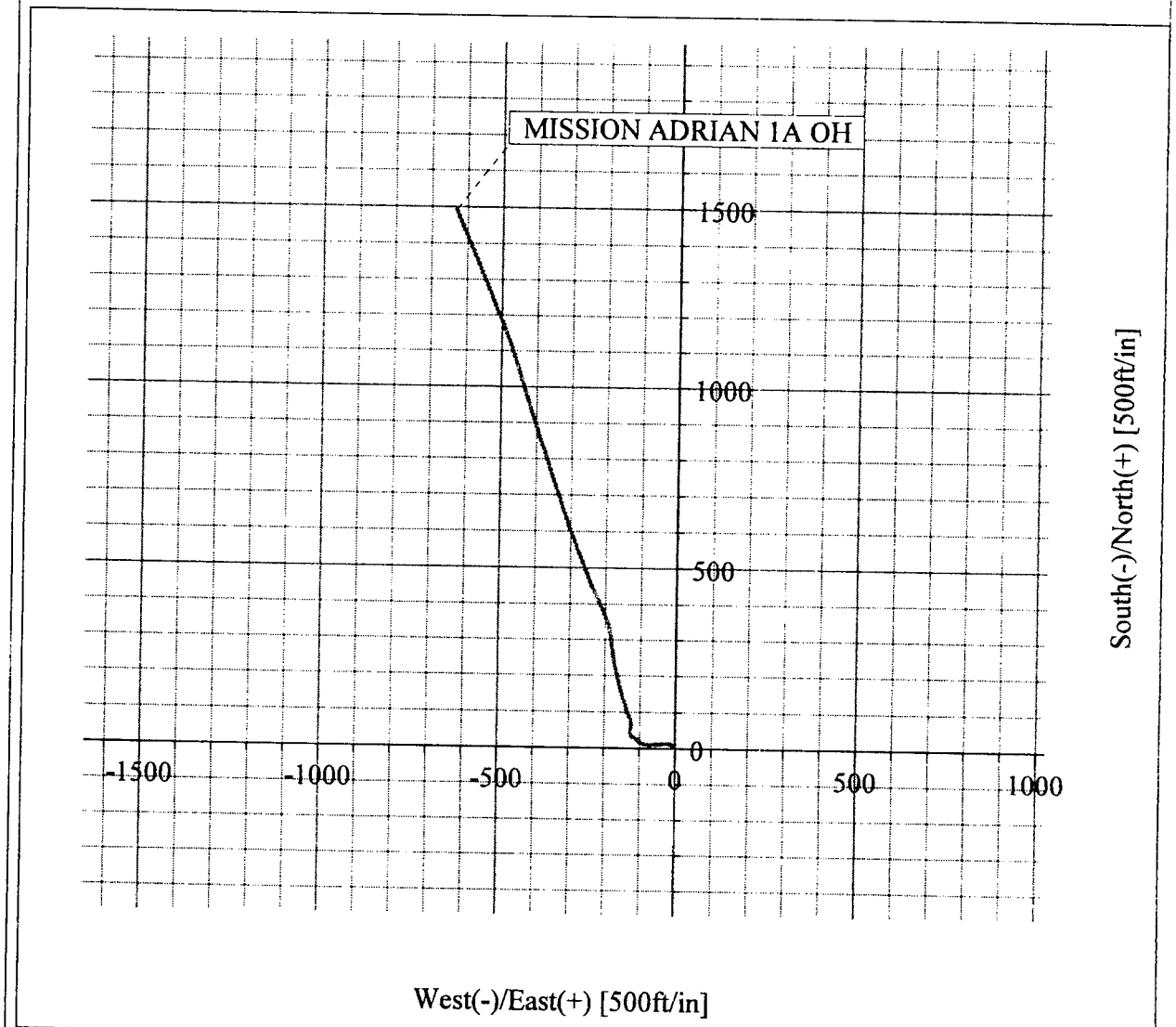
V.Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
338.00°	0.00	0.00	0.00



Azimuths to Grid North
True North: 0.31°
Magnetic North: 13.53°

Magnetic Field
Strength: 48017nT
Dip Angle: 59.09°
Date: 6/8/2006
Model: igrf2005





Scientific Drilling
West Coast Operations

Scientific Drilling
FINAL REPORT

Company:	THE GAS COMPANY	**Date:**	7/11/2007	**Time:** 15:06:50	**Page:** 1
Field:	ALISO CANYON NAD 83	**Co-ordinate(NE) Reference:**	Well: MISSION ADRIAN 1A, Grid North		
Site:	ALISO CANYON	**Vertical (TVD) Reference:**	MA-1A 1758.0		
Well:	MISSION ADRIAN 1A	**Section (VS) Reference:**	Well (0.00N,0.00E,338.00Azi)		
Wellpath:	MISSION ADRIAN 1A OH	**Survey Calculation Method:**	Minimum Curvature	**Db:** Sybase	

Survey:	MISSION ADRIAN 1A OH EASTMAN SURVEYS	**Start Date:**	6/8/2006
Company:	Scientific Drilling	**Engineer:**	Chandler Smith
Tool:	MSS;MAGNETIC SINGLE SHOT	**Tied-to:**	From Surface

Field:	ALISO CANYON NAD 83 ALISO CANYON CALIFORNIA		
Map System:	US State Plane Coordinate System 1983	**Map Zone:**	California, Zone V
Geo Datum:	GRS 1980	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	igrf2005

Site:	ALISO CANYON CALIFORNIA, U.S.A. ALISO CANYON				
Site Position:		**Northing:**	1937000.00 ft	**Latitude:**	34 18 49.216 N
From:	Map	**Easting:**	6394000.00 ft	**Longitude:**	118 33 19.065 W
Position Uncertainty:	0.00 ft			**North Reference:**	Grid
Ground Level:	0.00 ft			**Grid Convergence:**	-0.31 deg

Well:	MISSION ADRIAN 1A SUR. N 1933940.90, E 6397698.17 SOCALGAS			**Slot Name:**	
Well Position:	+N/-S -3059.10 ft	**Northing:**	1933940.90 ft	**Latitude:**	34 18 19.155 N
	+E/-W 3698.17 ft	**Easting:**	6397698.17 ft	**Longitude:**	118 32 34.780 W
Position Uncertainty:	0.00 ft				

Wellpath:	MISSION ADRIAN 1A OH ORIGINAL HOLE FROM EXISTING DATA	**Drilled From:**	Surface
Current Datum:	MA-1A **Height** 1758.00 ft	**Tie-on Depth:**	0.00 ft
Magnetic Data:	6/8/2006	**Above System Datum:**	Mean Sea Level
Field Strength:	48017 nT	**Declination:**	13.22 deg
		Mag Dip Angle:	59.09 deg

Vertical Section:	**Depth From (TVD)** ft	**+N/-S** ft	**+E/-W** ft	**Direction** deg
	0.00	0.00	0.00	338.00

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	137.00	137.00	0.25	266.00	137.00	0.09	-0.02	-0.30	0.18	0.18	0.00	0.30	266.00
3	74.00	211.00	0.50	341.00	211.00	0.46	0.27	-0.56	0.67	0.34	101.35	0.63	295.83
4	131.00	342.00	0.50	311.00	341.99	1.54	1.19	-1.18	0.20	0.00	-22.90	1.68	315.16
5	91.00	433.00	1.00	311.00	432.99	2.61	1.97	-2.08	0.55	0.55	0.00	2.87	313.43
6	91.00	524.00	1.25	304.00	523.97	4.14	3.05	-3.50	0.31	0.27	-7.69	4.64	311.01
7	125.00	649.00	1.75	339.00	648.93	7.18	5.59	-5.32	0.82	0.40	28.00	7.72	316.43
8	88.00	737.00	1.75	326.00	736.89	9.83	7.96	-6.55	0.45	0.00	-14.77	10.31	320.55
9	95.00	832.00	1.50	322.00	831.85	12.45	10.14	-8.13	0.29	-0.26	-4.21	13.00	321.29
10	93.00	925.00	2.00	284.00	924.81	14.57	11.49	-10.45	1.33	0.54	-40.86	15.53	317.72
11	79.00	1004.00	2.75	287.00	1003.74	16.57	12.38	-13.60	0.96	0.95	3.80	18.39	312.31
12	88.00	1092.00	4.50	281.00	1091.56	19.78	13.66	-19.01	2.03	1.99	-6.82	23.41	305.69
13	92.00	1184.00	6.50	270.00	1183.13	23.70	14.35	-27.76	2.45	2.17	-11.96	31.25	297.33
14	70.00	1254.00	7.50	259.00	1252.61	26.06	13.47	-36.21	2.38	1.43	-15.71	38.63	290.41
15	65.00	1319.00	7.75	266.00	1317.04	28.22	12.36	-44.74	1.48	0.38	10.77	46.42	285.44
16	93.00	1412.00	9.00	265.00	1409.05	32.28	11.29	-58.25	1.35	1.34	-1.08	59.33	280.97
17	91.00	1503.00	8.00	269.00	1499.05	36.64	10.56	-71.67	1.28	-1.10	4.40	72.44	278.38
18	92.00	1595.00	7.50	283.00	1590.22	42.37	11.80	-83.92	2.12	-0.54	15.22	84.75	278.00
19	62.00	1657.00	5.75	287.00	1651.80	46.65	13.61	-90.83	2.92	-2.82	6.45	91.85	278.52
20	63.00	1720.00	4.00	302.00	1714.57	50.41	15.70	-95.72	3.41	-2.78	23.81	97.00	279.32
21	32.00	1752.00	3.50	309.00	1746.50	52.17	16.91	-97.42	2.12	-1.56	21.87	98.88	279.85
22	117.00	1869.00	1.50	314.00	1863.39	56.69	20.22	-101.30	1.72	-1.71	4.27	103.30	281.29
23	92.00	1961.00	2.00	302.00	1955.34	59.09	21.91	-103.53	0.67	0.54	-13.04	105.82	281.95
24	123.00	2084.00	2.00	319.00	2078.27	62.86	24.66	-106.76	0.48	0.00	13.82	109.57	283.01

The Gas Company
Sempra Energy utility

Scientific Drilling
FINAL REPORT

Scientific Drilling
West Coast Operations

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A OH

Date: 7/11/2007 **Time:** 15:06:50 **Page:** 2
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
25	130.00	2214.00	1.25	300.00	2208.22	66.12	27.08	-109.47	0.70	-0.58	-14.62	112.77	283.90
26	159.00	2373.00	1.25	301.00	2367.18	68.87	28.84	-112.46	0.01	0.00	0.63	116.10	284.39
27	122.00	2495.00	1.50	290.00	2489.14	71.00	30.08	-115.10	0.30	0.20	-9.02	118.97	284.64
28	126.00	2621.00	1.25	286.00	2615.11	72.95	31.02	-117.97	0.21	-0.20	-3.17	121.98	284.73
29	70.00	2691.00	2.00	303.00	2685.08	74.42	31.89	-119.73	1.26	1.07	24.29	123.91	284.92
30	63.00	2754.00	2.50	323.00	2748.03	76.65	33.59	-121.48	1.47	0.79	31.75	126.04	285.46
31	58.00	2812.00	4.00	326.00	2805.94	79.85	36.28	-123.37	2.60	2.59	5.17	128.60	286.39
32	99.00	2911.00	5.00	353.00	2904.64	87.40	43.42	-125.83	2.34	1.01	27.27	133.11	289.04
33	92.00	3003.00	6.00	13.00	2996.22	95.21	52.09	-125.24	2.33	1.09	21.74	135.64	292.58
34	63.00	3066.00	7.00	14.00	3058.82	101.01	59.02	-123.57	1.60	1.59	1.59	136.94	295.53
35	60.00	3126.00	6.25	1.00	3118.42	106.98	65.84	-122.63	2.79	-1.25	-21.67	139.18	298.23
36	97.00	3223.00	7.00	339.00	3214.79	117.75	76.64	-124.65	2.71	0.77	-22.68	146.32	301.58
37	64.00	3287.00	8.50	336.00	3278.20	126.38	84.60	-127.97	2.43	2.34	-4.69	153.41	303.47
38	104.00	3391.00	10.25	341.00	3380.81	143.30	100.37	-134.11	1.85	1.68	4.81	167.51	306.81
39	91.00	3482.00	11.00	341.00	3470.25	160.06	116.23	-139.57	0.82	0.82	0.00	181.64	309.79
40	94.00	3576.00	11.50	342.00	3562.44	178.36	133.63	-145.39	0.57	0.53	1.06	197.47	312.59
41	93.00	3669.00	12.00	343.00	3653.49	197.24	151.69	-151.08	0.58	0.54	1.08	214.09	315.11
42	94.00	3763.00	12.75	343.00	3745.31	217.31	170.95	-156.97	0.80	0.80	0.00	232.09	317.44
43	94.00	3857.00	13.75	346.00	3836.81	238.70	191.71	-162.71	1.29	1.06	3.19	251.45	319.68
44	92.00	3949.00	14.50	348.00	3926.03	260.87	213.59	-167.75	0.97	0.82	2.17	271.59	321.85
45	64.00	4013.00	15.00	348.00	3987.92	276.92	229.53	-171.13	0.78	0.78	0.00	286.30	323.29
46	91.00	4104.00	17.50	350.00	4075.28	301.91	254.52	-175.96	2.81	2.75	2.20	309.42	325.34
47	93.00	4197.00	20.00	353.00	4163.33	330.95	284.08	-180.33	2.88	2.69	3.23	336.48	327.59
48	94.00	4291.00	23.75	352.00	4250.55	364.86	318.80	-184.92	4.01	3.99	-1.06	368.55	329.88
49	51.00	4342.00	22.25	344.00	4297.51	384.43	338.25	-189.01	6.79	-2.94	-15.69	387.48	330.80
50	30.00	4372.00	21.00	342.00	4325.40	395.44	348.83	-192.24	4.84	-4.17	-6.67	398.29	331.14
51	32.00	4404.00	19.75	339.00	4355.39	406.57	359.33	-195.95	5.09	-3.91	-9.37	409.28	331.40
52	108.00	4512.00	18.25	335.00	4457.51	441.70	391.69	-209.64	1.84	-1.39	-3.70	444.27	331.84
53	97.00	4609.00	18.25	335.00	4549.63	472.04	419.22	-222.48	0.00	0.00	0.00	474.60	332.05
54	92.00	4701.00	18.00	334.00	4637.07	500.60	445.06	-234.80	0.43	-0.27	-1.09	503.19	332.19
55	94.00	4795.00	20.00	337.00	4725.94	531.17	472.91	-247.44	2.37	2.13	3.19	533.74	332.38
56	105.00	4900.00	23.00	338.00	4823.63	569.65	508.47	-262.15	2.88	2.86	0.95	572.07	332.73
57	62.00	4962.00	24.75	338.00	4880.32	594.74	531.73	-271.55	2.82	2.82	0.00	597.06	332.95
58	139.00	5101.00	25.25	339.00	5006.30	653.48	586.39	-293.07	0.47	0.36	0.72	655.55	333.44
59	94.00	5195.00	26.00	340.00	5091.05	694.12	624.47	-307.30	0.92	0.80	1.06	695.99	333.80
60	93.00	5288.00	26.00	341.00	5174.64	734.84	662.90	-320.91	0.47	0.00	1.08	736.49	334.17
61	89.00	5377.00	26.25	341.00	5254.55	773.98	699.95	-333.67	0.28	0.28	0.00	775.42	334.51
62	96.00	5473.00	26.75	341.00	5340.46	816.76	740.45	-347.62	0.52	0.52	0.00	817.99	334.85
63	95.00	5568.00	27.00	341.00	5425.20	859.64	781.06	-361.60	0.26	0.26	0.00	860.70	335.16
64	95.00	5663.00	27.00	341.00	5509.84	902.71	821.84	-375.64	0.00	0.00	0.00	903.62	335.44
65	94.00	5757.00	26.75	341.00	5593.69	945.14	862.01	-389.47	0.27	-0.27	0.00	945.92	335.69
66	60.00	5817.00	27.25	342.00	5647.15	972.33	887.85	-398.12	1.13	0.83	1.67	973.02	335.85
67	57.00	5874.00	27.25	342.00	5697.83	998.37	912.67	-406.18	0.00	0.00	0.00	998.97	336.01
68	94.00	5968.00	26.50	342.00	5781.67	1040.76	953.08	-419.31	0.80	-0.80	0.00	1041.24	336.25
69	89.00	6057.00	26.00	342.00	5861.49	1080.02	990.52	-431.48	0.56	-0.56	0.00	1080.41	336.46
70	123.00	6180.00	25.50	342.00	5972.28	1133.33	1041.34	-447.99	0.41	-0.41	0.00	1133.61	336.72
71	95.00	6275.00	25.00	342.00	6058.20	1173.76	1079.88	-460.51	0.53	-0.53	0.00	1173.97	336.90
72	229.00	6504.00	23.25	338.00	6267.21	1267.24	1167.82	-492.40	1.05	-0.76	-1.75	1267.38	337.14
73	33.00	6537.00	23.25	338.00	6297.53	1280.27	1179.90	-497.28	0.00	0.00	0.00	1280.41	337.15
74	91.00	6628.00	23.25	338.00	6381.14	1316.19	1213.20	-510.74	0.00	0.00	0.00	1316.33	337.17
75	91.00	6719.00	23.00	338.00	6464.83	1351.93	1246.34	-524.12	0.27	-0.27	0.00	1352.06	337.19
76	96.00	6815.00	23.00	337.00	6553.19	1389.43	1280.99	-538.48	0.41	0.00	-1.04	1389.57	337.20

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A OH

Date: 7/11/2007 **Time:** 15:06:50 **Page:** 3
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
77	61.00	6876.00	23.00	337.00	6609.35	1413.27	1302.93	-547.79	0.00	0.00	0.00	1413.40	337.20
78	92.00	6968.00	23.00	337.00	6694.03	1449.21	1336.02	-561.84	0.00	0.00	0.00	1449.35	337.19
79	118.00	7086.00	23.75	336.00	6802.35	1496.00	1378.95	-580.51	0.72	0.64	-0.85	1496.16	337.17
80	122.00	7208.00	23.75	337.00	6914.02	1545.12	1424.01	-600.10	0.33	0.00	0.82	1545.29	337.15
81	182.00	7390.00	24.50	336.00	7080.12	1619.48	1492.22	-629.77	0.47	0.41	-0.55	1619.67	337.12

Annotation

MD	TVD

The Gas Company
A Sempra Energy company

FINAL PLOT

Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD1
Survey: MISSION ADRIAN 1A RD1

WELLPATH DETAILS

MISSION ADRIAN 1A RD1
EXIT WINDOW AT 7181', PROJECTIONS BELOW

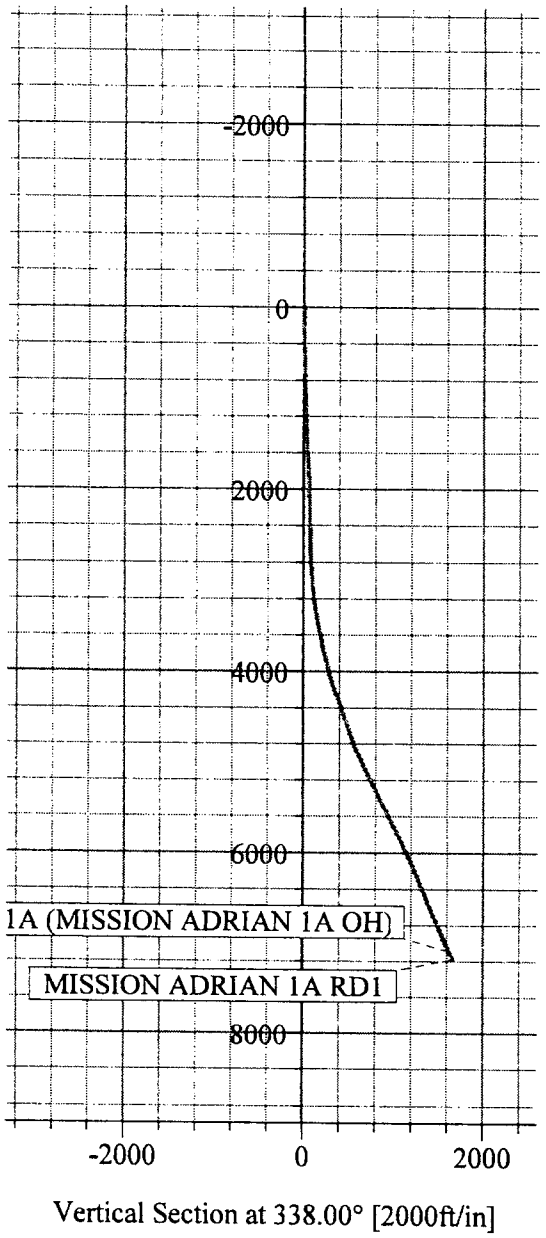
Rig: TORCH PROD
Ref. Datum: MA-1A 1758.00ft

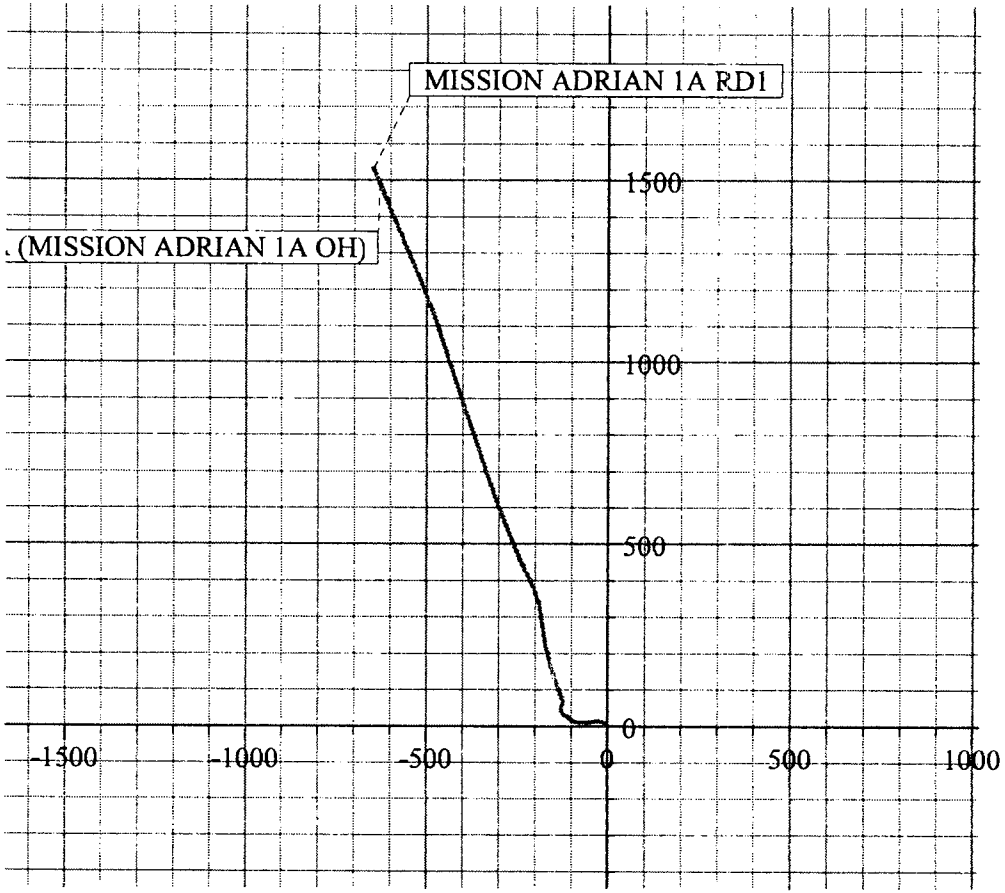
V.Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
338.00°	0.00	0.00	0.00

G T M

Azimuths to Grid North
True North: 0.31°
Magnetic North: 13.53°

Magnetic Field
Strength: 48017nT
Dip Angle: 59.09°
Date: 6/8/2006
Model: igrf2005





Scientific Drilling
West Coast Operations

The Gas Company
A Sempra Energy utility

Scientific Drilling
FINAL REPORT

Scientific Drilling
West Coast Operations

Company:	THE GAS COMPANY	**Date:**	7/11/2007	**Time:** 15:15:01	**Page:** 1
Field:	ALISO CANYON NAD 83	**Co-ordinate(NE) Reference:**	Well: MISSION ADRIAN 1A, Grid North		
Site:	ALISO CANYON	**Vertical (TVD) Reference:**	MA-1A 1758.0		
Well:	MISSION ADRIAN 1A	**Section (VS) Reference:**	Well (0.00N,0.00E,338.00Azi)		
Wellpath:	MISSION ADRIAN 1A RD1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey:	MISSION ADRIAN 1A RD1 MSS, TIE ON AT 7181'. PROJ. BELOW	**Start Date:**	6/8/2006
Company:	Scientific Drilling	**Engineer:**	Chandler Smith
Tool:	MSS;MAGNETIC SINGLE SHOT	**Tied-to:**	From Surface

Field:	ALISO CANYON NAD 83 ALISO CANYON CALIFORNIA		
Map System:	US State Plane Coordinate System 1983	**Map Zone:**	California, Zone V
Geo Datum:	GRS 1980	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	igrf2005

Site:	ALISO CANYON CALIFORNIA, U.S.A. ALISO CANYON				
Site Position:		**Northing:**	1937000.00 ft	**Latitude:**	34 18 49.216 N
From:	Map	**Easting:**	6394000.00 ft	**Longitude:**	118 33 19.065 W
Position Uncertainty:	0.00 ft			**North Reference:**	Grid
Ground Level:	0.00 ft			**Grid Convergence:**	-0.31 deg

Well:	MISSION ADRIAN 1A SUR. N 1933940.90, E 6397698.17 SOCALGAS			**Slot Name:**	
Well Position:	+N/-S -3059.10 ft	**Northing:**	1933940.90 ft	**Latitude:**	34 18 19.155 N
	+E/-W 3698.17 ft	**Easting :**	6397698.17 ft	**Longitude:**	118 32 34.780 W
Position Uncertainty:	0.00 ft				

Wellpath:	MISSION ADRIAN 1A RD1 EXIT WINDOW AT 7181', PROJECTIONS BELOW			**Drilled From:**	Surface
				Tie-on Depth:	0.00 ft
Current Datum:	MA-1A	**Height**	1758.00 ft	**Above System Datum:**	Mean Sea Level
Magnetic Data:	6/8/2006			**Declination:**	13.22 deg
Field Strength:	48017 nT			**Mag Dip Angle:**	59.09 deg

Vertical Section:	**Depth From (TVD)** ft	**+N/-S** ft	**+E/-W** ft	**Direction** deg
	0.00	0.00	0.00	338.00

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	137.00	137.00	0.25	266.00	137.00	0.09	-0.02	-0.30	0.18	0.18	0.00	0.30	266.00
3	74.00	211.00	0.50	341.00	211.00	0.46	0.27	-0.56	0.67	0.34	101.35	0.63	295.83
4	131.00	342.00	0.50	311.00	341.99	1.54	1.19	-1.18	0.20	0.00	-22.90	1.68	315.16
5	91.00	433.00	1.00	311.00	432.99	2.61	1.97	-2.08	0.55	0.55	0.00	2.87	313.43
6	91.00	524.00	1.25	304.00	523.97	4.14	3.05	-3.50	0.31	0.27	-7.69	4.64	311.01
7	125.00	649.00	1.75	339.00	648.93	7.18	5.59	-5.32	0.82	0.40	28.00	7.72	316.43
8	88.00	737.00	1.75	326.00	736.89	9.83	7.96	-6.55	0.45	0.00	-14.77	10.31	320.55
9	95.00	832.00	1.50	322.00	831.85	12.45	10.14	-8.13	0.29	-0.26	-4.21	13.00	321.29
10	93.00	925.00	2.00	284.00	924.81	14.57	11.49	-10.45	1.33	0.54	-40.86	15.53	317.72
11	79.00	1004.00	2.75	287.00	1003.74	16.57	12.38	-13.60	0.96	0.95	3.80	18.39	312.31
12	88.00	1092.00	4.50	281.00	1091.56	19.78	13.66	-19.01	2.03	1.99	-6.82	23.41	305.69
13	92.00	1184.00	6.50	270.00	1183.13	23.70	14.35	-27.76	2.45	2.17	-11.96	31.25	297.33
14	70.00	1254.00	7.50	259.00	1252.61	26.06	13.47	-36.21	2.38	1.43	-15.71	38.63	290.41
15	65.00	1319.00	7.75	266.00	1317.04	28.22	12.36	-44.74	1.48	0.38	10.77	46.42	285.44
16	93.00	1412.00	9.00	265.00	1409.05	32.28	11.29	-58.25	1.35	1.34	-1.08	59.33	280.97
17	91.00	1503.00	8.00	269.00	1499.05	36.64	10.56	-71.67	1.28	-1.10	4.40	72.44	278.38
18	92.00	1595.00	7.50	283.00	1590.22	42.37	11.80	-83.92	2.12	-0.54	15.22	84.75	278.00
19	62.00	1657.00	5.75	287.00	1651.80	46.65	13.61	-90.83	2.92	-2.82	6.45	91.85	278.52
20	63.00	1720.00	4.00	302.00	1714.57	50.41	15.70	-95.72	3.41	-2.78	23.81	97.00	279.32
21	32.00	1752.00	3.50	309.00	1746.50	52.17	16.91	-97.42	2.12	-1.56	21.87	98.88	279.85
22	117.00	1869.00	1.50	314.00	1863.39	56.69	20.22	-101.30	1.72	-1.71	4.27	103.30	281.29
23	92.00	1961.00	2.00	302.00	1955.34	59.09	21.91	-103.53	0.67	0.54	-13.04	105.82	281.95
24	123.00	2084.00	2.00	319.00	2078.27	62.86	24.66	-106.76	0.48	0.00	13.82	109.57	283.01

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD1

Date: 7/11/2007 **Time:** 15:15:01 **Page:** 2
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
25	130.00	2214.00	1.25	300.00	2208.22	66.12	27.08	-109.47	0.70	-0.58	-14.62	112.77	283.90
26	159.00	2373.00	1.25	301.00	2367.18	68.87	28.84	-112.46	0.01	0.00	0.63	116.10	284.39
27	122.00	2495.00	1.50	290.00	2489.14	71.00	30.08	-115.10	0.30	0.20	-9.02	118.97	284.64
28	126.00	2621.00	1.25	286.00	2615.11	72.95	31.02	-117.97	0.21	-0.20	-3.17	121.98	284.73
29	70.00	2691.00	2.00	303.00	2685.08	74.42	31.89	-119.73	1.26	1.07	24.29	123.91	284.92
30	63.00	2754.00	2.50	323.00	2748.03	76.65	33.59	-121.48	1.47	0.79	31.75	126.04	285.46
31	58.00	2812.00	4.00	326.00	2805.94	79.85	36.28	-123.37	2.60	2.59	5.17	128.60	286.39
32	99.00	2911.00	5.00	353.00	2904.64	87.40	43.42	-125.83	2.34	1.01	27.27	133.11	289.04
33	92.00	3003.00	6.00	13.00	2996.22	95.21	52.09	-125.24	2.33	1.09	21.74	135.64	292.58
34	63.00	3066.00	7.00	14.00	3058.82	101.01	59.02	-123.57	1.60	1.59	1.59	136.94	295.53
35	60.00	3126.00	6.25	1.00	3118.42	106.98	65.84	-122.63	2.79	-1.25	-21.67	139.18	298.23
36	97.00	3223.00	7.00	339.00	3214.79	117.75	76.64	-124.65	2.71	0.77	-22.68	146.32	301.58
37	64.00	3287.00	8.50	336.00	3278.20	126.38	84.60	-127.97	2.43	2.34	-4.69	153.41	303.47
38	104.00	3391.00	10.25	341.00	3380.81	143.30	100.37	-134.11	1.85	1.68	4.81	167.51	306.81
39	91.00	3482.00	11.00	341.00	3470.25	160.06	116.23	-139.57	0.82	0.82	0.00	181.64	309.79
40	94.00	3576.00	11.50	342.00	3562.44	178.36	133.63	-145.39	0.57	0.53	1.06	197.47	312.59
41	93.00	3669.00	12.00	343.00	3653.49	197.24	151.69	-151.08	0.58	0.54	1.08	214.09	315.11
42	94.00	3763.00	12.75	343.00	3745.31	217.31	170.95	-156.97	0.80	0.80	0.00	232.09	317.44
43	94.00	3857.00	13.75	346.00	3836.81	238.70	191.71	-162.71	1.29	1.06	3.19	251.45	319.68
44	92.00	3949.00	14.50	348.00	3926.03	260.87	213.59	-167.75	0.97	0.82	2.17	271.59	321.85
45	64.00	4013.00	15.00	348.00	3987.92	276.92	229.53	-171.13	0.78	0.78	0.00	286.30	323.29
46	91.00	4104.00	17.50	350.00	4075.28	301.91	254.52	-175.96	2.81	2.75	2.20	309.42	325.34
47	93.00	4197.00	20.00	353.00	4163.33	330.95	284.08	-180.33	2.88	2.69	3.23	336.48	327.59
48	94.00	4291.00	23.75	352.00	4250.55	364.86	318.80	-184.92	4.01	3.99	-1.06	368.55	329.88
49	51.00	4342.00	22.25	344.00	4297.51	384.43	338.25	-189.01	6.79	-2.94	-15.69	387.48	330.80
50	30.00	4372.00	21.00	342.00	4325.40	395.44	348.83	-192.24	4.84	-4.17	-6.67	398.29	331.14
51	32.00	4404.00	19.75	339.00	4355.39	406.57	359.33	-195.95	5.09	-3.91	-9.37	409.28	331.40
52	108.00	4512.00	18.25	335.00	4457.51	441.70	391.69	-209.64	1.84	-1.39	-3.70	444.27	331.84
53	97.00	4609.00	18.25	335.00	4549.63	472.04	419.22	-222.48	0.00	0.00	0.00	474.60	332.05
54	92.00	4701.00	18.00	334.00	4637.07	500.60	445.06	-234.80	0.43	-0.27	-1.09	503.19	332.19
55	94.00	4795.00	20.00	337.00	4725.94	531.17	472.91	-247.44	2.37	2.13	3.19	533.74	332.38
56	105.00	4900.00	23.00	338.00	4823.63	569.65	508.47	-262.15	2.88	2.86	0.95	572.07	332.73
57	62.00	4962.00	24.75	338.00	4880.32	594.74	531.73	-271.55	2.82	2.82	0.00	597.06	332.95
58	139.00	5101.00	25.25	339.00	5006.30	653.48	586.39	-293.07	0.47	0.36	0.72	655.55	333.44
59	94.00	5195.00	26.00	340.00	5091.05	694.12	624.47	-307.30	0.92	0.80	1.06	695.99	333.80
60	93.00	5288.00	26.00	341.00	5174.64	734.84	662.90	-320.91	0.47	0.00	1.08	736.49	334.17
61	89.00	5377.00	26.25	341.00	5254.55	773.98	699.95	-333.67	0.28	0.28	0.00	775.42	334.51
62	96.00	5473.00	26.75	341.00	5340.46	816.76	740.45	-347.62	0.52	0.52	0.00	817.99	334.85
63	95.00	5568.00	27.00	341.00	5425.20	859.64	781.06	-361.60	0.26	0.26	0.00	860.70	335.16
64	95.00	5663.00	27.00	341.00	5509.84	902.71	821.84	-375.64	0.00	0.00	0.00	903.62	335.44
65	94.00	5757.00	26.75	341.00	5593.69	945.14	862.01	-389.47	0.27	-0.27	0.00	945.92	335.69
66	60.00	5817.00	27.25	342.00	5647.15	972.33	887.85	-398.12	1.13	0.83	1.67	973.02	335.85
67	57.00	5874.00	27.25	342.00	5697.83	998.37	912.67	-406.18	0.00	0.00	0.00	998.97	336.01
68	94.00	5968.00	26.50	342.00	5781.67	1040.76	953.08	-419.31	0.80	-0.80	0.00	1041.24	336.25
69	89.00	6057.00	26.00	342.00	5861.49	1080.02	990.52	-431.48	0.56	-0.56	0.00	1080.41	336.46
70	123.00	6180.00	25.50	342.00	5972.28	1133.33	1041.34	-447.99	0.41	-0.41	0.00	1133.61	336.72
71	95.00	6275.00	25.00	342.00	6058.20	1173.76	1079.88	-460.51	0.53	-0.53	0.00	1173.97	336.90
72	229.00	6504.00	23.25	338.00	6267.21	1267.24	1167.82	-492.40	1.05	-0.76	-1.75	1267.38	337.14
73	33.00	6537.00	23.25	338.00	6297.53	1280.27	1179.90	-497.28	0.00	0.00	0.00	1280.41	337.15
74	91.00	6628.00	23.25	338.00	6381.14	1316.19	1213.20	-510.74	0.00	0.00	0.00	1316.33	337.17
75	91.00	6719.00	23.00	338.00	6464.83	1351.93	1246.34	-524.12	0.27	-0.27	0.00	1352.06	337.19
76	96.00	6815.00	23.00	337.00	6553.19	1389.43	1280.99	-538.48	0.41	0.00	-1.04	1389.57	337.20

The Gas Company
A Sempra Energy Utility

Scientific Drilling
FINAL REPORT

Scientific Drilling
West Coast Operations

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD1

Date: 7/11/2007 **Time:** 15:15:01 **Page:** 3
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
77	61.00	6876.00	23.00	337.00	6609.35	1413.27	1302.93	-547.79	0.00	0.00	0.00	1413.40	337.20
78	92.00	6968.00	23.00	337.00	6694.03	1449.21	1336.02	-561.84	0.00	0.00	0.00	1449.35	337.19
79	118.00	7086.00	23.75	336.00	6802.35	1496.00	1378.95	-580.51	0.72	0.64	-0.85	1496.16	337.17
80	95.00	7181.00	23.75	336.78	6889.30	1534.25	1414.01	-595.83	0.33	0.00	0.82	1534.42	337.15
81	19.00	7200.00	24.50	337.50	6906.64	1542.01	1421.17	-598.85	4.24	3.95	3.79	1542.18	337.15
82	292.00	7492.00	24.50	337.50	7172.35	1663.10	1533.04	-645.19	0.00	0.00	0.00	1663.27	337.18

Annotation

MD	TVD

The Gas Company

A Sempra Energy company

FINAL PLOT

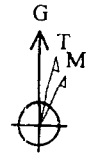
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD2
Survey: MISSION ADRIAN 1A RD2

WELLPATH DETAILS

MISSION ADRIAN 1A RD2
TIE ON TO EXIST. SURVEY/ PROJ. BELOW 7385'

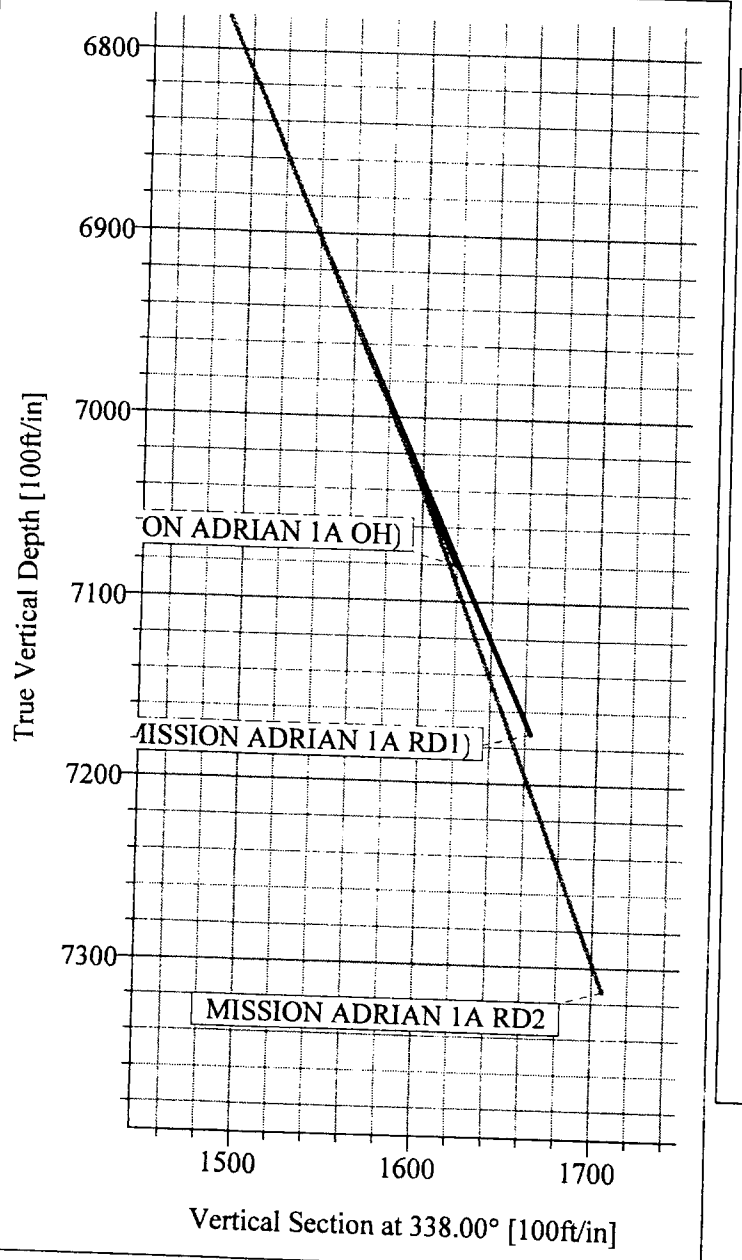
Rig: TORCH PROD.
Ref. Datum: MA-1A 1758.00ft

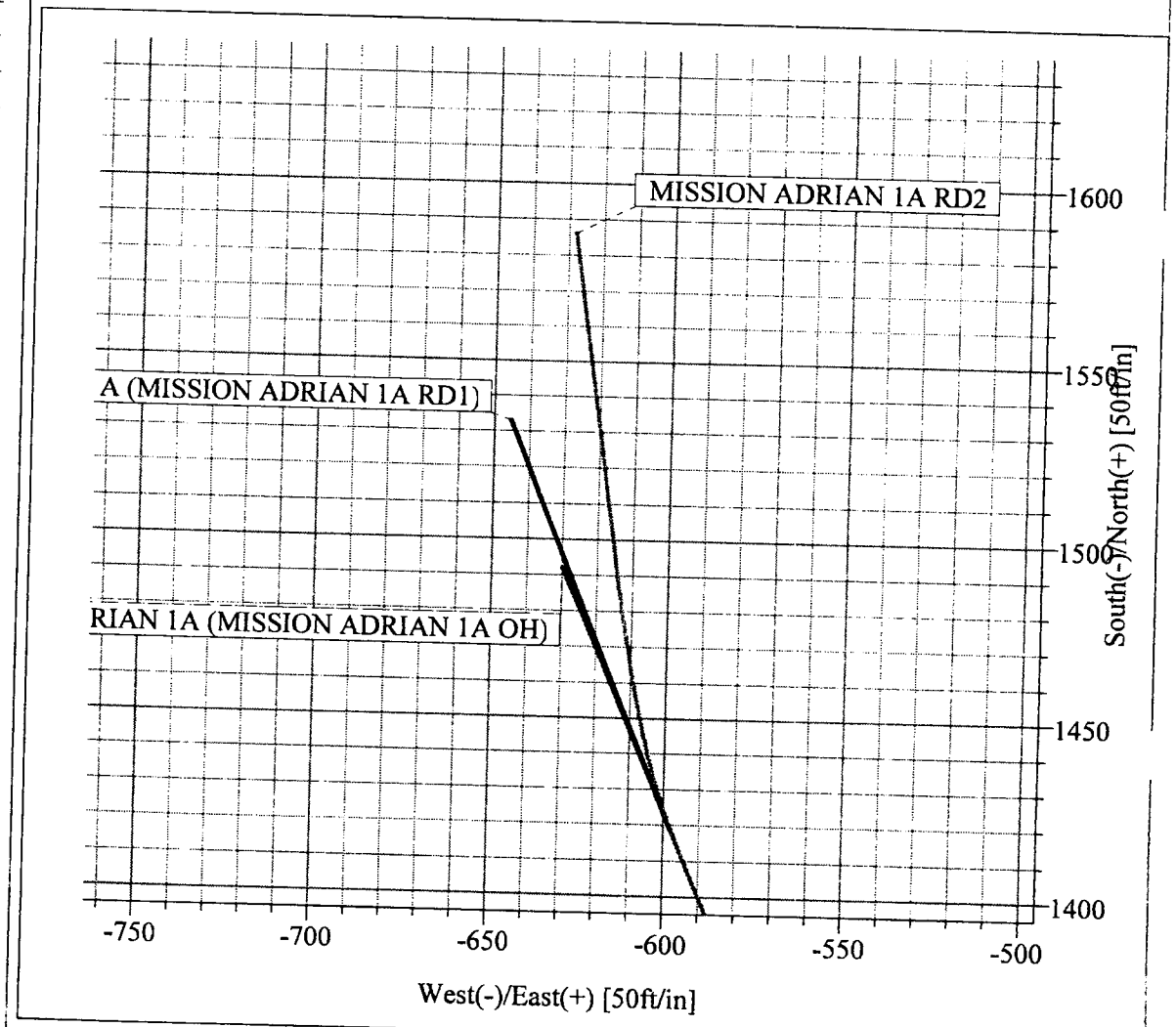
V.Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
338.00°	0.00	0 00	0.00



Azimuths to Grid North
True North: 0.31°
Magnetic North: 13.53°

Magnetic Field
Strength: 48017nT
Dip Angle: 59.09°
Date: 6/8/2006
Model: igrf2005





Scientific Drilling
West Coast Operations

The Gas Company
A Sempra Energy company

FINAL PLOT

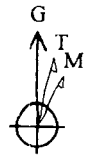
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD2
Survey: MISSION ADRIAN 1A RD2

WELLPATH DETAILS

MISSION ADRIAN 1A RD2
TIE ON TO EXIST. SURVEY/ PROJ. BELOW 7385'

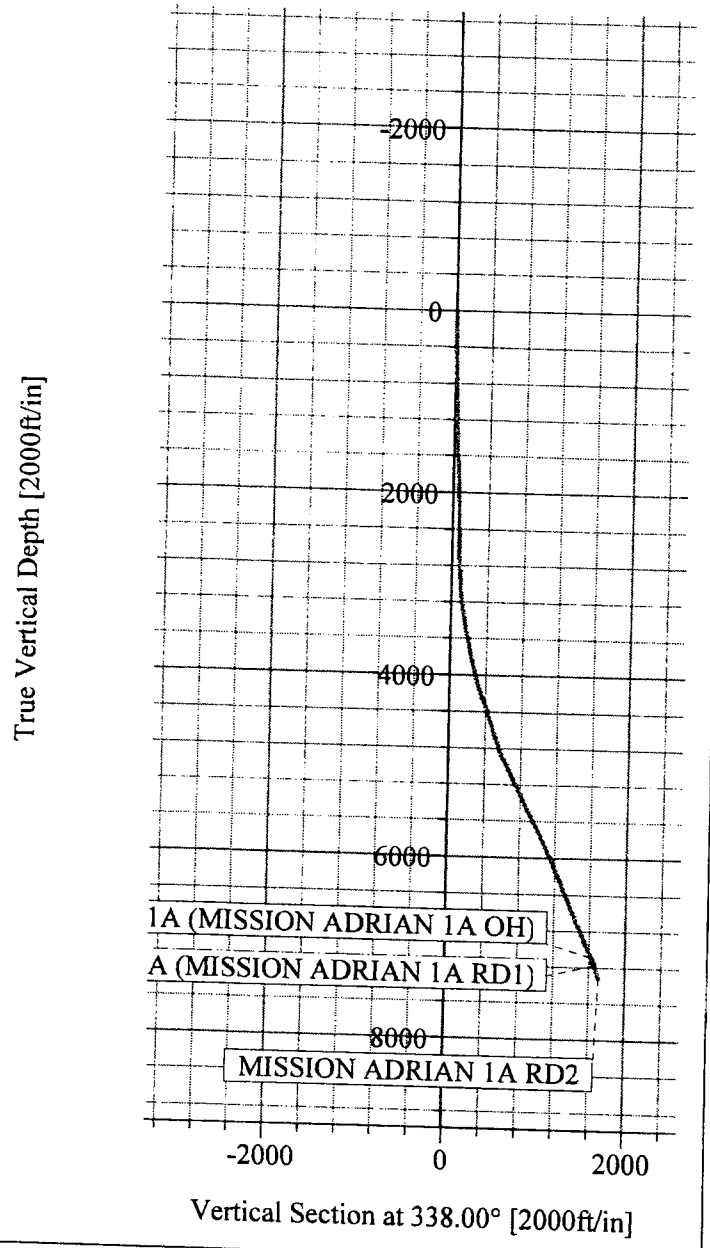
Rig: TORCH PROD
Ref. Datum: MA-1A 1758.00ft

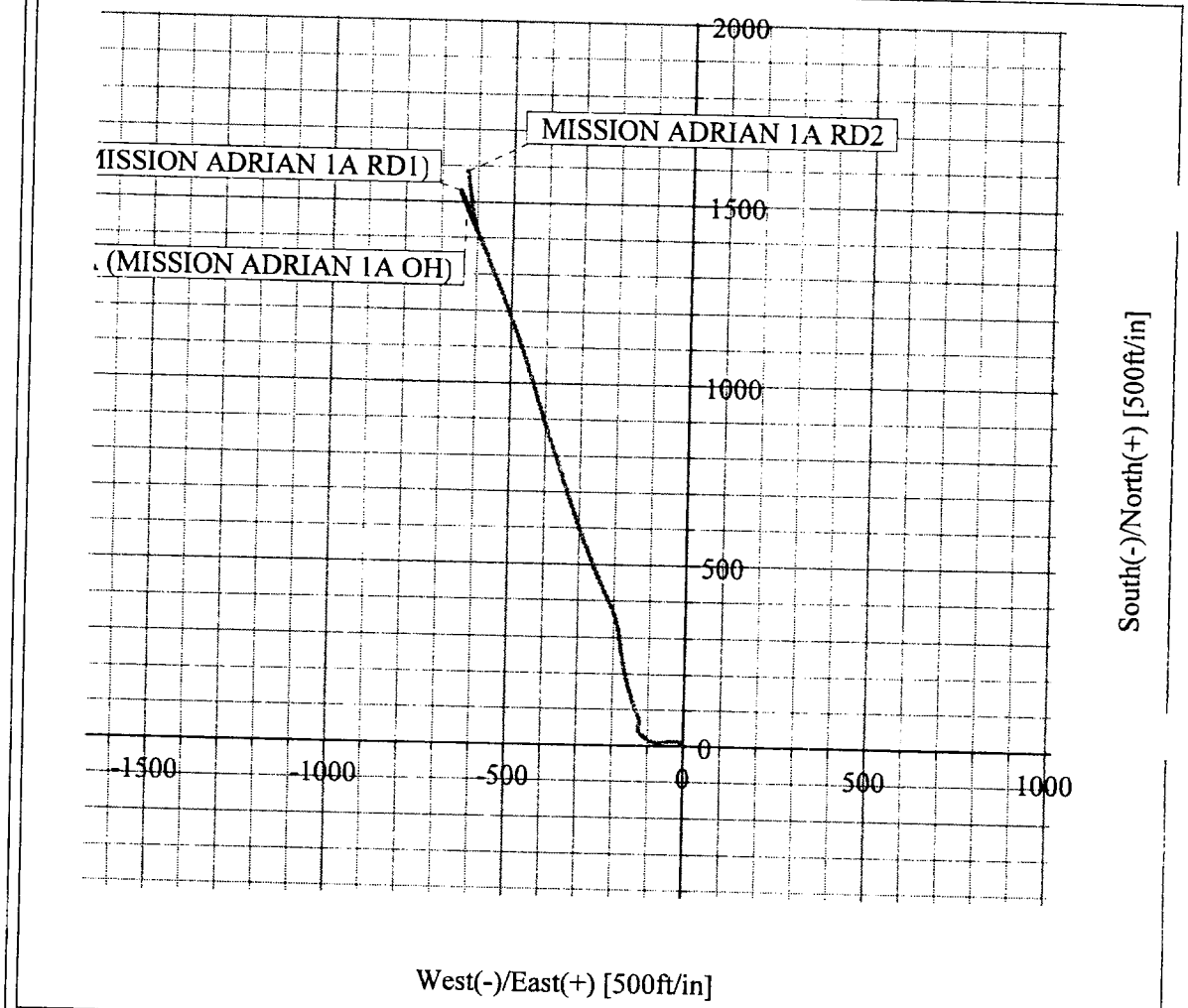
V.Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
338.00°	0.00	0.00	0.00



Azimuths to Grid North
True North: 0.31°
Magnetic North: 13.53°

Magnetic Field
Strength: 48017nT
Dip Angle: 59.09°
Date: 6/8/2006
Model: igrf2005





Scientific Drilling
West Coast Operations

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:06:36 Page: 1 Date: 7/11/2007
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North Co-ordinate(NE)
Site: ALISO CANYON
Reference: MA-1A 1758.0 Vertical (TVD)
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi) Section (VS)
Wellpath: MISSION ADRIAN 1A OH
Method: Minimum Curvature Db: Sybase Survey Calculation

Survey: MISSION ADRIAN 1A OH
6/8/2006 Start Date:
EASTMAN SURVEYS
Company: Scientific Drilling
Chandler Smith Engineer:
Tool: MSS;MAGNETIC SINGLE SHOT
From Surface Tied-to:

Field: ALISO CANYON NAD 83
ALISO CANYON
CALIFORNIA
Map System: US State Plane Coordinate System 1983
California, Zone V Map Zone:
Geo Datum: GRS 1980
Well Centre Coordinate System:
Sys Datum: Mean Sea Level
igrf2005 Geomagnetic Model:

Site: ALISO CANYON
CALIFORNIA, U.S.A.
ALISO CANYON
Site Position: Northing: 1937000.00 ft Latitude:
34 18 49.216 N
From: Map Easting: 6394000.00 ft Longitude:
118 33 19.065 W
Position Uncertainty: 0.00 ft
Grid North Reference:
Ground Level: 0.00 ft
-0.31 deg Grid Convergence:

Well: MISSION ADRIAN 1A
SUR. N 1933940.90, E 6397698.17 SOCALGAS Slot Name:
Well Position: +N/-S -3059.10 ft Northing: 1933940.90 ft Latitude:
34 18 19.155 N
+E/-W 3698.17 ft Easting : 6397698.17 ft Longitude:
118 32 34.780 W
Position Uncertainty: 0.00 ft

Wellpath: MISSION ADRIAN 1A OH
Surface Drilled From:
ORIGINAL HOLE FROM EXISTING DATA
0.00 ft Tie-on Depth:
Current Datum: MA-1A
Datum: Mean Sea Level Height 1758.00 ft Above System

Magnetic Data: 6/8/2006 Declination: 13.22 deg

Field Strength: 48017 nT Mag Dip Angle: 59.09 deg

Vertical Section: Direction	Depth From (TVD)	+N/-S	+E/-W
deg	ft	ft	ft
338.00	0.00	0.00	0.00

Plan:

Principal:

Date Composed:
Version:
Tied-to:

Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target

Survey

MD	Incl	Azim	TVD	N/S	E/W	VS	DLS	MapN	MapE	Sys TVD
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	ft	ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1933940.90	6397698.17	-1758.00
137.00	0.25	266.00	137.00	-0.02	-0.30	0.09	0.18	1933940.88	6397697.87	-1621.00
211.00	0.50	341.00	211.00	0.27	-0.56	0.46	0.67	1933941.17	6397697.61	-1547.00
342.00	0.50	311.00	341.99	1.19	-1.18	1.54	0.20	1933942.09	6397696.99	-1416.01
433.00	1.00	311.00	432.99	1.97	-2.08	2.61	0.55	1933942.87	6397696.09	-1325.01
524.00	1.25	304.00	523.97	3.05	-3.50	4.14	0.31	1933943.95	6397694.67	-1234.03
649.00	1.75	339.00	648.93	5.59	-5.32	7.18	0.82	1933946.49	6397692.85	-1109.07
737.00	1.75	326.00	736.89	7.96	-6.55	9.83	0.45	1933948.86	6397691.62	-1021.11
832.00	1.50	322.00	831.85	10.14	-8.13	12.45	0.29	1933951.04	6397690.04	-926.15
925.00	2.00	284.00	924.81	11.49	-10.45	14.57	1.33	1933952.39	6397687.72	-833.19
1004.00	2.75	287.00	1003.74	12.38	-13.60	16.57	0.96	1933953.28	6397684.57	-754.26
1092.00	4.50	281.00	1091.56	13.66	-19.01	19.78	2.03	1933954.56	6397679.16	-666.44
1184.00	6.50	270.00	1183.13	14.35	-27.76	23.70	2.45	1933955.25	6397670.41	-574.87
1254.00	7.50	259.00	1252.61	13.47	-36.21	26.06	2.38	1933954.37	6397661.96	-505.39
1319.00	7.75	266.00	1317.04	12.36	-44.74	28.22	1.48	1933953.26	6397653.43	-440.96
1412.00	9.00	265.00	1409.05	11.29	-58.25	32.28	1.35	1933952.19	6397639.92	-348.95

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:06:36 Page: 2
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North
Site: ALISO CANYON
Reference: MA-1A 1758.0
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi)
Wellpath: MISSION ADRIAN 1A OH
Method: Minimum Curvature Db: Sybase

Date: 7/11/2007
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD	Incl	Azim MapE	TVD Sys TVD	N/S	E/W	VS	DLS
MapN							
ft	deg	deg	ft	ft	ft	ft	deg/100ft
1503.00	8.00	269.00	1499.05	10.56	-71.67	36.64	1.28
1933951.46		6397626.50	-258.95				
1595.00	7.50	283.00	1590.22	11.80	-83.92	42.37	2.12
1933952.70		6397614.25	-167.78				
1657.00	5.75	287.00	1651.80	13.61	-90.83	46.65	2.92
1933954.51		6397607.34	-106.20				
1720.00	4.00	302.00	1714.57	15.70	-95.72	50.41	3.41
1933956.60		6397602.45	-43.43				
1752.00	3.50	309.00	1746.50	16.91	-97.42	52.17	2.12
1933957.81		6397600.75	-11.50				
1869.00	1.50	314.00	1863.39	20.22	-101.30	56.69	1.72
1933961.12		6397596.87	105.39				
1961.00	2.00	302.00	1955.34	21.91	-103.53	59.09	0.67
1933962.81		6397594.64	197.34				
2084.00	2.00	319.00	2078.27	24.66	-106.76	62.86	0.48
1933965.56		6397591.41	320.27				
2214.00	1.25	300.00	2208.22	27.08	-109.47	66.12	0.70
1933967.98		6397588.70	450.22				
2373.00	1.25	301.00	2367.18	28.84	-112.46	68.87	0.01
1933969.74		6397585.71	609.18				
2495.00	1.50	290.00	2489.14	30.08	-115.10	71.00	0.30
1933970.98		6397583.07	731.14				
2621.00	1.25	286.00	2615.11	31.02	-117.97	72.95	0.21
1933971.92		6397580.20	857.11				
2691.00	2.00	303.00	2685.08	31.89	-119.73	74.42	1.26
1933972.79		6397578.44	927.08				
2754.00	2.50	323.00	2748.03	33.59	-121.48	76.65	1.47
1933974.49		6397576.69	990.03				
2812.00	4.00	326.00	2805.94	36.28	-123.37	79.85	

2.60	1933977.18	6397574.80	1047.94				
	2911.00 5.00	353.00	2904.64	43.42	-125.83	87.40	
2.34	1933984.32	6397572.34	1146.64				
	3003.00 6.00	13.00	2996.22	52.09	-125.24	95.21	
2.33	1933992.99	6397572.93	1238.22				
	3066.00 7.00	14.00	3058.82	59.02	-123.57	101.01	
1.60	1933999.92	6397574.60	1300.82				
	3126.00 6.25	1.00	3118.42	65.84	-122.63	106.98	
2.79	1934006.74	6397575.54	1360.42				
	3223.00 7.00	339.00	3214.79	76.64	-124.65	117.75	
2.71	1934017.54	6397573.52	1456.79				
	3287.00 8.50	336.00	3278.20	84.60	-127.97	126.38	
2.43	1934025.50	6397570.20	1520.20				
	3391.00 10.25	341.00	3380.81	100.37	-134.11	143.30	
1.85	1934041.27	6397564.06	1622.81				
	3482.00 11.00	341.00	3470.25	116.23	-139.57	160.06	
0.82	1934057.13	6397558.60	1712.25				
	3576.00 11.50	342.00	3562.44	133.63	-145.39	178.36	
0.57	1934074.53	6397552.78	1804.44				
	3669.00 12.00	343.00	3653.49	151.69	-151.08	197.24	
0.58	1934092.59	6397547.09	1895.49				
	3763.00 12.75	343.00	3745.31	170.95	-156.97	217.31	
0.80	1934111.85	6397541.20	1987.31				
	3857.00 13.75	346.00	3836.81	191.71	-162.71	238.70	
1.29	1934132.61	6397535.46	2078.81				
	3949.00 14.50	348.00	3926.03	213.59	-167.75	260.87	
0.97	1934154.49	6397530.42	2168.03				
	4013.00 15.00	348.00	3987.92	229.53	-171.13	276.92	
0.78	1934170.43	6397527.04	2229.92				
	4104.00 17.50	350.00	4075.28	254.52	-175.96	301.91	
2.81	1934195.42	6397522.21	2317.28				
	4197.00 20.00	353.00	4163.33	284.08	-180.33	330.95	
2.88	1934224.98	6397517.84	2405.33				
	4291.00 23.75	352.00	4250.55	318.80	-184.92	364.86	
4.01	1934259.70	6397513.25	2492.55				
	4342.00 22.25	344.00	4297.51	338.25	-189.01	384.43	
6.79	1934279.15	6397509.16	2539.51				
	4372.00 21.00	342.00	4325.40	348.83	-192.24	395.44	
4.84	1934289.73	6397505.93	2567.40				
	4404.00 19.75	339.00	4355.39	359.33	-195.95	406.57	
5.09	1934300.23	6397502.22	2597.39				
	4512.00 18.25	335.00	4457.51	391.69	-209.64	441.70	
1.84	1934332.59	6397488.53	2699.51				
	4609.00 18.25	335.00	4549.63	419.22	-222.48	472.04	
0.00	1934360.12	6397475.69	2791.63				
	4701.00 18.00	334.00	4637.07	445.06	-234.80	500.60	
0.43	1934385.96	6397463.37	2879.07				
	4795.00 20.00	337.00	4725.94	472.91	-247.44	531.17	
2.37	1934413.81	6397450.73	2967.94				
	4900.00 23.00	338.00	4823.63	508.47	-262.15	569.65	
2.88	1934449.37	6397436.02	3065.63				
	4962.00 24.75	338.00	4880.32	531.73	-271.55	594.74	
2.82	1934472.63	6397426.62	3122.32				
	5101.00 25.25	339.00	5006.30	586.39	-293.07	653.48	
0.47	1934527.29	6397405.10	3248.30				
	5195.00 26.00	340.00	5091.05	624.47	-307.30	694.12	
0.92	1934565.37	6397390.87	3333.05				

	5288.00	26.00	341.00	5174.64	662.90	-320.91	734.84
0.47	1934603.80		6397377.26	3416.64			
	5377.00	26.25	341.00	5254.55	699.95	-333.67	773.98
0.28	1934640.85		6397364.50	3496.55			
	5473.00	26.75	341.00	5340.46	740.45	-347.62	816.76
0.52	1934681.35		6397350.55	3582.46			
	5568.00	27.00	341.00	5425.20	781.06	-361.60	859.64
0.26	1934721.96		6397336.57	3667.20			
	5663.00	27.00	341.00	5509.84	821.84	-375.64	902.71
0.00	1934762.74		6397322.53	3751.84			
	5757.00	26.75	341.00	5593.69	862.01	-389.47	945.14
0.27	1934802.91		6397308.70	3835.69			
	5817.00	27.25	342.00	5647.15	887.85	-398.12	972.33
1.13	1934828.75		6397300.05	3889.15			
	5874.00	27.25	342.00	5697.83	912.67	-406.18	998.37
0.00	1934853.57		6397291.99	3939.83			
	5968.00	26.50	342.00	5781.67	953.08	-419.31	1040.76
0.80	1934893.98		6397278.86	4023.67			
	6057.00	26.00	342.00	5861.49	990.52	-431.48	1080.02
0.56	1934931.42		6397266.69	4103.49			

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:06:36 Page: 3
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North
Site: ALISO CANYON
Reference: MA-1A 1758.0
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi)
Wellpath: MISSION ADRIAN 1A OH
Method: Minimum Curvature Db: Sybase

Date: 7/11/2007
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD	Incl	Azim	TVD	N/S	E/W	VS	DLS
MapN		MapE	Sys TVD				
ft	deg	deg	ft	ft	ft	ft	
deg/100ft	ft	ft	ft				
6180.00	25.50	342.00	5972.28	1041.34	-447.99	1133.33	
0.41	1934982.24	6397250.18	4214.28				
6275.00	25.00	342.00	6058.20	1079.88	-460.51	1173.76	
0.53	1935020.78	6397237.66	4300.20				
6504.00	23.25	338.00	6267.21	1167.82	-492.40	1267.24	
1.05	1935108.72	6397205.77	4509.21				
6537.00	23.25	338.00	6297.53	1179.90	-497.28	1280.27	
0.00	1935120.80	6397200.89	4539.53				
6628.00	23.25	338.00	6381.14	1213.20	-510.74	1316.19	

0.00	1935154.10	6397187.43	4623.14			
	6719.00 23.00	338.00	6464.83	1246.34	-524.12	1351.93
0.27	1935187.24	6397174.05	4706.83			
	6815.00 23.00	337.00	6553.19	1280.99	-538.48	1389.43
0.41	1935221.89	6397159.69	4795.19			
	6876.00 23.00	337.00	6609.35	1302.93	-547.79	1413.27
0.00	1935243.83	6397150.38	4851.35			
	6968.00 23.00	337.00	6694.03	1336.02	-561.84	1449.21
0.00	1935276.92	6397136.33	4936.03			
	7086.00 23.75	336.00	6802.35	1378.95	-580.51	1496.00
0.72	1935319.85	6397117.66	5044.35			
	7208.00 23.75	337.00	6914.02	1424.01	-600.10	1545.12
0.33	1935364.91	6397098.07	5156.02			
	7390.00 24.50	336.00	7080.12	1492.22	-629.77	1619.48
0.47	1935433.12	6397068.40	5322.12			

The Gas Company
A Sempra Energy utility

Scientific Drilling
FINAL REPORT

Scientific Drilling
West Coast Operations

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD2

Date: 7/11/2007 **Time:** 15:23:47 **Page:** 1
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey: MISSION ADRIAN 1A RD2
TIE ON TO EXIST. SURVEY/ PROJ. BELOW 7385'
Company: Scientific Drilling
Tool: MSS;MAGNETIC SINGLE SHOT

Start Date: 6/8/2006
Engineer: Chandler Smith
Tied-to: From Surface

Field: ALISO CANYON NAD 83
ALISO CANYON
CALIFORNIA
Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: California, Zone V
Coordinate System: Well Centre
Geomagnetic Model: igrf2005

Site: ALISO CANYON
CALIFORNIA, U.S.A.
ALISO CANYON
Site Position:
From: Map
Position Uncertainty: 0.00 ft
Ground Level: 0.00 ft
Northing: 1937000.00 ft
Easting: 6394000.00 ft
Latitude: 34 18 49.216 N
Longitude: 118 33 19.065 W
North Reference: Grid
Grid Convergence: -0.31 deg

Well: MISSION ADRIAN 1A
SUR. N 1933940.90, E 6397698.17 SOCALGAS
Slot Name:
Well Position: +N/-S -3059.10 ft **Northing:** 1933940.90 ft **Latitude:** 34 18 19.155 N
+E/-W 3698.17 ft **Easting:** 6397698.17 ft **Longitude:** 118 32 34.780 W
Position Uncertainty: 0.00 ft

Wellpath: MISSION ADRIAN 1A RD2
TIE ON TO EXIST. SURVEY/ PROJ. BELOW 7385'
Current Datum: MA-1A **Height** 1758.00 ft
Magnetic Data: 6/8/2006
Field Strength: 48017 nT
Vertical Section: **Depth From (TVD)** ft: 0.00; **+N/-S** ft: 0.00; **+E/-W** ft: 0.00; **Direction** deg: 338.00

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 13.22 deg
Mag Dip Angle: 59.09 deg

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	137.00	137.00	0.25	266.00	137.00	0.09	-0.02	-0.30	0.18	0.18	0.00	0.30	266.00
3	74.00	211.00	0.50	341.00	211.00	0.46	0.27	-0.56	0.67	0.34	101.35	0.63	295.83
4	131.00	342.00	0.50	311.00	341.99	1.54	1.19	-1.18	0.20	0.00	-22.90	1.68	315.16
5	91.00	433.00	1.00	311.00	432.99	2.61	1.97	-2.08	0.55	0.55	0.00	2.87	313.43
6	91.00	524.00	1.25	304.00	523.97	4.14	3.05	-3.50	0.31	0.27	-7.69	4.64	311.01
7	125.00	649.00	1.75	339.00	648.93	7.18	5.59	-5.32	0.82	0.40	28.00	7.72	316.43
8	88.00	737.00	1.75	326.00	736.89	9.83	7.96	-6.55	0.45	0.00	-14.77	10.31	320.55
9	95.00	832.00	1.50	322.00	831.85	12.45	10.14	-8.13	0.29	-0.26	-4.21	13.00	321.29
10	93.00	925.00	2.00	284.00	924.81	14.57	11.49	-10.45	1.33	0.54	-40.86	15.53	317.72
11	79.00	1004.00	2.75	287.00	1003.74	16.57	12.38	-13.60	0.96	0.95	3.80	18.39	312.31
12	88.00	1092.00	4.50	281.00	1091.56	19.78	13.66	-19.01	2.03	1.99	-6.82	23.41	305.69
13	92.00	1184.00	6.50	270.00	1183.13	23.70	14.35	-27.76	2.45	2.17	-11.96	31.25	297.33
14	70.00	1254.00	7.50	259.00	1252.61	26.06	13.47	-36.21	2.38	1.43	-15.71	38.63	290.41
15	65.00	1319.00	7.75	266.00	1317.04	28.22	12.36	-44.74	1.48	0.38	10.77	46.42	285.44
16	93.00	1412.00	9.00	265.00	1409.05	32.28	11.29	-58.25	1.35	1.34	-1.08	59.33	280.97
17	91.00	1503.00	8.00	269.00	1499.05	36.64	10.56	-71.67	1.28	-1.10	4.40	72.44	278.38
18	92.00	1595.00	7.50	283.00	1590.22	42.37	11.80	-83.92	2.12	-0.54	15.22	84.75	278.00
19	62.00	1657.00	5.75	287.00	1651.80	46.65	13.61	-90.83	2.92	-2.82	6.45	91.85	278.52
20	63.00	1720.00	4.00	302.00	1714.57	50.41	15.70	-95.72	3.41	-2.78	23.81	97.00	279.32
21	32.00	1752.00	3.50	309.00	1746.50	52.17	16.91	-97.42	2.12	-1.56	21.87	98.88	279.85
22	117.00	1869.00	1.50	314.00	1863.39	56.69	20.22	-101.30	1.72	-1.71	4.27	103.30	281.29
23	92.00	1961.00	2.00	302.00	1955.34	59.09	21.91	-103.53	0.67	0.54	-13.04	105.82	281.95
24	123.00	2084.00	2.00	319.00	2078.27	62.86	24.66	-106.76	0.48	0.00	13.82	109.57	283.01

The Gas Company
A Sempra Energy Utility

Scientific Drilling
FINAL REPORT

Scientific Drilling
West Coast Operations

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD2

Date: 7/11/2007 **Time:** 15:23:47 **Page:** 2
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
25	130.00	2214.00	1.25	300.00	2208.22	66.12	27.08	-109.47	0.70	-0.58	-14.62	112.77	283.90
26	159.00	2373.00	1.25	301.00	2367.18	68.87	28.84	-112.46	0.01	0.00	0.63	116.10	284.39
27	122.00	2495.00	1.50	290.00	2489.14	71.00	30.08	-115.10	0.30	0.20	-9.02	118.97	284.64
28	126.00	2621.00	1.25	286.00	2615.11	72.95	31.02	-117.97	0.21	-0.20	-3.17	121.98	284.73
29	70.00	2691.00	2.00	303.00	2685.08	74.42	31.89	-119.73	1.26	1.07	24.29	123.91	284.92
30	63.00	2754.00	2.50	323.00	2748.03	76.65	33.59	-121.48	1.47	0.79	31.75	126.04	285.46
31	58.00	2812.00	4.00	326.00	2805.94	79.85	36.28	-123.37	2.60	2.59	5.17	128.60	286.39
32	99.00	2911.00	5.00	353.00	2904.64	87.40	43.42	-125.83	2.34	1.01	27.27	133.11	289.04
33	92.00	3003.00	6.00	13.00	2996.22	95.21	52.09	-125.24	2.33	1.09	21.74	135.64	292.58
34	63.00	3066.00	7.00	14.00	3058.82	101.01	59.02	-123.57	1.60	1.59	1.59	136.94	295.53
35	60.00	3126.00	6.25	1.00	3118.42	106.98	65.84	-122.63	2.79	-1.25	-21.67	139.18	298.23
36	97.00	3223.00	7.00	339.00	3214.79	117.75	76.64	-124.65	2.71	0.77	-22.68	146.32	301.58
37	64.00	3287.00	8.50	336.00	3278.20	126.38	84.60	-127.97	2.43	2.34	-4.69	153.41	303.47
38	104.00	3391.00	10.25	341.00	3380.81	143.30	100.37	-134.11	1.85	1.68	4.81	167.51	306.81
39	91.00	3482.00	11.00	341.00	3470.25	160.06	116.23	-139.57	0.82	0.82	0.00	181.64	309.79
40	94.00	3576.00	11.50	342.00	3562.44	178.36	133.63	-145.39	0.57	0.53	1.06	197.47	312.59
41	93.00	3669.00	12.00	343.00	3653.49	197.24	151.69	-151.08	0.58	0.54	1.08	214.09	315.11
42	94.00	3763.00	12.75	343.00	3745.31	217.31	170.95	-156.97	0.80	0.80	0.00	232.09	317.44
43	94.00	3857.00	13.75	346.00	3836.81	238.70	191.71	-162.71	1.29	1.06	3.19	251.45	319.68
44	92.00	3949.00	14.50	348.00	3926.03	260.87	213.59	-167.75	0.97	0.82	2.17	271.59	321.85
45	64.00	4013.00	15.00	348.00	3987.92	276.92	229.53	-171.13	0.78	0.78	0.00	286.30	323.29
46	91.00	4104.00	17.50	350.00	4075.28	301.91	254.52	-175.96	2.81	2.75	2.20	309.42	325.34
47	93.00	4197.00	20.00	353.00	4163.33	330.95	284.08	-180.33	2.88	2.69	3.23	336.48	327.59
48	94.00	4291.00	23.75	352.00	4250.55	364.86	318.80	-184.92	4.01	3.99	-1.06	368.55	329.88
49	51.00	4342.00	22.25	344.00	4297.51	384.43	338.25	-189.01	6.79	-2.94	-15.69	387.48	330.80
50	30.00	4372.00	21.00	342.00	4325.40	395.44	348.83	-192.24	4.84	-4.17	-6.67	398.29	331.14
51	32.00	4404.00	19.75	339.00	4355.39	406.57	359.33	-195.95	5.09	-3.91	-9.37	409.28	331.40
52	108.00	4512.00	18.25	335.00	4457.51	441.70	391.69	-209.64	1.84	-1.39	-3.70	444.27	331.84
53	97.00	4609.00	18.25	335.00	4549.63	472.04	419.22	-222.48	0.00	0.00	0.00	474.60	332.05
54	92.00	4701.00	18.00	334.00	4637.07	500.60	445.06	-234.80	0.43	-0.27	-1.09	503.19	332.19
55	94.00	4795.00	20.00	337.00	4725.94	531.17	472.91	-247.44	2.37	2.13	3.19	533.74	332.38
56	105.00	4900.00	23.00	338.00	4823.63	569.65	508.47	-262.15	2.88	2.86	0.95	572.07	332.73
57	62.00	4962.00	24.75	338.00	4880.32	594.74	531.73	-271.55	2.82	2.82	0.00	597.06	332.95
58	139.00	5101.00	25.25	339.00	5006.30	653.48	586.39	-293.07	0.47	0.36	0.72	655.55	333.44
59	94.00	5195.00	26.00	340.00	5091.05	694.12	624.47	-307.30	0.92	0.80	1.06	695.99	333.80
60	93.00	5288.00	26.00	341.00	5174.64	734.84	662.90	-320.91	0.47	0.00	1.08	736.49	334.17
61	89.00	5377.00	26.25	341.00	5254.55	773.98	699.95	-333.67	0.28	0.28	0.00	775.42	334.51
62	96.00	5473.00	26.75	341.00	5340.46	816.76	740.45	-347.62	0.52	0.52	0.00	817.99	334.85
63	95.00	5568.00	27.00	341.00	5425.20	859.64	781.06	-361.60	0.26	0.26	0.00	860.70	335.16
64	95.00	5663.00	27.00	341.00	5509.84	902.71	821.84	-375.64	0.00	0.00	0.00	903.62	335.44
65	94.00	5757.00	26.75	341.00	5593.69	945.14	862.01	-389.47	0.27	-0.27	0.00	945.92	335.69
66	60.00	5817.00	27.25	342.00	5647.15	972.33	887.85	-398.12	1.13	0.83	1.67	973.02	335.85
67	57.00	5874.00	27.25	342.00	5697.83	998.37	912.67	-406.18	0.00	0.00	0.00	998.97	336.01
68	94.00	5968.00	26.50	342.00	5781.67	1040.76	953.08	-419.31	0.80	-0.80	0.00	1041.24	336.25
69	89.00	6057.00	26.00	342.00	5861.49	1080.02	990.52	-431.48	0.56	-0.56	0.00	1080.41	336.46
70	123.00	6180.00	25.50	342.00	5972.28	1133.33	1041.34	-447.99	0.41	-0.41	0.00	1133.61	336.72
71	95.00	6275.00	25.00	342.00	6058.20	1173.76	1079.88	-460.51	0.53	-0.53	0.00	1173.97	336.90
72	229.00	6504.00	23.25	338.00	6267.21	1267.24	1167.82	-492.40	1.05	-0.76	-1.75	1267.38	337.14
73	33.00	6537.00	23.25	338.00	6297.53	1280.27	1179.90	-497.28	0.00	0.00	0.00	1280.41	337.15
74	91.00	6628.00	23.25	338.00	6381.14	1316.19	1213.20	-510.74	0.00	0.00	0.00	1316.33	337.17
75	91.00	6719.00	23.00	338.00	6464.83	1351.93	1246.34	-524.12	0.27	-0.27	0.00	1352.06	337.19
76	96.00	6815.00	23.00	337.00	6553.19	1389.43	1280.99	-538.48	0.41	0.00	-1.04	1389.57	337.20

Company: THE GAS COMPANY
Field: ALISO CANYON NAD 83
Site: ALISO CANYON
Well: MISSION ADRIAN 1A
Wellpath: MISSION ADRIAN 1A RD2

Date: 7/11/2007 **Time:** 15:23:47 **Page:** 3
Co-ordinate(NE) Reference: Well: MISSION ADRIAN 1A, Grid North
Vertical (TVD) Reference: MA-1A 1758.0
Section (VS) Reference: Well (0.00N,0.00E,338.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

Stn	CLen ft	MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsD ft	ClsA deg
77	61.00	6876.00	23.00	337.00	6609.35	1413.27	1302.93	-547.79	0.00	0.00	0.00	1413.40	337.20
78	92.00	6968.00	23.00	337.00	6694.03	1449.21	1336.02	-561.84	0.00	0.00	0.00	1449.35	337.19
79	118.00	7086.00	23.75	336.00	6802.35	1496.00	1378.95	-580.51	0.72	0.64	-0.85	1496.16	337.17
80	95.00	7181.00	23.75	336.78	6889.30	1534.25	1414.01	-595.83	0.33	0.00	0.82	1534.42	337.15
81	44.00	7225.00	24.71	342.56	6929.43	1552.28	1430.93	-602.08	5.81	2.18	13.14	1552.44	337.18
82	25.00	7250.00	24.28	345.77	6952.18	1562.58	1440.90	-604.91	5.59	-1.72	12.84	1562.72	337.23
83	25.00	7275.00	23.37	347.84	6975.05	1572.56	1450.73	-607.22	4.94	-3.64	8.28	1572.68	337.29
84	25.00	7300.00	23.13	348.94	6998.02	1582.27	1460.39	-609.21	1.98	-0.96	4.40	1582.37	337.36
85	25.00	7325.00	23.11	350.02	7021.01	1591.89	1470.04	-611.00	1.70	-0.08	4.32	1591.96	337.43
86	25.00	7350.00	22.55	350.74	7044.05	1601.36	1479.61	-612.62	2.50	-2.24	2.88	1601.42	337.51
87	35.00	7385.00	21.76	351.86	7076.47	1614.20	1492.65	-614.62	2.56	-2.26	3.20	1614.24	337.62
88	255.00	7640.00	21.76	351.86	7313.30	1705.99	1586.23	-628.01	0.00	0.00	0.00	1706.03	338.40

Annotation

MD	TVD

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:16:57 Page: 1 Date: 7/11/2007
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North Co-ordinate(NE)
Site: ALISO CANYON
Reference: MA-1A 1758.0 Vertical (TVD)
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi) Section (VS)
Wellpath: MISSION ADRIAN 1A RD1
Method: Minimum Curvature Db: Sybase Survey Calculation

Survey: MISSION ADRIAN 1A RD1
6/8/2006 Start Date:
MSS, TIE ON AT 7181'. PROJ. BELOW
Company: Scientific Drilling
Chandler Smith Engineer:
Tool: MSS;MAGNETIC SINGLE SHOT
From Surface Tied-to:

Field: ALISO CANYON NAD 83
ALISO CANYON
CALIFORNIA
Map System: US State Plane Coordinate System 1983
California, Zone V Map Zone:
Geo Datum: GRS 1980
Well Centre Coordinate System:
Sys Datum: Mean Sea Level
igrf2005 Geomagnetic Model:

Site: ALISO CANYON
CALIFORNIA, U.S.A.
ALISO CANYON
Site Position: Northing: 1937000.00 ft Latitude:
34 18 49.216 N
From: Map Easting: 6394000.00 ft Longitude:
118 33 19.065 W
Position Uncertainty: 0.00 ft
Grid North Reference:
Ground Level: 0.00 ft
-0.31 deg Grid Convergence:

Well: MISSION ADRIAN 1A
SUR. N 1933940.90, E 6397698.17 SOCALGAS Slot Name:
Well Position: +N/-S-3059.10 ft Northing: 1933940.90 ft Latitude:
34 18 19.155 N
+E/-W 3698.17 ft Easting : 6397698.17 ft Longitude:
118 32 34.780 W
Position Uncertainty: 0.00 ft

Wellpath: MISSION ADRIAN 1A RD1
Surface Drilled From:
EXIT WINDOW AT 7181', PROJECTIONS BELOW
0.00 ft Tie-on Depth:
Current Datum: MA-1A
Datum: Mean Sea Level Height 1758.00 ft Above System

Magnetic Data: 6/8/2006 Declination: 13.22 deg

Field Strength: 48017 nT Mag Dip Angle: 59.09 deg

Vertical Section: Direction	Depth From (TVD)	+N/-S	+E/-W
deg	ft	ft	ft
338.00	0.00	0.00	0.00

Plan:

Principal:

Date Composed:
Version:
Tied-to:

Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target

Survey

MD	Incl	Azim	TVD	N/S	E/W	VS	DLS
MapN ft	deg	MapE deg	Sys TVD ft	ft	ft	ft	deg/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1933940.90		6397698.17	-1758.00				
137.00	0.25	266.00	137.00	-0.02	-0.30	0.09	0.18
1933940.88		6397697.87	-1621.00				
211.00	0.50	341.00	211.00	0.27	-0.56	0.46	0.67
1933941.17		6397697.61	-1547.00				
342.00	0.50	311.00	341.99	1.19	-1.18	1.54	0.20
1933942.09		6397696.99	-1416.01				
433.00	1.00	311.00	432.99	1.97	-2.08	2.61	0.55
1933942.87		6397696.09	-1325.01				
524.00	1.25	304.00	523.97	3.05	-3.50	4.14	0.31
1933943.95		6397694.67	-1234.03				
649.00	1.75	339.00	648.93	5.59	-5.32	7.18	0.82
1933946.49		6397692.85	-1109.07				
737.00	1.75	326.00	736.89	7.96	-6.55	9.83	0.45
1933948.86		6397691.62	-1021.11				
832.00	1.50	322.00	831.85	10.14	-8.13	12.45	0.29
1933951.04		6397690.04	-926.15				
925.00	2.00	284.00	924.81	11.49	-10.45	14.57	1.33
1933952.39		6397687.72	-833.19				
1004.00	2.75	287.00	1003.74	12.38	-13.60	16.57	0.96
1933953.28		6397684.57	-754.26				
1092.00	4.50	281.00	1091.56	13.66	-19.01	19.78	2.03
1933954.56		6397679.16	-666.44				
1184.00	6.50	270.00	1183.13	14.35	-27.76	23.70	2.45
1933955.25		6397670.41	-574.87				
1254.00	7.50	259.00	1252.61	13.47	-36.21	26.06	2.38
1933954.37		6397661.96	-505.39				
1319.00	7.75	266.00	1317.04	12.36	-44.74	28.22	1.48
1933953.26		6397653.43	-440.96				
1412.00	9.00	265.00	1409.05	11.29	-58.25	32.28	1.35
1933952.19		6397639.92	-348.95				

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:16:57 Page: 2
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North
Site: ALISO CANYON
Reference: MA-1A 1758.0
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi)
Wellpath: MISSION ADRIAN 1A RD1
Method: Minimum Curvature Db: Sybase

Date: 7/11/2007
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD	Incl	Azim MapE	TVD Sys TVD	N/S	E/W	VS	DLS
MapN							
ft	deg	deg	ft	ft	ft	ft	deg/100ft
1503.00	8.00	269.00	1499.05	10.56	-71.67	36.64	
1933951.46		6397626.50	-258.95				1.28
1595.00	7.50	283.00	1590.22	11.80	-83.92	42.37	
1933952.70		6397614.25	-167.78				2.12
1657.00	5.75	287.00	1651.80	13.61	-90.83	46.65	
1933954.51		6397607.34	-106.20				2.92
1720.00	4.00	302.00	1714.57	15.70	-95.72	50.41	
1933956.60		6397602.45	-43.43				3.41
1752.00	3.50	309.00	1746.50	16.91	-97.42	52.17	
1933957.81		6397600.75	-11.50				2.12
1869.00	1.50	314.00	1863.39	20.22	-101.30	56.69	
1933961.12		6397596.87	105.39				1.72
1961.00	2.00	302.00	1955.34	21.91	-103.53	59.09	
1933962.81		6397594.64	197.34				0.67
2084.00	2.00	319.00	2078.27	24.66	-106.76	62.86	
1933965.56		6397591.41	320.27				0.48
2214.00	1.25	300.00	2208.22	27.08	-109.47	66.12	
1933967.98		6397588.70	450.22				0.70
2373.00	1.25	301.00	2367.18	28.84	-112.46	68.87	
1933969.74		6397585.71	609.18				0.01
2495.00	1.50	290.00	2489.14	30.08	-115.10	71.00	
1933970.98		6397583.07	731.14				0.30
2621.00	1.25	286.00	2615.11	31.02	-117.97	72.95	
1933971.92		6397580.20	857.11				0.21
2691.00	2.00	303.00	2685.08	31.89	-119.73	74.42	
1933972.79		6397578.44	927.08				1.26
2754.00	2.50	323.00	2748.03	33.59	-121.48	76.65	
1933974.49		6397576.69	990.03				1.47
2812.00	4.00	326.00	2805.94	36.28	-123.37	79.85	

2.60	1933977.18	6397574.80	1047.94			
	2911.00 5.00	353.00	2904.64	43.42	-125.83	87.40
2.34	1933984.32	6397572.34	1146.64			
	3003.00 6.00	13.00	2996.22	52.09	-125.24	95.21
2.33	1933992.99	6397572.93	1238.22			
	3066.00 7.00	14.00	3058.82	59.02	-123.57	101.01
1.60	1933999.92	6397574.60	1300.82			
	3126.00 6.25	1.00	3118.42	65.84	-122.63	106.98
2.79	1934006.74	6397575.54	1360.42			
	3223.00 7.00	339.00	3214.79	76.64	-124.65	117.75
2.71	1934017.54	6397573.52	1456.79			
	3287.00 8.50	336.00	3278.20	84.60	-127.97	126.38
2.43	1934025.50	6397570.20	1520.20			
	3391.00 10.25	341.00	3380.81	100.37	-134.11	143.30
1.85	1934041.27	6397564.06	1622.81			
	3482.00 11.00	341.00	3470.25	116.23	-139.57	160.06
0.82	1934057.13	6397558.60	1712.25			
	3576.00 11.50	342.00	3562.44	133.63	-145.39	178.36
0.57	1934074.53	6397552.78	1804.44			
	3669.00 12.00	343.00	3653.49	151.69	-151.08	197.24
0.58	1934092.59	6397547.09	1895.49			
	3763.00 12.75	343.00	3745.31	170.95	-156.97	217.31
0.80	1934111.85	6397541.20	1987.31			
	3857.00 13.75	346.00	3836.81	191.71	-162.71	238.70
1.29	1934132.61	6397535.46	2078.81			
	3949.00 14.50	348.00	3926.03	213.59	-167.75	260.87
0.97	1934154.49	6397530.42	2168.03			
	4013.00 15.00	348.00	3987.92	229.53	-171.13	276.92
0.78	1934170.43	6397527.04	2229.92			
	4104.00 17.50	350.00	4075.28	254.52	-175.96	301.91
2.81	1934195.42	6397522.21	2317.28			
	4197.00 20.00	353.00	4163.33	284.08	-180.33	330.95
2.88	1934224.98	6397517.84	2405.33			
	4291.00 23.75	352.00	4250.55	318.80	-184.92	364.86
4.01	1934259.70	6397513.25	2492.55			
	4342.00 22.25	344.00	4297.51	338.25	-189.01	384.43
6.79	1934279.15	6397509.16	2539.51			
	4372.00 21.00	342.00	4325.40	348.83	-192.24	395.44
4.84	1934289.73	6397505.93	2567.40			
	4404.00 19.75	339.00	4355.39	359.33	-195.95	406.57
5.09	1934300.23	6397502.22	2597.39			
	4512.00 18.25	335.00	4457.51	391.69	-209.64	441.70
1.84	1934332.59	6397488.53	2699.51			
	4609.00 18.25	335.00	4549.63	419.22	-222.48	472.04
0.00	1934360.12	6397475.69	2791.63			
	4701.00 18.00	334.00	4637.07	445.06	-234.80	500.60
0.43	1934385.96	6397463.37	2879.07			
	4795.00 20.00	337.00	4725.94	472.91	-247.44	531.17
2.37	1934413.81	6397450.73	2967.94			
	4900.00 23.00	338.00	4823.63	508.47	-262.15	569.65
2.88	1934449.37	6397436.02	3065.63			
	4962.00 24.75	338.00	4880.32	531.73	-271.55	594.74
2.82	1934472.63	6397426.62	3122.32			
	5101.00 25.25	339.00	5006.30	586.39	-293.07	653.48
0.47	1934527.29	6397405.10	3248.30			
	5195.00 26.00	340.00	5091.05	624.47	-307.30	694.12
0.92	1934565.37	6397390.87	3333.05			

5288.00	26.00	341.00	5174.64	662.90	-320.91	734.84	
0.47	1934603.80	6397377.26	3416.64				
5377.00	26.25	341.00	5254.55	699.95	-333.67	773.98	
0.28	1934640.85	6397364.50	3496.55				
5473.00	26.75	341.00	5340.46	740.45	-347.62	816.76	
0.52	1934681.35	6397350.55	3582.46				
5568.00	27.00	341.00	5425.20	781.06	-361.60	859.64	
0.26	1934721.96	6397336.57	3667.20				
5663.00	27.00	341.00	5509.84	821.84	-375.64	902.71	
0.00	1934762.74	6397322.53	3751.84				
5757.00	26.75	341.00	5593.69	862.01	-389.47	945.14	
0.27	1934802.91	6397308.70	3835.69				
5817.00	27.25	342.00	5647.15	887.85	-398.12	972.33	
1.13	1934828.75	6397300.05	3889.15				
5874.00	27.25	342.00	5697.83	912.67	-406.18	998.37	
0.00	1934853.57	6397291.99	3939.83				
5968.00	26.50	342.00	5781.67	953.08	-419.31	1040.76	
0.80	1934893.98	6397278.86	4023.67				
6057.00	26.00	342.00	5861.49	990.52	-431.48	1080.02	
0.56	1934931.42	6397266.69	4103.49				

Scientific Drilling
TVDSS

Company: THE GAS COMPANY
Time: 15:16:57 Page: 3
Field: ALISO CANYON NAD 83
Reference: Well: MISSION ADRIAN 1A, Grid North
Site: ALISO CANYON
Reference: MA-1A 1758.0
Well: MISSION ADRIAN 1A
Reference: Well (0.00N,0.00E,338.00Azi)
Wellpath: MISSION ADRIAN 1A RD1
Method: Minimum Curvature Db: Sybase

Date: 7/11/2007
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD	Incl	Azim	TVD	N/S	E/W	VS	DLS
MapN		MapE	Sys TVD				
ft	deg	deg	ft	ft	ft	ft	
deg/100ft	ft	ft	ft				
6180.00	25.50	342.00	5972.28	1041.34	-447.99	1133.33	
0.41	1934982.24	6397250.18	4214.28				
6275.00	25.00	342.00	6058.20	1079.88	-460.51	1173.76	
0.53	1935020.78	6397237.66	4300.20				
6504.00	23.25	338.00	6267.21	1167.82	-492.40	1267.24	
1.05	1935108.72	6397205.77	4509.21				
6537.00	23.25	338.00	6297.53	1179.90	-497.28	1280.27	
0.00	1935120.80	6397200.89	4539.53				
6628.00	23.25	338.00	6381.14	1213.20	-510.74	1316.19	

0.00	1935154.10	6397187.43	4623.14			
	6719.00 23.00	338.00	6464.83	1246.34	-524.12	1351.93
0.27	1935187.24	6397174.05	4706.83			
	6815.00 23.00	337.00	6553.19	1280.99	-538.48	1389.43
0.41	1935221.89	6397159.69	4795.19			
	6876.00 23.00	337.00	6609.35	1302.93	-547.79	1413.27
0.00	1935243.83	6397150.38	4851.35			
	6968.00 23.00	337.00	6694.03	1336.02	-561.84	1449.21
0.00	1935276.92	6397136.33	4936.03			
	7086.00 23.75	336.00	6802.35	1378.95	-580.51	1496.00
0.72	1935319.85	6397117.66	5044.35			
	7181.00 23.75	336.78	6889.30	1414.01	-595.83	1534.25
0.33	1935354.91	6397102.34	5131.30			
	7200.00 24.50	337.50	6906.64	1421.17	-598.85	1542.01
4.24	1935362.07	6397099.32	5148.64			
	7492.00 24.50	337.50	7172.35	1533.04	-645.19	1663.10
0.00	1935473.94	6397052.98	5414.35			

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

No. **T206-150**

Report on Operations

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

Ventura, California
July 31, 2006

Your operations at well **"Mission Adrian" 1A,** API No. **037-21891,** Sec. **34**, T. **3N**, R.**16W**, S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **06-12-2006**. **Fred Pineda,** representative of the supervisor, was present from **1000** to **1130** there were also present **Larry Garcia.**

Present condition of well: **13 3/8" cem 1000'; 8 5/8" cem 7379'; 7" cem 7154'-7385'. TD 7640'. ED 7154'.**

The operations were performed for the purpose of **demonstrating that no fluid has access to the well through the seal between the 8 5/8" and 7" casings.**

DECISION:

The seal between the 8 5/8" and 7" casing is approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

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

No. T206-150

LAP TEST
~~MECHANICAL INTEGRITY TEST (MIT)~~

Operator: So. California Gas					Well: Mission Adrian" 1A	
Sec. 34	T. 3	R. 16	B.&M. SB	API No.: 037-21891-02	Field: Aliso Canyon	
County: Los Angeles					Witnessed/Reviewed on: 6/12/06	

Fred Pineda, representative of the supervisor, was present from 1000 to 1130.

Also present were: Larry Garcia / Tool pusher, Well Services

Casing record of the well:

13 3/8 Cem. 1000'; 8 5/8" Cem. 7379; 7" Cem. 7154 - 7385; Cem plug Hook ~~[illegible]~~ TD 7640' EP. 7154

The MIT was performed for the purpose of (D-4) 8 5/8" & 7" [illegible]

☐ ~~The MIT is approved since it indicates that all of the injection fluid is confined to the formations below ______ feet at this time.~~ (E-4) 8 5/8" & 7"

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

Pressure tested liner Lap to 1000 psi,
Held for 22 min w/ no bleed off.

7154' top of 7" casing. Top of cement in 8 5/8" casing was tagged at 7010', drilled through cement to 7154'

OGD6 (9/00/UCP/2M) Printed on recycled paper.

Well:	Date:	Time:
Observed rate: B/D	Meter rate: B/D	Fluid level: feet
Injection pressure: psi	MASP:	Pick-up depth: feet
Initial annulus pressure: psi	Pressure after bleed-off:	psi
Casing vented during test (Y/N)	Survey company:	

DEPTH	COUNTS	RATE	DEPTH	COUNTS	RATE	COMMENTS:

SPINNER COUNTS

TRACER CASING AND TUBING RATE CHECKS

Interval	Time (sec.)	Rate (B/D)	Background log: _____ to _____
			COMMENTS:

TOP PERFORATION CHECK

Top perforation depth:	Wait at: for seconds	Beads: (Y/N)
Casing shoe at:	WSO holes at:	Arrival time: *Calculated* *Actual*

LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

PACKER CHECK

Packer at:	Wait at: for seconds	Beads: (Y/N)
Tubing tail at:	Tubing size:	2nd Packer at: Mandrel:

LOG FROM	TO	SLUG @	LOG FROM	TO	SLUG @	COMMENTS:

COMMENTS:

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

No. P206-1 11

PERMIT TO CONDUCT WELL OPERATIONS

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

Gas Storage

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

Ventura, California
June 6, 2006

Your supplementary proposal to redrill well "Mission Adrian" 1A,
A.P.I. No. 037-21891-02 Sec. 34, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon Frew pool
Los Angeles County, dated 05/30/2006 received 05/30/2006 has been examined in conjunction with records filed in this office.

THE PROPOSAL, COVERING WORK WITH PRIOR AGREEMENT, IS APPROVED PROVDIDED THAT:

1. Requirements specified in permit No. P206-92, dated April I0, 2006 shall apply.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

Hal Bopp, State Oil and Gas Supervisor

By _____
Deputy Supervisor

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

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

OG111 (6/96/GSR/5M) Printed on recycled paper.

P206-111

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

1,600,600 BOND ☐
~~OGD114~~ ☐
OGD121 ☑
EDP WELL FILE ☐

SUPPLEMENTARY NOTICE

A notice to the Division of Oil, Gas, and Geothermal Resources, *dated* 10/20/2005, stating the intention to

redrill (*Drill, rework, abandon*) well Mission Adrian 1A (*Well designation*), API No. 037-2189

Sec. 34, T. 3N, R. 18W, SB B.&M., Aliso Canyon

Los Angeles County should be amended because of changed conditions

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
0'-1000' 13-3/8" 54.5# K-55 casing cemented with 1134cf in 17" hole. 0'-7379' 8-5/8" 36&40# N-80 Buttress casing cemented with 1853cf in 12-1/4" hole 7305'-7619' 5-1/2" 17# K-55 wire wrapped liner gravel packed in 15" hole with 40/60 sand. Squeezed holes at 7302', 7217 to 7226', 7210' & 7180 to 7190', 8-5/8" TIW packer with open 2-7/8" tail and XN Nipple (unset) sitting on liner top7295' to 7305; 8-5/8" TIW packer set in collar after becoming stuck at 7245' to 7255' with 2-7/8" tail and XN nipple – PRN plug in nipple. WEA whipstock with debris sub and latch set in TIW packer at 7245', top at 7232'. Damaged casing due to rotation of whipstock from 7234 to 7238'. Recovery lug on top of whipstock was milled off. Whipstock was rotating during recovery attempt. Casing and damaged pipe tested to 800psi surface after exit attempt. No bleed off. New changes; Stuck Hole opener, DCs and DP. Top of fish @ 7252' Top of window @ 7199', Bottom of window @ 7202'.

2. The total depth is: 7640' feet. The effective depth is: 7252' feet.

3. Present completion zone (s): Well is plugged above Sesnon (*Name*). Anticipated completion zone (s): Sesnon (*Name*)

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

We now propose: *(A complete program is preferred and may be attached.)*
Back off 3 1/2 heavy weight drill pipe @ 7252. Run in and clean hole with 7 5/8 bit and 7 1/2 near bit stabilizer to 7252'. Run in with 7 x 10" hole opener and open hole from 7210' to 7252'. Run 2 7/8 tubing tail to 7252' and change over to 8.6 ppg 3% KCL, Cement from 7252' back to 7100', 100' inside 8 5/8 40# casing. Run in with 7 5/8 bit and scraper and bumper sub drill out to 7202'. Change over to flo-pro. Run mud motor with 1 1/2 degree bent housing with 7 5/8 bit and 7 1/2 stabilizer. Slide drill for 30' to the right of high side, Rotate past stub, Run in with 7 1/2 bit and stabilizer at 30' and 60'. Drill to 7380'. Pull out and run 10" hole opener , open hole from 7270' to 7380'. Run 7" casing and cement, Drill out cement and change over to new flo-pro. Drill 6 1/8 hole to 7640'. Open hole for liner for liner and run 5 1/2 Wire mesh liner with 6" shroud and gravel pack as per existing program.

RECEIVED
MAY 30 2006
By DOGGR DIST2

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

Name of Operator	Telephone Number	
Southern California Gas Company	818 701 3251	
Address: 9400 Oakdale Ave	City: Northridge	Zip Code: 91313
Name of Person Filing Notice: Richard Jackson	Signature	Date: 05/30/2006

File In Duplicate

OG122 (P/92)

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

No. P206-103

PERMIT TO CONDUCT WELL OPERATIONS

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

Gas Storage

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

Ventura, California
June 6, 2006

Your supplementary proposal to redrill well "Mission Adrian" 1A,
A.P.I. No. 037-21891-02 Sec. 34, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon Frew pool
Los Angeles County, dated 05/12/2006 received 05/12/2006 has been examined in conjunction with records filed in this office.

THE PROPOSAL, COVERING WORK IN ACCORDANCE WITH PRIOR AGREEMENT IS APPROVED.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

Hal Bopp, State Oil and Gas Supervisor

By _____
Deputy Supervisor

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

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

OG111 (6/96/GSR/5M) Printed on recycled paper.

P206-103 1000,000

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES 111 ✓ 115 ✓

BC ND ☐
~~OGD 14~~ ☑
OGD 121 ✓ ☐
EDP WELL FILE ☐

SUPPLEMENTARY NOTICE

A notice to the Division of Oil, Gas, and Geothermal Resources, *dated* 10/20/2005, stating the intention to

redrill (Drill, rework, abandon) well Mission Adrian 1A (Well designation)

Sec. 34, T. 3N, R. 18W 16, SB B.&M., Aliso Canyon Field,

Los Angeles County should be amended because of changed conditions

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
0'-1000' 13-3/8" 54.5# K-55 casing cemented with 1134cf in 17" hole. 0'-7379' 8-5/8" 36&40# N-80 Buttress casing cemented with 1853cf in 12-1/4" hole 7305'-7619' 5-1/2" 17# K-55 wire wrapped liner gravel packed in 15" hole with 40/60 sand. Squeezed holes at 7302', 7217 to 7226', 7210' & 7181 to 7190'.
New changes: 8-5/8" TIW packer with open 2-7/8" tail and XN nipple (unset) sitting on liner top7295' to 7305; 8-5/8" TIW packer set in collar after becoming stuck at 7246' to 7256' with 2-7/8" tail and XN nipple – PRN plug in nipple. WEA whipstock with debris sub and latch set in TIW packer at 7246'. top at 7232'. Damaged casing due to rotation of whipstock from 7234 to 7238'. Recovery lug on top of whipstock was milled off. Whipstock was rotating during recovery attempt. Casing and damaged pipe tested to 800psi surface after exit attempt. No bleed off.

2. The total depth is: 7666' feet. The effective depth is: 7280' feet.

3. Present completion zone (s): Well is plugged above Sesnon (Name). Anticipated completion zone (s): Sesnon (Name)

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

We now propose: *(A complete program is preferred and may be attached.)*
Set permanent Bridge plug in 8-5/8" casing at 7198' – just above casing collar at 7202'.
Set bottom trip Whipstock on BP and construct exit window. Test with open window to maximum field storage pressure. Change over to completion fluid. Drill ahead to bottom of storage zone at approximately 7640' with 7-1/2" bit. Open hole to 11" from 7380' to 7620'. Use solids free clean fluids for packing operation. Run 4" shrouded, Wire wrapped screen in 11" open hole across storage zone. Run blank through window with GP hanger on top. Gravel pack with 20/40 sand. Run packer and completion tubing above junction. Remove BOPE and install wellhead. Return well to injection/withdrawal.

Note: If test at window is not good, 7" casing will be cemented from window to top of storage zone.

RECEIVED
MAY 12 2006
By DOGGR DIST 2

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

Name of Operator	Telephone Number	
Southern California Gas Company	818 701 3251	
Address	**City**	**Zip Code**
9400 Oakdale Ave	Northridge	91313
Name of Person Filing Notice	**Signature**	**Date**
Richard Jackson	[signature]	05/12/2006

File In Duplicate

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

No. **T206-114**

Report on Operations

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

Ventura, California
May 16, 2006

Your operations at well **"Mission Adrian" 1A,** API No. **037-21891,** Sec. **34**, T. **3N**, R.**16W**, S.B.B.&M. **Aliso Canyon** Field, in **Los Angeles** County, were witnessed on **04-11-2006. Fred Pineda,** representative of the supervisor, was present from **0630** to **1715**. There were also present **Ken Kennedy.**

Present condition of well: **13 3/8" cem 1000'; 8 5/8" cem 7379'; perf 7302' WSO, perfs @ int. 7228'-7350', BP @ 7267', BP 7267'; 5 ½" ld 7305'-7619', perfs @ 7399'-7615'. TD 7640'. ED 7619'.**

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

DECISION:

The blowout prevention equipment & its installation on the 8 5/8" casing are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

API No. [illegible]-21871-01 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 206-114

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator [illegible] Well [illegible] 1A Sec. 34 T. 3N R. [illegible]

Field [illegible] County Los Angeles Spud Date

VISITS: Date / Engineer / Time / Operator's Rep. / Title

1st 4/11/06 Fred Pinada (0630 to 1715) Ken Kennedy

2nd (to)

Contractor [illegible] Rig# 21 Contractor's Rep. & Title Larry Garcia

Casing record of well: 13 3/8" cem. 1000'; 8 5/8" cem. 7379'; perfs. @ int. 7228' [illegible], B.P. @ 7267, B.P. [illegible] 5 1/2" ld. 7305' to 7619', perfs @ 7399' - 7613, TD 7640' ED 7619 Perf 7302 WSO

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

DECISION: The blowout prevention equipment and its installation on the [illegible] " casing are approved.

Proposed Well Opns: Drill a multi lateral MACP: ______ psi

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

REQUIRED BOPE CLASS: III [illegible]

CASING RECORD OF BOPE ANCHOR STRING

Size	Weight(s)	Grade(s)	Shoe at	CP at	Cement Details	Top of Cement Casing	Top of Cement Annulus

BOP STACK / TEST DATA

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul	Gal. to Close	Recovery Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
A	-	Shaffer	-	9"	5k							4/11/06	[illegible]
Rd	3 1/2	Shaffer	-	9"	5k							4/11/06	[illegible]
Rd	CSO	Shaffer	-	9"	5k							4/11/06	5000
TOTAL:													

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 2700 psi

Total Rated Pump Output ______ gpm 2/5 Fluid Level OK

Distance From Well Bore 60 ft.

	Accum. Manufacturer	Capacity	Precharge
1	Shaffer	80 gal.	1650 psi
2		gal.	psi

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

	EMERG. BACKUP SYSTEM		L=	Press.	Wkg. Fluid
X	N₂ Cylinders	1	L= "	1750	10 gal.
	Other:	2	L= "	[illegible]	10 gal.
		3	L= "	[illegible]	10 gal.
		4	L= "	[illegible]	10 gal.
		5	L= "		gal.
		6	L= "		gal.
			TOTAL:		gal.

AUXILIARY EQUIPMENT

		No.	Size (in.)	Rated Press.	Weld	Flange	Thread	Test Press.
	Fill-up Line							
X	Kill Line		2"	5k		X		5000
X	Control Valve(s)	2						5000
X	Check Valve(s)	1		5k		X		5000
X	Aux. Pump Connect.			5k		X		—
X	Choke Line		3"	5k		X		5000
X	Control Valve(s)	5		5k		X		5000
X	Pressure Gauge					X		
X	Adjustable Choke(s)	2		5k		X		—
	Bleed Line							
X	Upper Kelly Cock							5000
X	Lower Kelly Cock		3.5"					[illegible]
X	Standpipe Valve							[illegible]
X	Standpipe Press. Gauge							—
X	Pipe Safety Valve		3.5	5k				5000
X	Internal Preventer		3					5000

HOLE FLUID MONITORING EQUIPMENT

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

Hole Fluid Type	Weight	Storage Pits (Type & Size)
[illegible] Mud	9.4	712 bbls [illegible]
KCl [illegible]	8.5	500 [illegible]

REMARKS AND DEFICIENCIES:

Internal preventer, pipe safety valve, kelly valve were tested using a test wellhead. Test data was reported to DOGGR by Ken Kennedy/consultant to SoCal Gas. [illegible] to insure operation.

Standpipe valve test results [illegible] to DOGGR

OGD9 (4/03/UCP/3M)

Faxed 3 pages To Indian Cover.

ATT, Fred Pineda Here is the Test For MA1A, T.I.W. Dart, Kelly Upper & Lower.

Mission Adrian 1A

So Cal Gas

Aliso Cyn

Ken Kennedy 4-12-06

805-701-1591

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

No. P206-92

PERMIT TO CONDUCT WELL OPERATIONS

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

Gas Storage

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

Ventura, California
April 10, 2006

Your proposal to drill a multilateral in well "Mission Adrian" 1A,
A.P.I. No. 037-21891-01 Sec. 34, T. 3N, R. 16W, SB B.&M.,
Aliso Canyon field, ---------- area, Sesnon-Frew pool
Los Angeles County, dated 04/03/2006 received 04/03/2006 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class IIIB 5M requirements is installed and maintained in operating condition at all times during the drilling of the lateral.
2. Drilling fluid of a quality and in sufficient quantity is used to control all subsurface condition in order to prevent blowouts.
3. An approved blowout prevention and control plan shall be available during the proposed operations.
4. This office shall be consulted before sidetracking the well or running any additional casing.
5. This office shall be consulted before sidetracking the well or running any additional casing.
6. If extensive, unplanned drill pipe operations occur (such as fishing, milling, etc.) and there is a possibility of casing damage, the casing must be pressure tested prior to resuming normal operations. This Division must be notified to witness the tests.
7. The integrity of the new 7" casing x 8-5/8" lap shall be determined by a pressure test after the top has been cut and pulled.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To witness a pressure test of the blowout prevention equipment before commencing downhole operations.
   b. To witness a test of the integrity of the 7" x 8-5/8" casing lap.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

Hal Bopp, State Oil and Gas Supervisor

By _____
Deputy Supervisor

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

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

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

NOTICE OF INTENTION TO REWORK / REDRILL WELL

P206-92

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

FOR DIVISION USE ONLY			
	Forms		DOP Well File
Bond	OGD114	OGD121	
1600 000	111 ✓	165 ✓	

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework/redrill well Mission Adrian 1A API No. 037-21891
(Circle one) *(Well designation)*

Sec. 34 T. 3N R. 16W S.B.B.&M. Aliso Canyon Field

Los Angeles County.

GS

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
0'-1000' 13-3/8" 54.5# K-55 casing cemented with 1134cf in 17" hole.
0'-7379' 8-5/8" 36&40# N-80 Buttress casing cemented with 1853cf in 12-1/4" hole. Bridge Plug set at 7267'.
7305'-7619' 5-1/2" 17# K-55 wire wrapped liner gravel packed in 15" hole with 40/60 sand.
Squeezed holes at 7302', 7217 to 7226', 7210' & 7184 to 7190'.

Top of S-4 at 7410' (7089'TVD)

2. The total depth is: 7640' feet. The effective depth is: 7619' feet.

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

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

5. Last produced: 12-05 *(Date)* _____ *(Oil, B/D)* _____ *(Water, B/D)* Storage *(Gas, Mcf/D)*

(or)
Last injected: _____ *(Date)* _____ *(Water, B/D)* _____ *(Gas, Mcf/D)* _____ *(Surface pressure, psi)*

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

The proposed work is as follows: *(A complete program is preferred and may be attached.)*
Move in Heavy workover rig. Install class III BPOE & test. Remove Bridge plug from 7267'. Exit with Whipstock and drill multi-lateral from above existing liner and cement 7" casing above storage zone. Gravel pack 4" Wire wrapped screen in 11" open hole across storage zone. Place SL 3 junction across window. Run packer and completion tubing above junction. Remove BOPE and install wellhead. Return well to injection/withdrawal.

Program for the multi-lateral sidetrack of well is attached.

APR 2006

_____ *(Proposed bottom-hole coordinates)* _____ *(Estimated true vertical depth)*

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

Name of Operator	Telephone Number	
Southern California Gas Company	818 701-3251	
Address: 9400 Oakdale Ave	City: Chatsworth	Zip Code: 913[illegible]3
Name of Person Filing Notice: Richard Jackson	Signature: [signature]	Date: 04/0[illegible]/2006

File in Duplicate

OG107 (7/97/GSR/5M)

January 23, 2006 Engineer: Richard Jackson

Mission Adrian 1A

Program to sidetrack with multi-lateral

Complete Lateral with Gravel Packed Wire Wrapped Screen

Open side track and parent wellbores to injection/withdrawal

Operator: Southern California Gas Company

Field: Aliso Canyon Gas Storage Field

Well: Mission-Adrian Fee 1A

Date: 1-23-2006
Revisions: 2-2-06RJ 3-20-06RJ 4-2-06RJ

API Number: 037-00691

Work Order Authorization Number: WO 96xxx.00x IO 300xxx

Objective: Exit existing casing above current liner top. Drill to top of storage zone and cement 7" casing drill and complete storage zone with gravel packed wire wrapped screen. Place junction to open parent and sidetrack completions to injection/withdrawal.
Complete well as dual flow injection/withdrawal well with both lateral and parent bores open.

WELL STATUS

Current Status:	Well is currently out of service
Elevation:	All depths based on original KB, which is 21.00' above tubing hanger.
Max hole angle:	27° @5817'. - S4 is at 7410' drilled depth (7098' TVD) Use this depth for kill/flui calcs.
Effective clean out depth	7619' bottom of liner
Casing Record:	0' – 1000' 13-3/8", 54.5#, K-55 Buttress casing cemented w/1134cf. 0' – 21' 8-5/8", 40#, N-80 Buttress casing 21'- 5504' 8-5/8", 36#, N-80 Buttress casing 5504-7379' 8-5/8", 40#, N-80 Buttress casing cemented in 12-1/4" hole with 1835cf Significant collars at: 7289', 7246', 7203', 7160', 7119', 7077' Perforated 4) ½" holes per foot 7228-7258; 7278-7284; 7287-7297; 7300-7350. Holes were squeezed for repair of shoe leak 8-5/8" bridge plug in well at 7267'.
Liner	5-1/2" – 17# at 7619' - top at 7305'. .007 wire wrapped screen 7379' – 7615'. Gravel packed in 15" hole w/ 470 sx of 40-60 sand Scraper was run to T.D. with no fill or obstructions
Tubing Record:	No tubing in well.
Wellhead:	All seals in wellhead were replaced and re-energized. Tubing hanger & Tree ins alled.
Fluid in hole:	KCl water and polymer

Well Kill Requirements:

January 23, 2006 Engineer: Richard Jackson

- Top of producing zone = 7410' MD (7098' TVD).
- Bottom hole pressure must be monitored daily.
- Calculated fluid density to provide 500 psi overbalance at storage zone

Other considerations:

1. Due to other projects taking place in the immediate vicinity, stay in contact with foreman of other projects to coordinate equipment moves.

2. Aliso Canyon is a Title V Facility. Check with the onsite environmental specialist, John Clarke, confirm that all required permits and procedures are properly recorded.

Permits: Permit from the Ca DOGGR will be required for the operations discribed in this well work program.

WELL WORK PROGRAM

Note: The current log does not correlate with the original logging depths but has been tied to original e-log depth with neutron correlation. Setting of the whipstock packer should be tied to short joint of casing from 7003-7034' = 31'. Tallies may differ by 18' from the elog depths. Use caution and check with project manager to confirm all tool tallies.

PROCEDURE – Heavy Workover Rig:

1. Move in Torch Rig #21 with sub-base and full workover components. Set rig and base on 14" sub-base matts to allow for full Class III BOP stack.
2. Remove tree and install and test Class III BOPE. DOGGR to witness.
3. Pick up BP recovery tool on 3-1/2" drill pipe and run in well to 7267'.
4. Place 50 barrel HEC polymer plug on top of Bridge plug.
5. Recover BP. Keep hole full and watch for bubble under BP.
6. Run Bottom hole assembly on wireline setting tool as follows:
    a. 2-7/8" re-entry guide
    b. 2-7/8" XN no-go seating nipple with 2-7/8" PXN plug in place.
    c. 2-7/8" X 6' N-80 pup joint. Pack with STP and grease to top of pup joint.
    d. Schlumberger Modified Big Bore Whip stock packer. SS WS M BB
    e. Make up to wireline setting tools.
    f. Run in hole to 7284' (Bottom of packer) This depth may be adjusted to an appropriate depth above collar at 7289' after all tools are tallied. Tie to short joint of casing from 7003-7034' = 31'
    g. Set packer

Note: the exact setting depth of the packer will be determined by measurements when all components are on location and modeling has been completed. Exit joint will be either 7246 – 7289' or adjacent joint. For program

purposes depths will be from this exit jt. Position in full joint so exit ramp does not mill through collar. Confirm collars and quality of cement prior to setting tools. Reference depths:

Top of whip stock at	7256'
Top of window at	7254'
Bottom of window at	7267.5'
Bottomof whipstock	7270.6'

7. Make up Scientific Gyro tool and run in hole per Gyro practices to determine orientation of packer with orienting fixture. If the fixture is not available run in with the latch on DP and a UBHO sub and run the gyro inside the DP.
8. Rig down wireline.

Refer to Solids control attachment and MI mud program for the window milling. Place magnets in the return pit to catch metal from milling

9. Run the whipstock milling assembly.
   a. Release - Anchor Latch
   b. Debris Sub (TIW P-858-2)
   c. Milling Whipstock
   d. Starting Mill – pinned to whipstock
   e. 1 jt of 3-1/2 IF Drill pipe
   f. 6) 4-3/4" drill collars or as directed by milling specialist.
   g. 20 joints of 3-1/2" HWDP
   h. 3-1/2" DP

Orient the Spline sub of the Anchor Latch to align the milling whipstock face to the required orientation to right of high side as directed by SLB and WEA milling specialist.

10. Run in hole slowly and latch into anchor latch. Slow to ½ fps until orientation Stinger and Latch have located in the orientation slot.
11. Pick up 10,000 over up weight to confirm that Anchor Latch is locked into the Packer profile.
12. Shear off "break bolt" by pulling to 20,000 over up weight. Shear the bolt pulling up.
13. Change over to solids free FloPro system.
14. Mill 20" with starter mill.
15. POOH
16. Pick up window milling assy
    a. Window mill
    b. Watermellon
    c. 1 jt of 3-1/2 IF Drill pipe
    d. 6) 4-3/4" drill collars or as directed by milling specialist.
    e. 20 joints of 3-1/2" HWDP
    f. 3-1/2" DP

g. Mill 22' or until milling/drilling stops estimated bottom of window will be at 7267.5'Ream several times through window and circulate clean.
h. Pooh
i. Gage mills to confirm 8-5/8" exit window. Re-gage window as required.

Note: Operations to be 24hr while in open hole.

17. Exit window with 7-5/8" PDC bit on 4-3/4" collars and HW DP. Drill ahead to top of storage zone at 7380'.
18. Open hole from 7300' to 7380' to 10" with 3 arm hole opener on 4-3/4" collars and HW drillpipe. Condition hole for casing. Run four arm caliper log in open hole portion of well to confirm cement volumes.
19. Run 7"- 26# flush joint casing to 7380' with top at 7200'. Casing is to be inspected and lubricated with manufacturers recommended thread lubricant in the inspection yard. Use Baker-Lock on shoe joint, float and landing/latch threads.
    a. FJ float shoe tack welded on bottom
    b. 1 jt 7" 26# FJ
    c. FJ float collar - At top of 1st full jt.
    d. FJ Landing Collar with latch
    e. 7"casing as required
    f. 7" X 8-5/8" Cement adapter with rt hand release.
    g. Running Tools to include liner wiper plug (mechanical rt hand release)
    h. See attached WEA hookup drawing.
    i. Run WEA JAM unit on all connections.

Drill hole to fit casing tally – avoid placing connection in window.
Run solids control equipment while drilling to top of storage zone.
Pre treat for cement contamination at window and before drilling out after cementing.

20. Cement 7" casing with approximately 50cf "G" cement as follows (volumes are to be confirmed with caliper log.
    a. 10 barrels of water ahead
    b. 40 cf of "G" cement slurry
    c. Drop plug
    d. Place 10cf of neat "G" cement on top of plug

    Displace with 50cf of water and drilling fluid as required to bump wiper plug in top of 7' casing. Shear pins to release wiper plug. Move pipe while cementing when cement exits shoe of 7".
    e. Displace with an additional 22cf (aprox) to bump plug in landing joint.
    f. Check latch for back flow.
    g. Set liner on bottom and rotate right to release from running sub/adapter.

h. Pull 10 stands and reverse circulate 2 tubing volumes and pull out of well.

21. Run 7-5/8" bit with 8-5/8" positive scraper to top of 7" liner at 7200'.
22. Drill out cement with 6-1/8" bit and 7"-26# casing scraper to shoe of 7" casing at 7380'.
23. Make up 6-1/8" bit on 4-3/4" collars, with 2) near bit stabilizers and 3rd stabilizer at top of first collar.
24. Condition mud prior to drilling into zone.
25. Drill ahead with locked up assembly to 7640'.
26. Condition mud to remove drilled solids and add Calcium Carbonate particles as specified by MI. Use mud cleaner screens to remove only drilled solids and not CC material.
27. Run under reamer and open hole to 11" from 7380' to 7640'. Circulate hole clean and pump high viscosity sweep to carry cuttings to surface.
28. Place clean, high viscosity pill across open hole interval. Pull above pill and change over to filtered, inhibited 3% KCl water. Use only clean fluid in well during remainder of job.
29. Run 4 arm open hole caliper log from 7640' to 7380'.
30. Run 4", 0.016" WWS from 7640' to 7380' with 4" semi-perf above wirewrap.Use Baker SC-1. Run full joint of 5-1/2" blank below SC-1.
    h. 4" WWS to be equipped with shroud and centralizers. Max O.D. is 6.125"
    i. Run circulating shoe on bottom of 4" WWS with bypass and circulate out pill before packing.
    j. Top of SC-1 at approximately 7340'.
31. Gravel pack with 20-40 gravel and filtered 3% KCl water, until packed off.
32. Reverse out excess gravel. Walt 2 hours for pack to settle. Lower crossover tool and restress pack. Repack if necessary.
33. Release from packer and pull out with Gravel packing tools.
34. Pick up 1-1/2" tubing on drill pipe and run in well to bottom of liner at 7640'. Pump breaker/carbonate mud cake removal solution across completion interval per MI direction. Close well in and allow breaker to work for specified time.
35. Circulate/kill well as required and place HEC polymer pill across liner. Pull out and lay down small diameter tubing.
36. Run 7"-26# X 4-1/2" Quantum Seal Bore Packer on wireline and set at 7290'. Tie into collars in 8-5/8" casing. Confirm cut is below window.
37. Pick up hydraulic casing cutter and cut 7" casing in lateral at 7285'. Be careful to avoid connection and collision with the packer. Exact depth of cut to be determined by modeling components with actual tallies.
38. Recover the portion of 7" casing from top at 7200' to the cut at 7285'.
39. Run Whipstock retrieving tools and remove the milling whipstock assembly. Pull 40,000# to release the whipstock by using die collar to go over top of WS ramp.
40. Pull out of well with milling whipstock.

Refer to SLB program attached to the end of the well work program for detail in the running of the junction.

41. Assemble and run the RapidConnect ML Template and packer production seals.
    a. Production seal assembly
    b. Orienting latch lug
    c. Spline assembly and extender.
    d. Deflector
    e. Nipple

Assemble as directed by Schlumberger on site supervision.
Pick up the assembly and verify the Template window position relative to the lug latch. Install locking screws in the threaded holes as directed.

42. Run the Latching Template assembly in well on 3-1/2 HWDP and 3-1/2 DP. Rabbit all pipe from derrick.
43. Engage the latch in the packer bore by setting 10,000 to 15,000# on assembly. Verify latch by pulling 10,000# over up weight. Verify latch engagement with the application of 500 to 1000 ft-lb of torque.
44. Drop ball provided inside the 3-1/2" drill pipe. Pump ball down with 1/2bbl/min maximum rate. Slow rate when ball is within 10 barrels of seating. Once seated pressure up to 2500psi. Pressure will dump once the tool shifts. This also disconnects the running tool from the Template.
45. Pick up slowly to verify disengagement. Pull out of well with running tool.

Note: there are additional release procedures if 2500psi fails to release tools.

46. Assemble and run in hole with rapid connector. As detailed in SLB supplement. Once connector is verified in position, pull out and lay down running tools.

47. Run production tubing:
    a. 8-5/8" HES G-6 production packer at 7220' with re-entry guide.
    b. 6' pup joint
    c. LH release on/off tool with X profile
    d. 1jt 2-7/8 EUE 8R N-80 tubing
    e. XD sliding sleeve
    f. 1jt 2-7/8 EUE 8R N-80 tubing
    g. Gas Lift mandrel with Dummy valve
    h. 2-7/8 EUE 8R N-80 tubing to surface with a second GLM (with dummy valve) at approximately 3500'.

48. Set packer and land tubing in hanger with 10,000# compression at packer.
49. Secure hanger and install BPV.
50. Remove BOPE and install tree.
51. RDMO workover rig. Clean location.

Richard Jackson
1-27-2006

Approvals:

January 23, 2006 Engineer: Richard Jackson

Supplement for the running of the junction

4.9 Retrieving the milling whipstock assembly (die collar)

A retrieving tool is used to retrieve the milling whipstock assembly. It is a fishing hook designed to engage and pull the whipstock and a special cut lip guide to lift the whipstock face off of the casing I.D. to permit the fishing hook to "swallow" the whipstock face top.

1. Rig up and RIH the milling whipstock retrieving tool with DP.
2. Make up Schlumberger MWD tool to workstring.
3. When the retrieving tool is 90 ft above the top of the milling whipstock. Record free pick up and slack off weight. Kick in pumps and activate MWD. Orient retrieving tool spear. Kick out pumps.
4. Slowly RIH the retrieving tool approximately 10 ft below the top of the whipstock.
5. POOH slowly (1/2 foot per second) to try to engage the retrieving tool in the top of the milling whipstock profile.
6. Once the retrieving tool is engaged in the top of milling whipstock profile : Apply 40,000 lbs over pull to release the whipstock
7. POOH the milling whipstock assembly.
8. On surface disconnect the milling whipstock with extender.

6.0 SETTING THE RAPID CONNECT SYSTEM ACROSS THE JUNCTION

6.1 Assemble and RIH RapidConnect ML Template and Packer Production Seals

The Template assembly is delivered to the rig in three components:

- Template with running tool attached with 3 ½ IF Box thread at the top of the running tool. Threaded protection sleeve is attached to the bottom of the Template. The Running tool primarily release is hydraulic and secondary emergency disconnect is rotational (5 turns to the left). The top of the Template has a 5.250" PBR (5' long) to receive the seal assembly of the upper main bore completion. Below the Template assembly will be run the tubing extension and 3.65" OD seal assembly to be stabbed in the lower whipstock production packer of the main bore.

Note
In order to prevent Template accidental disconnect from the running tool during handling on the rig floor there is a pair of shipping screws installed between the Template and the running tool. These screws should be removed from the Template when the complete tool is assembled on the rig floor and is ready to be run in the hole.

- Extender with production latch connected together through an angular adjustment device. A sleeve with two half rings for connection to the Template is located at the extender top end. Anchor Latch collet is dressed with 12 shear screws and is rated for 60,000 lb release.
- Nipple for the Through Tubing Re-entry Deflector installation for lateral re-entry and providing a bottom seal surface for the Isolation sleeve (neither Through Tubing Re-entry Deflector nor Isolation Sleeve are available at the time of lateral construction). The ID through the Nipple is 2.312".

January 23, 2006 Engineer: Richard Jackson

Procedure:

1. Make up on the catwalk the lower assembly for the template and extender consisting of the production seal assembly, orienting latch lug, spline assembly and extender. Install collar clamp on the extender body. **(If Extender with seal assembly and Template with running tool have not been made up, go to procedure #3 to make up on rig floor).**
2. On the latch/extender assembly adjust the required angular orientation between the latch lug and the widest extrusion on the top of the extender (the Template window is positioned in line with the widest extrusion). This orientation will depend on the milled window location relative to the packer riser.
3. Pick up the extender/latch assembly with the hoist line and hang through the rotary and set it in the slips.
4. Slide the Nipple inside the top of the extender. There is only one position for Nipple installation.
5. Place elevator on the Template running tool and pick up the assembly. Hang it above the extender. Slowly lower the Template and engage it with the top of the extender. There is only one possible position for Template/Extender engagement. Slide the sleeve back and tighten to the Template. Install three anti-rotation screws.
6. Pick up the complete assembly to verify the Template window position relative to the latch lug.
7. Slowly go down. Remove two shipping screws from the Template PBR and install two locking screws in the threaded holes. Template assembly is ready to be run in the hole.

6.2 Latching Template assembly to the packer

1. RIH assembly in the well with, HWDP & 2 7/8" drill pipe. Approaching the packer reduce the speed to 1 ft/min.
2. Engage the latch in the packer bore by slacking off 10-15,000 lb.
3. Apply 10,000 lb over pull to verify the latch engagement in the packer bore.
4. Apply 500-1000 ft/lb right hand torque to verify the latch engagement.
5. Drop 1 3/8" phenolic ball inside the string and circulate it down with maximum flow rate 1/2 bbl/min. Within 10 bls of seating ball, slow rate until ball seats. Once the ball lands inside the running tool slowly pressure up to 2,500 psi. The running tool piston shifts down disconnecting the Template from the running tool. The pressure dumps once this happens.
6. Slowly pick up the string to verify disengagement. In case the running tool is still connected to the Template, increase pressure in 500 psi increments to to 3,500 psi and check disengagement.

   Note :If hydraulic disconnect fails to release slack off 5,000 lbs and rotate string 5 turns to the left, at the tool, to mechanically disengage running tool.

7. POOH running tool

6.3 Assemble and RIH the Rapid connector

The connector ties back the drop off liner and lands and locks into the template. The seal assembly and mule shoe exit the 8 5/8" casing window extension and stab in the top of the Seal Bore Packer in the lateral branch. The Connector assembly is delivered to the rig in 2 components

- Connector installed inside the guiding sleeve with the running tool attached
- 4" seal assembly with Nitrile bonded seals per Figure 1.

Note : The tail pipe space out should be adjusted so the seal units locate in the (PACKER) liner top PBR prior the last 22 ft of downward movement of the Connector. The connector should be free to travel until it no goes in the template. The tail pipe must not cause interference.

January 23, 2006 Engineer: Richard Jackson

The half mule shoe must be oriented to the same side as the opening in the Connector.

1. Make up the seal assembly as in the drawing. Place a collar clamp on the seal assembly and place in rotary table. Make up the required length of 2 7/8" tubing joints to the seal assembly.
2. Make up the Connector and running tool assembly to the seal assembly. All lengths and threads to be confirmed as proper space out to the liner top in the open hole lateral in imperative for space out.
3. Verify the mule shoe is aligned in phase with the Connector running tool.

	CONNECTOR ASSEMBLY
	Mule Shoe Entry Guide with 3 ½" Stub Acme box up
	4.000" OD Seals Assembly 0.75 m long w/ 3 ½" Stub Acme box x pin
	3.96" OD Spacer pup joint 2 meter long, 3 ½" Stub Acme box x pin
	4.000" OD Seal Assembly 0.75 m long w/ 3 ½" Stub Acme box x pin
	Cross Over Sub 3 ½" Stub Acme pin x 2 7/8" EUE box
	2 7/8" Tubing w/ 2 7/8" EUE connections
	Cross Over Bushing 2 7/8" EUE pin down x 3 ½" NU Pin up
	ML Connector w/ 3 ½" NU box down
	ML Connector Running Tool w/ 3 ½ IF box up
	3 ½" Lift Sub w/ 3 ½ IF Box up Cro

4. Install the UBHO above the running tool and check that the tool face is aligned correctly with the high side of the mule shoe.
5. RIH assembly on 3 ½" drill pipe, drill collar and heavy weight drill pipe. A requirement of 20,000 lbs are essential for this and future applications.
6. With half mule shoe 30m above template, record free pick up, slack off weight and free torque.
7. Establish circulation at 2 bbl/mn or required pressure to activate MWD tool.
8. Determine the tool face orientation with Gyro. Adjust the orientation of the kick-off guide to achieve the correct alignment of the mule shoe. Verify the tool face with Gyro after making the rotational adjustment.
9. Slowly lower the Connector checking pressure and weight to determine if the liner seal assembly has successfully kicked out of the Template into open hole. Continue to lower string.

   NOTE: If the BHA stops at the top of the window in the Template, pick up above the Template rotate string ½ turn and reattempt to slide into Template. Do not exceed 5000 lbs slack off during this period.

10. If the seal assembly hang up at the bottom of the Template, rotate string ½ turn and reattempt to slide into through the Template into open hole. Continue circulation with 200 psi.

January 23, 2006 Engineer: Richard Jackson

11. Continue lowering string until applying 5,000lbs compression. Mark pipe. Pick up and check for a collet snap at 8000lbs. This indicates successful orientation and alignment. Repeat sequence.
12. Continue lowering string and mark pipe at 1ft intervals. Land the Connector running tool and slack off 15,000lbs to shear the retaining ring in the running tool. The connector is now free to run down the rails and out into the lateral. Circulate at a low flow rate (0.5 to 1 bpm or 200 psi) and stroke the Connector seals out into the lateral. On rig floor we should have a weight and pressure indication while the seal assembly is stabbing into the lateral liner PBR. As the seal assembly begin to engage the PBR pressure should increase. Stop pumping and bleed off pressure

    Note : After ring shears there should be a free travel down of 22 ft.

13. After 22 ft of travel the Connector will be fully engaged. Set down 15,000-20,000 lbs and then over pull 5,000lbs string tension to verify the connector is locked in. Return to neutral position.

    Note : The connector has been installed and the junction has been created.
14. Slack off 5,000 lbs. And place 15 turns right hand rotation to the string. Check for return torque. The running tool releases with 15 turns at the tool.
15. Check for returned number of turns. Right hand rotate string 10 additional turns.
16. Pick up and record free pick up.
17. POOH running tool and work string.

5/12/06
Kennedy / Fields
- set whip stock to drill
multi lateral. Can't remove
whipstock can't drill out
window plan to
reset 2nd whip stock higher

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

No. P206-10

PERMIT TO CONDUCT WELL OPERATIONS

(field code)

00
(area code)

(new pool code)

(old pool code)

C O R R E C T E D C O P Y

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

Ventura, California
January 24 2006

Your _____ proposal to evaluate condition of well well "Mission Adrian" 1A, A.P.I. No. 037-21891 Sec. 34, T. 3N, R. 16W, SB B.&M., Aliso Canyon field, ---------- area, Sesnon-Frew pool Los Angeles County, dated 01/18/2006 received 01/18/2006 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class III 5M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. This office shall be consulted before initiating any changes or additions to this proposed operation or if operations are to be suspended.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

Hal Bopp, State Oil and Gas Supervisor

By _____
Deputy Supervisor

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

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

OG111 (6/96/GSR/5M) Printed on recycled paper.

010 80 30-Hoisting Plan

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

NOTICE OF INTENTION TO REWORK / REDRILL WELL P206-10

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

FOR DIVISION USE ONL			
	Forms		DP Well
Bond	OGD114 ✓	OGD121 ✓	File
1,000,000 ✓	111 ✓	115 ✓	

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

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework/redrill (Circle one) well Mission Adrian 1A (Well designation) API No. 037-21891

Sec. 34 T. 3N R. 16W S.B.B.&M. Aliso Canyon Field

Los Angeles County.

GS

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:
0'-1000' 13-3/8" 54.5# K-55 casing cemented with 1134cf in 17" hole.
0'-7379' 8-5/8" 36&40# N-80 Buttress casing cemented with 1853cf in 12-1/4" hole
7305'-7619' 5-1/2" 17# K-55 wire wrapped liner gravel packed in 15" hole with 40/60 sand.
Squeezed holes at 7302', 7217 to 7226', 7210' & 7184 to 7190'.

Top of S-4 at 7410' (7069'TVD)

2. The total depth is: 7640' feet. The effective depth is: 7619' feet.

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

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

5. Last produced: 12-05 (Date) (Oil, B/D) (Water, B/D) Storage (Gas, Mcf/D)

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

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

The proposed work is as follows: *(A complete program is preferred and may be attached.)*
Move in Hoist, Kill well. Install class III BPOE & test. Release from packer. Remove packer from 7127'. Run scraper to top of liner at 7305'. Run casing evaluation/Cement bond log. Set BP at 7175'. Test casing to 1000psi. Remove BOPE. Replace wellhead seals.
Rig down hoist.

Supplemental program for the multi-lateral sidetrack of well will be submitted based on the results of this work.

(Proposed bottom-hole coordinates) (Estimated true vertical depth)

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

Name of Operator	Telephone Number	
Southern California Gas Company	818 701-3251	
Address	City	Zip Code
9400 Oakdale Ave	Chatsworth	91313
Name of Person Filing Notice	Signature	Date
Richard Jackson		1/18/2006

File In Duplicate

OG107 (7/97/GSR/SM)

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
RBDMS- RECORDS ENTERED

COMPANY SOUTHERN CAL. GAS CO. WELL NO. MISSION ADRIAN 1A

API NO. 037-21891 SEC. 34, T. 3N, R. 16W, SB B.&M.

COUNTY L.A. FIELD ALISO CANYON

RBDMS DATA ENTERED: 11-15-96
(DATE)

BY: Janet Schroeder
(NAME)

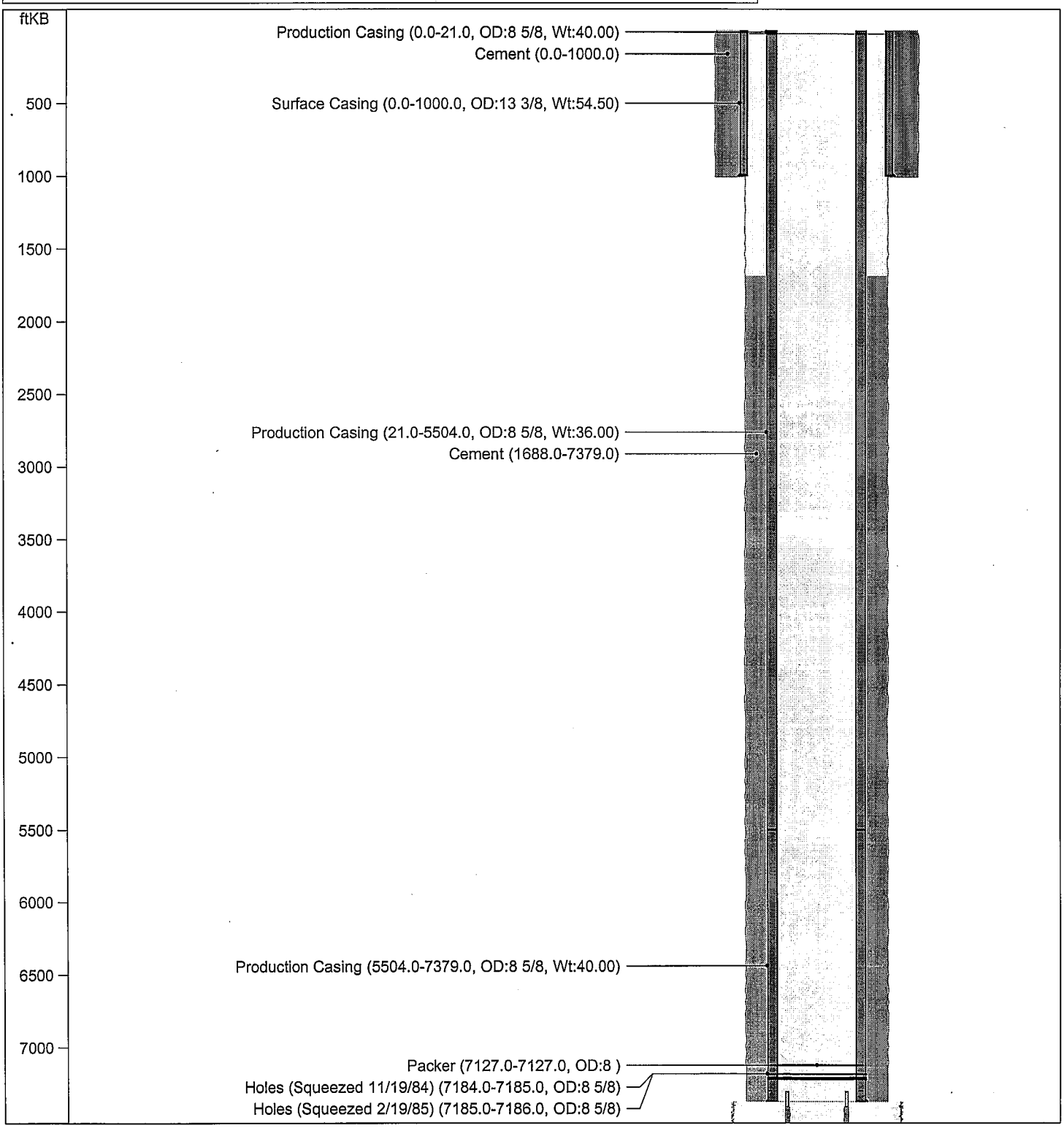
RBDMS DATA MUST BE UPDATED FOR ALL DATA THAT IS RECEIVED AFTER THE DATE INDICATED ABOVE.

UPDATED 7-7-98 S. MULQUEEN

WELL CONSTRUCTION DATA ONLY

04037218910000	
Well Name	MISSION ADRIAN 1A
Operator	SOUTHERN CA GAS CO
Field Name	ALISO CANYON
TD	7378.0 ftKB
PBTD	7378.0 ftKB
Approval Date	13-Apr-79
Spud Date	28-Oct-79
TD Date	07-Jan-80
Production Date	
Injection Date	
P/A Date	

Division of Oil & Gas Conservation



7/7/98

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Ventura, California

November 12, 1991

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

Your request, dated July 24, 1991, proposing to change the designation of well(s) in Sec. 34, T. 3N, R 16W, S.B. B. & M., Aliso Canyon field, Los Angeles County, District No. 2, has been received.

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

FROM	TO
"SFZU" FF-31 (037-00685)	"Fernando Fee" 31 (037-00685)
"SFZU" FF-33 (037-00687)	"Fernando Fee" 33 (037-00687)
"SFZU" FF-34 (037-00688)	"Fernando Fee" 34 (037-00688)
"SFZU" FF-35 (037-00689)	"Fernando Fee" 35 (037-00689)
"SFZU" MX-1A (037-21891)	"Mission Adrian" 1A (037-21891)
"SFZU" MA-1B (037-21892)	"Mission Adrian" 1B (037-21892)
"SFZU" MA 5 (037-00695)	"Mission Adrian" 5 (037-00695)
"SFZU" MA 5-A (037-22309)	"Mission Adrian" 5A (037-22309)
"SFZU" PF-3 (037-00646)	"Porter Fee" 3 (037-00646)
"SFZU" FF-34-A (037-22044)	"Fernando Fee" 34-A (037-22044)
"SFZU" FF-34-B (037-22302)	"Fernando Fee" 34-B (037-22302)
"SFZU" MA-3 (037-00693)	"Mission Adrian" 3 (037-00693)
"SFZU" MS-4 (037-00694)	"Mission Adrian" 4 (037-00694)
"SFZU" PF-1 (037-00644)	"Porter Fee" 1 (037-00644)
"SFZU" PF-2 (037-00645)	"Porter Fee" 2 (037-00645)

M. G. MEFFERD, State Oil and Gas Supervisor

By _____
Deputy Supervisor
PATRICK J. KINNEAR

OGD157 (10/85/DWRR/1M)

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAY 18 1990
VENTURA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Co. Field Aliso Canyon County Los Angeles
Well MA-1A Sec. 34, T. 3N, R. 16W SB B. & M.
A.P.I. No. 037-21891 Name R. D. Phillips (Person submitting report) Title Agent (President, Secretary or Agent)
Date April 2, 19 90

Signature J. B. Lane for R. D. Phillips

P. O. Box 3429 Terminal Annex, Los Angeles, CA 90051 (213) 689-3925
(Address) (Telephone Number)

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

Date	
	MWO No. 99114 was issued to replace liner and gravel pack.
12-15	Rigged up.
12-16 to 12-19	Pumped in stages 500 barrels of 63#/cu.ft. 45 vis polymer fluid and 200 barrels of 400 vis polymer pill. Did not establish returns. Pumped in stages, 120 barrels high viscosity pill, 90 barrels high vis pill, Then 20 barrels-no, returns. Pumped 190 barrels high viscosity pill. Obtained returns. Circulated gas out of well.
12-20	Shot fluid level at 1166'. Filled well with 96 barrels. Removed xmas tree. Installed BOPE and tested blind rams, pipe rams and choke manifold to 3000 psi, Hydril bag to 2200 psi. Witnessed by Mr. Hesson of the DOG. Release from packer and pulled tubing up 45' through sand. Pulled free and filled well.
12-21 to 12-26	Pumped 90 BBL high vis pill. Pulled out 3-1/2" tubing and production equipment. Ran 7-5/8" bit and casing scraper on 3-1/2" IF drill pipe to top of packer. Pumped 200 bbl high vis pill. Retrieved permetrieve packer from 7130'. Ran 4-5/8" bit and cleaned out fill from 7543'-7635'.
12-27 to 12-28	Stuck Vertilog tool at 7323'. Wireline truck pulled out of rope socket leaving tool in well. Ran 2-3/8" overshot on drill pipe to 7213' (top of tool). Retrieved Vertilog tool. Ran 5-1/2" casing cutter and cut 5-1/2" liner at 7338'.
12-29	Ran 5-1/2" spear to 7323'. Attached to liner and pulled out of well retrieving liner lead seal adapter and 9' of 5-1/2" liner.

OG103 (3/86/DWRR/5M) Mailed 5/15/90

12-30 Rig and crew idle.

1-1 Holiday

1-2 Washed liner with 5-1/2" wash tool from 7373'-7526' (top of fill). Circulated well and pulled above liner.

1-3 Ran 5-5/8" bit on 12 joints of 2-3/8" drill pipe to 7485' (top of fill) and cleaned out to 7635'.

1-4 Cleaned out fill from 7616'-7632'. Changed out drilling line. Ran 5-1/2" wash tools to 7526' and washed liner to 7623'.

1-5 Attached 5-1/2" spear to liner at 7349'. Liner would not come free. Released spear and pulled out of well. Set 5-1/2" full bore retrievable packer at 7349' to free point liner. Tool indicated liner was stuck in lap between 8-5/8" and 5-1/2" casing. Pressured tested 8-5/8" casing and 5-1/2" liner to 7349' at 1500 psi for 20 minutes - o.k. Released packer and started out of well.

1-6 Ran 60' of 7-3/8" x 6-5/8" washpipe with sawtooth shoe to 7340'. Washed out hard material between liner lap from 7373' - 7379' and cleaned out to 7405'.

1-8 With 5-1/2" wash tool washed liner from 7373'-7442'. Circulated well through desilter equipment and pulled above liner.

1-9 Continued washing 5-1/2" liner from 7442'-7480' (top of fill). Pulled out of well. Ran 4-5/8" bit to 7480' and cleaned out to 7632'.

1-10 Washed 5-1/2" liner from 7479'-7619'. Ran 5-1/2" 20# spear on fishing assembly to 7340'. Attached to liner and jarred for four hours at 80,000# over string weight-no movement. Released spear and pulled out of well. Set packer at 7347' and free pointed liner. Liner was free to 7550', stuck from 7550' and to top of fill at 7595'.

1-11 to 1-12 Ran 4-5/8" bit and cleaned out to 7632'. Cut liner with 5-1/2" casing cutter at 7624'. Attached 8-5/8" x 5-1/2" liner pulling tool at 7340'and pulled liner with 190,000# to 240,000#. Pulled liner 6' off bottom. Pulling tool failed. Spear would not release from liner. Released tool and safety joint above spear. Ran 5-1/2' fishing assembly on top of safety joint to top of liner. Attached to liner and worked liner free. Pulled out of well retrieving liner except last 10' below cut.

1-15 Ran 7-5/8" bit to fill at 7505'. Circulated sand out and cleaned out to 7625'. Pulled into shoe. Slipped drilling line. Waited one hour. Ran in well to 7625'-no fill.

1-16 Ran hole opener and opened hole to 15" from 7381'-7625'. Circulated sand out of well. Pulled into shoe at 7362' and secured well.

1-17 Ran in to 7623'-no fill. Pulled out of well. Ran caliper log from 7605' to 7632', had 20' of fill. Cleaned out with bit from 7607'-7625'. Circulated well clean. Pulled into shoe.

1-18 Cleaned pit. Mixed 600 barrels of polymer completion fluid. Ran in well to 7625'-no fill. Unplugged bit. Changed well over to filtered polymer completion fluid. Spotted 100 barrels high vis pill in open hole. Pulled to kill string. Slipped drilling line.

1-19 Ran 312' of 5-1/2" 17# K-55 LT&C liner: bull nose, 6 joints of .007" wire wrap with centralizers, 2 joints blank, landing nipple. Found 6' of fill. Set bottom at 7619', top at 7307'. Pumped 340 sacks of 40-60 sand. Sand out at 1700 psi. Backscuttled 37 sacks of sand out of well.

1-20 Recorded an injection rate of 4.5 barrels/minute at 700 psi. Mixed and pumped 55 sacks, 35 sacks, then 20 sacks-no pressure build-up.

1-22 Mixed 90 cu.ft. of 40-60 sand and displaced 57 cu.ft. behind liner before reaching 1700 psi standing pressure on gravel pack. Waited 2 hours and repressured gravel pack. Pressure bled off 800 psi in 4 minutes (good test). Released gravel pack tool from liner. Cut and slipped drilling line.

1-23 to 1-24 Pulled out of well with gravel packing tool. Ran Howco 8-5/8" x 5-1/2" lead seal adapter to top of liner at 7305', attached to liner and set adapter. Ran 340' of 2-3/8" drill pipe tail on 3-1/2" drill pipe to 7619' - no fill. Set 8-5/8" Otis permatrieve packer at 7127' with wireline.

1-25 Ran test seals to packer at 7127'. Pulled 20,000# over string weight and set 10,000# on packer. Pressure tested seals to 1500 psi. Released from packer and pulled out of well laying down 3-1/2" drill pipe.

1-26 Ran 3-1/2" Otis seal assembly with 2 seals and production tube, crossed over to 2-7/8" tubing, 1 joint of 2-7/8" EUE 8rd J55 tubing, 1 Otis 2-7/8" x 2.205" No-Go nipple, 1 joint of 2-7/8" tubing, 1 Otis 2-7/8" XD sliding sleeve (closed), 1 joint of 2-7/8" tubing, 1 2-7/8" Camco gas lift mandrel with dummy valve on 2-7/8" tubing. Ran in well hydrotesting to 4000 psi to above packer. Displaced polymer completion fluid from well with 420 barrels of 2% KCl water.

1-27 Latched into packer at 7127'. Pulled 20,000# over tubing weight to check latch and landed with 12,000# on packer when donut was in place. Pressure tested seals 1500 psi. Installed back pressure valve in donut. Removed BOPE and installed xmas tree. Pressure tested xmas tree to 5000 psi. Removed back pressure valve. Blind flanged outlets on wellhead and xmas tree. Released rig at 1:00 P.M.

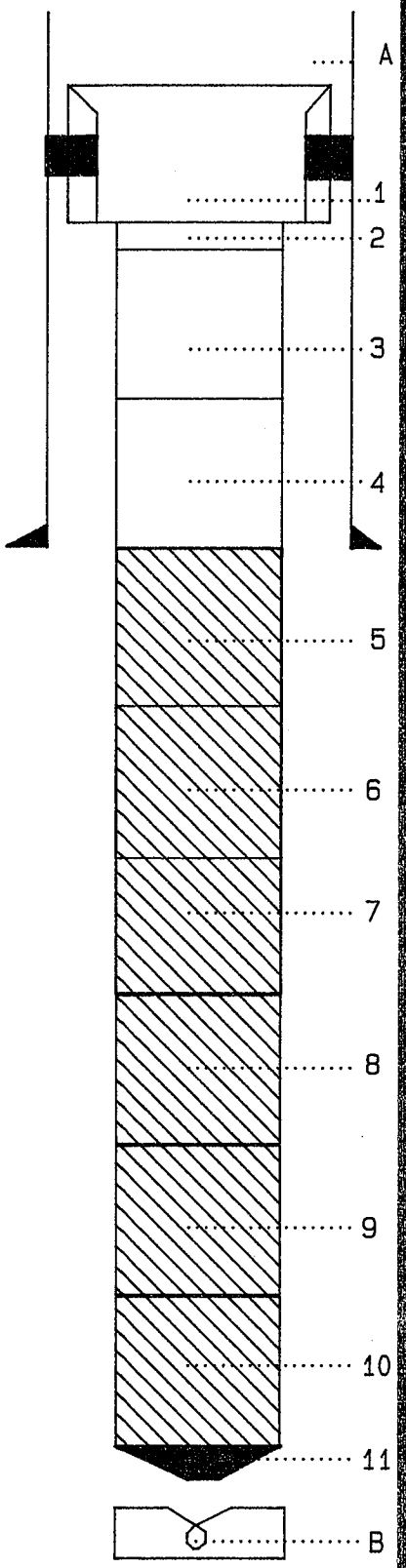
3700 bbl. fluids lost during workover operations.

LINER DETAIL

WELL: Mission Adrian 1A
FIELD: Aliso Canyon

STATUS: Injection/Withdrawal casing flow
DATE: 4-2-90

LINER PROFILE



	Liner		Liner
SIZE	5-1/2"	SIZE	5-1/2"
WEIGHT	17#	I. D.	4.892"
GRADE	K-55	DRIFT I.D.	4.767"
THREAD	L T & C	COLLAR O.D.	6.05"
DEPTH		WIRE-WRAP O.D.	6.10"

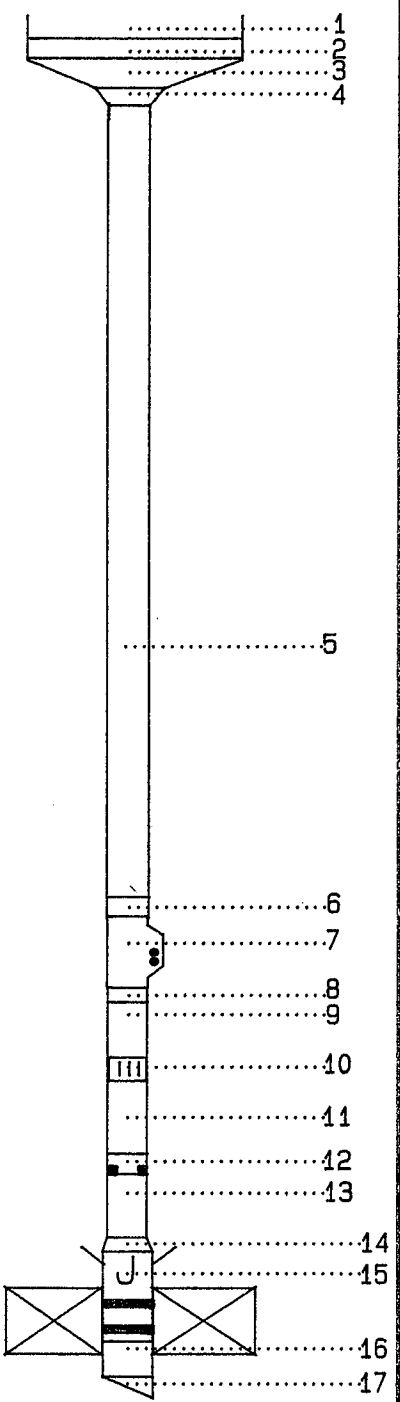
	LINER DETAIL	LENGTH	DEPTH
A	8-5/8" casing 7.725" ID		7379.00
1	Howco Lead seal adapter		7305.10
	drive-over 5.06" ID, 7.50"OD	1.82	7306.92
2	Howco Landing nipple w/lugs	1.71	7308.63
3	blank joint	39.55	7348.18
4	blank joint	29.55	7377.73
5	wire-wrapped joint	36.52	7414.25
6	wire-wrapped joint	40.56	7454.81
7	wire-wrapped joint	40.55	7495.36
8	wire-wrapped joint	40.54	7535.90
9	wire-wrapped joint	40.55	7576.45
10	wire-wrapped joint	40.54	7616.99
11	screwed bull plug with	1.55	7618.54
	plate inside		
B	Stub of previous 5-1/2 liner		7625.00
	K-55, ST & C, 20#	10.00	7635.00
	wire wrapped liner joints:		
	-20 rows, 1-1/2" centers, 1/2" holes, 160 HPF		
	-304 stainless, .007" gauge screen jacket		
	-42" long centralizers at collars		
	blank joints have 4, 1/4" x 6" centralizing		
	lugs welded:		
	-in the center		
	-4' from each end		

TUBING DETAIL

WELL: Mission Adrian 1A
FIELD: Aliso Canyon

STATUS: Injection/Withdrawal casing flow
DATE: 4-2-90

TUBING PROFILE



	TUBING		TUBING
SIZE	2-7/8"	SIZE	2-7/8"
WEIGHT	6.4#	ID.	2.441"
GRADE	J-55	DRIFT I. D.	2.347"
THREAD	EUE 8rd	COLLAR O.D.	3.668"
DEPTH	7134'	STRENGTH	99,660#

	TUBING DETAIL	LENGTH	DEPTH
1	KB to GL	21.00	21.00
2	GL to tubing hanger	2.00	23.00
3	Tubing hanger	0.42	23.42
4	X-over 3 1/2" x 2-7/8"	0.65	24.07
5	225 joints	6995.06	7019.13
6	Pup joint	4.08	7023.21
7	Camco "MMA" GLM 5.0" O.D.	8.18	7031.39
	1.5" RA-latch		
8	Pup joint	0.67	7032.06
9	One joint	30.03	7062.09
10	Otis XD SSD 2.31" ID	3.19	7065.28
	4.68 sq. in. flow port area		
11	One joint	30.90	7096.18
12	Otis XN No-Go 1.791" ID	1.26	7097.44
13	One joint	29.56	7127.00
14	X-over 2-7/8" x 3-1/2"	1.10	7128.10
15	Otis J-latch w/2 seals: 2.91"ID	2.62	7130.72
16	Otis locking bar for packer	2.24	7132.96
17	Otis guide shoe	1.00	7133.96
	Otis permetrieve packer W/L set	at:	7127.00
	8-5/8" PW 4.00" ID, 7.50" O.D.		
	Landed with 10,000# on packer		
	up weight: 58,000#		
	down weight: 42,000#		

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

No. T290- 4

REPORT ON OPERATIONS

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

Ventura , California
January 4, 1990

Your operations at well "SFZU" MA-1A ,API No. 037-21891 , Sec. 34,T. 2N,R. 16W, S.B.B.&M. Aliso Canyon Field,in Los Angeles County, were witnessed on 12/20/89 . Bruce Hesson , representative of the supervisor, was present from 1130 to 1500 . There were also present Jerry Woods, Drilling Foreman & Jim Dayton .

Present condition of well: 13 3/8" cem 1000'; 8 5/8" cem 7379', perf 7302' WSO; 5 1/2" ld 7235'-7635', perf 7245'-7287'; 7373'-7623'. TD 7640'.

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

DECISION:

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

ljg

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

OG109

DIVISION OF OIL AND GAS

BLOWOUT PREVENTION EQUIPMENT MEMO

T 4

Operator So. Cal Gas Co. Well "SFZU" MA-1A Field Aliso Cyn County LA

VISITS:	Date	Engineer	Time		Operator's Rep.	Title
1st	12/20/89	B. Hesson	1130	to 1500	Jerry Woods	D.F.
2nd				to	Jim Dayton	

Casing record of well: 13 3/8" CEM 1000'; 8 5/8" CEM 7379', PERF 7302' WSO; 5 1/2" LD 7235'-7635', PERF 7245'-7287'; 7373'-7623'. TD 7640'.

OPERATION: Testing (~~Inspecting~~) the blowout prevention equipment and installation.
DECISION: The blowout prevention equipment and its installation on the 8 5/8 "casing are approved.

REQUIRED BOPE CLASS: III 3M

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

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

BOP STACK

API Symb.	Ram Sz.	Mfr.	Model or Type	Size (in.)	Press. Rtg.	Date Last Overhaul	a Gal. to Close	b Rec.Time (Min.)	a/b Calc. GPM Output
A	-	HYDRIL	GK	8	3000				
Rd	2 7/8	SHAFFER	LWS	8	"				
Rd	CSO	"	"	8	"				

TEST DATA

psi Drop to Close	Secs. to Close	Test Date	Test Press.
		12/20	2300
		12/20	3000
		12/20	3000

ACTUATING SYSTEM

Accum. Unit(s) Wkg. Press. 3000 psi
Total Rated Pump Output _____ gpm
Distance From Well Bore 50+ ft.

	Mfr.	Accum. Cap.	Precharge
1	Hoomer	80 gal.	1500 psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.
✓ Manif. at accum. unit		✓
Remote at Drlr's. stn.		
Other:		

EMERG. BACKUP SYST.	Press.	Wkg. Fl.
✓ N2 Cyl No: 3 Type:	1 2100	gal.
Other: 4	2 2150	gal.
	3 2200	gal.
	4	gal.
	5	gal.
	6	gal.

AUXILIARY EQUIPMENT

		No.	Sz. (in.)	Rated Press.	Connections: Weld	Flan.	Thrd.	
	Fill-Up Line							
✓	Kill Line		2	3000		✓	✓	3000
✓	Control Valve(s)	1				✓	✓	
✓	Check Valve(s)	1				✓	✓	
✓	Auxil. Pump Connec.					✓	✓	
✓	Choke Line		3			✓	✓	
✓	Control Valve(s) (8)	1				✓	✓	
✓	Pressure Gauge					✓	✓	
✓	Adjustable Choke(s)	2	3			✓	✓	
✓	Bleed Line		3			✓	✓	
	Upper Kelly Cock							
	Lower Kelly Cock		2 7/8					
	Standpipe Valve							
	Standpipe Pressure Ga.							
✓	Pipe Safety Valve		2 7/8					
✓	Internal Preventer		2 7/8	↓				↓

HOLE FLUID MONITORING EQUIPMENT	Alarm Aud.	Alarm Vis.	Class
Calibrated Mud Pit			A
Pit Level Indicator			B
Pump Stroke Counter			B
Pit Level Recorder			C
Flow Sensor			C
Mud Totalizer			C
Calibrated Trip Tank			C
Other:			

REMARKS:

HYDRO TEST

FM. DONUT - PLUG FOM CSO, TBE W/ VALVE (SI) THREADED INTO DONUT FOM PIPE RAMS & BAG

Hole Fluid Type	Weight	Storage Pits

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

No. P289-472
Field Code 010
Area Code 00
New Pool Code 30
Old Pool Code 30

PERMIT TO CONDUCT WELL OPERATIONS
GAS STORAGE

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

Ventura, California
December 21, 1989

Your proposal to rework well "SFZU" MA-1A, A.P.I. No. 037-21891, Section 34, T. 2N, R. 16W, S.B. B.&M., Aliso Canyon field, any area, Sesnon-Frew pool, Los Angeles County, dated 12/12/89, received 12/14/89, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class III 3M requirements shall be installed and maintained in operating condition at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
4. THIS DIVISION SHALL BE NOTIFIED:
   a. To inspect the installed blowout prevention equipment before commencing downhole operations.

Blanket Bond
bb

Engineer Steve Fields

Phone (805) 654-4761

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

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

Notice of Intention to Rework Well

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

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
BB	✓	✓

DIVISION OF OIL AND GAS

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

to rework well SFZU MA-1A ~~Mission Adrian -1A-~~ (Well designation), API No 037-21891

Sec. 34, T. 3N, R. 16W SB B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth 7640'

DIVISION OF OIL AND GAS
RECEIVED
DEC 14 1989
VENTURA, CALIFORNIA

2. Complete casing record, including plugs and perforations (present hole)

13-3/8"	cemented at 1000'; 54# K55	
8-5/8"	cemented at 7379';	
	0- 21', 40# N-80	
	-5504', 36# N-80	
	-7379' 40# N-80	
317'	5-1/2"	liner landed at 7640', wire wrapped screen lead seal adapter top at 7323'.

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

4. Present zone pressure 2900; New zone pressure _____

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

(or)

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

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

The proposed work is as follows:

1. Move in rig and kill well. Install and pressure test BOPE.
2. Pull tubing and packer.
3. Retrieve 5-1/2" liner and clean out well.
4. Open hole to 15" from 7380' to 7635'.
5. Install and gravel pack new 5-1/2" production liner.
6. Install new packer, 3-1/2" tubing and return well to gas storage operation.

Note: If well is to be redrilled, show proposed new bottom-hole coordinates and true vertical depth.

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

Address Box 3249, Terminal Annex (Street)
Los Angeles, CA 90051 (City) (State) (Zip)
Telephone Number (213) 689-3925

Southern California Gas Company (Name of Operator)
By M.W. Buss for R.W. Weibel, Agent (Name-Printed)
M.W. Buss 12/12/89 (Name-Signature) (Date)
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

OG107 (2/86/DWRR/5M)

File Copy

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Southern California Gas Co. Field Aliso Canyon County Los Angeles
Well Mission Adrian #1A, Sec. 34, T 3N, R 16W, SB B. & M.
A.P.I. No. 037-21891 Name J. W. Gourley (Person submitting report) Title Agent (President, Secretary or Agent)
Date April 2, 1985

Signature J W Burn for J W Gourley

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

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

Date	
	MWO No.: 99431 was issued to repair a casing shoe leak
1984	
11-6	Loaded rig and moved from MGS #20-13 in Montebello to Mission Adrian #1-A in Aliso Canyon. Unloaded rig and started rigging up.
11-7	Finished rigging up. Circulated gas from well (75 bbls. to fill well).
11-8	Filled well (18 bbls.), set back pressure valve in doughnut. Removed Xmas tree and installed BOPE. Changed pipe rams from 2-7/8" to 3-1/2". Tested blind rams, pipe rams and manifold to 3000 psi. Tested Hydril bag to 2300 psi. R. Habel of DOG witnessed tests. Pulled seals out of packer, filled well (28 bbls.). Measured out of well. Laid down Otis equipment. Made up latch-in tool, jars, bumper sub, four 4-3/4" drill collars, crossover to 3-1/2" tubing. Running in well.
11-9	Filled well (15 bbls.). Finished running in well. Located packer at 7212'. Latched into packer and jarred loose. Pulled out of well. Made up a 45° on 16 joints of 2-7/8" EUE 8rd tubing (500'). Crossed over to 3-1/2" tubing. Ran in well to 7635' (no fill). Changed over from 74#/cu.ft. polymer completion fluid to 75#/cu.ft. calcium chloride water. Water was not mixed - weight 72.8#/cu.ft. Changed over to 74#/cu.ft. polymer completion fluid. Well took 40 bbls.

1984

11-10 Circulated 74#/cu.ft. polymer fluid out of well with 75#/cu.ft. calcium chloride water. Equalized 51 sacks of sand from 7635' to 7230'. Pulled out of well. Using wireline bailer, capped sand with cement from 7230'-7210'. Shot eight 1/2" bullet holes from 7190'-7189'. Made up 300' 2-7/8" tubing tail on 8-5/8" 40# retrievable retainer. Ran in well to 7191' with 2-7/8" tail.

11-12 Equalized 75 cu.ft. of 12% HCl 3% HF acid. Obtained breakdown of 5 cu.ft. per minute at 1500 psi. Equalized 50 cu.ft. acid. Final breakdown of 5 cu.ft. per minute at 1300 psi. Pulled out of well. Using wireline, set drillable retainer at 7150'. Made up stab-in tool on 3-1/2" tubing. Ran in well and stabbed into retainer.

11-13 Mixed and pumped 50 sacks of Class "G" cement with 0.5% CFR-2, 0.6% Halad 9 preceded with 25 cu.ft. of 6% HCl 1-1/2% HF acid and 25 cu.ft. of 12% HCl 3% HF acid. Squeezed 24 cu.ft. away. Final pressure 1900 psi. Backscuttled and pulled out of well with stab-in tool. Made up bit, junk sub, and four 4-3/4" drill collars on 3-1/2" tubing.

11-14 Finished running in well. Drilled out cement from 7130'-7150'. Drilled up retainer. Drilled out cement to 7210'. Pressure tested holes to 1500 psi. Pulled out of well. Made up Cavins surge tool. Ran in well and surged at 7210'. Pulled out of well with surge tools. Made up a 7-5/8" bit, junk sub, two 4-3/4" drill collars, crossed over to 3-1/2" tubing.

11-15 Finished running in well to cement cap at 7210'. Ran audio analyzer from 7200' to surface. Showed gas movement behind casing. Pulling out of well with bit.

11-16 Finished pulling out of well. Using wireline, shot four 1/2" jet holes from 7185'-7186'. Ran 8-5/8" 40# retrievable retainer with 314' of 2-7/8" 8rd. Crossed over to 3-1/2" 8rd to 7188'. Equalized 75 cu.ft. of 12% HCl 3% HF acid. Attempted to obtain breakdown. Pumped 75 cu.ft. 1/2 cu.ft. a minute at 2000 psi.

11-17 Finished pulling out of well. Using wireline, shot eight 1/2" holes from 7184'-7185'. Made up 314' of 2-7/8" EUE 8rd on 8-5/8" 40# retainer. Crossed over to 3-1/2" tubing. Ran in well and set tool at 7187'. Equalized 75 cu.ft. of 18% HCl 3% HF acid. Attempted breakdown - 3 cu.ft. a minute - 2000 psi. Cleared pipe. Equalized 75 cu.ft. of 18% HCl 3% HF acid in tubing at 7187'. Attempted breakdown - 4 cu.ft. a minute - 2000 psi.

1984

11-19 Equalized 100 cu.ft. of 12% HCl 3% HF acid in tubing at 7184'. Obtained a breakdown of 5 cu.ft. a minute at 2000 psi. Squeezed holes from 7184'-7186' with 25 sacks of Class "G" cement mixed with 0.5% CFR-2, 0.6% Halad 9. Preceded with 25 cu.ft. of 12% HCl 3% HF acid, followed with 10 cu.ft. of water. Pumped 5 cu.ft. of cement in place. Final pressure 1900 psi. Backscuttled. Pulled out of well. Ran in well with 7-5/8" bit, two 4-3/4" drill collars. Crossed over to 3-1/2" tubing 30 stands.

11-20 Finished running in well with 7-5/8" bit. Drilled cement and cleaned out from 7169' to 7235' tubing measurements. Backscuttled. Measured out of well. Tubing measured 15' short. Located bottom at 7219'. Made up a new 7-5/8" bit, two 4-3/4" drill collars on 3-1/2" tubing. Ran in well and finished cleaning out to 7235'. Backscuttled.

11-21 Finished pulling out of well with bit. Using wireline bailer, equalized one cubic foot of sand 7239'-7235'. Set cement cap at 7224'-7234'. Shot eight 1/2" jet holes 7220'-7222'. Made up 314' 2-7/8" tubing on 8-5/8" 40# retrievable retainer. Crossed over to 3-1/2" tubing. Ran in well to 6931'.

11-22 Holiday.

11-23 Ran in well to 7222'. Equalized 75 cu.ft. of 12% HCl 3% HF acid in tubing at 7222'. Obtained breakdown of 4 cu.ft./minute at 2000 psi. Cleared holes. Equalized 75 cu.ft. of 12% HCl 3% HF acid in tubing at 7222'. Breakdown of 5 cu.ft./minute at 2000 psi. Cleared holes. Equalized 100 cu.ft. of 15% HCl 5% HF acid in tubing at 7222'. Breakdown of 5 cu.ft./minute at 1900 psi.

11-24 Equalized 100 cu.ft. of 15% HCl 5% HF acid at 7222' and obtained breakdown of 5 cu.ft./minute at 1800 psi. Pulled out of well. Using wireline, shot eight 1/2" bullet holes from 7217' to 7219'. Ran in well. Set 2-7/8" tubing tail at 7219'. Equalized 150 cu.ft. of 15% HCl 5% HF acid in tubing at 7219'. Obtained a final breakdown of 5 cu.ft./minute at 1400 psi.

1984

11-26 Equalized 25 cu.ft. of 12% HCl 3% HF acid in tubing at 7219'. Set tool and pumped 12 cu.ft. out. Equalized 13 cu.ft. from 7219' to 7180'. Pulled out of well with tool. Using wireline, set drillable retainer at 7169'. Ran in well to 7169'. Pumped 25 cu.ft. of acid to 7169'. Stabbed in and pumped 9 cu.ft. out of holes. Pulled out of tool. Squeezed holes with 57 cu.ft. of Class "G" cement mixed with 0.5% CFR-2, 0.6% Halad 9 with RA in first 10 cu.ft. of cement. Preceded with 25 cu.ft. of 12% HCl 3% HF acid. Pumped 57 cu.ft. out at 1500 psi with 3 cu.ft. a minute. Cleared holes with 25 cu.ft. water. Equalized 20 cu.ft. 12% HCl 3% HF acid in tubing at 7219'. Set tool and pumped 4 cu.ft. out of holes. Pulled out of tool. Squeezed holes with 57 cu.ft. of Class "G" cement mixed with 0.5% CFR-2, 0.6% Halad 9. Preceded with 5 cu.ft. of 12% HCl 3% HF acid followed with 10 cu.ft. water. Pumped 57 cu.ft. out. Final pressure 1500 psi. Cleared holes with 25 cu.ft. of water. Circulated well for one hour.

11-27 Equalized 25 cu.ft. of 12% HCl acid in tubing at 7169'. Stabbed in and pumped 9 cu.ft. out holes. Pulled out of tool. Mixed 57 cu.ft. of Class "G" cement with 0.5% CFR-2, 0.6% Halad 9. Preceded with 25 cu.ft. of 12% HCl 3% HF acid followed with 10 cu.ft. of water. Squeezed away 5 cu.ft. cement. Cleared holes with 25 cu.ft. water. Mixed 57 cu.ft. of Class "G" cement with 0.5% CFR-2, 0.6% Halad 9. Preceded with 25 cu.ft. acid followed with 10 cu.ft. water. Squeezed 37 cu.ft. out. Final pressure 1900 psi. Squeezed total of 208 cu.ft. cement. Backscuttled. Pulled out of well with stab-in tool. Made up 7-5/8" bit, 2 junk subs, six 4-3/4" drill collars. Crossed over to 3-1/2" tubing.

11-28 Finished running in well. Drilled 8-5/8" 40# retainer and cement. Cleaned out to cement cap at 7224'. Backscuttled. Tested holes from 7219'-7217' to 2000 psi for 20 minutes.

11-29 Rigged up wireline. Ran noise log in fluid from 7222' to 6000' - indicated noise. Pulled out of well with bit. Ran in well with 30 stands of 3-1/2" tubing. Ran noise log from 7220'-5500' - noise at 7120'. Pulled 3-1/2" tubing. Ran in well with 7-5/8" bit, 2 junk subs, two 4-3/4" drill collars. Crossed over to 3-1/2" tubing. Drilled out cement from 7224'-7234'. Backscuttled well clean. Pulled out of well with bit. Made up 314' 2-7/8" tubing. Crossed over to 3-1/2" tubing. Ran in well.

11-30 Finished running in well. Circulated gas out of well. Backscuttled sand out of well from 7235'-7570'. Pulled out of well. Made up flow test tools. Ran in well to 7216'. Tested surface lines to 3500 psi.

1984

12-1 Set 8-5/8" 40# test tools at 7210'. Opened tool at 6:15 a.m.; gas to surface at 6:18 a.m. Flowed into tank until 7:00 a.m. (39 bbls). Continued flowing into Company line until 1:00 p.m. at 700 psi. Started injecting into well at 1:00 p.m. 2850 psi. Stopped injecting at 8:30 p.m. Final injection pressure 2650 psi. Closed tool and safety valves.

12-2 Two men to monitor casing (22 hours). No rig time.

12-3 Using wireline, ran temperature, capacitance, gamma ray, audio analyzer, RA tracer logs which showed gas movement from zone to 2000'.

12-4 Circulated gas out of well. Pulled out of well with test tool. Made up 16 joints (496') of 2-7/8" EUE 8rd tubing; crossed over to 3-1/2" tubing. Ran in well to 7580'. Changed over from 73#/cu.ft. polymer completion fluid to 74#/cu.ft. calcium chloride water, 80% lease water 20% calcium chloride water. Equalized 43 sacks of sand from 7580'-7240'. Pulled 250' above sand.

12-5 Circulated bottoms up. Ran in liner. Located top of sand at 7249'. Equalized 9 linear feet of sand. Pulled out of well. Using wireline bailer, capped sand with cement from 7240'-7230'. Ran in well with 3-1/2" tubing to 7123'.

12-6 Circulated bottoms up (no gas). Tested cement cap and casing to 2000 psi for 20 minutes. Pulled out of well. Using wireline, ran caliper log 7220'-1000'. Ran in well with 115 stands of 3-1/2" tubing (6886').

12-7 Circulated bottoms up. Pulled out of well. Rigged up wireline to run segmented casing inspection. Logged casing going in well. Tool stopped working and unable to finish logging casing. Made up retrievable retainer. Ran in well to 3000'.

12-8 Using pump truck, pressure tested 8-5/8" casing from 3000' to 7230' to 3000 psi for 20 minutes at 500' intervals. No hole indicated. Pulled out of well. Using wireline, shot eight 1/2" holes from 7226'-7225'. Ran 314' of tubing on 8-5/8" 40# retrievable retainer. Crossed over to 3-1/2" tubing. Ran in well to 7161'.

1984

12-10 Ran in well to 7226'. Using pump truck, equalized 100 cu.ft. of 15% HCl 5% HF acid at 7226'. Obtained a breakdown of 5 cu.ft. per minute at 1500 psi. Pulled out of well with 8-5/8" 40# retrievable retainer. Using wireline, set 8-5/8" retainer at 7174'. Ran in well with stab-in tool and stabbed into retainer. Tested to 1000 psi.

12-11 Using pump truck, equalized 25 cu.ft. of 12% HCl 3% HF acid at 7174'. Stabbed in and pumped 8 cu.ft. out of holes. Remaining 17 cu.ft. in 8-5/8" casing from 7174'-7226'. Squeezed holes with 57 cu.ft. of Class "G" mixed with 0.5% CFR-2, 0.6% Halad 9. Preceded with 25 cu.ft. of 12% HCl 3% HF acid and followed with 10 cu.ft. of water. Pumped cement out and cleared holes with 25 cu.ft. of water. Resqueezed with same cement detail. Total of 114 cu.ft. out holes. Cleared holes and waited on cement to set for 4 hours. Mixed 57 cu.ft. of cement mixed with 0.5% CFR-2, 0.6% Halad 9. Preceded with 25 cu.ft. of 12% HCl 3% HF acid and followed with 10 cu.ft. of water. Final pressure 2000 psi. Pulled 5 stands. Backscuttled. Pulled out of well. Made up 7-5/8" bit, two junk subs, six 4-3/4" drill collars. Crossed over to 3-1/2" tubing. Ran in well to 6851'.

12-12 Ran in well to 6621'. Backscuttled acid gas out of well. Drilled 3' of cement. Ran in well to 7168'. Drilled cement from 7168'-7174'. Drilled 8-5/8" 40# retainer and cement to 7226' and cleaned out to 7230'. Backscuttled. A total of 150 cu.ft. of cement squeezed away through holes at 7225'-7226'.

12-13 Ran noise log in fluid from 7226'-6800'. Drilled cement cap from 7230'-7235'. Backscuttled. Changed over from 74#/cu.ft. calcium chloride water to 74#/cu.ft. polymer completion fluid. Started out of well. Shut down rig due to high winds.

12-14 Pulled out of well with 7-5/8" bit. Made up 4-5/8" bit, bit sub, 496' of 2-7/8" tubing. Crossed over to 3-1/2" tubing. Ran in well to 7235'. Drilled cement out of liner. Cleaned out sand to 7635'. Pulled out of liner.

12-15 Finished pulling out of well with 4-5/8" bit. Made up 8-5/8" 40# test tools. Ran in well. Tested surface lines to 3000 psi. Set packer at 7205'. Opened tool at 12:30 p.m. Gas to surface in one minute, fluid in 5 minutes. Flowed to tank for 30 minutes (36 bbls.). Continued flowing into Company line at 700 psi until 9:30 p.m. Closed tool.

1984

12-17 Injected gas into storage zone continuously from 8:00 a.m. to 8:00 p.m. at 2700 psi.

12-18 Rigged up wireline and ran capacitance, temperature and audio analyzer logs. Noise log indicated gas activity from 6200'-7580'.

12-19 Rigged up wireline and injected 100 MC of I-131 from 7353'-7370' while well was on injection at surface pressure of 2325 psi. Log confirmed gas movement behind casing. Released test tool and backscuttled fluid to kill well. Pulled out of well and laid down test tools. Ran in well with 496' of 2-7/8" tubing on bottom of 3-1/2" to 7183'.

12-20 Located fill at 7635'. Displaced 74#/cu.ft. polymer completion fluid with 415 bbls. of 67#/cu.ft. filtered lease water. Dumped 48 sacks of 8-12 gravel down tubing. Pulled up above liner top and located sand at 7240' (pipe measurement). Pulled out of well and rigged up wireline. Located sand with CCL at 7222'. Capped sand with six lineal feet of cement. Shot eight 1/2" bullet holes from 7209'-7210' (electric log measurement). Made up retrievable cement retainer with 310' of 2-7/8" tail. Measured in hole to 7120'. Rigged up pump truck for breakdown.

12-21 Located hard cement cap at 7222' (pipe measurement). Pulled up 8' and pumped 75 cu.ft. of 12-3 acid followed by 272 cu.ft. of lease water. Set retainer and pressured to 2000 psi. Pressure dropped to 1750 psi in one hour. Continued to hold 2000 psi using pump truck. Displaced 9 cu.ft. acid out holes in 9 hours. Released tool and backscuttled acid out of well. Pumped 75 cu.ft. of 15-5 acid followed by 272 cu.ft. of filtered lease water. Set tool and pressured to 2000 psi.

12-22 Pressure on tubing bled down to 500 psi. Repressured to 2000 psi with 15-5 acid. Established breakdown at 6 cu.ft. a minute at 1800 psi. Displaced 75 cu.ft. of 15-5 acid into formation. Secured well due to high winds.

12-24 Holiday

12-25 Holiday

12-26 Released retainer and pulled out of well. Rigged up wireline and set drillable retainer at 7175'. Made up stab-in on 3-1/2" tubing and ran in hole. Stabbed in and pressure tested annulus to 2500 psi. Pressure bled down to 1500 psi in 5 minutes with no visible returns through tubing. Pulled out of well. Made up retrievable retainer on tubing and ran in well to 7169'. Pressured annulus to 3000 psi. Bled to 2500 psi in 30 minutes. Pressured tubing to 3100 psi.

1984

12-27 Pulled RTTS out of well. Made up stab-in on 3-1/2" tubing and ran in well. Stabbed into retainer and pressured annulus to 2500 psi. Pumped 25 cu.ft. of 12-3 acid followed by 57 cu.ft. of Class "G" cement with 0.75% CFR-2, 0.6% Halad 9 followed by 10 cu.ft. of fresh water. Cleared holes with lease water. Repeated same procedure two more times without reaching squeeze pressure. Pumped same mixture of cement two more times without acid lead and never reached squeezed pressure. Pumped cement for sixth time without acid and attained final pressure of 2250 psi. Total cement pumped out holes, 302 cu.ft. Pulled 15 stands.

12-28 Pulled out of hole. Made up 7-5/8" S3J bit on six drill collars and ran in well. Drilled cement from 7078'-7187'. Drilled retainer from 7187'-7190'. Drilled hard cement from 7190'-7226' and circulated well. Pressured annulus to 2500 psi, which bled to 2000 psi in 12 minutes. Pulled out of well. Laid down bit and stood back drill collars. Made up retrievable retainer on 3-1/2" tubing and ran in well with 30 stands.

12-29 Ran in well to 7188' and set retainer. Tested holes at 7210' to 2550 psi. Pressure bled off to 2360 psi in 20 minutes. Tested annulus to 2525 psi for 20 minutes. Released retainer. Located bottom at 7220'. Set retainer at 7218'. Pressured up to 7725 psi. Pressure bled off to 2400 psi in 10 minutes. Pulled out of well. Made up 310' of 2-7/8" tail on retainer and ran in well. Located bottom at 7221'. Cleaned out to 7224'. Set tail at 7219' and pressured to 2500 psi. Pressure bled off to 2375 psi in 75 minutes. Released retainer and set tail at 7223'. Pumped 75 cu.ft. of 15-5 acid followed by 285 cu.ft. of lease water and set retainer. Established breakdown at 5.5 cu.ft./minute at 2100 psi. Displaced all acid out holes.

12-31 Holiday

1985

1-1 Holiday

1-2 Rig shut down because of high winds.

1-3 Using pump truck, equalized 75 cu.ft. of 15% HCl 5% HF acid at 7220'. Obtained breakdown of 5 cu.ft. a minute at 1900 psi. Equalized 75 cu.ft. of 15% HCl 5% HF followed with 25 cu.ft. of 12% HCl 3% HF acid at 7220'. Obtained a final breakdown of 5 cu.ft. at 1800 psi.

1-4 Rig down because of high winds.

1-5 Pulled 50 stands. Secured well and shut down rig because of high winds.

1985

1-7 Finished pulling out of well. Using wireline, made up 8-5/8" 40# drillable retainer. Ran in well. Retainer stopped at 7186'. Pulled out of well. Made up 7-5/8" bit on two 4-3/4" drill collars. Crossed over to 3-1/2" tubing. Ran in well. Bit stopped at 7191'. Made up Kelly, rotated and ran in to 7222'. Backscuttled 2 lbs. of metal out of well. Changed over from 68#/cu.ft. salt water to 63#/cu.ft. lease salt water. Pulled to kill string.

1-8 Finished pulling out of well. Using wireline, set 8-5/8" 40# drillable retainer at 7170'. Made up stab-in tool on 3-1/2" tubing. Ran in well to 7168'. Pumped 25 cu.ft. of 12% HCl 3% HF acid to 7166'. Stabbed into retainer at 7170'. Pumped 9 cu.ft. out of holes at 7220'. Pulled out of retainer. Mixed 57 cu.ft. of Class "G" cement with 0.5% CFR-2 0.6% Halad 9. Preceded with 25 cu.ft. of 12% HCl 3% HF acid. Followed with 10 cu.ft. of water. Squeezed 14 cu.ft. out holes at 7220'. Final pressure 2500 psi. Backscuttled. Pulled out of well with stab-in tool. Made up 7-5/8" bit, two junk subs, six 4-3/4" drill collars on 3-1/2" tubing and started in well.

1-9 Finished running in well to 7073'. Drilled out cement to 7170'. Drilled retainer and drilled out cement to 7199'. Made a trip for a new bit. Finished drilling cement to 7222'. Backscuttled well clean.

1-10 Pulled out of well with bit. Made up an 8-5/8" 40# retrievable retainer. Ran in well. Set tool at 7210'. Tested holes 7219'-7220' at 2000 psi for 20 minutes. Pulled out of well. Made up 7-5/8" bit, two junk subs, six 4-3/4" drill collars; crossed over to 3-1/2" tubing. Ran in well to 7220'. Changed over from 63#/cu.ft. lease salt water to 67#/cu.ft. polymer completion fluid. Drilled cement cap and cleaned out to top of liner at 7235'. Backscuttled. Pulling out of well.

1-11 Finished pulling out of well with 7-5/8" bit. Made up Cavins surge tool. Ran in well and surged at 7235'. Pulled out of well with surge tool. Made up a 2-7/8" 45° on 500' of 2-7/8" tubing. Crossed over to 3-1/2" tubing. Ran in to top of liner at 7235'. Cleaned out sand from 7235'-7454'. Swivel locked up. Pulled 25 stands.

1-12 Rig down for repairs.

1-14 Rig down for repairs.

1985

1-15 Finished cleaning out sand from 7454'-7635'. Pulled out of well with 2-7/8" tubing tail. Made up 8-5/8" 40# test tools. Ran in well to 7188'. Tested surface lines to 3000 psi and set packer. Opened tool at 5:45 p.m. Flowed into tank until 7:45 p.m. Continued flowing into Company line at 600 psi.

1-16 Continued flowing well into Company line until 3:30 a.m. at 600 psi. Started injecting gas into well (2500 psi) at 3:30 a.m. until 1:30 p.m.

1-17 Using wireline, ran a temperature, capacitance and noise log from 7635' to surface. Loaded out wireline. Continued flowing well.

1-18 Flowed well to Company line.

1-19 Rigged up wireline. Ran temperature, capacitance and noise log from 7635' to surface. Closed in well.

1-21 Using wireline, reran noise log from 7600'-7000'. Found noise in zone diminishing above packer. Prepared to run RA survey and shut down to wait for gas pressure.

1-22 Using wireline, ran radioactive tracer survey from 7600'-6000'. Found gas migration up to 6950'. Killed well with 67#/cu.ft. polymer completion fluid. Released tester and circulated gas out of well. Started out of well laying down 3-1/2" tubing string.

1-23 Finished laying down 3-1/2" tubing and test tools. Made up 5-1/2" inside cutter on 2-7/8" RIF drill pipe and picked up drill pipe to 7200'. Made inside cut in liner at 7242' and pulled out of well with cutter. Made up 4-13/16" spear on 4-7/8" bumper sub, hydraulic jars, six 4-3/4" drill collars and accelerator and started in well.

1-24 Attached spear to fish at 7241'; jarred fish loose and pulled out of well. (Recovered 8-5/8" lead seal adapter, 8-5/8" x 5-1/2" lead seal hanger and 5-1/2" port collar.) Ran 5-1/2" inside cutter in well to 7315' and made inside cut. Pulled out of well. Made up 4-13/16" spear on fishing assembly and started in well.

1-25 Attached spear to fish at 7243' and pulled out of well. (Retrieved 74' of liner, one 4' x 5-1/2" stub, one 42' joint of wire wrapped screen; one 28' x 5-1/2" piece of blank casing.) Ran 8-5/8" 40# casing scraper on drill pipe to 7315' and pulled out of well. Ran 7-5/8" sizing tool on drill pipe to 7315' and prepared casing stub for hanger. Started out of well.

1985

1-26 Finished pulling out of well with sizing tool. Ran Baker 8-5/8" x 5-1/2" adapter on drill pipe to 7315'. Attached to casing stub and set adapter. Pulled out with setting tools. Using wireline, ran neutron and collar logs from 7635'-6633'.

1-28 Located fill at 7618'. Equalized 37 sacks of sand. Pulled out of well. Using wireline, located top of sand at 7301' (19' high). Ran in well to 7301'. Located sand. Backscuttled 19' of sand out of well. Pulled 30 stands.

1-29 Finished pulling out of well. Using wireline bailer, set cement cap from 7313'-7305'. Well taking fluid. Ran in well with 8-5/8" 40# retrievable retainer. Set tool at 7304'.

1-30 Checked annulus. No fluid loss. Released 8-5/8" 40# retainer. Filled well with 12 bbls. Changed over from lease salt water to 63#/cu.ft. polymer completion fluid. Equalized 50 bbls. of high viscosity polymer completion fluid at 7305'. Pulled out of well. Made up 7-5/8" bit, bit sub, two 4-3/4" drill collars. Crossed over to 2-7/8" drill pipe. Ran in well to 7308'. No cement on top of liner. Pulled 7-5/8" bit. Made up 4-5/8" bit, bit sub, two joints of 2-7/8" tubing. Crossed over to 2-7/8" tubing. Ran in well to 7306'. Drilled cement to 7317'. Backscuttled well clean.

1-31 Ran in liner and cleaned out sand to 7341'. Pulled out of well with 4-5/8" bit. Made up 5-1/2" internal casing cutter and extensions crossed over to 2-7/8" drill pipe. Ran in well and cut 5-1/2" 20# liner at 7326'. Pulled out of well. Made up 5-1/2" 20# casing spear. Ran in well. Located top of liner at 7306' with stop sub. Jarred on fish 60,000# over string weight for one hour. Released spear. Pulled out of well. Made up 5-1/2" internal casing cutter. Ran in well with kill string.

2-1 Finished running in well. Cut 5-1/2" 20# liner at 7329'. Pulled out of well with 5-1/2" internal casing cutter. Made up 5-1/2" casing spear, bumper sub, jars, accelerator and crossed over to six 4-3/4" drill collars and crossed over to 2-7/8" drill pipe. Ran in well to 7306' with stop sub, 7329' with spear. Attached spear to fish. Pulled out of well with fish. Hung up at 6316'. Worked free and pulled out. Recovered 8-5/8" x 5-1/2" lead seal and 22' of 5-1/2" 20# pipe. Made up 7-5/8" x 5-1/2" sizing tool, 8-5/8" 40# casing scraper and crossed over to 2-7/8" drill pipe. Ran in well to 7332'. Polished off casing stub.

1985

2-2 Finished pulling out of well with 7-5/8" sizing tool. Made up adapter lead seal drive over 8-5/8" 36-40# x 7" x 5-1/2" with 5' extension. Ran six 4-3/4" drill collars and crossed over to 2-7/8" drill pipe. Ran in well and set lead seal hanger. Pulled 4,000#. Tested lead seal to 300 psi for 10 minutes. Released from lead seal. Top of liner at 7323'.

2-4 Finished pulling out of well with liner setting tool. Ran open end tubing to 7323' and displaced sand from 7344'-7318'. Pulled out with tubing. Using wireline, installed cement cap from 7318'-7308'. Made up 8-5/8" retrievable retainer with 60' of 2-7/8" tubing tail on drill pipe and started in well.

2-5 With tail at 7304' and retrievable retainer at 7231', spotted 75 cu.ft. of 12% HCl and 3% HF acid at 7304'. Set retainer and displaced 55 cu.ft. into holes at 7302' at 18 cu.ft./minute with 2200 psi. Pulled out with retainer. Using wireline equipment, set 8-5/8" drillable retainer at 7240'. Made up stinger on 2-7/8" drill pipe and started in well.

2-6 Stabbed into retainer at 7240'; pumped 20 cu.ft./minute at 2000 psi. Cement Job #1. Preceded by 25 cu.ft. of 12% HCl and 3% HF acid. Mixed and displaced 115 cu.ft. of Neat "G" cement with 0.5% CFR-2 and 0.6% Halad 9, 40 cu.ft. past holes at 7302'; maximum pressure 1750 psi. Took breakdown; 16 cu.ft./minute at 2000 psi. Cement Job #2. Mixed 91 cu.ft. of Neat "G" cement with 0.5% CFR-2 and 0.6% Halad 9 and displaced 61 cu.ft. out holes at 7302' before reaching 2600 psi final pressure. Pulled above retainer, backscuttled drill pipe and pulled out with stinger. Ran 8-5/8" retrievable retainer back in well to 7230' and started testing casing for leak. Set retainer at 4840'. Pressured above retainer at 2000 psi. Below retainer fell to 300 psi in 10 minutes.

2-7 Ran retainer to 7228'; pressured below retainer at 2000 psi. Pressure dropped 300 psi in 10 minutes. Pressured annulus to 2000 psi; fell 350 psi in 10 minutes. Reset retainer at 7176'. Pressured below retainer to 2000 psi and pressure dropped 750 psi in 5 minutes. Pressured annulus to 2000 psi with no pressure loss. Spotted 75 cu.ft. of 12% HCl and 3% HF acid at 7196' and displaced 65 cu.ft. at maximum rate of 10 cu.ft./minute at 2200 psi. Pulled out with retainer. Using wireline, set 8-5/8" drillable retainer at 7150'. Made up stinger on 2-7/8" drill pipe and started in well.

1985

2-8 Stung into retainer at 7150' and pumped away 9-1/2 cu.ft./minute at 2000 psi. Preceded by 25 cu.ft. of 12% HCl and 3% HF acid, mixed and spotted 75 cu.ft. of Neat "G" cement mixed with 0.5% CFR-2 and 0.6% Halad 9 and displaced 42 cu.ft. below retainer into holes from 7189'-7226' before reaching 2100 psi final squeeze pressure. Backscuttled excess cement and pulled out with stinger. Made up new 7-5/8" bit on drilling assembly and started in well.

2-9 Finished running in well. Drilled cement from 7100'-7150'. Drilled retainer 7150'-7156'. Drilled cement from 7156'-7232'. Backscuttled. Pulled three stands.

2-11 Rig down due to high winds.

2-12 Rig down due to high winds.

2-13 Rig down due to high winds.

2-14 Pulled 40 stands. Shut rig down due to high winds. Secured rig.

2-15 High winds, crew on standby for 4 hours.

2-16 Rig down due to high winds.

2-18 Ran drill pipe back in well and cleaned out fill from 7200'-7233'. Pulled out of well and ran surge tool on drill pipe and opened tool, cleaning out from 7238'-7240'. Pulled out of well. Recovered one gallon of iron. Ran 8-5/8" retrievable retainer on drill pipe to 7100'. Set tool and pressured down drill pipe at 2000 psi. Bled off 500 psi in 30 minutes.

2-19 Pulled out with retainer. Using wireline, set 8-5/8" drillable retainer at 7050'. Ran stinger to retainer and pumped away 5 cu.ft./min. at 2500 psi. Preceded by 25 cu.ft. of 6% HCl and 1-1/2% HF acid and followed with 87 cu.ft. of Neat "G" cement with 0.5% CFR-2 and 0.6% Halad 9. Displaced 5 cu.ft. out holes below 7189' before reaching final pressure of 2000 psi. Backscuttled drill pipe and pulled 10 stands.

2-20 Drilled out cement from 6950'-7050'. Drilled out retainer and cement from 7050'-7157'. Cleaned out to 7233'. Pulled 10 stands.

2-21 Cleaned cement out of shaker pit and cellar. Shut down rig due to high winds.

1985

2-22 Pulled out with bit. Ran 8-5/8" retrievable retainer to 7150' and pressured holes below retainer at 2000 psi. Lost 500 psi in one-half minute. Spotted 150 cu.ft. of 12% HCl and 3% HF acid and displaced out holes below 7184' at 8 cu.ft./minute at 2500 psi. Pulled out with retainer. Using wireline, set 8-5/8" drillable retainer at 7150'. Started in well with stinger tool.

2-23 Ran stinger to retainer at 7150'; pumped away 5 cu.ft./min. at 2500 psi. Preceded by 75 cu.ft. of 12% HCl and 3% HF acid, mixed 57 cu.ft. of Neat "G" cement with 0.5% CFR-2 and 0.6% Halad 9 and displaced 25 cu.ft. below holes at 7184'. Pulled out with stinger. Ran drilling assembly with 7-5/8" bit in well to 7100'.

2-25 Circulated contaminated lease salt water out of well with clean 63#/cu.ft. salt lease water. Drilled out cement from 7074'-7190'. Drilled retainer and cement to 7211'. Cleaned out to 7233'. Backscuttled. Pulled out of well with bit. Made up 8-5/8" 40# retrievable retainer and ran in well to 5086'.

2-26 Finished running in well. Set retrievable retainer at 7140'. Pressure tested down drill pipe at 2000 psi for one hour. Pulled tool. Made up a 7-5/8" bit, two junk subs, casing scraper, six 4-3/4" drill collars on 2-7/8" drill pipe. Ran in well to 7232'. Drilled out retainer. Drilled out cement to 7308'. Pulled 10 stands.

2-27 Pulled out of well with 7-5/8" bit. Made up 45° cut-off on two joints 2-7/8" tubing and 8-5/8" 40# retrievable retainer. Crossed over to 2-7/8" drill pipe. Ran in well. Backscuttled. Cleaned out fill to 7308'. Using pump truck, pressure tested squeezed holes at 7302' to 2000 psi. Released retainer. Backscuttled and cleaned out to 7318'. Pulled out of well.

2-28 Using wireline, ran casing inspection log from 7310' to surface. Ran in well with bit, junk sub, and casing scraper on six 4-3/4" drill collars. Crossed over to 2-7/8" drill pipe. Drilled and cleaned out cement cap from 7310'-7318'. Pulled out of well. Made up 8-5/8" 40# retrievable retainer. Ran in well to 7319'.

3-1 Set retainer at 7315'. Using pump truck, tested from surface to 7319' with 2000 psi for 20 minutes. Pulled out of well. Made up 500' of 2-7/8" tubing. Crossed over to 2-7/8" drill pipe and ran in well to 7310'. Changed over from lease salt water to 63#/cu.ft. polymer completion fluid. Pulled out of well with tubing tail.

1985

3-2 Made up 8-5/8" 40# test tools. Ran in well to 7310' and set tool. Flowed into tank from 2:30 a.m. until 4:15 a.m. (70 bbls. fluid). Continued flowing into Company line until 12:00 p.m. and started injecting into well at 12:00 p.m. until 10:00 p.m. at 2800 psi.

3-4 Rigged up wireline. Ran temperature, capacitance and noise log. Log was inconclusive. Flowed well into Company line from 4:00 p.m. until 9:30 p.m.

3-5 Flowed well into Company line at 550 psi from 6:30 a.m. until 6:00 p.m.

3-6 Rigged up wireline. Grease pump on lubricator failed to work. Loaded out wireline. Flowed into Company line at 540 psi from 11:30 a.m. until 6:00 p.m.

3-7 Rigged up wireline. Ran a capacitance, noise and RA log. Showed gas movement from 7302'-7000'. Circulated gas out of well with 63#/cu.ft. polymer completion fluid. Pulling out of well with 8-5/8" 40# test tool.

3-8 Finished pulling out of well. Made up 465' of 2-7/8" tubing, crossed over to 2-7/8" drill pipe. Ran in well. Changed over from 63#/cu.ft. polymer completion fluid to 63#/cu.ft. lease salt water. Equalized 40 sacks of sand at 7630'. Pulled out of liner to 7267'.

3-9 Pulled out of well with 2-7/8" drill pipe and 2-7/8" tubing tail. Using wireline bailer, set cement cap in 8-5/8" 40# from 7316'-7306'. Made up 8-5/8" 40# retrievable retainer on 455' of 2-7/8" tubing, crossed over to 2-7/8" drill pipe. Ran in well to 6191'.

3-11 Finished running in well; stopped at 7299'. Backscuttled with cement returns. Tested cement cap to 2000 psi for 20 minutes and lost 700 psi. Pulled out of well with RTTS tool. Made up bit, bit sub, two 4-3/4" drill collars, crossed over to 2-7/8" drill pipe. Ran in well and drilled out cement cap and sand to 7319'. Backscuttled.

3-12 Using wireline bailer, located top of sand at 7319'. Bailer stuck in sand. Pulled wireline out of rope socket. Made up 5-3/4" overshot, bumper sub, jars, six 4-3/4" drill collars, crossed over to 2-7/8" drill pipe. Ran in well and located top of fish at 7283'. Pulled out of well with fish. Using wireline, ran in and located fill at 7307'. Made up a 7-5/8" bit, bit sub, two 4-3/4" drill collars, crossed over to 2-7/8" drill pipe. Ran in to 7307' and cleaned out to 7319'. Backscuttled. Pulling out of well.

1985

3-13 Pulled out of well with 7-5/8" bit. Using wireline bailer, set cement cap from 7309'-7319'. Made up 8-5/8" 40# retrievable retainer and ran in well to 7144'. Waited on cement cap to set up. Ran in well to 7306'. Set retainer and tested cement cap to 2000 psi. Pulled to 7301' and set tool. Lost 750 psi in 15 minutes. Pulled to 6710', no test. Pulled to 6048', test 2000 psi. Ran in well. Broke and serviced tool joints. Set tool at 7301'. Pressured to 2000 psi, no test. Pulled 10 stands.

3-14 Pressure tested holes 7184'-7185'; 7189'-7196' at 2000 psi for 20 minutes bleed off to 1400 psi. Tested holes 7209'-7226' at 2000 psi for 20 minutes. Bleed off 2000 psi to 1200 psi with returns in annulus. Tested holes 7302'-7303' at 2000 psi for 20 minutes. Bleed off 2000 psi to 1500 psi with returns in annulus. Released tool and pulled out of well. Made up 428' of 2-7/8" tubing, 8-5/8" 40# retainer, crossed over to 2-7/8" drill pipe and ran in well to 7302' with tubing tail and retainer at 6860'. Tested pipe to 2000 psi. Equalized 75 cu.ft. of 12% HCl 3% HF acid. Pressured to 2500 psi - no breakdown. Backscuttled acid from well.

3-15 Pulled drill pipe from 6860'-5380' testing for leaks. Retainer failed. Pulled out of well. Made up a 2-3/8" 45° 12 + 2-3/8" crossed over to 2-7/8" tubing 427' and 8-5/8" 40# retrievable retainer. Rigged up internal test tools at 2:00 p.m. Tested 30 joints in 7-1/2 hours. Released contractor. Waited for external test tools.

3-16 Rigged up external test tools. Tested 2-7/8" drill pipe to 4000 psi. One tool joint leaked. Dressed tool joint and continued in well. Loaded out test tools. Rig shut down at 9:00 a.m. to replace drum clutch.

3-18 With tubing tail at 7206' and 8-5/8" retrievable retainer at 6779', spotted 50 cu.ft. of 15% HCl and 6% HF acid, 10 cu.ft. past tail. Set retainer and displaced acid at 7 cu.ft./min. with 1250 psi. Released retainer, spotted, equalized, and balanced 54 cu.ft. of ammonium chloride water from 7206'-7040'. Pulled out of well with retainer. Using wireline, set drillable retainer at 7140'. Made up stinger on 2-7/8" drill pipe and started in well.

3-19 Cement Job (1) preceded by 100 cu.ft. of ammonium chloride, 112 cu.ft. of Injectrol and 60 cu.ft. of KCl water, mixed 100 cu.ft. of Neat "G" cement with 0.5% CFR-2 and 0.6% Halad 9, RI-131 and pumped past squeeze holes at 7302' by 25 cu.ft. (maximum pressure reached was 1600 psi). Breakdown rate 7 cu.ft./min. at 2000 psi. Cement Job (2) mixed 100 cu.ft. of Neat "G" cement with 0.5% CFR-2 and 0.6% Halad 9 and displaced 66 cu.ft. out holes at 7302' before reaching 2650 psi final pressure. Released from retainer, backscuttled drill pipe and pulled out of well. Made up 7-5/8" bit on drilling assembly and started in well.

1985

3-20 Drilled up retainer at 7140'. Tools ran free to 7206'. Drilled out cement to 7318' and backscuttled. Pulled out of well with bit. Made up 8-5/8" retrievable retainer on 2-7/8" drill pipe. Started in well.

3-21 Ran 8-5/8" retrievable retainer to 7308'. Pressured cap at 2000 psi for 30 minutes. Reset retainer at 7298'. Pressured down drill pipe at 2000 psi for 30 minutes. Pressured annulus at 2000 psi for 30 minutes. Released retainer and shut rig down due to high winds.

3-22 Pulled out of well with retainer. Ran 7-5/8" bit and drilling assembly and cleaned out to 7320'. Pulled out with bit. Ran surge tool on drill pipe to 7320'; opened tool and cleaned out to 7323'. Started out of well.

3-23 Pulled out of well with surge tool (recovered one gallon of iron and cement). Ran 427' of 2-7/8" tubing tail with mule shoe on bottom below 2-7/8" drill pipe to 7321'; displaced lease salt water from well with 450 bbls. of 63#/cu.ft. polymer completion fluid and cleaned out sand from 7323'-7325'; tubing plugged while backscuttling. Worked plug loose and shut down rig.

3-25 Cleaned out liner from 7329'-7623'. Pulled out of well with 2-7/8" tubing tail. Made up 8-5/8" 40# test tools. Ran in well and set retainer at 7310'. Opened tool at 5:30 p.m. and flowed into tank until 6:30 p.m. (25 bbls.). Continued flowing into Company line.

3-26 Flowed into Company line from 12:01 a.m. to 10:00 p.m. at 480 psi.

3-27 Using wireline, ran temperature, capacitance, noise and RA log - indicated gas movement up to 7310'. Rigged down wireline.

3-28 Pumped 60 bbls. 500 viscosity polymer pill. Released wireline tool and filled well with 80 bbls., laying down drill pipe; hole took fluid - 93 bbls. 63#/cu.ft. polymer completion fluid, pumped 50 bbls. 500 viscosity polymer pill, 102 bbls. 63#/cu.ft. polymer completion fluid, 35 bbls. 500 viscosity polymer pill, 275 bbls. 63#/cu.ft. polymer completion fluid and 145 bbls. 500 viscosity polymer pill.

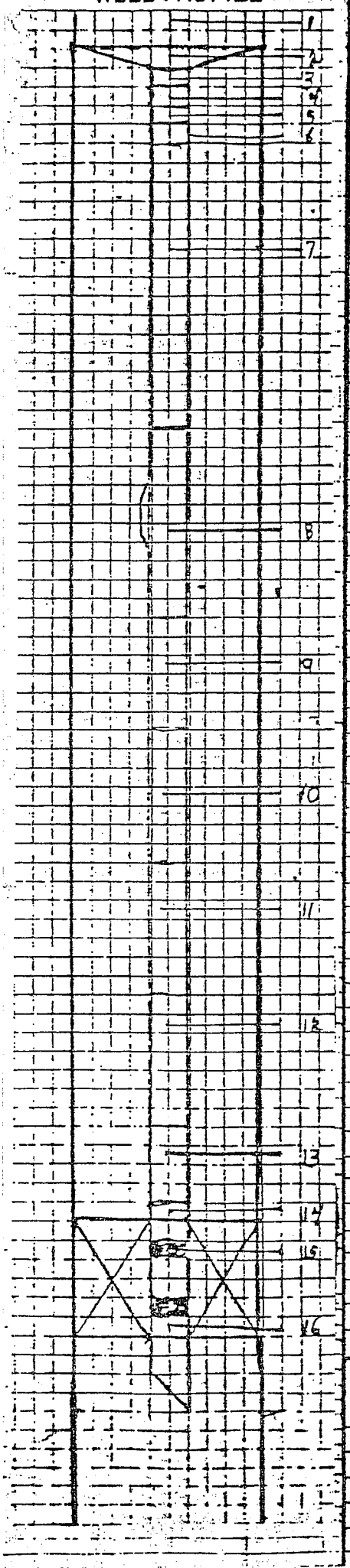
3-29 Shot fluid level 2015'. Pumped 100 bbls. of polymer fluid. Finished laying down drill pipe, 2-7/8" tubing and drill collars. Using wireline, set Otis permatrieve packer at 7130'. Changed to 3-1/2" pipe rams. Rigged up Hydrotest solid test and solid tested Otis locator sub, one joint 3-1/2" tubing, Otis 2.635" "XN" No-Go nipple, one joint 3-1/2" tubing, Otis 3-1/2" "XD" sliding sleeve (closed) to 5000 psi. Picked up, drifted and hydrotested 3-1/2" 9.3# 8rd EUE N-80 to 5000 psi.

1985

3-30 Finished drifting and hydrotesting in well to 5000 psi. Spaced out and landed on packer with 20,000#. Checked latch with 20,000#. Tested seals and packer at 1000 psi for 20 minutes. Installed back pressure valve and removed BOPE. Installed xmas tree and tested to 4000 psi for 20 minutes. Loaded sub-base and rigged down.

4-1 Unstrung drilling line from rig crown and traveling blocks. Finished tearing down and loading rig. Released rig at 12:01 p.m. 4-1-85.

WELL PROFILE



OPERATOR So. Calif Gas Co.

WELL # MA-#1A

FIELD Aliso Canyon

COUNTY Los Angeles

STATE California

DATE Revised 5-17-85
3-19-85

☐ NEW COMPLETION ☐ WORKOVER

	CASING	LINER	TUBING 1	TUBING 2	TUBING 3
SIZE					
WEIGHT					
GRADE					
THREAD					
DEPTH					

ITEM NO.	TUBING DETAILS	LENGTH	DEPTH
1.	K.B.	21.00	
2.	Tubing hanger +2.12 above ground level	-2.12	18.88
3.	Tubing hanger	.50	19.38
4.	Pup joint 3-1/2" EUE 8rd 9.3# N-80	7.57	26.95
5.	Pup joint 3-1/2" EUE 8rd 9.3# N-80	8.05	35.00
6.	Pup joint 3-1/2" EUE 8rd 9.3# N-80	10.10	45.10
7.	226 joint 3-1/2" EUE 8rd 9.3# N-80	6972.57	7017.67
8.	BST 3-1/2" gas lift mandrel 1-1/2" packer	14.80	7032.47
9.	One joint 3-1/2" EUE 8rd 9.3# N-80	30.65	7063.12
10.	Otis XD sliding sleeve-closed	3.58	7066.70
11.	One joint 3-1/2" EUE 8rd 9.3# N-80	30.96	7097.66
12.	Otis XN No GO (2.635 ID)	1.44	7099.10
13.	One joint 3-1/2" EUE 8rd 9.3# N-80	30.38	7129.48
14.	J-latch	.52	7130.00
A.	Otis 8-5/8" 40# PW Permatrieve packer 20,000# release		
15	Otis seals (2)	2.02	
16	Otis production tube guide tail	3.10	
	Tubing landed with 22,000# compression		
	Pulled 20,000# on latch		
	Top of packer tubing measurements = 7141.51		
	Tubing hanger 2.12' above ground level		
	Packer set on wireline 7130'		
	E Log		

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 284-261

DIVISION OF OIL AND GAS

Report on Operations

J. W. Gourley, Agent
Southern California Gas Co.
P.O. Box 3249, Terminal Annex
Los Angeles, CA 90051

Santa Paula, Calif.
Dec. 10, 1984

Your operations at well "SFZU" MA-1A, API No. 037-21891
Sec. 34, T. 3N R.16W, S.B. B.& M. Aliso Canyon Field, in Los Angeles County,
were witnessed on 11/8/84. R. Habel, representative of
the supervisor, was present from 1300 to 1400. There were also present Bill Killebrew,
So.Calif.Gas Rep.
Present condition of well: 13 3/8" cem 1000'; 8 5/8" cem 7379', perf 7302'WSO; 5 1/2"
ld. 7235-7635', perf 7245-7287' and 7373-7623'. TD 7640'.

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND ITS INSTALLATION ON THE 8 5/8" CASING ARE APPROVED.

b

M. G. MEFFERD

Murray W. Dosch

OG109 (9/83/GSR1/15M)

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

No. P 284-380

PERMIT TO CONDUCT WELL OPERATIONS

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

J. W. Gourley, Agent
Southern California Gas Company
P.O. Box 3249, Terminal Annex
Los Angeles, CA 90051

Santa Paula, California
October 23, 1984

Your proposal to alter casing well "SFZU" MA-1A,
A.P.I. No. 037-21891, Section 34, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, any area, Sesnon pool,
Los Angeles County, dated 9/28/84, received 10/17/84 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

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

Blanket Bond
MS:ljg

Engineer Michael Stettner

Phone (805) 525-2105

M. G. MEFFERD, State Oil and Gas Supervisor

By Michael Stettner
Deputy Supervisor

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

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

OG111 (6/84/DWRR/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

SANTA [illegible]

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

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
93	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well ~~Mission Adrian #1-A~~ MF-14, API No. 037-21891
(Well designation)

Sec. 34, T. 3W, R. 16W S.BB. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth 7640'

2. Complete casing record, including plugs and perforations (present hole)

	13-3/8"	cemented 1000'
	8-5/8"	cemented 7379', WSO at 7302'
400'	5-1/2"	landed 7635', top 7235' - W.W. 7245' - 7287' and 7373' - 7625'. Gravel flow packed with 302 sacks.

3. Present producing zone name Sesnon ; Zone in which well is to be recompleted ✱ same

4. Present zone pressure 2800 psi ; New zone pressure ✱ same

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

(or)

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

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

The proposed work is as follows:

1. Move in and rig up. Kill well. Install BOPE and pressure test.
2. Pull tubing. Recover packer. Fill with sand 7635' - 7230' and cap with cement to 7210'. Shoot holes 7190' - 7189'. Set drillable retainer and squeeze holes with cement.
3. Drill out cement and clean out sand. Test and run audio analyzer log.
4. Set packer, run tubing and return well to gas storage service.

Note: If well is to be redrilled, show proposed new bottom-hole coordinates and true vertical depth.

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

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

Southern California Gas Company
(Name of Operator)
By J.W. Gourley 4/28/94
(Name) J.W. Gourley (Date)
Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

OG107 (12/83/DWRR/5M)

CRITICAL WELL

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

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

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

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Santa Paula, California October 10, 1984

J. W. Gourley

Southern California Gas Company
P.O. Box 3249, Terminal Annex
Los Angeles, CA 90051

I have received your notice dated September 28, 1984, of intent to rework

"SFZU" MA-1A (037-21891)

(Well name and number)

Sec. 34, T. 3N, R. 16W, S.B. B. & M.

THE ENCLOSED NOTICE IS BEING RETURNED FOR MORE INFORMATION AND RESUBMITTAL.

M. G. MEFFERD
State Oil and Gas Supervisor

By _____
Deputy Supervisor

OG 113 (3/82/DWRR/1M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

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

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well Mission Adrian #1-A (Well designation), API No. 037-21891

Sec. 34, T. 3W, R. 16W S.B.B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth 7640'

2. Complete casing record, including plugs and perforations (present hole)

	13-3/8"	cemented 1000'
	8-5/8"	cemented 7379', WSO at 7302'
400'	5-1/2"	landed 7635', top 7235' - W.W. 7245' - 7287' and 7373' - 7625'. Gravel flow packed with 302 sacks.

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

4. Present zone pressure 2800 psi ; New zone pressure X

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

(or)

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

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

The proposed work is as follows:

1. Move in and rig up. Kill well. Install BOPE and pressure test.
2. Pull tubing. Recover packer. Fill with sand 7635' - 7230' and cap with cement to 7210'. Shoot holes 7190' - 7189'. Set drillable retainer and squeeze holes with cement.
3. Drill out cement and clean out sand. Test and run audio analyzer log.
4. Set packer, run tubing and return well to gas storage service.

Note: If well is to be redrilled, show proposed new bottom-hole coordinates and true vertical depth.

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

Address P.O. Box 3249 Terminal Annex (Street)

Los Angeles (City) California (State) 90051 (Zip)

Telephone Number (213) 689-3561

Southern California Gas Company (Name of Operator)

By J.W. Gourley (Name) J.W. Gourley 9/28/94 (Date)

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

OG107 (12/83/DWRR/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

Operator So. Calif. Gas Co., Well No. Mission Adrian 1-A, API No. 037-21891

Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

Location 4369.35' south and 997.22' east from Station #84
(Give surface location from property or section corner, or street center line and/or lambert coordinates)

Elevation of ground above sea level 1725 feet.

All depth measurements taken from top of Kelly Bushing which is 21 feet above ground.
(Derrick Floor, Rotary Table or Kelly Bushing)

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.

Date February 6, 1980

Signed P. S. Magruder, Jr.

D. S. Smiley
(Engineer or Geologist)

Title Agent

Commenced drilling October 28, 1979

Completed drilling January 7, 1980

Total depth (1st hole) 7640' (2nd) - (3rd) -

Present effective depth 7640'

Junk None

GEOLOGICAL MARKERS DEPTH

RECEIVED
SANTA PAULA, CALIFORNIA

Formation and age at total depth Miocene

Commenced producing - (Date) Flowing/gas lift/pumping (Cross out unnecessary words)

Name of producing zone Sesnon (S-4 & S-8)

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	Gas Storage Well					
Production after 30 days						

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	Grade and Type of Casing	New or Second Hand	Size of Hole Drilled	Numbers of Sacks or Cubic Feet of Cement	Depth of Cementing if through perforations
13-3/8"	1000'	Surf.	54.5	K-55 Butt.	New	17-1/2"	1134 CF	-
8-5/8"	7379'	Surf.	36 & 40	N-80 Butt.	New	12-1/4"	1853 CF	-
5-1/2"	7635'	7235'	20	K-55 ST&C	New	7-5/8" Opened to 15"	Gravel Packed	-

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

8-5/8" - Jet perforated four 1/2" HPF 7302' WSO

5-1/2" - .010" wire wrapped screen 7245'-7287', 7373'-7623'

Was the well directionally drilled? Yes If yes, show coordinates at total depth 1587' north & 672' west

Electrical log depths 7390', 7560', 7640' Other surveys Compensated Density-Neutron

OG 100

ATTACH ONE COPY OF EACH LOG AND SURVEY

27907-705 10-74 6M ③ OSP

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Southern California Gas Co. Field or County Aliso Canyon
Well Mission Adrian #1-A, Sec. 34, T 3N, R 16W, SB B. & M.
A.P.I. No. 037-21891 Name P. S. Magruder Jr (Person submitting report) Title Agent (President, Secretary or Agent)
Date 2.1.80., 19
Signature
PO Box 3249 Terminal Annex, Los Angeles, Calif 90051 (Address) (213) 689-2345 (Telephone Number)

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

Mission Adrian #1-A
PROGRAM

Date	
1979	Drill and complete as Gas Storage Well in Sesnon zone. Intended bottom hole location 1576'N and 658'W of surface location.
10.28	0 Day. Rigged up Kenai-Camrich Rig #23. Spudded in at 1:00 pm., 10.28.79. Drilled 17 1/2" hole from 40' to 252' with bit #1.
10.29.	1st Day. Drilled 17 1/2" hole from 252' to 799' with bit #1.
10.30.	2nd Day. Drilled 17 1/2" hole from 799' to 832' with bit #1 and to 1,004' with bit #2. Wiped hole, circulated clean and pulled out. Rigged up to run 13 3/8" casing.
10.31.	3rd Day. Ran 25 joints (1,003') of 13 3/8", 54.5#, K-55 Buttress casing. Baker guide shoe landed at 1,000'. Baker stab-in float collar at 957'. Howco pumped 100 cu.ft. of water ahead of 800 cu.ft. of class "G" cement blended with 8% gel and 3% calcium chloride, followed by 250 sacks of class "G" cement blended with 3% calcium chloride. Cement in place at 11:00 am, 10.31.79. No cement returns to surface. Chained out drill pipe stinger. Cut off conductor. Cut off 13 3/8" casing. Welded on 13 5/8" wellhead and tested to 1,500 psi. X-rayed head, O.K.
11.1.	4th Day. Installed BOPE. Using Byron Jackson pump truck and bulk equipment equalized 40 sacks of class "G" cement with 3% calcium chloride outside 13 3/8" to fill to surface.
11.2.	5th Day. Attempted test on blind rams. Valve on kill line leaked, replaced valve. H&H attempted test on blind rams with water to 4,000 psi and casing leaked. Ran in hole with open end drill pipe to 950'. Closed pipe rams. H&H attempted to test with water at 2,700 psi but pressure bled off.

Mission Adrian #1-A
Aliso Canyon

11.3. 6th Day. Made up Baker fullbore packer. Ran in and set packer at 475'. Pressured annulus to 1,000 psi. No communication to drill pipe. Pressured to 2,000 psi for 20 minutes, O.K. Pressured annulus to 2,550 psi and drill pipe to 2,600 psi, O.K. Pulled out of hole. Made up and ran in hole with 12 1/4" bit. Cleaned out firm cement from 941' to 943'. Circulated out a large amount of cement cut mud and cement. Pressured casing to 2,000 psi for 20 minutes, O.K. Pressured to 2,700 psi, bled off 250 psi in 25 minutes.

11.4. 7th Day. Displaced drilling fluid with water. Ran Baker fullbore packer and set at 475'. Pressure tested to 2,700 psi for 20 minutes. Test held. Ran in to 951'. Backscuttled out cement cuttings. Set packer at 935'. Pressure tested with 2,700 psi. Annulus held. Drill pipe bled off 600 psi in 15 minutes. Pulled out of hole. Measured in with 12 1/4" bit #3. Tagged float collar at 957'. Drilled out float collar. Bit dropped through 1 1/2'. Cleaned out cement to 990'. Circulated clean. Pressure tested with 2,700 psi. Bled off 100 psi in 5 minutes. Pulling out of hole.

11.5. 8th Day. Ran in hole with 4 1/2" open end drill pipe to 990'. Backscuttled clean. Dowell equalized 50 sacks of class "G" cement blended with 3% calcium chloride. Cement in place at 2.45 am., 11.5.79. Pulled out of hole. Closed blind rams. Pressured up to 2,700 psi for 20 minutes. Bled back to 2,500 psi. Waited on cement four hours. Pressure had dropped to 2,375 psi. Pressured back up to 2,700 psi for 20 minutes. Blind rams tested O.K. Ran in hole with drilling assembly. Tagged top of cement at 936'. Closed pipe rams. Pressured up to 2,700 psi. Bled off 400 psi in 20 minutes. Pulled out of hole. Made check test on blind rams. Pulled casing bowl protector. Set test plug in casing head. Attempted tests on pipe rams and Hydril. No good.

11.6. 9th Day. Finished changing pipe ram rubbers and tested to 2,800 psi for 20 minutes, O.K. Tested Hydril to 2,700 psi for 20 minutes, O.K. Tested kill line, choke manifold and all associated valves to a minimum of 2,700 psi. Tested Kelly cock to 2,900 psi. All tests with water. Witnessed and approved by DOG. Rigged up Nowsco. Attempted Nitrogen test on blind rams, rubbers no good. Ran in hole with drilling assembly. Testing Hydril.

11.7. 10th Day. Tested Hydril to 2,700 psi and pipe rams to 2,800 psi for 20 minutes each test, O.K. Attempted tests on 3" valves on mud cross. Changed out valves. Tested valves to 2,800 psi for 20 minutes each test, O.K. All tests were with nitrogen. Installed bowl protector (bit guide). Ran in with drilling assembly and bit #3. Cleaned out cement from 936' to 1,004'. Drilled 12 1/4" hole from 1,004' to 1,071'

11.8. 11th Day. Drilled 12 1/4" hole from 1,071' to 1,319' with bit #3.

11.9. 12th Day. Drilled 12 1/4" hole from 1,319' to 1,432' with bit #3. Pulled out and ran Dyna-drill #1. Dyna-drilled 12 1/4" hole from 1,432' to 1,560' with bit #4.

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11.10. 13th Day. Dyna-drilled 12 1/4" hole from 1,560' to 1,661' with bit #4 and to 1,792' with bit #5 on Dyna-drill #1 - 2nd run. Pulled out. Ran in with drilling assembly. Reamed from 1,332' to 1,492' with bit #6.

11.11. 14th Day. Finished reaming to 1,792'. Directionally drilled 12 1/4" hole from 1,792' to 2,373' with bit #6. Pulled out of hole.

11.12. 15th Day. Finished trip for bit. Directionally drilled 12 1/4" hole from 2,373' to 2,694' with bit #7. Pulled out of hole. Ran in to shoe with bit #8 and Dynadrill #1 - 3rd run.

11.13. 16th Day. Dyna-drilled 12 1/4" hole from 2,694' to 2,852' with bit #8 and to 2,862 with bit #9.

11.14. 17th Day. Dyna-drilled 12 1/4" hole from 2,862' to 3,043' with bit #9 and to 3,094' with bit #10 on Dyna-drill #1 - 4th run.

11.15. 18th Day. Dyna-drilled 12 1/4" hole from 3,094' to 3,269' with bit #10 and to 3,312' with bit #11 on Dyna-drill #1 - 5th run.

11.16. 19th Day. Dyna-drilled 12 1/4" hole from 3,312' to 3,322' with bit #10 on Dyna-drill #1 - 6th run. Reamed from 2,726' to 3,322'. Directionally drilled 12 1/4" hole from 3,322' to 3,722' with bit #11.

11.17. 20th Day. Directionally drilled 12 1/4" hole from 3,722' to 4,013' with bit #11 and to 4,197' with bit #12.

11.18. 21st Day. Directionally drilled 12 1/4" hole from 4,197' to 4,291' with bit #13. Dyna-drilled 12 1/4" hole from 4,291' to 4,349' with bit #14 on Dyna-drill #2 - 1st run.

11.19. 22nd Day. Dyna-drilled 12 1/4" hole from 4,349' to 4,382' with bit #15 and to 4,429' with bit #16 on Dyna-drill #2 - 3rd run.

11.20. 23rd Day. Dyna-drilled 12 1/4" hole from 4,429' to 4,444' with bit #16 on Dyna-drill #2 - 3rd run. Pulled out of hole. Made up and ran drilling assembly and bit #17. Reamed from 4,230' to 4,444'. Directionally drilled 12 1/4" hole from 4,444' to 4,609'.

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11.21. 24th Day. Directionally drilled 12 1/4" hole from 4,609' to 4,701' with bit #17 and to 4,822' with bit #18.

11.22. 25th Day. Directionally drilled 12 1/4" hole from 4,822' to 4,971' with bit #18 and to 5,134' with bit #19.

11.23. 26th Day. Directionally drilled 12 1/4" hole from 5,134' to 5,474' with bit #19 and to 5,691' with bit #20.

11.24. 27th Day. Directionally drilled 12 1/4" hole from 5,691' to 5,817' with bit #20 and to 5,904' with bit #21.

11.25. 28th Day. Directionally drilled 12 1/4" hole from 5,904' to 6,180' with bit #21 and to 6,222' with bit #22.

11.26. 29th Day. Directionally drilled 12 1/4" hole from 6,222' to 6,336' with bit #22. Pulled out. Made up and ran Dyna-drill #3 - 1st run and bit #23. Dyna-drilled from 6,336' to 6,347'. Guided by S.D.C. eye tool.

11.27. 30th Day. Dyna-drilled 12 1/4" hole from 6,347' to 6,357' with bit #23 and to 6,375' with bit #24, guided by S.D.C. Pulled out of hole. Made up drilling assembly and bit #25.

11.28. 31st Day. Running in hole, hit bridge at 4,582'. Reamed to 4,723'. Hit bridge at 6,308'. Reamed to 6,375'. Directionally drilled 12 1/4" hole from 6,375' to 6,537' with bit #25. Pulling out of hole.

11.29. 32nd Day. Ran in hole with bit #26. Directionally drilled 12 1/4" hole from 6,537' to 6,876'. Pulled out of hole.

11.30. 33rd Day. Finished trip for bit #27. Directionally drilled 12 1/4" hole from 6,876' to 6,982' with bit #27. Pulled out, changed bit and bottom stabalizer. Ran in to 5,183'. Reamed to 5,243'. Running in hole.

12.1. 34th Day. Reamed from 5,837' to 6,507'. Stuck drill pipe. Jarred and spotted 70 bbls of oil. Jarred fish loose after 6 1/2 hours. Reamed from 6,507' to 6,982'. Directionally drilled 12 1/4" hole from 6,982' to 7,107' with bit #28.

12.2. 35th Day. Directionally drilled 12 1/4" hole from 7,107' to 7,208' with bit #29.

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12.3. 36th Day. Directionally drilled 12 1/3" hole from 7,208' to 7,216' with bit #29 and to 7,390' with bit #30. Circulated and conditioned mud for three hours.

12.4. 37th Day. Pulled out of hole to 1,000' and ran back to 7,390' T.D. Circulated for three hours and conditioned mud. Pulled out of hole. Ran induction and Caliper Log from 7,355' to 1,000'.

12.5. 38th Day. Laid down four 8" Drill Collars. Ran in well with R.R. 12 1/4" bit to 7,390'. Circulated and conditioned mud to run 8 5/8" casing. Pulled out and ran 8 5/8" casing to 294'.

12.6. 39th Day. Ran 8 5/8" casing to 7,379'. Circulated for three hours. Unable to move casing. Cemented with 500 cu.ft. of CW7 followed by 1,200 cu.ft. of 1-1 class "G" cement and Litepoz 7 with 1% "D-65", 0.5% "D-60" followed by 350 sacks of class "G" cement with 0.75% "D-65" and 0.5% "D-60" with 250 cu.ft. of Dowell Self-stress mixed with 0.5% "D-65", 0.2% "D-108". Casing detail : 7,379' - 5,504' 40# N-80 Buttress, 5,504' - 21' 36# N-80 Buttress, 21' - surface 40# N-80 Buttress.

12.7. 40th Day. Removed BOPE. Landed 8 5/8" casing 7,379' with 265,000 lbs on slips. Cut off casing. Installed BOPE.

12.8. 41st Day. Tested BOPE blind rams and 3 1/2" pipe rams to 4,000 psi. Tested Hydril to 3,000 psi with water and nitrogen, O.K.

12.9. 42nd Day. Laid down 4 1/2" drill pipe. Ran in well with 7 5/8" bit, 8 5/8" casing scraper and twelve 4 3/4" drill collars, picking up 3 1/2" drill pipe and installing casing protector rubbers on each joint.

12.10. 43rd Day. Picked up 6,000' of 3 1/2" drill pipe. Plugged bit repeatedly. Pulled out of hole. Visual inspection of 3 1/2" drill pipe revealed many bad tool joints. Ran back in hole and started laying down 3 1/2" drill pipe.

12.11. 44th Day. Picked up 6,472' of 3 1/2" drill pipe.

12.12. 45th Day. Circulated and cleaned out from 6,380' to 6,842'. Drilled hard cement from 6,842' to 7,149' with bit #31.

12.13. 46th Day. Drilled out cement from 7,149' to 7,358' with bit #32. Cleaned mud pits.

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12.14. 47th Day. Circulated out clay base mud with clean waste salt water. Pulled out of well. Ran Welex cement bond and Neutron Logs from 7,354' up to 2,990'. Ran Welex Wire Line Gun, shot four 1/2" holes at 7,302'. With Dowell Pump Truck, pressure tested holes at 7,302' with 2,000 psi for 20 minutes, O.K. Ran Lynes Tester on 3 1/2" drill pipe, set Packer at 7,270'. Pulled out of well. Recovered 180' of lease salt water. Test O.K. by DOG.

Inside:		Outside:	
I.H.	3100	I.H.	3000
F.H.	3100	F.H.	3000
I.F.	100	I.F.	100
F.F.	100	F.F.	100

12.15. 48th Day. One 12" crescent wrench was inadvertently dropped into well. Ran in well with Midway 4 1/2" magnet. Pulled out of well. Recovered 8" of wrench handle. Reran magnet. Pulled out of well. Recovered head of wrench. Ran in well with 7 5/8" bit.

12.16. 49th Day. Cleaned mud pits and changed over from 63# waste salt water to 86# H.E.C. Brine Polymer Fluid. Drilled out cement from 7,358' to 8 5/8" casing shoe at 7,379'. Drilled 7 5/8" hole from 7,379' to 7,512' with bit #33.

12.17. 50th Day. Drilled 7 5/8" hole from 7,512 to 7,560' with bit #34. Circulated hole clean. Pulled out of well. Ran Welex Induction, Neutron and Density logs from 7,560' up to 7,378'. Ran in well with O.M.T. 7 1/4" x 15" hole opener.

12.18. 51st Day. Opened 7 5/8" hole to 15" from 7,378' to 7,432' with hole opener #1.

12.19. 52nd Day. Opened 7 5/8" hole to 15" from 7,432' to 7,477' with hole opener #2 and to 7,493' with opener #3.

12.20. 53rd Day. Drilled 7 5/8" hole 7,560' to 7,576'. Lost 70 bbls of drilling fluid in 30 minutes. Pulled bit up into 8 5/8" casing at 7,378', mixed 120 sec vis pill and spotted on bottom. Let set for four hours. Ran back to bottom. Drilled 7 5/8" hole from 7,576' to 7,631' with bit #33. Lost total 720 bbls of fluid.

12.21. 54th Day. Drilled 7 5/8" hole from 7,631' to 7,640' with bit #34. Pulled out of well. Ran Welex Induction, Neutron and Density Logs. Had problems with logging tools. Ran in hole with 7 5/8" bit and cleaned out 7,640'.

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12.22. 55th Day. Circulated hole clean at 7,640'. Pulled out of well and ran Welex Induction Log from 7,639' up to 7,378'. Density and Neutron Logs stopped at bottom of 15" hole 7,493'. Ran in well with O.M.T. 7 1/4" x 15" hole opener #4. Opened 7 5/8" hole to 15" from 7,493' to 7,522' with hole opener #4.

12.23. 56th Day. Opened 7 5/8" hole to 15" from 7,522' to 7,534' with hole opener #5 and to 7,536' with hole opener #6.

12.24. 57th Day. Opened 5 7/8" hole to 15" from 7,536' to 7,538' with hole opener #6 and to 7,577' with hole opener #7 and to 7,580' with hole opener #8.

12.25. 58th Day. Opened 7 5/8" hole to 15" from 7,580' to 7,583' with hole opener #8 and to 7,596' with hole opener #9. Ran 7 5/8" bit #32RR and cleaned out fill from 7,596' to 7,640'. Note : total fluid lost 1,885 bbls.

12.26. 59th Day. Opened 7 5/8" hole to 15" from 7,596' to 7,627' with hole opener #10 and to 7,637' with hole opener #11. Started in hole with gage hole opener #12. Fluid lost in 24 hours 212 bbls, (Total 2,097).

12.27. 60th Day. Pulled out of hole. Ran in with 7 5/8" x 15" hole opener #12 and Gage reamed from 7,378' to 7,637'. Pulled out of hole. Rigged up shooting flange and wire line stripper. Ran compensated density - neutron log from 7,636' to 7,379'.

12.28. 61st Day. Completed running caliper log from 7,634' to 7,380'. Ran in hole with 7 5/8" bit to 7,640', no fill. Cleaned pits. Changed circulating system to clean calcium chloride "HEC" gravel pack fluid (86#). Pulled out of hole. Started making up 5 1/2" 20#, K-55 LT&C 10 mesh wire wrapped liner.

12.29. 62nd Day. Completed making up 5 1/2" liner, overall length including hanger and port collar is 400.08'. Made up 2 3/8" tubing stinger (12 joints) with Burns (Baker) landing and packing tools, action length 397.66' Ran liner slowly on 3 1/2" drill pipe, tagged bottom at 7,640'. Pulled up and hung liner at 7,635' (top 7,235'). Had difficulty in releasing from liner. Set lead seal. Tested lead seal at 850 psi, inconclusive. Tried to open port collar, did not. Chain tonged out of hole. Lower GP cups, top one torn up. Made new tools and started in hole.

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12.30. 63rd Day. Ran in hole. Tagged top of liner. Located port collar. Tried to open port collar, could not open. Tried to test port collar, pressure bled off but port collar not open. Tried to test lead seal, pressure bled off. Chain tonged and measured out of hole. Found six to eight loose drillpipe joints that leaked. Lower GP cups and top one torn up. Installed new cups on tools. Ran in hole with gravel pack tools and no 2 3/8" extended tail making each drill pipe tool joint.

12.31. 64th Day. Continued running in well with gravel packing tool. Tested lead seal hanger. Lead seal leaked. Opened port collar. Pulled out of well. Ran in well with bottom hole packer to 1,481'.

1980

1.1. 65th Day. Continued running in well with Baker lead seal adapter. Set adapter and tested. O.K. Pulled out. Ran in with gravel packing tool. Circulated one hour. Displaced 200 cu.ft. of 20-40 sand.

1.2. 66th Day. Gravel flow packed with total of 302 sacks of 20-40 gravel. Ran in well with wash tool with 409' of 2 3/8" tubing. Washed 5 1/2" liner from 7,620' to 7,230'. Circulated 1 1/2 hours. Pulling out of well.

1.3. 67th Day. Ran in with gravel packing tool. Located port collar at 7,239'. Pressured up tool in blank port collar to 1,000 psi, 'held'. Pulled up in port collar and pressured up to 1,000 psi, closed, 'held'. Opened port collar and pressured up to 1,000 psi and bled off to 800 psi in 1 1/2 minutes. Unable to place additional gravel.

1.4. 68th Day. Ran photon log. Ran in well with 8 5/8" Otis Permatrieve packer on wire line which stopped at 6,188'. Ran in with 7 5/8" bit and 8 5/8" casing scraper and worked through tight casing at 6,188'. Ran in to 7,233' and circulated one and 1/2 hours. Ran gauge ring and junk basket on wire line.

1.5. 69th Day. Set Otis Permatrieve packer at 7,212'. Ran 3 1/2" drill pipe and laid down same. Ran latch in locator and two seals on 3 1/2" tubing.

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Aliso Canyon

1.6. 70th Day. Continued running in well with 3 1/2" tubing. Latched in to packer at 7,212' pulled 20,000# to check latch and pressure tested packer and seals to 1,500 psi. O.K. Released from packer and circulated two hours. Pulled out. Ran Otis Annular flow safety system, Hydro-testing to 5,000 psi.

1.7. 71st Day. Continued running in well with 3 1/2" tubing hydrotesting to 5,000 psi. Spaced out and landed in Otis 8 5/8" permatrieve packer at 7,212' wire line measurement. Removed BOPE, installed xmas tree and tested to 5,000 psi. Displaced polymer fluid with 450 bbls of waste salt water. Lost 200 bbls of 86# mud while displacing with waste salt water.

Released rig at 12:00 midnight.

OTIS COMPLETION GUIDE

OEC-217-B

OTIS ENGINEERING CORPORATION
GENERAL OFFICE: Belt Line Rd. at Webb Chapel
P. O. Box 34380, DALLAS, TEXAS 75234
A HALLIBURTON Company

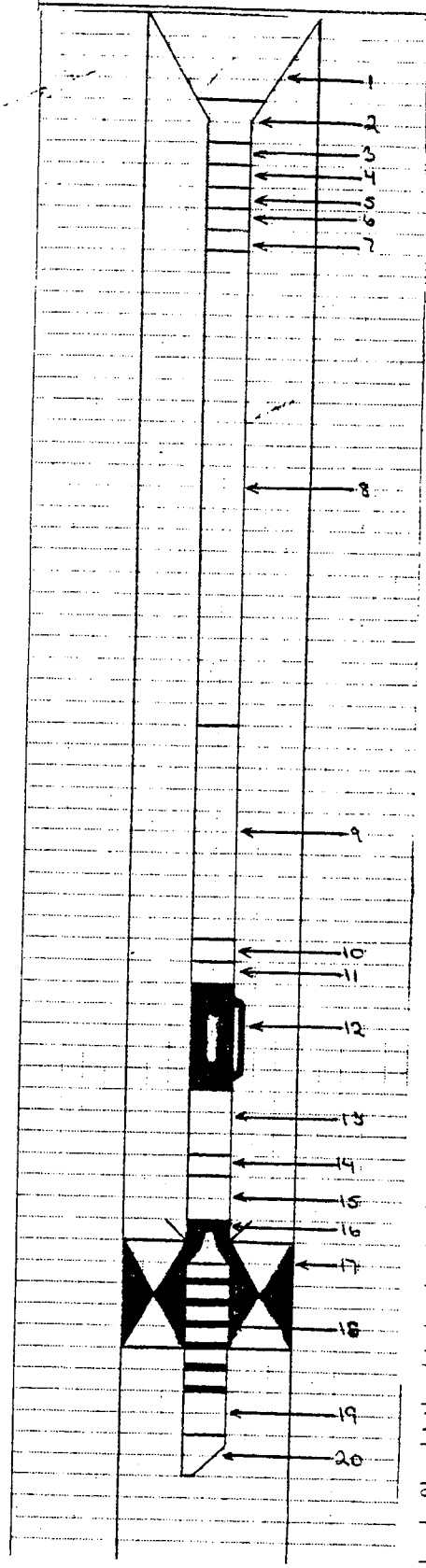
PREPARED FOR	COMPANY	TELEPHONE	DATE
MR. Ed Lancaster	So Cal Gas Co		1-7-80

FIELD NAME	WELL NAME	COUNTY	STATE	
Aliso Canyon	Mission Adrian	L.A.	Cal	[X] NEW COMPLETION [ ] WORKOVER

	SIZE	WEIGHT	GRADE	THREAD	DEPTH
CASING	8 5/8	40 lb	1-A		
LINER	5 1/2	20 lb			

(X) SAFETY EQUIPMENT ( ) GAS LIFT EQUIPMENT (X) PACKERS AND ACCESSORIES
( ) COMPLETION EQUIPMENT ( ) POST COMPLETION EQUIPMENT

TUBING SIZE UT 3 1/2 LT
THREAD 8rd EU



	DESCRIPTION OF EQUIPMENT AND SERVICES		ESTIMATE
1.	Original K.B.	21.00	0
	Tubing Hanger Above Ground	-2.30	21.00
2.	Tubing Hanger	.50	18.70
3.	Pup Jt 3 1/2" 9.3 lb J-55 8rd EU	7.62	19.20
4.	Pup Jt 3 1/2" 9.3 lb J-55 8rd EU	2.23	26.82
5.	Pup Jt 3 1/2" 9.3 lb J-55 8rd EU	4.21	29.05
6.	Pup Jt 3 1/2" 9.3 lb J-55 8rd EU	4.12	33.26
7.	Pup Jt 3 1/2" 9.3 lb J-55 8rd EU	8.04	37.38
8.	204 Joints* 3 1/2" 9.3 lb J-55 8rd EU	6101.15	45.42
9.	35 Joints 3 1/2" 9.3 lb N-80 8rd EU	1019.72	6146.57
10.	Pup Jt 3 1/2" 9.3 lb N-80 8rd EU	4.33	7166.29
11.	Otis "X" Nipple 3 1/2" 2.813" I.D.	1.15	7170.62
12.	Otis Annular Flow Safety System 5.5" O.D. 2.75 I.D.	9.04	7171.77
13.	Otis 3 1/2" Blast Joint 4.5" O.D. 3.0" I.D.	20.13	7180.81
14.	Otis "RN" No-Go Nipple 2.562" by 2.329"	1.28	7200.94
15.	Camco 3 1/2" Blast Joint 4.5" O.D. 3.0" I.D.	9.78	7202.22
16.	Otis Straight Slot Locator 4.5" O.D.	1.23	7212.00
17.	Otis Perma-Trieve Packer "PW" 8 5/8" 32-40 lb 7.5" O.D. 4.0" ID	(4.23)	7212.00
18.	Otis Seal Assembly "6" 4.04" O.D. 3.0" I.D.	6.13	7213.23
19.	Otis Production Tube 3.98" O.D. 3.0" I.D.	0.98	7221.62
	End of Tubing		7222.60

COMPLETION PROCEDURE

Eastman Whipstock
A PETROLANE COMPANY

REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY

SOUTHERN CALIFORNIA GAS CO.
COMPANY

MA-1A
WELL NAME

ALISO CANYON, CA.
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
P-1079-D0178	SINGLE SHOT	28-OCT-79

SURVEY BY LONG BEACH OFFICE

FORM D-142 R1

SOUTHERN CALIFORNIA GAS COMPANY
WELL NO: MA-1A FILE: 22-17
LOCATION: ALISO CANYON FIELD, CA.
DATE: 11/79
JOB NO: P-1079-D0178
ELEV: 1747' DECL: 16 0 E
TYPE: EASTMAN SINGLE SHOT SURVEY
SEC. BEARING: N22W
SURVEYOR: BRIDGES

VERTICAL SECTION CALCULATED IN PLANE OF PROPOSAL
DIRECTION: N 22 DEG 0 MIN W

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

SOUTHERN CALIFORNIA GAS COMPANY
WELL NO: MA-1A FILE: 22-17
LOCATION: ALISO CANYON FIELD, CA.

COMPUTATION TIME 05:57:49 DATE 00-00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET	CLOSURE DISTANCE FEET	CLOSURE DIRECTION D M	DOGLEG SEVERITY DG/100FT
0.	0 0	0 0	0.	0.00	0.00	0.00 0.00	0.00	0 0	0.00
137.	0 15	S 86 0 W	137.	137.00	0.09	0.02 S 0.30 W	0.30	S 86 0 W	0.18
211.	0 30	N 19 0 W	74.	211.00	0.46	0.23 N 0.67 W	0.71	N 71 16 W	0.67
342.	0 30	N 49 0 W	131.	341.99	1.57	1.17 N 1.31 W	1.75	N 48 14 W	0.20
433.	1 0	N 49 0 W	91.	432.98	2.63	1.95 N 2.20 W	2.94	N 48 33 W	0.5
524.	1 15	N 56 0 W	91.	523.97	4.17	3.03 N 3.62 W	4.72	N 50 2 W	0.31
649.	1 45	N 21 0 W	125.	648.92	7.26	5.56 N 5.63 W	7.91	N 45 22 W	0.82
737.	1 45	N 34 0 W	88.	736.88	9.93	7.93 N 6.87 W	10.49	N 40 52 W	0.45
832.	1 30	N 38 0 W	95.	831.84	12.54	10.11 N 8.45 W	13.18	N 39 53 W	0.29
925.	2 0	N 76 0 W	93.	924.80	14.83	11.63 N 10.79 W	15.86	N 42 51 W	1.33
1004.	2 45	N 73 0 W	79.	1003.73	16.82	12.51 N 13.94 W	18.73	N 48 6 W	0.96
1092.	4 30	N 79 0 W	88.	1091.55	20.09	13.85 N 19.34 W	23.79	N 54 23 W	2.03
1184.	6 30	N 90 0 W	92.	1183.12	24.15	14.70 N 28.10 W	31.71	N 62 24 W	2.45
1254.	7 30	S 79 0 W	70.	1252.60	26.57	13.88 N 36.58 W	39.12	N 69 13 W	2.38
1319.	7 45	S 86 0 W	65.	1317.03	28.73	12.75 N 45.12 W	46.89	N 74 13 W	1.48
1412.	9 0	S 85 0 W	93.	1409.03	32.80	11.69 N 58.63 W	59.78	N 78 43 W	1.35
1503.	8 0	S 89 0 W	91.	1499.03	37.18	10.99 N 72.06 W	72.89	N 81 20 W	1.28
1595.	7 30	N 77 0 W	92.	1590.19	42.99	12.28 N 84.36 W	85.25	N 81 43 W	2.12
1657.	5 45	N 73 0 W	62.	1651.78	47.29	14.13 N 91.27 W	92.36	N 81 12 W	2.9
1720.	4 0	N 58 0 W	63.	1714.55	51.17	16.35 N 96.13 W	97.51	N 80 21 W	3.41
1752.	3 30	N 51 0 W	32.	1746.48	52.93	17.56 N 97.83 W	99.40	N 79 49 W	2.12
1869.	1 30	N 46 0 W	117.	1863.36	57.50	20.94 N 101.65 W	103.79	N 78 22 W	1.72
1961.	2 0	N 58 0 W	92.	1955.32	59.92	22.67 N 103.86 W	106.31	N 77 41 W	0.67
2084.	2 0	N 41 0 W	123.	2078.24	63.72	25.45 N 107.11 W	110.10	N 76 38 W	0.48
2214.	1 15	N 60 0 W	130.	2208.19	66.94	27.78 N 109.95 W	113.40	N 75 49 W	0.70
2373.	1 15	N 59 0 W	159.	2367.15	69.69	29.54 N 112.93 W	116.73	N 75 21 W	0.01
2495.	1 30	N 70 0 W	122.	2489.12	71.85	30.80 N 115.57 W	119.60	N 75 5 W	0.30
2621.	1 15	N 74 0 W	126.	2615.08	73.79	31.73 N 118.45 W	122.62	N 75 0 W	0.21
2691.	2 0	N 57 0 W	70.	2685.05	75.23	32.55 N 120.25 W	124.57	N 74 51 W	1.26
2754.	2 30	N 37 0 W	63.	2748.00	77.46	34.23 N 122.05 W	126.75	N 74 20 W	1.47

SOUTHERN CALIFORNIA GAS COMPANY
WELL NO: MA-1A FILE: 22-17
LOCATION: ALISO CANYON FIELD, CA.

COMPUTATION TIME 05:57:49 DATE 00-00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET	CLOSURE DISTANCE FEET	CLOSURE DIRECTION D M	DOGLEG SEVERITY DG/100FT
2812.	4 0	N 34 0 W	58.	2805.91	80.65	36.91 N 123.95 W	129.33	N 73 25 W	2.60
2911.	5 0	N 7 0 W	99.	2904.60	88.35	44.11 N 126.65 W	134.11	N 70 48 W	2.34
3003.	6 0	N 13 0 E	92.	2996.18	96.30	52.88 N 126.19 W	136.82	N 67 16 W	2.33
3066.	7 0	N 14 0 E	63.	3058.77	102.10	59.81 N 124.53 W	138.14	N 64 21 W	1.60
3126.	6 15	N 1 0 E	60.	3118.37	108.12	66.66 N 123.62 W	140.45	N 61 40 W	2.7[illegible]
3223.	7 0	N 21 0 W	97.	3214.72	119.00	77.61 N 125.56 W	147.61	N 58 17 W	2.71
3287.	8 30	N 24 0 W	64.	3278.13	127.62	85.59 N 128.86 W	154.69	N 56 25 W	2.43
3391.	10 15	N 19 0 W	104.	3380.74	144.56	101.34 N 135.06 W	168.86	N 53 7 W	1.85
3482.	11 0	N 19 0 W	91.	3470.18	161.31	117.21 N 140.53 W	182.99	N 50 10 W	0.82
3576.	11 30	N 18 0 W	94.	3562.37	179.62	134.60 N 146.35 W	198.83	N 47 24 W	0.57
3669.	12 0	N 17 0 W	93.	3653.42	198.50	152.66 N 152.04 W	215.45	N 44 53 W	0.58
3763.	12 45	N 17 0 W	94.	3745.24	218.57	171.92 N 157.93 W	233.45	N 42 34 W	0.80
3857.	13 45	N 14 0 W	94.	3836.74	239.97	192.68 N 163.69 W	252.82	N 40 21 W	1.29
3949.	14 30	N 12 0 W	92.	3925.95	262.14	214.56 N 168.74 W	272.96	N 38 11 W	0.97
4013.	15 0	N 12 0 W	64.	3987.84	278.19	230.49 N 172.13 W	287.67	N 36 45 W	0.78
4104.	17 30	N 10 0 W	91.	4075.20	303.18	255.49 N 176.98 W	310.80	N 34 43 W	2.81
4197.	20 0	N 7 0 W	93.	4163.26	332.25	285.05 N 181.40 W	337.87	N 32 28 W	2.88
4291.	23 45	N 8 0 W	94.	4250.48	366.15	319.76 N 185.97 W	369.91	N 30 11 W	4.01
4342.	22 15	N 16 0 W	51.	4297.42	385.75	339.24 N 190.11 W	388.88	N 29 16 W	6.7
4372.	21 0	N 18 0 W	30.	4325.31	396.77	349.81 N 193.34 W	399.69	N 28 56 W	4.84
4404.	19 45	N 21 0 W	32.	4355.31	407.90	360.31 N 197.06 W	410.68	N 28 41 W	5.09
4512.	18 15	N 25 0 W	108.	4457.42	443.04	392.67 N 210.80 W	445.67	N 28 14 W	1.84
4609.	18 15	N 25 0 W	97.	4549.54	473.38	420.20 N 223.64 W	476.01	N 28 1 W	0.00
4701.	18 0	N 26 0 W	92.	4636.97	501.95	446.03 N 235.96 W	504.60	N 27 53 W	0.43
4795.	20 0	N 23 0 W	94.	4725.85	532.52	473.88 N 248.64 W	535.15	N 27 41 W	2.37
4900.	23 0	N 22 0 W	105.	4823.53	570.99	509.43 N 263.37 W	573.48	N 27 20 W	2.88
4962.	24 45	N 22 0 W	62.	4880.22	596.08	532.69 N 272.77 W	598.47	N 27 7 W	2.82
5101.	25 15	N 21 0 W	139.	5006.20	654.83	587.35 N 294.30 W	656.96	N 26 37 W	0.47
5195.	26 0	N 20 0 W	94.	5090.95	695.46	625.43 N 308.54 W	697.39	N 26 15 W	0.92
5288.	26 0	N 19 0 W	93.	5174.54	736.19	663.86 N 322.14 W	737.89	N 25 53 W	0.47

WELL NO: MA-1A FILE: 22-17
LOCATION: ALISO CANYON FIELD, CA.

TIME 05:57:49 DATE 00-00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET	CLOSURE DISTANCE FEET	CLOSURE DIRECTION D M	DOGLEG SEVERITY DG/100FT
5377.	26 15	N 19 0 W	89.	5254.45	775.33	700.91 N 334.90 W	776.81	N 25 32 W	0.28
5473.	26 45	N 19 0 W	96.	5340.36	818.11	741.41 N 348.85 W	819.38	N 25 12 W	0.52
5568.	27 0	N 19 0 W	95.	5425.10	860.99	782.02 N 362.83 W	862.09	N 24 53 W	0.26
5663.	27 0	N 19 0 W	95.	5509.75	904.06	822.80 N 376.87 W	905.00	N 24 37 W	0.00
5757.	26 45	N 19 0 W	94.	5593.59	946.50	862.97 N 390.71 W	947.30	N 24 22 W	0.27
5817.	27 15	N 18 0 W	60.	5647.05	973.68	888.81 N 399.35 W	974.40	N 24 12 W	1.13
5874.	27 15	N 18 0 W	57.	5697.73	999.72	913.63 N 407.41 W	1000.35	N 24 2 W	0.00
5968.	26 30	N 18 0 W	94.	5781.57	1042.11	954.04 N 420.55 W	1042.62	N 23 47 W	0.
6057.	26 0	N 18 0 W	89.	5861.40	1081.38	991.48 N 432.71 W	1081.79	N 23 35 W	0.
6180.	25 30	N 18 0 W	123.	5972.18	1134.68	1042.30 N 449.22 W	1134.98	N 23 19 W	0.41
6275.	25 0	N 18 0 W	95.	6058.10	1175.11	1080.84 N 461.75 W	1175.34	N 23 8 W	0.53
6504.	23 15	N 22 0 W	229.	6267.09	1268.63	1168.77 N 493.75 W	1268.79	N 22 54 W	1.05
6537.	23 15	N 22 0 W	33.	6297.42	1281.65	1180.85 N 498.63 W	1281.81	N 22 54 W	0.00
6628.	23 15	N 22 0 W	91.	6381.02	1317.58	1214.16 N 512.09 W	1317.73	N 22 52 W	0.00
6719.	23 0	N 22 0 W	91.	6464.71	1353.32	1247.29 N 525.47 W	1353.46	N 22 51 W	0.27
6815.	23 0	N 23 0 W	96.	6553.08	1390.82	1281.95 N 539.83 W	1390.97	N 22 50 W	0.41
6876.	23 0	N 23 0 W	61.	6609.23	1414.66	1303.89 N 549.14 W	1414.81	N 22 50 W	0.00
6968.	23 0	N 23 0 W	92.	6693.92	1450.60	1336.98 N 563.19 W	1450.75	N 22 51 W	0.00
7086.	23 45	N 24 0 W	118.	6802.23	1497.40	1379.91 N 581.85 W	1497.57	N 22 52 W	0.72
7208.	23 45	N 23 0 W	122.	6913.90	1546.51	1424.97 N 601.45 W	1546.70	N 22 53 W	0.33
7390.	24 30	N 24 0 W	182.	7080.00	1620.87	1493.18 N 631.11 W	1621.08	N 22 55 W	0.47

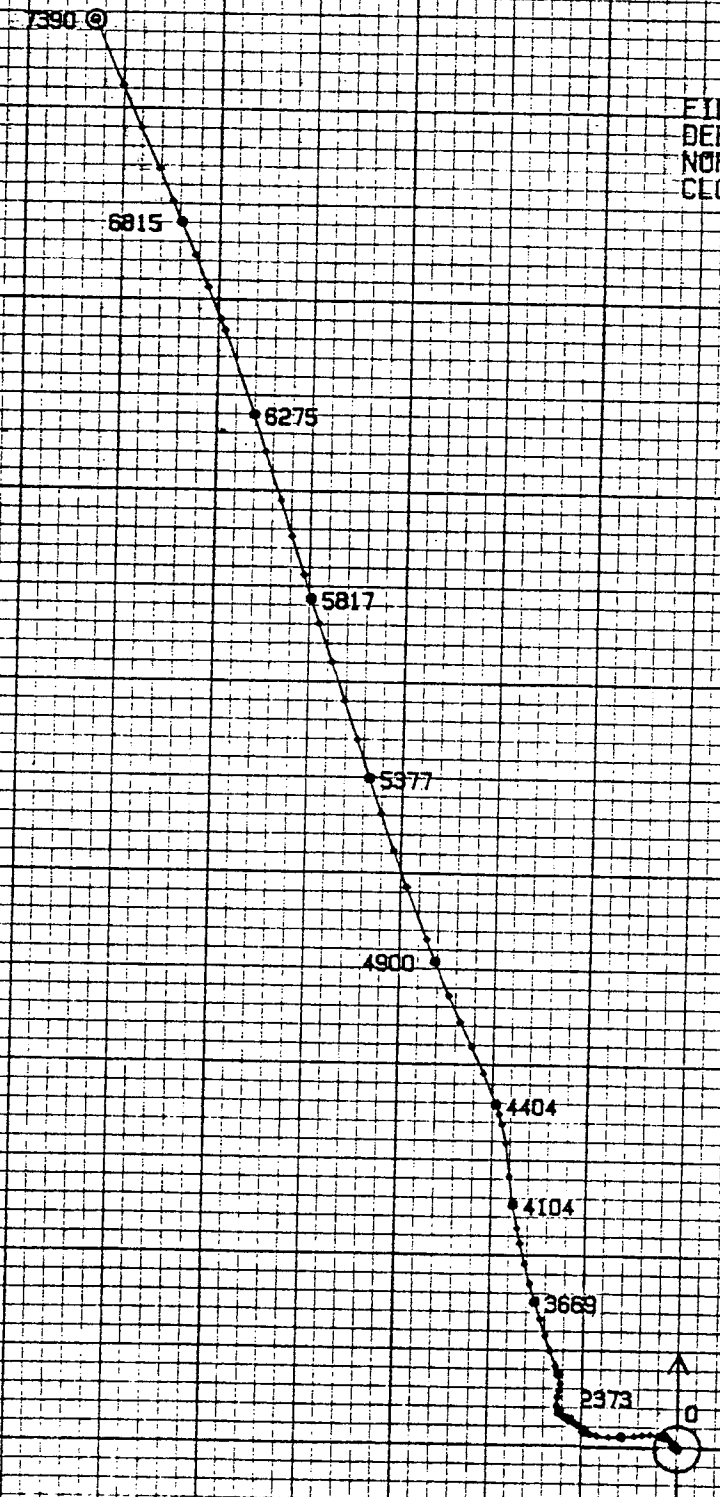
FINAL CLOSURE - DIRECTION: N 22 DEGS 55 MINS W
DISTANCE: 1621.08 FEET

SOUTHERN CALIFORNIA GAS COMPANY
WELL NO: MA-IA FILE: 22-17
LOCATION: ALISO CANYON FIELD, CA.

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION

SCALE 1 IN. = 200 FEET
DEPTH INDICATOR: MD



FINAL STATION:
DEPTH 7890 MD, 7080.00 TVD
NORTH 1493.18 WEST 631.10
CLOSURE 1621.07 N 22 54 43 W

JOB #: P-1079-D0178

Otis Completion Guide - Mission Adrian 1-A

A. Tubing landed on Packer 20,000lb compression.
B.* 204 Joints of Tubing Corrected to W/L measurements.
C. Top of Packer 7220' Tubing Measurements.
D. 20,000 lb compression equal to 3' of tubing.

Completion Procedure:

Ray Chavers - Otis Engineering Corp 213-864-3701
Sante Fe Springs

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 279-323

DIVISION OF OIL AND GAS

Report on Operations

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

Santa Paula, Calif.
December 24, 1979

Your operations at well "SFZU" MA-1A, API No. 037-21891, Sec. 34, T. 3N, R16W S.B., B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 12/15/79. Mr. Ed Hickey, representative of the supervisor, was present from 0100 to 0330. There were also present Mr. Lonnie Conell, So. Cal. Gas foreman

Present condition of well: 13 3/8" cem. 1004'; 8 5/8" cem. 7389', perf. 7302' WSO. T.D. 7389'.

The operations were performed for the purpose of demonstrating a water shut off on the 8 5/8" casing by means of a formation tester.

DECISION:

THE 8 5/8" SHUT-OFF AT 7302' IS APPROVED.

M. G. MEFFERD
State Oil and Gas Supervisor

By _____
Deputy Supervisor
John L. Hardoin

OG109 (6-77-GSRI-15M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 279-322

DIVISION OF OIL AND GAS

Report on Operations

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

~~Santa Paula~~ Calif.
~~December 24, 1979~~

Your operations at well ~~"SFZU" MA-1A~~, API No. ~~037-21891~~, Sec. ~~34~~, T. ~~3N~~ R. ~~16W~~ ~~S.B.~~, B.& M. ~~Aliso Canyon~~ Field, in ~~Los Angeles~~ County, were witnessed on ~~11/6/79~~. ~~Mr. Ed Hickey~~, representative of the supervisor, was present from ~~1300~~ to ~~1500~~. There were also present ~~Mr. Ray Kahle, So. Cal. Gas~~

Present condition of well: ~~13 3/8" cem. 1004'. T.D. 1010'.~~

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

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

r

~~M. G. MEFFERD~~
State Oil and Gas Supervisor

By _____
Deputy Supervisor
~~John L. Hardoin~~

OG109 (6-77-GSRI-15M)

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

No. P 279-119

REPORT ON PROPOSED OPERATIONS

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

Mr. P. S. Magruder, Jr., Agent
Southern Calif. Gas Co.
P.O. Box 54790 Terminal Annex
Los Angeles, CA90054

Santa Paula, California
April 13, 1979

Your _____ proposal to drill Gas Storage well "SFZU" MA-1A,
A.P.I. No. 037-21891, Section 34, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated 3/29/79, received 4/11/79 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Sufficient cement shall be pumped back of the 13 3/8" casing to fill to the surface.
2. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
3. Unlined sumps, if they contain harmful waters, shall not be located over fresh water bearing aquifers.
4. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
5. Blowout prevention equipment of at least DOG Class $III^{B}_{A}1M$, shall be installed on the 13 3/8" casing and Class $III^{B}_{A}2M$ on the 8 5/8" casing and maintained in operating condition at all times.
6. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
   a. A pressure test of the blowout prevention equipment before drilling below 1000'.
   b. A test of the 8 5/8" shut-off above the zone to be produced.

Blanket Bond
MD:b

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

M. G. MEFFERD, State Oil and Gas Supervisor

By John L. Hardoin Deputy Supervisor

OGIII (1-79-GSRI-5M)

D' ISION OF OIL AND G/
Notice of Intention to Drill New Well

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

FOR DIVISION USE ONLY					
MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
2		✓	BB	✓	✓

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to commence drilling well SFZ-U' MA-1A, API No.____ (Assigned by Division)

Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

Legal description of mineral-right lease, consisting of____ acres, is as follows: (Attach map or plat to scale)

Previously submitted

DIVISION OF OIL AND GAS
RECEIVED
APR 11 1979
SANTA PAULA, CALIFORNIA

Do mineral and surface leases coincide? Yes____ No____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of well____ feet____ (Direction) along section / property line and ____ feet____ (Direction) at right angles to said line from the____ corner of section / property ____ (Cross out one) or 4369.35' south and 997.22' east from station 84

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

If well is to be directionally drilled, show proposed coordinates (from surface location) at total depth: 1576 feet north (Direction) and 658 feet west (Direction)

Elevation of ground above sea level 1725 feet.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table, or Kelly Bushing) that is 22 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES API	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	CALCULATED FILL BEHIND CASING
13-3/8"	54.5	K-55 Butt.	Surf.	1000'	1000'	Surface
8-5/8"	36 & 40	N-80 Butt.	Surf.	7270'	7270'	1000'
5-1/2"	20	K-55 LT&C	7145'	7470'	Gravel Pack Screen Liner	-

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

Intended zone(s) of completion Sesnon 7270', 2000 psi (Name, depth, and expected pressure) Estimated total depth 7470'

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

Name of Operator	Type of Organization (Corporation, Partnership, Individual, etc.)	
So. California Gas Company	Corporation	
Address	**City**	**Zip Code**
P.O. Box 3249 Terminal Annex	Los Angeles	90051
Telephone Number	**Name of Person Filing Notice**	**Signature** / **Date**
(213) 689-3561	P. S. Magruder, Jr.	P S Magruder Jr / 3-29-79

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

OG105 (7-78-GSRI-5M)

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

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

Lead Agency: _____

Contact Person: _____

Address: _____

_____

Phone: ( ) _____

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

CRITICAL WELL

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

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

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