SoCalGas-31

Exhibits to Prepared Supplemental Rebuttal Testimony of Glenn La Fevers (October 26, 2020)

I.19-06-016

ALJs: Hecht/Poirier

Date Served: March 12, 2021

From:

Turner, Benjamin@DOC

To:

Lauren.Wolman@mail.house.gov

Subject:

Fwd: Aliso update

Date:

Friday, November 13, 2015 11:09:09 PM

Update from DOGGR field staff:

Sent from my iPhone (pleeze esckooze tiepoes and occasional inadvertent brusqueness)

Ben Turner

Assistant Director, Governmental and Environmental Relations Department of Conservation

801 K Street, MS 24-02

Sacramento, CA

Office: 916-445-8733

Begin forwarded message:

Subject: Aliso update

Here is an update from a field engineer:

Today was an extremely eventful day at the SS 25 site. Bruce Hesson and I arrived at the command post at 0630 this morning. We were quickly briefed by Todd Van De Putte with SoCalGas on the day's operations. The well conditions were unchanged from the previous day. The composite bridge plug set at 8412' was holding and no meaningful pressure had been added or subtracted from the 27/8" tubing. The operator then ran wireline and punched holes in the 27/8" tubing in preparation for the kill job. After the tubing shots were fired, the tubing began to return to the original pressure of ± 1600 psi as expected.

I was then called to the SS 25 site to witness the pumping operations. I did not have a time piece with me as all electronics were removed from the site. Therefore, times are estimated here. The winds were blowing to the SW at 15-20mph. At around 1100 hours pumping began with a 5 bbl polymer pill followed by 9.4 ppg CaCl2 mud. The rate of pumping was 8 bbls/min and the operator was bullheading through the 2 7/8" tubing. The CT rig was not used and the BOPE stack and riser had been removed.

After 45 bbls of 9.4 ppg mud was pumped, the tubing pressure began to increase and there was a ±100 psi drop in the 7" annulus. The choke was then opened full and a small amount of fluid and gas was coming to the return tanks. It appeared the well had turned the corner on the 2 7/8" tubing. At about 100 bbls away or so, the well began to blowout to surface despite having the choke at 100% open. A large column of gas, aerated mud, and rock formed a geyser around the well head. Mud brine also began to flow from around the well head fissures. The pumping rate was kept at 8 bbls/min and the tubing was keeping pressure. The

pump was able to chase the fluid. At the recommendation of Boots and Coots, Bret Lane w/ SCG, Mike Dozier also w/ SCG and myself retreated from the choke controls and remained at the SS 25 command bunker. A significant amount of gas and mud continued to blow around the well head and also floated downwind to the SW. The well continued to blow around the wellhead for the next 300 bbls of pumping which should have been about 40 minutes of time elapsed. At this point the site began to run out of kill fluid as the theoretical wellbore volume of 318 bbls had been pumped. More fluid was pumped into the well and the well continued to blow into the return tank and around the well head. The dust column reached an estimated 60' in height.

At around 420 bbls away, Scott McGurk, Scott Walker, and Bruce Hesson came up to the SS 25 site after monitoring conditions by computer at an adjacent lower location. I met the three half way down the road and we quickly tested the east side of the hill where gas had been leaking out of the hillside. The gas monitor did not detect any gas. The leak points that I had previously noted were nearly dead.

We then walked back to the SS 25 site. After speaking with Bret Lane and Danny Clayton with Boots and Coots, it was agreed that the operator should continue to pump the well despite the surface gas leakage as this may be the best opportunity to kill the well. At around 550 bbls away the surfaced mud began to flow off of the well pad and down the road. A vacuum truck was called and the mud flowed into a concrete catch basin. This basin was plugged and the mud sucked out with the vacuum truck before it could break containment. The leaking kill mud did not breach the hot zone. The operator continued to pump at about 1 bbl/min. The well continued to blow but the rate was reduced. After 800 bbls of mud away, a 10 bbl polymer pill was spotted into the tubing. It was allowed to gravity feed down the tubing. Pumping was stopped at ± 1445 hours. There was no more mud to pump on site after 2.5 wellbore volumes were pumped. The well continued to blow, but fluid stopped coming from the wellbore. After about 10 minutes the dust began to abate and we were able to approach the wellbore. We observed the well from the choke manifold controls upwind of the blow. The well was blowing a small amount of gas from the well cellar. Most of the gas however, was blowing from a large fissure about 20' north of the wellhead. This gas was a significant blow and it was decided that it should be left alone for the night. There was no more mud to pump and the fluid stopped emanating from the wellbore. The tubing was on a vacuum. The 7" casing had 185 psi on it and the 11 3/4" had ±65 psi on it. We decided to leave the site after this inspection and walked down to the command area. We arrived at command at ± 1500 .

Phone calls to HQ ensued and Division management was updated on the day's activities.

<u>Tomorrow</u> will likely consist of a wireline run to collect data. There are several possibilities as to a course of action. The tubing pressure will determine whether or not a cement job is feasible. The well head did appear intact and it may be possible to pump cement. However, if the tubing returns to significant pressure, a cement job may not be possible at this time. This means that insufficient fluid reached the storage zone and a cement plug will likely only agitate the well.

If the tubing pressure is reasonably low, a noise log will likely be run to determine if and where gas is migrating. A fluid shot in the 7" annulus may also be possible, or a capacitor wireline tool may be of use as well. If the tubing is dead, then the storage zone is dead. This means that the gas blow actually came from a shallower zone behind the 7" casing and likely below the shoe of the 11 ¾" casing. It is possible that when the kill fluid was pumped into the well an ice plug that had built up around the 11 ¾" x 16" wellbore annulus broke down allowing the gas to vent. This hypothetical ice plug may have resulted in choking back the gas release and forcing the gas to migrate to the surrounding hillsides. Once this ice was broken, the most convenient path of flow was through the open choke and around the 11 ¾" casing. This could explain why the hillside gas leaks stopped.

I shall return to the SS 25 site at 0630 hours tomorrow. If you have any questions please don't hesitate to text or email.

Sent from my iPhone (pleeze esckooze tiepoes and occasional inadvertent brusqueness)

Ben Turner
Assistant Director, Governmental and Environmental Relations
Department of Conservation
801 K Street, MS 24-02
Sacramento, CA
Office: 916-445-8733

Ex. I-1, page 3 of 3

Safety and Enforcement Division's (SED) Response to Southern California Gas Company Data Request 12:

Date Provided by SED to SoCalGas: October 2, 2020

1. Identify all facts supporting YOUR allegation that SoCalGas "purposefully" extracted and vented oil into the atmosphere on November 13, 2015.

SED objects to Question 1 to the extent that it mischaracterizes Ms. Felts' testimony. Taking one term out of context does not properly characterize a portion of testimony and the conclusion must be read in its entirety. Namely, the entire quote on page 4 of Ms. Felts' surreply testimony, Chapter 8, lines 23-25, is: "In conclusion, records suggest that a purposeful release of oil and gas occurred and that SoCalGas subsequently attempted to cover up the facts surrounding this release in violation of 451." Notwithstanding this conclusion, Ms. Felts answers as follows:

Response: All facts supporting the allegation were presented with testimony. See response to Question 8 below.

2. Produce all DOCUMENTS supporting YOUR allegation that SoCalGas "purposefully" extracted and vented oil into the atmosphere on November 13, 2015.

SED objects to this question as mischaracterizing Ms. Felts' testimony. The precise quote from Ms. Felts' testimony page 1, lines 16 to 17 is, "However, I have recently discovered evidence that shows SoCalGas purposely extracted oil and vented it into the atmosphere during the SS-25 incident." Notwithstanding this objection, Ms. Felts answers as follows.

Response: The Nov 13, 2015 text message sent from "777200585003" reported "oil was extracted and was vented into the atmosphere." Grammatically, this is a purposeful statement and cannot be construed otherwise. This text message is quoted in its entirety in Chapter eight of testimony, page 2, lines 4 through 10.

3. Please reference Chapter Eight, page 2, lines 16-19, and footnote 7, which states:

Apparently, during the day, and before 5:26 PM, which is the time stamp for the text message that went out, there was a release of gas, oil and brine that shot feet into the atmosphere and covered the surroundings with oil.⁷

- a) Identify the individual or individuals who made the "oral comment" referenced in the excerpted passage above.
- b) Identify the time and date of the "non-related meeting" referenced in the excerpted passage above.
- c) Identify the subject of the "non-related meeting" referenced in the excerpted passage above.
- d) Identify all individuals who attended the "non-related meeting" referenced in the excerpted passage above.

⁷ Based on oral comment that I recall hearing in a non-related meeting around the time of the incident. I have not been able to confirm this fact with SoCalGas documentation.

Response:

- 3.a. After considerable research into past records, I have not been able to definitively recall when I heard the comment or who made it. Since I was not on contract yet, I know the meeting was not associated with this case. I only know that when I came into the project, I had in mind to look for evidence of the event as I worked through the evidence.
- 3.b. See the response to 3.a.
- 3.c. See the response to 3.a.
- 3.d. See the response to 3.a.
- 4. Identify all facts supporting your allegation that "another [kill] attempt was tried by SoCalGas or Boots and Coots" that is not described the Blade Report.

SED objects to this question as vague in that it does not reference the portion of testimony to which the quote refers. SED understands the question to be asking about Ms. Felts' sur-reply testimony, page 3 line 21 to page 4 line 2 and is instructing Ms. Felts to answer with that understanding. Based upon that understanding, SED further objects to the question as a mischaracterization of Ms. Felts' testimony. Ms. Felts' testimony did not state that another kill attempt *was* tried by SoCalGas or Boots and Coots, as the partial and out of context quote in the question would suggest. Quoted in its entirety, that passage states,

"In addition, based on dates of kill events identified by Blade, [Footnote omitted], the kill attempt on November 13, 2015 was the second kill attempt, so, based on this memo, *it is possible that another attempt was tried by SoCalGas or Boots and Coots*. [Footnote 16 states, "My review of records provided in response to SED DRs suggests that there *may* have been additional well kill attempts."] (Emphasis added.)

5. Produce all DOCUMENTS supporting your allegation that "another [kill] attempt was tried by SoCalGas or Boots and Coots" that is not described the Blade Report.

SED incorporates all of its objections in response to question 4 by reference here.

6. Please reference Chapter Eight, page 4, lines 3-19, which states: Finally, in a response to SED's data request DR 33, SoCalGas provided a Draft Timeline of Events. The entry for November 13, 2015 states:

November 13 - Tubing perforation activities performed and attempted stop the flow of gas by putting fluids down the well. During this operation, there was a release of a mist into the air. Based on the information at this time, it is not believed that these materials pose a threat to public health. Out of an abundance of caution, residents were notified to stay inside. Once determined that the mist was contained to our facility, residents were again notified that there was no reason to remain inside.

Office of Emergency Services and National Response Center were notified of the release. They were updated at 3:14 pm that flow was reduced.

SoCalGas provided no evidence to support the statements regarding reporting the incident or notifying the residents. This response was provided in the text of a supplemental response to the data request and is therefore not stamped with a SoCalGas bates number. No supporting documents were provided with the response.

- a) Identify all data requests in which SED requested that SoCalGas provide "evidence" or "supporting documents" to the support the draft entry for November 13, 2015, as excerpted above.
- b) Identify each question in which SED requested that SoCalGas provide "evidence" or "supporting documents" to the support the draft entry for November 13, 2015, as excerpted above.
- c) Identify the specific document to which "[t]his response" refers.
- d) Identify the question for which "[t]his response" was provided.

SED objects to this question as unduly burdensome because it is asking SED to produce documents that SoCalGas already has in its possession, and SoCalGas has the ability to access, read and understand the data that it requests. Notwithstanding this objection, Ms. Felts answers as follows.

Response to 6 a-d. I am not aware of any specific SED data request for the evidence or supporting documents. Since I came to this project in the fall of 2019, I am also not aware of any conversations, discussions, or other communications that may have occurred regarding evidence in this case prior to fall of 2019. My statement in Chapter Eight, page 4, lines 3-19 generally covers the entire collection of all data that was provided by SoCalGas to SED in this case and which I had reviewed at the time testimony was written.

- 7. Please reference Chapter Eight, page 4, lines 19-22, which states:

 <u>The Draft Timeline of Events provided to SED conflicts with the internal text message sent</u> to SoCalGas personnel on November 13, 2015 and states facts that were not included in the Standard Sesnon 25 Chronology of Events that appears within SoCalGas documents.
- a) Identify with specificity all facts that conflict between the Draft Timeline of Events and the "internal text message sent to SoCalGas personnel on November 13, 2015."
- b) In which "SoCalGas documents" are the "facts that were not included in the Standard Sesnon 25 Chronology of Events?"

Response to Questions 7 a and b: As mentioned in SED testimony, page 4, footnote 17, the draft timeline of events was provided in SoCalGas response to DR33. The full reference is DR33.01 SCG memo-Q12f amend 7-Dec-18.

Compare this statement in the Nov 13, 2015 Text message:

"During the repair process to mitigate the leak at the well head in Aliso Canyon oil was extracted and was vented into the atmosphere. There is an oily mist that may potentially be moving into the Porter Ranch area. Customer Service Field Distribution and Meter Reading employees who are or may be headed to work in the area have been given instructions to avoid the Porter

Ranch area until further notice. The Customer Contact Center has been notified, If an A-1 is issued in the area CSF employees are to take extreme caution when working the order."

To the Draft Timeline statement SoCalGas provided in the actual response to DR 33:

"November 13 - Tubing perforation activities performed and attempted stop the flow of gas by putting fluids down the well. During this operation, there was a release of a mist into the air. Based on the information at this time, it is not believed that these materials pose a threat to public health. Out of an abundance of caution, residents were notified to stay inside. Once determined that the mist was contained to our facility, residents were again notified that there was no reason to remain inside. Office of Emergency Services and National Response Center were notified of the release. They were updated at 3:14 pm that flow was reduced."

- 8. Please reference Chapter Eight, page 4, lines 23-25, which states: In conclusion, records suggest that a purposeful release of oil and gas occurred and that SoCalGas subsequently attempted to cover up the facts surrounding this release in violation of 451.
- a) Identify all "records" that "suggest" an attempt "to cover up the facts surrounding this release."
- b) Identify all facts that "suggest" an attempt "to cover up the facts surrounding this release."
- c) Identify all facts that support the alleged "violation of Section 451" referenced in the quote.

Response:

SED objects to Question 8 to the extent that subparts a, b, and c mischaracterize Ms. Felts' conclusion. The conclusion must be read in its entirety to be properly understood. Notwithstanding that objection, the following answers are provided.

a. A search of Boots & Coots, SoCalGas, and Haliburton daily reports, event records and emails and text messages on and after November 2015, as well as the CalGem data base regarding the Aliso 2015 SS-25 event, and reports to various regulatory agencies, turned up no records of the event as described in the Nov 13, 2015 text message sent from "777200585003" that reported "oil was extracted and was vented into the atmosphere." The consistent absence of this statement or anything similar to it in all other SoCalGas records suggests purposeful intent to avoid recording the incident.

Chapter Eight Violation 331 further discusses such records. For example, see Chapter Eight, page 2 line 20 to page 3 line 6, which states, "A review of emails and documents provided by SoCalGas in response to SED data requests did not turn up a description of this event. Specifically, there is no mention in either the SoCalGas daily report or the Boot(s) & Coots daily report for November 13, 2015. [Footnote 8, referencing Page 32 from AC_CPUC_SED_DR_16_0000649-1026.Incident.Day and Report #20 from Boots&Coots.Daily Reports.] A search of the California Geologic Energy Management Division (CalGEM) [Footnote omitted] web site records for underground storage and the SS-25 well failure event turned up no mention or report on the incident even though it appears that a representative may have been present that day. [Footnote 10 referencing

AC CPUC SED DR 17 0002068.shallow.gas.recovery – this memo discusses other issues related to the SS-25 situation, but puts a representative at the well site on 11/13/2015.] There is another email message from C. Brandy to Bret Lane asking about the text message quoted above, but there are no email responses from Bret Lane regarding the subject. [Footnote 11, referencing AC CPUC SED DR 17 0002072].

- b. See response to 8.a and Chapter Eight, Violation 331.
- c. The facts supporting the safety violation of Public Utilities Code Section 451 include the purposeful extraction of oil and venting it into the atmosphere without pre-notice to the public and without further notice to the public that some exposure to oil might have occurred, as described in more detail in Chapter 8, violation 331.

Governor's Office Emergency Services Hazardous Materials Spill Report

DATE : 11/13/2015		RECEIVED BY	':	CONTRO	L#:
TIME: 1334				Cal OES - 1	15-6708
				NRC -	
1.a. PERSON NOTI	EVING Cal O	FS.			
1. NAME:	2. AGENCY:		3. PHONE#:	4. Ext:	5. PAG/CELL:
I. IVANIE.	S CA Gas		5. 1 HOπEπ.	T. LAU.	S. TAG/CELL.
1.b. PERSON REPO		I (If different fr	om abovo).		
1. NAME:	2. AGENCY:		3. PHONE#:	4. Ext:	5. PAG/CELL:
2. SUBSTANCE TY		•	5. 1 HOπEπ.	T. LAU.	3. TAG/CELL.
	r e: >= <amount< td=""><td>Measure</td><td>c. TYPE:</td><td>d OTHED.</td><td>e. PIPELINE f. VESSEL</td></amount<>	Measure	c. TYPE:	d OTHED.	e. PIPELINE f. VESSEL
SUBSTANCE:	-\Amouni	measure	C. TIFE.	u. OTHEK.	
	Unk	Gal(s)	DETROI ELI	M.	>= 300 Tons
1. Oil - Crude =	UIIK	Gal(s)	PETROLEUM	VI	No No
Type					31
2.					No No
3. –	D	11.1.211			No No
g. DESCRIPTION:					material is flowing directly
			and pooling at the b		
					o estimate of containment
			andling the containr		
h.		WATER	j. WATERWAY:		RINKING WATER
STOPPAGE/CONTA				IMP A	ACTED
No	No)			
I. KNOWN IMPACT	r No	one			
3. a. INCIDENT LO	CATION: 128	301 Tampa Ave, A	Aliso Canyon Storag	e Facility, V	Vell #SS25
b. CITY:		COUNTY:	d. ZIP:		
Northridge	Lo	s Angeles County	91326	SOU	TH COAST AQMD
4. INCIDENT DESC		J			
a. DATE:		TIME (Military):	c. SITE:	d. RF	EPORTED CAUSE
11/13/2015		17	Other	Unkn	
			Description for O		
			Similar to Tank Fa		
e. INJURIES	f 1	FATALITY	g. EVACUATION		LEANUP BY:
No	No		No		rting Party
6. NOTIFICATION			110	Керо	iting I dity
a. ON SCENE:	INFORMALI	b. OTHER ON	SCENE.	c OTHE	R NOTIFIED:
Other		DOG	SCENE.	c. Offic	RIOTIFIED.
d. ADMIN. AGENC	V. I as Ansolas (o SEC	ACENCY.	LACoFD Health Haz-Mat
Department	1: Los Angeles C	nty rife	e. SEC.	AGENC I:	LACOFD Hearm Haz-Mar
f. ADDITIONAL CO	HINTV.		σ ADM	IN. AGENO	·V·
h. NOTIFICATION			g. ADM	III. AGEII	21.
DOG Unit: 2	LIST:	i RV	WQCB Unit:		
DOG CIRC. 2		I. IX	4		
AA/CIPA DEG-OSPR I	TSC RWOCE I	IS EPA LISEWS AT		DPH-D O DO	G, BSEE, Co/WP, Co/Hlth, Co/E-
1111 CO111, DI G-OBI K, L	.150, 101 QCD, C	Jo Lift, Obi Wb, All	Hlth	,, DO., DO	5, D5LL, C6/11, C6/11till, C6/E-
			DOG		
Photo Attachment:					
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Created by: Warning Center on: 11/13/2015 01:34:07 PM Last Modified by: Warning Center on: 11/13/2015 01:51:43 PM

Ex. I-3, page 1 of 5

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Governor's Office of Emergency Services Hazardous Material Spill Update

		CONTRO	OL#: 15-6708 NI	RC# 1133370	
NOTIFY DATE/TIME: 11/13 1334	3/2015 /	RECEIVED BY: OCCURENCE DA 11/13/2015/1317	те/тіме:	CITY/OP. AREA: Northridge/Los Ange SOUTH COAST AQ	•
1.a. PERSON NOTIFYING C	Cal OES:				
AGENCY: S CA Gas					
1.b. PERSON REPORTING S	SPILL (I	f different from abo	ve):		
AGENCY:	(1				
SUBSTANCE TYPE:	1easure	c. TYPE:	d. OTHER:	e. PIPELINE	f. VESSEL
Amount					>= 300 Tons
<i>J</i> 1	Gal(s)	PETROLEU	JM	No	No
2. 3.				No No	No
Orignal Description: During well k	rill a mist	is releasing due to n	eccure material ic	NO	No
flowing directly into the atmost traveling Southwest in the air fr time, RP is handling the contain Update(s): 11/13/2015 01:56:5. No additional information.	rom the w	vell head, no estimate d clean up.	of containment at t	this	
PERSON NOTIFYING Cal O NAME:	AGE		PHONE#:	Ext:	PAG/CELL:
UPDATE QUANTITY	Measure				
Amount	~ · · ·				
1.	Gal(s)				
2.					
3.					
4.					
UPDATE KNOWN IMPACT	Γ:				
UPDATE CAUSE:					
SITUATION UPDATE:					
NRC report received: Wind spe FAX NOTIFICATION LIST:	ed is 20 N	MPH, No additional i	nformation.		
AA/CUPA, DFG-OSPR, DTSC, RWQCB, US EPA ADMINISTERING AGENCY: SECONDARY AGENCY: ADDITIONAL COUNTIES:	Los Ange	R RESOURCES BD, CDPH-D.C les City Fire Department Health Haz-Mat	., DOG, BSEE, Co/WP, Co/HI	th, Co/E-Hlth DOG	
ADDITIONAL ADMIN. AGENCY: DOG Unit:					
OTHER NOTIFIED; RWQCB Unit: CONFIRMATION REQUEST: FAX NOTIFICATION LIST:	4				
ADMINISTERING					

https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/e6583981879f9ea688257efc0078913e? OpenDocument& Hig... 1/2 and 1/2

AGENCY:

ADDITIONAL ADMIN.

AGENCY:

SECONDARY AGENCY:

ADDITIONAL COUNTIES: Cal GEM:

RWQCB Unit:

PrevDoc NextDoc

SECONDARY AGENCY: ADDITIONAL COUNTIES: ADDITIONAL ADMIN. AGENCY:

OTHER NOTIFIED: RWQCB Unit:

CONFIRMATION REQUEST:

4

DOG Unit:

Governor's Office of Emergency Services Hazardous Material Spill Update

CONTROL#: 15-6708 NRC#

NOTIFY DATE	/ TIME : 11/	13/2015 /	RECEIVED BY:		CITY/OP. AREA:	
1334			OCCURENCE D	ATE/TIME:	Northridge/Los Ange	eles County
			11/13/2015/1317		SOUTH COAST AC	OMD
1.a. PERSON NO	TIFYING	Cal OES	<u> </u>			<u></u>
AGENCY: S CA	Gas					
1.b. PERSON RI	EPORTING	SPILL (If different from ab	ove):		
AGENCY:						
SUBSTANCE TY a. SUBSTANCE:	YPE: b. QTY: Amount	Measure	c. TYPE:	d. OTHER:	e. PIPELINE	f. VESSEL >= 300 Tons
1.Oil - Crude Type	e Unk	Gal(s)	PETROLE	CUM	No	No
2.					No	No
3.			t is releasing due to j		No	No
No additional info; 11/13/2015 03:14 off site impact has	ormation. 4:36 PM - C s occurred. I	Called to up No waterw OES OF AG	NRC report received: odate status: The mis ays have been impact SPILL UPDATE: ENCY: CA Gas	at flow has reduced a		PAG/CELL:
UPDATE QUAN	TITY	Measure	A Gas			
Amount						
1.		Gal(s)				
2.						
3.						
4.						
UPDATE KNOV	WN IMPAC	CT:				
UPDATE CAUS	SE:					
SITUATION UP						
Called to update s	tatus: The r	nist flow h	as reduced and no of	f site impact has occ	curred. No waterways	have been
impacted. FAX NOTIFICATION	ON LIST:					
AA/CUPA, DFG-OSPR, DT ADMINISTERING			IR RESOURCES BD, CDPH-D		lth, Co/E-Hlth DOG	
SECONDARY AGE	NCY:	LACoFI	Health Haz-Mat			

https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/c09f3e9554f5afda88257efc007fae44?OpenDocument&Highli... 1/2

FAX NOTIFICATION

LIST:

ADMINISTERING

AGENCY:

ADDITIONAL ADMIN.

AGENCY:

SECONDARY AGENCY:

ADDITIONAL **COUNTIES:**

Cal GEM:

RWQCB Unit:

Created by: Warning Center on: 11/13/2015 03:14:36 PM Last Modified by: Warning Center on: 11/13/2015 03:17:31 PM ********** End of Form *********

Message

From: Koskie, W. Jeff [WKoskie@semprautilities.com]

Sent: 11/25/2015 3:11:09 PM

To: Epuna, Matthewson (matthewson.epuna@cpuc.ca.gov) [matthewson.epuna@cpuc.ca.gov]

Subject: RE: CPUC Data Request - Public Notification
Attachments: CPUC Data Request_CommsTimeline.pdf

Importance: High

Matt.

Please replace first attachment with this PDF attachment that includes a prepared date.

Thanks,

Jeff

From: Koskie, W. Jeff

Sent: Wednesday, November 25, 2015 2:58 PM

To: Epuna, Matthewson (matthewson.epuna@cpuc.ca.gov) **Subject:** FW: CPUC Data Request - Public Notification

Importance: High

Matt.

Regarding your request to provide information demonstrating our public interaction tied to the Aliso Canyon, attached is a summary.

Please let me know if you have any questions, or if I can be of any further assistance.

Jeff

W. Jeff Koskie, ARM

Pipeline Safety and Compliance Manager

ML SC9334

Office Phone (661) 775-8770 Fax: (213) 244-8155

<mailto:wkoskie@semprautilities.com>





CPUC Data Request - Public Notifications - Prepared 11/25/2015

DATE	AUDIENCE	COMMUNICATION	DESCRIPTION
10/26/2015	Customer	Meeting	Neighborhood Town hall Meeting
10/27/2015	Customer	Letter	Customer Letter mailed to 8,000 customers, plus 1,200 of the 8,000 hand delivered
10/27/2015	Customer	Email	Regional Public Affairs Regular Updates Begin
10/28/2015	Customer	Aliso web update	Posted on 10/28
10/30/2015	Customer	Aliso web update	Posted on 10/30
10/30/2015	Customer	Customer Letter (English with translation referral)	Mailed 10/30 to 8,000 customers
10/30/2015	Customer	Customer FAQ English	Posted on website 10/30
10/30/2015	Customer	Aliso Canyon Customer Letter #2	Mailed and posted to the website on 10/30
10/30/2015	Various	Meeting	Stakeholder Briefing
10/31/2015	Customer	Aliso Canyon Customer Letter #2 (Armenian, Korean, Spanish)	Posted on the website on 10/31
10/31/2015	Customer	Customer Letters in Spanish, Korean, Armenian	Posted on website 10/31
10/31/2015	Customer	Customer Letter to inform customers about coiled tubing rig preparation	Delivered to 1,400 homes closest to the facility
11/2/2015	Customer	Customer FAQ in Korean, Armenian, Spanish	Posted on website

11/2/2015	Customer	Customer Letter	Mailed to 8,100
11/2/2015	Customer	Air Sampling updates	Began regular updates on website
11/02/2015	Customer	Web Update	Posted on 11/2
11/03/2015	Customer	Web Update	Posted on 11/3
11/4/2015	Various	Meeting	Neighborhood Town hall Meeting
11/04/2015	Customer	Web Update	Posted on 11/4
11/05/2015	Customer	Health Issues FAQ	Posted on 11/5
11/06/2015	Customer	Web Update	Posted on 11/6
11/07/2015	Customer	Web Update	Posted on 11/7
11/08/2015	Customer	Web Update	Posted on 11/8
11/09/2015	Customer	Web Update	Posted on 11/9
11/10/2015	Customer	Web Update	Posted on 11/10
11/11/2015	Customer	Web Update	Posted on 11/11
11/12/2015	Customer	Customer Email – You may smell odors or hear	Deployed 11/12/15
		noises	
11/12/2015	Customer	Outbound Dial Message - You may smell odors or hear noises	11/12/2015
11/12/2015	Customer	Customer Update BrochureEmail	Deployed and posted on 11/12/2015
11/12/2015	Customer	Web Update	Posted on 11/12
11/13/2015	Customer	Web Update	Posted on 11/13
11/13/2015	Customer	Outbound Dial Message – Stay Indoor Notification	Deployed 11/13/2015
11/13/2015	Customer	Outbound Message All Clear Notice	Deployed 11/13/2015
11/14/2015	Customer	Web Update	Posted on 11/14
11/15/2015	Customer	Web Update	Posted on 11/15

11/15/2015	Customer	Outbound Dial Message - Will Resume Pumping	Deployed 11/15/2015
11/16/2015	Customer	Web Update	Posted on 11/16
11/17/2015	Customer	Customer Update Brochure	Posted 11/17/2015
11/17/2015	Customer	Web Update	Posted on 11/17
11/18/2015	Customer	Web Update	Posted on 11/18
11/18/2015	Various	Meeting	Briefing on Updates
11/19/2015	Customer	Letter	Letter addressed to Dr. Steven Bohlen_DOGGR
11/19/2015	Customer	Web Update	Posted on 11/19
11/20/2015	LA Dept. of Public Health	Letter	Letter addressed to Angelo Bellomo County of Los Angeles Department of Public Health
11/20/2015	Customer	Web Update	Posted on 11/20
11/21/2015	Customer	Claims Flyer	Created for deployment
11/21/2015	Customer	Homeless Flyer	Created for deployment
11/21/2015	Customer	Web Update	Posted on 11/21
11/22/2015	Customer	Web Update	Posted on 11/22
11/23/2015	External Stakeholders	Aliso Canyon Storage Facility Update	Email deployed 11/23/2015
11/23/2015	Customer	Letter	One-month letter mailed to 8,000 customers
11/23/2015	Customer	Aliso Canyon Update Email	Deployed 11/23/2015
11/24/2015	Customer	Packet of communications	LACBOS 11/24/2015
11/24/2015	Customer	Web Update	Posted on 11/24

Aliso Canyon Updates

Updated November 14, 2015

Background

On October 23, SoCalGas crews discovered a leak at one of the natural gas storage wells at its Aliso Canyon storage field. In response, we activated the appropriate procedures to begin to address the leak.

We regret that the smell of the odorant in natural gas is unpleasant and that some people are sensitive to the odor, and we sincerely apologize for the annoyance and concern this odor is causing the neighboring communities. However, the leak does not pose an imminent threat to public safety. The well is located in an isolated, mountain area more than a mile away from and more than 1,200 feet higher than the closest home or public area. Scientists agree natural gas is not toxic and that its odorant is harmless at the minute levels at which it is added to natural gas. In outdoor locations such as this, natural gas quickly dissipates into the air, greatly reducing the possibility for ignition and further diluting the gas as it reaches the public. The human nose is amazingly sensitive and can detect the smell of the odorant at levels much lower than any level of concern.

We have assembled a world-class team of experts, and we are working as quickly as safety will allow to stop the leak. In addition, we are in regular communication with L.A. City and County Fire and Hazmat Departments, the L.A. County Department of Health, the California Division of Oil, Gas & Geothermal Resources, and the South Coast Air Quality Management District.

Update on Activities - November 13

- SoCalGas' team of well-management experts began the multi-day process of pumping fluids down the well to stop the flow of gas. (http://www.socalgas.com/documents/news-room/aliso-canyon-recent-activity.pdf) The goal is to fill the well pipe with enough brine solution to outweigh the pressure of the gas coming up out of the ground. The brine solution will act like a plug. (See page three of our brochure (http://www.socalgas.com/documents/news-room/aliso-canyon-recent-activity.pdf) for more information on this process.) Once the flow of natural gas is stopped, we will begin the effort to place a permanent seal at the bottom of the well pipe.
- We have some of the world's best experts advising us, and one of the reasons they are so successful is
 they are very cautious in their approach. The way we are addressing this incident is the best practice for
 situations such as this.
- As a result of this procedure which may take a few days, there is a potential for residents in the community
 to hear unusual noises and smell additional odors. In addition, some of the fluid being pumped down the
 well may come back up and spray into the air.
- On Friday, some of the brine solution did come back up, and it created a mist in the air over the facility. Out
 of an abundance of caution, we assumed the mist could contain oily residues (The storage field is depleted
 oil field.) and could travel beyond the facility. As a result, we immediately alerted the residents in nearby
 communities to stay indoors. As soon as we recognized the mist would not travel beyond the facility, we
 advised residents there was no reason to stay indoors.
- We conferred with the Health Department, the LA County Department of Health and HazMat and the SCAQMD. Our initial observations later in the day led us to believe the contents of the mist were likely mostly a mixture of mud and the brine solution; however, we have sent samples for analysis to be certain of its contents. When we receive the final report from the laboratory, we will make this information available.

https://spreview.socalgas.com/newsroom/aliso-canyon-updates-11-14-15

- During these operations, we were monitoring and sampling the air both at the work site and down in the community. This information will be available as normal on our web site.
- As this work continues, SoCalGas will continue to monitor the well pressures 24/7 to ensure conditions remain safe.
- To update state and local officials and elected representatives on the progress and conditions at the site,
 SoCalGas participated in the regular, daily briefing with representatives of the local health, fire and hazmat agencies. We also informed community representatives about the issues related to the mist.
- A team of our environmental specialists and retained experts continued conducting daily air sampling and monitoring at several representative sites both within the leak site and the community. Although experts agree that natural gas is not toxic and that the levels of the odorant in the natural gas are too low to be a long-term health concern, we are continuing to conduct this sampling to provide the community with more information. The samples we are taking are in addition to those being taken by the SCAQMD. Air sampling results (http://www.socalgas.com/news-room/aliso-canyon-air-sample-results.shtml) from our tests are available at: http://www.socalgas.com/news-room/aliso-canyon-air-sample-results.shtml (http://www.socalgas.com/news-room/aliso-canyon-air-sample-results.shtml).
- We also continued meeting with neighbors at our public information booth, which we staff as weather permits. In the event of inclement weather, please remember, neighbors can check updates on this website, email us at AlisoCanyon@SoCalGas.com (mailto:AlisoCanyon@SoCalGas.com) or call us at (818) 435-7707. The booth is located near the gates of our facility at 12801 Tampa Avenue in Porter Ranch, and its hours (weather permitting) are from 10 a.m. to 5 p.m.

We apologize for how this incident may be affecting you, and we appreciate the community's ongoing patience as we work as quickly as safety will allow to resolve this situation. If you believe you have suffered harm or injury as a result of this incident, please complete this online form (http://socalgas.com/about-us/our-services/consulting/claims.shtml) or call 213-244-5151.

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Aliso Canyon Updates

Updated November 15, 2015

Background

On October 23, SoCalGas crews discovered a leak at one of the natural gas storage wells at its Aliso Canyon storage field. In response, we activated the appropriate procedures to begin to address the leak.

We regret that the smell of the odorant in natural gas is unpleasant and that some people are sensitive to the odor, and we sincerely apologize for the annoyance and concern this odor is causing the neighboring communities. However, the leak does not pose an imminent threat to public safety. The well is located in an isolated, mountain area more than a mile away from and more than 1,200 feet higher than the closest home or public area. Scientists agree natural gas is not toxic and that its odorant is harmless at the minute levels at which it is added to natural gas. In outdoor locations such as this, natural gas quickly dissipates into the air, greatly reducing the possibility for ignition and further diluting the gas as it reaches the public. The human nose is amazingly sensitive and can detect the smell of the odorant at levels much lower than any level of concern.

We have assembled a world-class team of experts, and we are working as quickly as safety will allow to stop the leak. In addition, we are in regular communication with L.A. City and County Fire and Hazmat Departments, the L.A. County Department of Health, the California Division of Oil, Gas & Geothermal Resources, and the South Coast Air Quality Management District.

Update on Activities - November 14

- SoCalGas' team of well-management experts resumed the multi-day process of pumping fluids down the well to stop the flow of gas. (http://www.socalgas.com/documents/news-room/aliso-canyon-recent-activity.pdf) The goal is to fill the well pipe with enough brine solution to outweigh the pressure of the gas coming up out of the ground. The brine solution will act like a plug. (See page three of our brochure (http://www.socalgas.com/documents/news-room/aliso-canyon-recent-activity.pdf) for more information on this process.) Once the flow of natural gas is stopped, we will begin the effort to place a permanent seal at the bottom of the well pipe.
- We have some of the world's best experts advising us, and one of the reasons they are so successful is
 they are very cautious in their approach. The way we are addressing this incident is the best practice for
 situations such as this.
- As a result of this procedure which may take a few days, there is a potential for residents in the community
 to hear unusual noises and smell additional odors. In addition, some of the fluid being pumped down the
 well may come back up and spray into the air.
- On Friday, some of the brine solution did come back up, and it created a mist in the air over the facility. Out
 of an abundance of caution, we assumed the mist could contain oily residues (The storage field is a
 depleted oil field.) and could travel beyond the facility. As a result, we immediately alerted the residents in
 nearby communities to stay indoors. As soon as we recognized the mist would not travel beyond the facility,
 we advised residents there was no reason to stay indoors.
- We sent samples of the liquid that generated the mist to an outside laboratory for analysis. The laboratory analysis determined that the liquid is non hazardous.
- During these operations, we were monitoring and sampling the air both at the work site and down in the community. This information will be available as normal on our web site.

https://spreview.socalgas.com/newsroom/aliso-canyon-updates-11-15-15

- As this work continues, SoCalGas will continue to monitor the well pressures 24/7 to ensure conditions remain safe.
- To update state and local officials and elected representatives on the progress and conditions at the site, SoCalGas participated in the regular, daily briefing with representatives of the local health, fire and hazmat agencies. We also informed community representatives about the issues related to the mist.
- A team of our environmental specialists and retained experts continued conducting daily air sampling and
 monitoring at several representative sites both within the leak site and the community. Although experts
 agree that natural gas is not toxic and that the levels of the odorant in the natural gas are too low to be a
 long-term health concern, we are continuing to conduct this sampling to provide the community with more
 information. The samples we are taking are in addition to those being taken by the SCAQMD. Air sampling
 results (/newsroom/aliso-canyon-updates/air-sample-results) from our tests are available at:
 http://www.socalgas.com/news-room/aliso-canyon-air-sample-results (/newsroom/aliso-canyon-updates/air-sample-results)
- We also continued meeting with neighbors at our public information booth, which we staff as weather permits. In the event of inclement weather, please remember, neighbors can check updates on this website, email us at AlisoCanyon@SoCalGas.com (mailto:AlisoCanyon@SoCalGas.com) or call us at (818) 435-7707. The booth is located near the gates of our facility at 12801 Tampa Avenue in Porter Ranch, and its hours (weather permitting) are from 10 a.m. to 5 p.m. Today we will have an additional public information booth at Holly Bernson Park at Sesnon Blvd. and Porter Ranch Drive, and its hours are from 10:00 a.m. to 1:00 p.m.

We apologize for how this incident may be affecting you, and we appreciate the community's ongoing patience as we work as quickly as safety as possible to resolve this situation. If you believe you have suffered harm or injury as a result of this incident, please complete this online form (/about-us/claims) or call 213-244-5151.

Submit a Claim

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Message

From: Koskie, W. Jeff [WKoskie@semprautilities.com]

Sent: 11/17/2015 3:43:52 PM

To: Solis, Maria [Maria.Solis@cpuc.ca.gov]; Epuna, Matthewson [matthewson.epuna@cpuc.ca.gov]

CC: Gonzalez, Hector O [HGonzalez2@semprautilities.com]; Smith, Paul [PSmith1@semprautilities.com]; Bauer, Troy A.

[TBauer@semprautilities.com]

Subject: RE: Underground Storage facilities - CPUC Data Request Response - Aliso Canyon Storage Facility
Attachments: Attachment A- Mud Mixture - 11-13-15.pdf; Attachment B - Vacuum Truck Contents 11-13-15.pdf

Maria.

Attached are requested documents.

Please let me know if you have any questions, or if I can be of any further assistance.

Jeff

From: Solis, Maria [mailto:Maria.Solis@cpuc.ca.gov]

Sent: Monday, November 16, 2015 1:33 PM **To:** Koskie, W. Jeff; Epuna, Matthewson

Cc: Gonzalez, Hector O; Smith, Paul; Bauer, Troy A.

Subject: RE: Underground Storage facilities - CPUC Data Request Response - Aliso Canyon Storage Facility

Jeff, based on the statement highlighted below from your timeline, can you forward the test results and the conclusions of the test results, thank you, Maria

November 14 – Evaluating the well conditions, preparing the site and determining the best strategy for our continued efforts to stop the flow of gas. Representatives from the L.A. County Health & Hazmat have inspected the site today and yesterday and observed our containment procedures. Collected samples of the mud and liquid from yesterday's release and having it analyzed and expect results tonight. At 1:05 pm OES and NRC were notified of release containment and minor additional release of crude oil at 4:30 am.

Have a Blessed Day and be SAFE, Sincerely, Maria

Maria C. Solis, P.E.

Senior Utilities Engineer (Specialist)

California Public Utilities Commission

Safety and Enforcement Division

Gas Engineering and Compliance Section

180 Promenade Circle, Suite 115

Below are responses to final group of initial data request items.

Please let me know if you have any questions, or if I can be of any further assistance.

Jeff

1. Time line that describes all the events to date, including initial response, recovery and mitigation.

Timeline is attached.

2. Were any customers affected by this incident as far as delivery of gas? If so, how were they effected and how was the impact mitigated?

Delivery of gas to customers has not been impacted.

3. Estimate of product released to date, both to the atmosphere and underground.

No estimate at this time. While we are prioritizing the prompt resolution of the leak, we are in the process of determining appropriate estimation methodologies. We continue to gather and preserve

operational, well, air and subsurface data that may be used to evaluate the magnitude and character of the release.
4. Were any shallow groundwater aquifers or aquitards affected by the incident? If so were the local drinking water supply utilities notified? If so when and who was notified?
No indication at this point that any shallow groundwater aquifers or aquitards have been affected by the incident. We will be able to further assess well after control to determine if there is any potential impact.
5. What is the initial proposed future mitigation to this type of incident.
Our first priority is to stop the flow of gas using standard practices that ensure continued safety, offer the greatest likelihood of a prompt resolution and are appropriately tailored to the individual circumstances of this leak. Once we have the current incident under control, SoCalGas will evaluate whether anything can be done to mitigate the possibility of such incidents in the future. This evaluation will likely be part of our root cause analysis of the current incident.
ratare. The sychological will interface but took occurs alleryons of the carroin moracin.
6. Estimated time to correct the issue.
Well kill efforts to stop the flow of gas continue today. No specific timeline for completion has been determined.
7. Already answered and submitted
9. Any injuries or notential horm to applement as the nublic
8. Any injuries or potential harm to employees or the public. None specifically connected to incident. However, one employee had a finger injuried when door

slammed shut in office at Aliso, away from and unrelated to well site.

9. Already answered and submitted
10. Already answered and submitted
11. Notification to date if any to local residents concerning the incident. Please refer to attached timeline which includes resident notification information.
12. Already answered and submitted
13. Estimate of the cost to mitigate the incident. To be determined
14 Any initial failure investigation findings to date

We know the well has a casing leak. Until the leak is stopped and the well is inspected, we cannot determine the extent or the cause of the failure. Root cause investigation will commence at that time.

15. Documentation of any safety meetings or safety tailgate meetings that have occurred to date.

Our contracted well control experts have a safety coordinator on site. All persons entering the site are required to attend a tailgate safety meeting every day. Every morning, before any activities, SoCalGas safety professionals provide safety updates to crews. We will provide a supplemental update on specifics tomorrow.

W. Jeff Koskie, ARM

Pipeline Safety and Compliance Manager
ML SC9334

Office Phone (661) 775-8770 Fax: (213) 244-8155 <mailto:wkoskie@semprautilities.com>

From: Solis, Maria

Sent: Friday, November 13, 2015 4:41 PM

To: 'Bauer, Troy A.'; Smith, Paul; 'GLaFevers@semprautilities.com'

Cc: Epuna, Matthewson; Jeff Koskie

Subject: RE: Underground Storage facilities

Hello Paul, Troy, and Glenn, I've been asked by the LA CPUC office to assist with the CPUC's investigation of the incident reported below. The following is a list of my initial data requests. Thank you in advance for your prompt reply. I'm requesting a 48 hour return on this initial data request. I'm assuming based on your emergency management plan that all of these items have already been prepared. If any of the items are in draft form at this juncture in your investigation please forward them under the confidentiality order asap. If you can't respond to all the data requests within 48 hours of this email please let me know when the data request will be available.

- 1. Time line that describes all the events to date, including initial response, recovery and mitigation.
- 2. Were any customers affected by this incident as far as delivery of gas? If so, how were they effected and how was the impact mitigated?
- 3. Estimate of product released to date, both to the atmosphere and underground.

- 4. Were any shallow groundwater aquifers or aquitards affected by the incident? If so were the local drinking water supply utilities notified? If so when and who was notified?
- 5. What is the initial proposed future mitigation to this type of incident.
- Estimated time to correct the issue.
- 7. Emergency response team that was put in place as a result of the incident.
- 8. Any injuries or potential harm to employees or the public.
- 9. Sections of your storage facility emergency plan/procedures/standards that were initiated to respond to the incident.
- 10. A recent published copy of the Aliso Canyon emergency response plan and any other additional emergency response plans/procedures/standards that specifically call out gas storage wells.
- 11. Notification to date if any to local residents concerning the incident.
- 12. Notification to date if any to local first responders.
- 13. Estimate of the cost to mitigate the incident.
- 14. Any initial failure investigation findings to date.
- 15. Documentation of any safety meetings or safety tailgate meetings that have occurred to date.

Have a Blessed Day and be SAFE, Sincerely, Maria

Maria C. Solis, P.E.
Senior Utilities Engineer (Specialist)
California Public Utilities Commission
Safety and Enforcement Division
Gas Engineering and Compliance Section
180 Promenade Circle, Suite 115
Sacramento, CA 95834

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Calscience



WORK ORDER NUMBER: 15-11-1098

The difference

AIR SOIL WATER MARINE CHEMISTRY

Analytical Report For

Client: Southern California Gas Company

Client Project Name: TS2015-C013 / Aliso Canyon
Attention: Sharid Razzak
M.b. 723B

P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249

amande Porter

Approved for release on 11/16/2015 by: Amanda Porter Project Manager

ResultLink)

Email your PM)



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Work Order Narrative

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/14/15. They were assigned to Work Order 15-11-1098.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

十



Los Angeles, CA 90051-1249

Analytical Report

Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Date Received: Work Order: Preparation: Method:

Units:

11/14/15 15-11-1098 EPA 3550B

mg/kg

EPA 8015B (M)

Project: TS2015-C013 / Aliso Canyon

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well Fluid	15-11-1098-2-A	11/13/15 18:40	Sludge	GC 47	11/14/15	11/14/15 13:10	151114B02
Parameter Parame	0	Result	RL		DF	Qua	alifiers
C6	an one	ND	5.0		1.00		
C7	C 9 90	ND	5.0		1.00		
C8	ma con Ma	ND	5.0		1.00		
C9-C10	10 10 10	ND	5.0		1.00		
C11-C12	So 50 80	ND	5.0		1.00		
C13-C14	Compliance Audit of the	ND	5.0		1.00		
C15-C16	10/4 1/4	CMD C	5.0		1.00		
S17-C18		ND	5.0		1.00		
C19-C20		NO.	5.0		1.00		
C21-C22		164 66	5.0		1_00		
023-024		ND W	A		1.00		
C25-C28		ND	5.0 5.0 5.0 5.0		1.00		
29-032		ND	C 95.0		1.00		
C33-C36		ND	5.0	Ow.	1.00		
C37-C40		ND	8:0	Q.	1.00		
C41-C44		ND	8.0 5.0	no no	1.00		
C6-C44 Total		ND	5.0	J. A.	1.00		
Surrogate		Rec. (%)	Col	ntrol Limits	Qualifiers		
n-Octacosane		107	61-	145	60.0		

RL: Reporting Limit.



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order: Preparation:

Method: Units:

11/14/15 15-11-1098

EPA 3550B

EPA 8015B (M)

mg/kg

Project: TS2015-C013 / Aliso Canyon

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Junction SS25&9	15-11-1098-3-A	11/13/15 18:50	Sludge	GC 47	11/14/15	11/14/15 13:28	151114B02
Parameter	0	Result	RL		DF	Qua	lifiers
C6	an ope	ND	10		2,00		
C7	0 9 9	ND	10		2.00		
C8	ma on Ma	12	10		2,00		
C9-C10	10 10 10	75	10		2.00		
C11-C12	Compliance Assub	130	10		2.00		
C13-C14	Cornolistice Audir of the	120	10	V.	2.00		
C15-C16	10/10	68	10		2.00		
G17-G18		Q ATTO	10		2.00		
C19-C20					2.00		
C21-C22		28 0	10 10 10 10 10 10 10 10 10 10 10 10 10 1		2.00		
C23-C24		18	0 10		2.00		
C25-C28		22	Oc 40 10		2.00		
C29-C32		37	C 900		2.00		
C33-C36		35	00 10	Ow	2.00		
C37-C40		32	76 10	Q.	2.00		
C41-C44		22	10	mana .	2.00		
C6-C44 Total		750	5.0	The Peral	1.00		
Surrogate		Rec. (%)	Co	ntrol Limits	Qualifiers		
n-Octacosane		109	61-	145	60,0		

RL: Reporting Limit.



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

11/14/15 Work Order: 15-11-1098

Preparation: **EPA 3550B**

Method: EPA 8015B (M)

Units: mg/kg Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-490-1869	N/A	Solid	GC 47	11/14/15	11/14/15 12:53	151114B02
Parameter	0	Result	RI		DF	Qua	lifiers
C6	an ope	ND	5.)	1.00		
C7	C 9 90	ND	5.)	1.00		
C8	ma en Ma	ND	5.0)	1.00		
C9-C10	Cond Section Session	ND	5,	2	1.00		
C11-C12	Go So 62	ND	5.0		1.00		
C13-C14	4 8 3	ND ND	5.0)	1.00		
C15-C16	TON TO	CIND	5.)	1.00		
G17-G18	1	ND	5.)	1.00		
C19-C20		NO C	5.0)	1.00		
C21-C22		NDC 2	5.)	1.00		
023-024		ND W	0, 5.)	1.00		
C25-C28		ND 6	5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5)	1.00		
C29-C32		ND	C 95)	1.00		
C33-C36		ND	90 5	O _v	1.00		
C37-C40		ND	8	Shane	1.00		
C41-C44		ND	5.	100 To	1.00		
C6-C44 Total		ND	5.	اله م	1.00		
Surrogate		Rec. (%)	Co	ontrol Limits	Qualifiers		
n-Octacosane		103	61	-145	60		

RL: Reporting Limit.



Southern California Gas Company

M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order: Preparation:

Method: Units:

11/14/15 15-11-1098

EPA 3510C

EPA 8015B (M) ug/L

Project: TS2015-C013 / Aliso Canyon

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Equipment Blank	15-11-1098-1-C	11/13/15 18:25	Aqueous	GC 47	11/14/15	11/14/15 13:45	151114B01
Parameter	0	Result	RL		DF	Qua	alifiers
C6	an one	ND	50		1.00		
C7	C 9 9	ND	50		1.00		
C8	ma en Ma	ND	50		1.00		
C9-C10	10 10 10	ND	50		1.00		
C11-C12	Co 50 %	ND	50		1.00		
C13-C14	Comoliance Audin of the	ND.	50		1.00		
C15-C16	10/2 of 10	CIND	50		1.00		
G17-G18		O NID	50		1.00		
C19-C20		ND -	50		1.00		
C21-C22		NDC S	S 50		1.00		
C23-C24		ND W	O. 50		1.00		
C25-C28		ND	CO 50		1.00		
C29-C32		ND	C 950		1.00		
C33-C36		ND	0 50	Ow	1.00		
C37-C40		ND	80	Q.	1.00		
C41-C44		ND	50	mana	1.00		
C6-C44 Total		ND	100	16 8	1.00		
Surrogate		Rec. (%)	Co	ntrol Limits	Qualifiers		
n-Octacosane		90	68-	140	66.0		

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company

M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order:

Preparation:

Method: Units:

15-11-1098 **EPA 3510C**

11/14/15

EPA 8015B (M)

ug/L

Project: TS2015-C013 / Aliso Canyon

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-498-310	N/A	Aqueous	GC 47	11/14/15	11/14/15 12:35	151114801
<u>Parameter</u>	0	Result	RL		DF	Qua	alifiers
C6	Cond Section Ses Up of the	ND	50		1.00		
C7	C 9 90	ND	50		1.00		
C8	ma Bartha	ND	50		1.00		
C9-C10	10 00 10	ND	50		1.00		
C11-C12	Co 50 6	ND	50		1.00		
C13-C14	A 3 3	ND ND	50		1.00		
C15-C16	Cond Standard Standar	ND ND	50		1.00		
G17-G18		O ND	50		1.00		
C19-C20		NO C	50		1.00		
C21-C22		winter of	50		1_00		
C23-C24		ND W	50 50 50 50 50 50 50		1.00		
C25-C28		ND	Oc 4/0 50		1.00		
C29-C32		ND	50 50 50 50 50		1.00		
C33-C36		ND	% 50°	Ow.	1.00		
C37-C40		ND			1.00		
C41-C44		ND	50	no nor	1.00		
C6-C44 Total		ND	100	16.	1.00		
Surrogate		Rec. (%)	Cor	ntrol Limits	Qualifiers		
n-Octacosane		95	68-	140	60.0		

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company	Date Received:	11/14/15
M.L. 723B, P.O. Box 513249, Terminal Annex	Work Order:	15-11-1098
Los Angeles, CA 90051-1249	Preparation:	EPA 3050B
	Method:	EPA 6010B
	I Inits	ma/ka

Project: TS2015-C013 / Aliso Canyon

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well Fluid	15-11-1098-2-A	11/13/15 18:40	Sludge	ICP 7300	11/14/15	11/14/15 14:03	151114L01
Parameter Parame	0	Result	R	L	DF	Qua	lifiers
Antimony	an one	ND	0.	732	0.976		
Arsenic	C 9 90	ND	.0	732	0.976		
Barium	ma carris	67.1	0	488	0.976		
Beryllium	Marion 10	ND	0	244	0.976		
Cadmium	90 50 B	ND	0	488	0.976		
Chromium	Conto Section Sea of the	ND	0	244	0.976		
Cobalt	die die	CIND	0	244	0.976		
Copper		0.569	o	488	0.976		
Lead		NO On	0	488	0.976		
Molybdenum		NDC /	0 0	244	0.976		
Vickel		NO TH	0,0	244	0.976		
Selenium		ND	Oc 400.0	732	0,976		
Silver		0.671	0,00	244	0.976		
Thallium		0.945	CONSIDER	732	0.976		
Vanadium		ND	8	244 Q	0.976		
Zinc		13.9	0	978 100	0,976		
Well Fluid	15-11-1098-2-А	11/13/15 18:40	Sludge	ICP 7300	11/14/15	11/14/15 14:19	151114L01
Parameter		Result	R	L	DF 9.76	Qua	ulifiers
Calcium		103000	4	3.8	9.76		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company	Date Received:	11/14/15
M.L. 723B, P.O. Box 513249, Terminal Annex	Work Order:	15-11-1098
Los Angeles, CA 90051-1249	Preparation:	EPA 3050B
	Method:	EPA 6010B
	Units:	mg/kg

Project: TS2015-C013 / Aliso Canyon

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Junction SS25&9	15-11-1098-3-A	11/13/15 18:50	Sludge	ICP 7300	11/14/15	11/14/15 14:10	151114L01
Parameter Parame	0	Result	R	L	DF	Qua	alifiers
Antimony	82 Ope	ND	0.	718	0.957		
Arsenic	0 9 9	1.94	.0	718	0.957		
Barium	ma sa Ma	144	0	478	0.957		
Beryllium	100000	ND	0	239	0.957		
Cadmium	Compliance Audir of the	3.04	0	478	0.957		
Chromium	4, 3	8.47	0	239	0.957		
Cobalt	10/2 1/0	239	0	239	0.957		
Copper	Condidental Subra	0 120	0	478	0.957		
Lead		0,772	. 0	478	0.957		
Molybdenum		5.67		239	0.957		
Nickel		248	Oronico O	239	0.957		
Selenium		ND	Tes Code o	718	0,957		
Silver		0.340	0 90	239	0.957		
Thallium		ND	900	239 718	0.957		
Vanadium		37.6	6	239 🔍	0.957		
Zinc		45.9	0	9870 470	0.957		
Junction SS25&9	15-11-1098-3-A	11/13/15 18:50	Sludge	ICP 7300	11/14/15	11/14/15 14:22	151114L01
Parameter		Result	R		DF 9,57	Qualifiers	
Calcium		43600	4	7.8	9.57		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



 Southern California Gas Company
 Date Received:
 11/14/15

 M.L. 723B, P.O. Box 513249, Terminal Annex
 Work Order:
 15-11-1098

 Los Angeles, CA 90051-1249
 Preparation:
 EPA 3050B

 Method:
 EPA 6010B

 Units:
 mg/kg

Project: TS2015-C013 / Aliso Canyon Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-002-22051	N/A	Solid	ICP 7300	11/14/15	11/14/15 13:58	151114L01
Parameter	0	Result	E	₹ <u>L</u>	DF	Qua	lifiers
Antimony	an one	ND	C	0.750	1.00		
Arsenic	C 4 90	ND	. (0.750	1.00		
Barium	ma en Ma	ND	C	0.500	1.00		
Beryllium	Salor Collection	ND	C	.250	1.00		
Cadmium	Go So 40	ND	0	0.500	1.00		
Chromium	Contained Subrail	ND		0.250	1.00		
Cobalt	10 May 1/2	CMD	0).250	1.00		
Copper	6	ND	(0.500	1.00		
ead		ND O		0.500	1.00		
Molybdenum		NDC /	0 0	0.250	1.00		
Nickel		ND W	e oto vision	0.250	1.00		
Selenium		ND C	Oc 4000	0.750	1.00		
Silver		ND	0,9	250	1.00		
Thallium		ND	900	750	1.00		
/anadium		ND	6	250 0	1.00		
Zina		ND	1	250 G	1.00		
Calcium		ND	5	5.00	1.00		
					1.00 1.00		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order: Preparation:

Method: Units:

15-11-1098 EPA 3010A Total

EPA 6010B mg/L

11/14/15

Project: TS2015-C013 / Aliso Canyon

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Equipment Blank	15-11-1098-1-A	11/13/15 18:25	Aqueous	ICP 7300	11/14/15	11/14/15 15:30	151114LA1
<u>Parameter</u>	0	Result	RL		DF	Qua	lifiers
Antimony	Completion Seson	ND	0.0	150	1.00		
Arsenic	C 9 90	ND	0.0	100	1.00		
Barium	ma Bouth	ND	0.0	100	1.00		
Beryllium	10 10 10	ND	0.0	100	1.00		
Cadmium	Compliance Audie of	ND	0.0	100	1.00		
Chromium	A 3 3	ND	0.0	0100	1.00		
Cobalt	10/10	CIND	0.0	100	1.00		
Copper	Compliance Audir of the	OND	0.0	100	1.00		
Lead		ND -	0.0	100	1.00		
Molybdenum			0.0	0100	1.00		
Nickel		Ve.	^	100	1.00		
Selenium		ND	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0150	1.00		
Silver		ND	C 90	00500	1.00		
Thallium		ND	0000	r50	1.00		
Vanadium		ND	40.4	01.00 + 7	1.00		
Calcium		0.559	0.1	00 CO	1.00		
Zinc		ND	0.0	100 3/	1.00		
					1.00 1.00		
					000		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company

Project: TS2015-C013 / Aliso Canyon

M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order: Preparation:

Method:

Units:

11/14/15

15-11-1098 EPA 3010A Total

EPA 6010B

mg/L

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-003-15490	N/A	Aqueous	ICP 7300	11/14/15	11/14/15 15:26	151114LA1
Parameter	0	Result	RL		DF	Qua	alifiers
Antimony	an one	ND	0.0	150	1.00		
Arsenic	0,000	ND	0.0	100	1.00		
Barium	man on the	ND	0.0	100	1.00		
Beryllium	10 10 10	ND	0.0	100	1.00		
Cadmium	Cond Section Ses don	ND	0.0	100	1.00		
Chromium	A 3 3	ND ND	0.0	1100	1.00		
Cobalt	10 M	CAND.	0.0	100	1.00		
Copper	1	MR	0.0	100	1.00		
Lead		ND C	0.0	100	1.00		
Molybdenum		NDO 9	0.0	100	1.00		
Nickel		116.	A	100	1.00		
Selenium		ND	0.0 CO 080 CO 080	150	1.00		
Silver		ND	C 900	0500	1.00		
Thallium		ND	0000	r50	1.00		
Vanadium		ND	80	100	1.00		
Calcium		ND	7	2 8	1.00		
Zinc		ND	0.0	100 9/	1.00		
					TOO SO		
					50		

RL: Reporting Limit.



Southern California Gas C	company		Date Recei	ved:			11/14/15	
M.L. 723B, P.O. Box 5132	249, Terminal Annex		Work Order		15-11-1098 EPA 7470A Total			
Los Angeles, CA 90051-1	249		Preparation					
			Method:			EPA 7470A		
			Units:				mg/L	
Project: TS2015-C013 / A	liso Canyon					Pa	ige 1 of 1	
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID	
Equipment Blank	15-11-1098-1-A	11/13/15 18:25	Aqueous	Mercury 04	11/14/15	11/14/15 13:57	151113LA3	
Parameter	0	Result	RL		<u>DF</u>	Qua	alifiers	
Mercury	an one	ND	0.0	000500	1.00			

RL. Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Co	mpany		Date Rece	eived:			11/14/15	
M.L. 723B, P.O. Box 51324	9, Terminal Annex		Work Orde	er:			15-11-1098	
Los Angeles, CA 90051-124	49		Preparatio	EPA 7471A Total				
		Method:				EPA 7471A		
		Units:			mg/kg			
Project: TS2015-C013 / Alis	so Canyon	- 10				Pa	ige 1 of 1	
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID	
Well Fluid	15-11-1098-2-A	11/13/15 18:40	Sludge	Mercury 05	11/14/15	11/14/15 15:12	151113L02	
Parameter	C.	Result	R	<u>L</u>	DF	Qua	alifiers	
Mercury	O no nile	ND	0	.0833	1.00			
Junction SS2589	16-11-1698-3-A	11/13/15 18:50	Sludge	Mercury 05	11/14/15	11/14/15 15:14	151113L02	
Parameter	970 75 44	Result	R	<u>L</u>	DF	Qua	alifiers	
Mercury	A403 77	ND	0	.0794	1.00			
Method Blank	099-16-272-1760	NIA	Solid	Mercury 05	11/13/15	11/13/15 19:55	151113L02	
Parameter		Result	B	L.	DF	Qua	alifiers	
Mercury		ND CHILL	e Oronson	0833	1,00			
				Mercury 05	Proj. Proj.			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Co	mpany		Date Rece	eived:		11/14/15		
M.L. 723B, P.O. Box 51324	9, Terminal Annex		Work Orde	15-11-109				
Los Angeles, CA 90051-12		Preparatio	n:			EPA 5030C		
		Method:			EPA 826			
		Units:			ug/kg			
Project: TS2015-C013 / Alis	so Canyon					Pa	ge 1 of 7	
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID	
Well Fluid	15-11-1098-2-B	11/13/15 18:40	Sludge	GC/MS W	11/14/15	11/14/15 15:06	151114L007	

Well Filling	10-11-1000-2-2	18:40	oldage collina	11114219	15:06	1011142001
Comment(s): - The reporting lim	it is elevated resulting from r	natrix interfere	nce.			
Parameter	de out	Result	RL	DF	Qu	alifiers
Acetone	C 9 9	ND	12000	50.0		
Benzene	m. 80, 1/2.	ND	490	50.0		
Bromobenzene	10 00 TO	ND	490	50.0		
Bromochloromethane	Co 50.00	ND	490	50.0		
Bromodichloromethane	90000	ND	490	50.0		
Bromoform	10 10	CND	490	50.0		
Bromomethane		CND	2400	50.0		
2-Butanone		NO.	4900	50.0		
n-Butylbenzene		NDC .	6 490	50.0		
sec-Butylbenzene		ND W	490	50.0		
tert-Butylbenzene		ND	0 40 490	50.0		
Carbon Disulfide		ND	C 94900	50.0		
Carbon Tetrachloride		ND	% 4900m	50.0		
Chlorobenzene		ND	490 G 490	50.0		
Chloroethane		ND	4907	50,0		
Chloroform		ND	490	9/_ 50.0		
Chloromethane		ND	2400	50.0		
2-Chlorotoluene		ND	490	×50.0		
4-Chlorotoluene		ND	490	5000		
Dibromochloromethane		ND	490	50.0C		
1,2-Dibromo-3-Chloropropane		ND	970	50.0		
1,2-Dibromoethane		ND	490	50.0		
Dibromomethane		ND	490	50.0		
1,2-Dichlorobenzene		ND	490	50.0		
1,3-Dichlorobenzene		ND	490	50.0		
1,4-Dichlorobenzene		ND	490	50.0		
Dichlorodifluoromethane		ND	490	60.0		
1,1-Dichloroethane		ND	490	50.0		
1,2-Dichloroethane		ND	490	50.0		
1,1-Dichloroethene		ND	490	50.0		
c-1,2-Dichloroethene		ND	490	50.0		
t-1,2-Dichloroethene		ND	490	50.0		
1,2-Dichloropropane		ND	490	50.0		
1,3-Dichloropropane		ND	490	50.0		

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company	Da	te Received:		11/14/15
M.L. 723B, P.O. Box 513249, Terminal Annex	Wo	ork Order:		15-11-1098
Los Angeles, CA 90051-1249	Pre	eparation:		EPA 5030C
East to a seed of a seed of a seed		thod:		EPA 8260B
	Un			ug/kg
Project: TS2015-C013 / Aliso Canyon				Page 2 of 7
Parameter	Result	RL	DF	Qualifiers
2,2-Dichloropropane	ND	490	50.0	
1,1-Dichloropropene		490	50.0	
c-1,3-Dichloropropene	ND	490	50.0	
t-1,3-Dichloropropene	ND	490	50.0	
Ethylbenzene O'G'	ND	490	50.0	
2-Hexanone	ND	4900	50.0	
1,1-Dichloropropene c-1,3-Dichloropropene t-1,3-Dichloropropene Ethylbenzene 2-Hexanone Isopropylbenzene p-Isopropyltoluene Methylene Chloride 4-Methyl-2-Pentanone Naphthalene n-Propylbenzene Styrene 1,1,2-Tetrachloroethane 1,1,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane	ND	490	50.0	
p-Isopropyltoluene	ND	490	50.0	
Methylene Chloride	Dix ND	4900	50.0	
4-Methyl-2-Pentanone	CND	4900	50.0	
Naphthalene	O NOS	4900	50.0	
n-Propylbenzene	NO CO.	490	50.0	
Styrene	ND/C B	490	50.0	
1,1,1,2-Tetrachloroethane	ND CHILL	490	50.0	
1,1,2,2-Tetrachloroethane	ND 16	Ok. 490	50.0	
Tetrachloroethene	ND G	0490	50.0	
Toluene	ND	0 490	50.0	
1,2,3-Trichlorobenzene	ND	970	50.0	
1,2,4-Trichlorobenzene	ND	490	50.0	
1,1,1-Trichloroethane	ND	490 0 0	50.0	
1,1,2-Trichloroethane	ND	490 C	50.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	4900	0,50.0	
Trichloroethene	ND	490	50.6	
1,2,3-Trichloropropane	ND	490	50.0	
1,2,4-Trimethylbenzene	ND	490	50.0	
Trichlorofluoromethane	ND	4900	50.0	
1,3,5-Trimethylbenzene	ND	490	50.0	
Vinyl Acetate	ND	4900	50.0	
Vinyl Chloride	ND	490	50.0	
p/m-Xylene	ND	490	50,0	
o-Xylene	ND	490	50.0	
Methyl-t-Butyl Ether (MTBE)	ND	490	50.0	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1.4-Bromofluorobenzene	100	60-132		
Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	104	62-146		
Toluene-d8	99	80-120		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Date Received: 11/14/15 Southern California Gas Company Work Order: 15-11-1098 M.L. 723B, P.O. Box 513249, Terminal Annex Preparation: **EPA 5030C** Los Angeles, CA 90051-1249 **EPA 8260B** Method: Units: ug/kg

Project: TS2015-C013 / Aliso Canyon

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Junction SS25&9	15-11-1098-3-B	11/13/15 18:50	Sludge	GC/MS W	11/14/15	11/14/15 14:38	151114L007
Parameter	Cornoliance Audit of It	Result	R	L	DF	Qua	lifiers
Acetone	2000c	ND	13	2000	50.0		
Benzene	0 9 90	ND	49	90	50.0		
Bromobenzene	man Bartha	ND	45	90	50.0		
Bromochloromethane	100000	ND	49	90	50.0		
Bromodichloromethane	90 50 90 m	ND	45	90	50.0		
Bromoform	7,000	ND	45	90	50.0		
Bromomethane	The state of	CND	2	400	50.0		
2-Butanone		O NDO	49	900	50.0		
n-Butylbenzene		5600	49	90	50.0		
sec-Butylbenzene		1400	40 40 40 40 40 40 40 40 40 40 40 40 40 4	90	50.0		
tert-Butylbenzene		ND TH	0, 4	90	50.0		
Carbon Disulfide		ND	O. 40 4	900	50.0		
Carbon Tetrachloride		ND	C 94	90	50.0		
Chlorobenzene		ND	90 4	500 _m	50.0		
Chloroethane		ND	9	0 G	50.0		
Chloroform		ND	4		50,0		
Chloromethane		ND		400 9/	50.0		
2-Chlorotolyene		ND	49	90	50.0		
4-Chlorotoluene		ND	49	90	50.0		
Dibromochloromethane		ND	45	90	50.0		
,2-Dibromo-3-Chloropropane		ND	9	70	50.0 ^C		
1,2-Dibromoethane		ND	45	90	50.0		
Dibromomethane		ND	49	90	50.0		
.2-Dichlorobenzene		ND		90	50.0		
,3-Dichlorobenzene		ND	49	90	50.0		
,4-Dichlorobenzene		ND	49	90	50.0		
Dichlorodifluoromethane		ND	49	90	50.0		
,1-Dichloroethane		ND	49	90	50.0		
,2-Dichloroethane		ND		90	50.0		
1,1-Dichlaroethene		ND	45	90	50.0		
c-1,2-Dichloroethene		ND	45	90	50.0		
-1,2-Dichloroethene		ND	49	90	50.0		
1,2-Dichloropropane		ND	45	90	50.0		
1,3-Dichloropropane		ND		90	50.0		
2,2-Dichloropropane		ND	49	90	50.0		

RL: Reporting Limit.

DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company	Da	te Received:		11/14/15	
M.L. 723B, P.O. Box 513249, Terminal Annex	W	ork Order:		15-11-1098	
Los Angeles, CA 90051-1249	Pro	eparation:		EPA 5030C	
Sandy Control of the		ethod:		EPA 8260B	
		its:		ug/kg	
Project: TS2015-C013 / Aliso Canyon	The Part of the Pa			Page 4 of 7	
Parameter Parame	Result	RL	DF	Qualifiers	
1,1-Dichloropropene	ND	490	50.0	The second second	
c-1,3-Dichloropropene t-1,3-Dichloropropene Ethylbenzene 2-Hexanone Isopropylbenzene p-Isopropyltoluene Methyl-ene Chloride 4-Methyl-2-Pentanone n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane	ND	490	50.0		
t-1,3-Dichloropropene	ND	490	50.0		
Ethylbenzene	2800	490	50.0		
2-Hexanone	ND	4900	50.0		
Isopropylbenzene	1300	490	50.0		
p-isopropyltoluene	2500	490	50.0		
Methylene Chloride	ND ND	4900	50.0		
4-Methyl-2-Pentanone	Dix ND	4900	50.0		
n-Propylbenzene	3200	490	50.0		
Styrene	O NO	490	50.0		
1,1,1,2-Tetrachloroethane	NO Co.	490	50.0		7
1,1,2,2-Tetrachloroethane	ND/C B	490	50.0		1
Tetrachloroethene	ND YELL	490	50.0		
Toluene	4200	Ok 490	50.0		
1,2,3-Trichlorobenzene	ND	0970	50.0		
1,2,4-Trichlorobenzene	ND	0 490	50.0		
1,1,1-Trichloroethane	ND	Ø\$0 C	50.0		
1,1,2-Trichloroethane	ND	490	50.0		
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	490 490	50.0		
Trichloroethene	ND	490	50.0		
1,2,3-Trichloropropane	ND	490	50.0		
Trichlorofluoromethane	ND	4900	50.0		
1,3,5-Trimethylbenzene	12000	490	50.0		
Vinyl Acetate	ND	4900	50.0		
Vinyl Chloride	ND	490	50.0		
p/m-Xylene	22000	490	50.0		
o-Xylene	6900	490	50.0		
Methyl-t-Butyl Ether (MTBE)	ND	490	50.0		
Surrogate	Rec. (%)	Control Limits	Qualifiers		
1,4-Bromofluorobenzene	108	60-132			
Dibromofluoromethane	94	63-141			
1,2-Dichloroethane-d4	100	62-146			
Toluene-d8	106	80-120			

RL. Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Project: TS2015-C013 / Aliso Canyon

Analytical Report

Date Received: 11/14/15 Southern California Gas Company Work Order: 15-11-1098 M.L. 723B, P.O. Box 513249, Terminal Annex Preparation: **EPA 5030C** Los Angeles, CA 90051-1249 Method: **EPA 8260B** ug/kg

Units:

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Junction SS25&9	15-11-1098-3-B	11/13/15 18:50	Sludge	GC/MS W	11/14/15	11/14/15 16:28	151114L007
<u>Parameter</u>	0	Result	R	L	DF	Qua	alifiers
Naphthalene	an one	28000	2	4000	250		
1,2,4-Trimethylbenzene	Compliance Audit of the	26000	2	400	250		
Surrogate	Pla cholako	Rec. (%)	<u>C</u>	ontrol Limits	Qualifiers		
1,4-Bromofluorobenzene	So 50 80	98	6	0-132			
Dibromofluoromethane	N. 33 3	97	6	3-141			
1,2-Dichloroethane-d4	10/2 1/0	C001	6	2-146			
Toluene-d8		@ 10th	8	0-120			
		43/200					
		Cal	0				
		4/1	0				
			5000				
			000	So.			
			0	G.			
				no Per			
				9/)		
					000		
					50		
					C		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Date Received: 11/14/15 Southern California Gas Company Work Order: 15-11-1098 M.L. 723B, P.O. Box 513249, Terminal Annex Preparation: **EPA 5030C** Los Angeles, CA 90051-1249 **EPA 8260B** Method: Units: ug/kg

Project: TS2015-C013 / Aliso Canyon

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-10429	N/A	Solid	GC/MS W	11/14/15	11/14/15 13:42	151114L007
<u>Parameter</u>	Contoliance Audit of the	Result	1	<u> </u>	DF	Qua	lifiers
Acetone	an one	ND		2000	50.0		
Benzene	0 9 9	ND		500	50.0		
Bromobenzene	ma so Ma	ND		500	50.0		
Bromochloromethane	10 10 10	ND		500	50.0		
Bromodichloromethane	So 50 %	ND		500	50.0		
Bromoform	4 3 3	ND ND		500	50.0		
Bromomethane	10/2 M	CMD		2500	50.0		
2-Butanone	16	NDO		5000	50.0		
n-Butylbenzene		ND C		500	50.0		
sec-Butylbenzene		NDC 9	0	500	50.0		
ert-Butylbenzene		ND W	0,	500	50.0		
Carbon Disulfide		ND 3	6 40 S	5000	50.0		
Carbon Tetrachloride		ND	00	500	50.0		
Chlorobenzene		ND	00	500	50.0		
Chlorcethane		ND	9	60 G	50.0		
Chloroform		ND		5007	50,0		
Chloromethane		ND		2500	50.0		
2-Chlorotoluene		ND		500	50.0		
4-Chlorotoluene		ND		500	50.0		
Dibromochloromethane		ND		500	5000		
,2-Dibromo-3-Chloropropane		ND		1000	50.0		
1,2-Dibromoethane		ND	1	500	50.0		
Dibromomethane		ND	4	500	50.0		
.2-Dichlorobenzene		ND		500	50.0		
1,3-Dichlorobenzene		ND	1	500	50.0		
1,4-Dichlorobenzene		ND	3	500	50.0		
Dichlorodifluoromethane		ND		500	50.0		
1,1-Dichloroethane		ND		500	50.0		
1,2-Dichloroethane		ND		500	50.0		
I,1-Dichlaroethene		ND		500	50.0		
c-1,2-Dichloroethene		ND		500	50.0		
-1,2-Dichloroethene		ND		500	50.0		
1,2-Dichloropropane		ND		500	50.0		
1,3-Dichloropropane		ND		500	50.0		
2,2-Dichloropropane		ND		500	50.0		

RL: Reporting Limit.

DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company	Dat	te Received:		11/14/15	
M.L. 723B, P.O. Box 513249, Terminal Annex	Wo	rk Order:		15-11-1098	
Los Angeles, CA 90051-1249	Pre	eparation:		EPA 5030C	
Los Aligolos, OA 0000 I 1240		thod:		EPA 8260B	
	Uni			ug/kg	
Project: TS2015-C013 / Aliso Canyon	Oil		Page 7 of 7		
Parameter	Result	RL	DF	Qualifiers	
1,1-Dichloropropene	ND	500	50.0	deadmicro	
		434	50.0		
-1.3-Dichloropropene	ND	500	50.0		
Ethylbenzene	ND	500	50.0		
2-Hexanone	ND	5000	50.0		
sopropylbenzene	ND	500	50.0		
o-Isopropyltoluene	ND	500	50.0		
Methylerie Chloride	ND	5000	50.0		
-Methyl-2-Pentanone	Sa ND	5000	50.0		
-1,3-Dichloropropene -1,3-Dichloropropene -1,3-Dichloropropene	CND	5000	50.0		
-Propylbenzene	NO NO	500	50.0		
tyrene	ND %	500	50.0		
1,1,2-Tetrachloroethane	NOV.	500	50.0		
1.2.2-Tetrachioroethane	ND C	500	50.0		
etrachloroethene	ND The	0/ 500	50.0		
oluene	ND %	3/0500	50.0		
,2,3-Trichlorobenzene	ND	500 500 500 1000 500 500	50.0		
,2,4-Trichlorobenzene	ND	500	50.0		
1,1-Trichloroethane	ND	500	50.0		
.1,2-Trichloroethane	ND	500 0 0	50.0		
1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	50.0		
richloroethene	ND	500	50.0		
2,3-Trichloropropane	ND	500	50.0		
	ND	500	50.0		
,2,4-Trimethylbenzene richlerofluoromethane			50.0		
	ND ND	5000 500	50.0		
,3,5-Trimethylberizene			50.0		
finyl Acetate	ND	5000			
inyl Chloride	ND	500	50.0		
/m-Xylene	ND	500	50.0		
-Xylene	ND	500	50.0		
fethyl-t-Butyl Ether (MTBE)	ND	500	50.0		
urrogate	Rec. (%)	Control Limits	Qualifiers		
,4-Bromofluorobenzene	98	60-132			
Dibromofluoromethane	97	63-141			
,2-Dichloroethane-d4	103	62-146			
Toluene-d8	99	80-120			

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL: (714) 895-5494 • FAX: (714) 894-7501

RL. Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Southern California Gas Company

Date Received:

11/14/15

M.L. 723B, P.O. Box 513249, Terminal Annex

Work Order:

15-11-1098

Los Angeles, CA 90051-1249

Client Sample Number			Lab S	Sample Number		Date/Tir	ne Collected	Matrix
Equipment Blank			15-11	-1098-1		11/13/1	18:25	Aqueous
Parameter	Results	RL	DF	Qualifiers	Units	<u>Date</u> Prepared	<u>Date</u> Analyzed	Method
Chloride	ND	2.0	1.00		mg/L	N/A	11/14/15	SM 4500-CI C
Well Fluid			15-11-1098-2			11/13/1	5 18:40	Sludge
Parameter	Results	RL	DF	Qualifiers	Units	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	Method
Ignitability	242	670	1.00		oF.	N/A	11/14/15	EPA 1010A(M)
Sulfide, Total	9242 ND ND	0.50	1.00		mg/kg	11/14/15	11/14/15	EPA 376.2M
Cyanide, Total	ND O	0.50 3	1.00		mg/kg	11/14/15	11/14/15	EPA 9010C/9014
pH	6.49	60.00	04.00		pH units	11/14/15	11/14/15	EPA 9045D
Chloride	15000	2000	200		mg/kg	11/14/15	11/14/15	SM 4500-CI C
Junction SS25&9			15-11	1098-3		11/13/1	5 18:50	Sludge
Parameter	Results	RL	-	a significant	Units	<u>Date</u> Prepared	Date Analyzed	Method
Ignitability	>212	70	1,00	Chin On	°F	N/A	11/14/15	EPA 1010A(M)
Sulfide, Total	ND	0.50	1.00	Man V	mg/kg	11/14/15	11/14/15	EPA 376.2M
Cyanide, Total	ND	0.50	1.00	C	mg/kg	11/14/15	11/14/15	EPA 9010C/9014
pH	7,30	0.01	1.00	0	pH units	11/14/15	11/14/15	EPA 9045D
Chloride	28000	500	50.0	Collines Co	mg/kg	11/14/15	11/14/15	SM 4500-CI C
Method Blank					30	N/A		Solid
Parameter	Results	RL	<u>DF</u>	Qualifiers	<u>Units</u>	Date Prepared	<u>Date</u> <u>Analyzed</u>	Method
Sulfide, Total	ND	0.10	0.200		mg/kg	11/14/15	511/14/15	EPA 376.2M
Cyanide, Total	ND	0.050	0.100		mg/kg	11/14/15	91/4/15	EPA 9010C/9014
		2.2	4 00			4116	44.14.414.	014 4505 010
Chloride	ND	2.0	1,00		mg/L	N/A	11/14/15	SM 4500-CI C

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249 Date Received: Work Order: Preparation: Method: 11/14/15 15-11-1098

N/A EPA 9010C/9014

Project: TS2015-C013 / Aliso Canyon

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Quality Control Sample ID	Туре	Matrix	Instr	ument	Date Prepared	Date Ana	lyzed	MS/MSD Bat	ch Numbe
Junction SS25&9	Sample	Sludge	UV 8	1	11/14/15	11/14/15	12:09	F1114CNS1	
Junction SS2589	Matrix Spike	Sludge	UV 8		11/14/15	11/14/15	12:09	F1114CNS1	
Junction SS25&9	Matrix Spike Duplicate	Sludge	UV 8		11/14/15	11/14/15	12:09	F1114CNS1	
Parameter	Sample Spike Conc. Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPDCL	Qualifiers
Cyanide, Total	Sample Spike Conc. Added ND 0.2000	0.1770	88	0.1720	86	70-130	3	0-25	
	Addis Or W	The Duble	· B						
		"C	Ellies Ou	i v					
			Coc	ons or	2				
				"No	Teral O.				
					100	50			
						C			



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

Date Received: Work Order: 11/14/15 15-11-1098 EPA 3550B

Preparation: Method:

EPA 8015B (M)

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Quality Control Sample ID Well Fluid	Type Sample	Matrix Sludge	Inst	rument	Date Prepare		CONTRACTOR OF THE PARTY OF THE	MS/MSD Bat 151114502	ch Number
Well Fluid	Matrix Spike	Sludge	GC		11/14/15			151114502	
								151114502	
<u>Parameter</u> TPH as Diesel	Sample Spike Codc Added	MS Conc. 400.2	MS %Rec. 100	MSD Conc. 425.0	MSD %Rec. 106	%Rec. CL 64-130	RPD 6	0-15	Qualifiers
	Sample Spike Added ND 400.0	Titled Under							
		Uslice	The On						
			Mes Co	Slons					
				e during	Sener				
					al Orde	200			
						O.C.			



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249 Date Received: Work Order: Preparation: Method: 11/14/15 15-11-1098

EPA 3050B EPA 6010B

Project: TS2015-C013 / Aliso Canyon

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Quality Control Sample ID	Туре		Matrix	Inst	rument	Date Prepared	Date Ana	lyzed	MS/MSD Ba	tch Number
Well Fluid	Sample		Sludge	ICP	7300	11/14/15	11/14/15	14:03	151114501	
Well Fluid	Matrix Spike		Sludge	ICP	7300	11/14/15	11/14/15	14:05	151114501	
Well Fluid	Matrix Spike D	Ouplicate	Sludge	ICP	7300	11/14/16	11/14/15	14:08	151114501	
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	DAND THE	25.00	19.06	76	18.96	76	50-115	1	0-20	
Arsenic	O NOU O	25.00	24.24	97	24.02	96	75-125	1	0-20	
Barium		25.00	100.4	133	87.90	83	75-125	13	0-20	3
Beryllium	4.5	25.00	22.22	89	21 61	86	75-125	3	0-20	
Cadmium	ND &	25,00	22.04	88	21.67	87	75-125	2	0-20	
Chromium	ND	25,000	22 20	89	21.81	87	75-125	2	0-20	
Cobalt	ND	25.00	22.60	90	22.19	89	75-125	2	0-20	
Copper	0.5885	25.00	26 62	104	25.00	102	75-125	2	0-20	
Lead	ND	25.00	19.43	78 78	19.39	78	75-125	0	0-20	
Molybdenum	ND	25.00	23.97	66	23.78	95	75-125	1	0-20	
Nickel	ND	25.00	21.87	1/87 POLOV	21.49	86	75-125	2	0-20	
Selenium	ND	25.00	23.77	953	23.62	94	75-125	1	0-20	
Silver	0.6706	12.50	14.15	108 0	13:30	101	75-125	6	0-20	
Thallium	0,9450	25.00	22.81	87	Q17.12"	65	75-125	28	0-20	3,4
Vanadium	ND	25.00	24.55	98	23,86	95	75-125	3	0-20	
Zínc	13.90	25.00	35.25	85	35.190	85	75-125	0	0-20	
Calcium	103200	25.00	99250	4X	92280	40	75-125	4X	0-20	Q
						Q.				



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249 Date Received: Work Order: Preparation: Method: 11/14/15 15-11-1098 EPA 3010A Total EPA 6010B

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Quality Control Sample ID	Type		Matrix	Inst	trument	Date Prepared	Date Ana	lyzed	MS/MSD Ba	tch Number
15-11-1099-1	Sample		Aqueous	s ICF	7300	11/14/15	11/14/15	15:34	151114SA1	100
15-11-1099-1	Matrix Spike		Aqueous	s ICF	7300	11/14/15	11/14/15	15:37	151114SA1	
15-11-1099-1	Matrix Spike I	Duplicate	Aqueous	s ICF	7300	11/14/15	11/14/15	15:43	151114SA1	
<u>Parameter</u>	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	SND The	0.5000	0.2473	49	0.2457	49	72-132	1	0-10	3
Arsenic	0.01929	0.5000	0.6014	118	0.6118	120	80-140	2	0-11	
Barium	2,256	0,5000	2,893	4X	3.054	4X	87-123	4X	0-6	Q
Beryllium	ND	0.5000	0.5453	109	0.5677	114	89-119	4	0-8	
Cadmium	0.05572	0.5000	0.5323	95	0.5480	98	82-124	3	0-7	
Chromium	ND	0.5000	0,5422	108	0,5708	114	86-122	5	0-8	
Cobalt	0.01920	0.5000	0.5191	100	0.5351	103	83-125	3	0-7	
Соррег	0.1176	0.5000	0.67420	111	0.7070	118	78-126	5	0-7	
Lead	ND	0.5000	0.4253	285	0,4394	88	84-120	3	0-7	
Molybdenum	0.05082	0.5000	0.5453	99	0.5629	102	78-126	3	0-7	
Nickel	0.1773	0.5000	0.6734	1045	0.6974	104	84-120	3	0-7	
Selenium	ND	0.5000	0.5193	1045	0.5492	110	79-127	6	0-9	
Silver	0.01846	0.2500	0.3288	124 0	0,3411	129	86-128	4	0-7	3
Thallium	0.03243	0.5000	0.2546	44	0.2788	49	79-121	9	8-0	3,4
Vanadium	0.2425	0.5000	0.8265	117	0.8762	127	88-118	6	0-7	3
Calcium	3262	0.5000	3112	4X	31620	128 OF CO.	77-113	4X	0-11	Q
Zinc	0.9568	0.5000	1.561	121	1.595	128	89-131	2	0-8	



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Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

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Preparation:

EPA 7470A Total **EPA 7470A**

Method:

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Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepa	red Date Ana	lyzed	MS/MSD Bat	tch Number
15-11-0525-14	Sample	Aqueous					151113SA3	
15-11-0525-14	Matrix Spike	Aqueous					151113SA3	
15-11-0525-14	Matrix Spike Duplicate	Aqueous	Mercury 0	11/13/16	11/13/15	18:38	151113SA3	
Parameter	Sample Spike Conc. Added	MS Conc.	MS MSI %Rec. Con	MSD %Rec.	%Rec. CL	RPD	RPDCL	Qualifiers
Mercury	Sample Conc. Added ND 0.01000	0.01030	103 0.01	059 106	55-133	3	0-20	
	Addit OLD	The Dublic	Ø,					
		E.C.	The Ovision					
			Codedi	G ₀				
			3	To Teral On				
				. 6	9,500.			
					C			



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

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Quality Control Sample ID	Туре	Matrix	Inst	rument	Date Prepared	Date Ana	lyzed	MS/MSD Bat	tch Number
15-11-0586-3	Sample	Solid	Mei	rcury 05	11/13/15	11/13/15	20:03	151113502	
15-11-0586-3	Matrix Spike	Solid	Mei	cury 05	11/13/15	11/13/15	20:06	151113502	
15-11-0586-3	Matrix Spike Duplicate	Solid	Mei	rcury 05	11/13/15	11/13/15	20:08	151113802	
<u>Parameter</u>	Sample Spike Conc. Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	Sample Spike Conc. Added ND 0.8350	0.6764	81	0.7051	84	71-137	4	0-14	
	94.0	The Public	The Oro						
			Co. Co.	Slons or o	2				
				"No	Theral Order				
					7	50°C			



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 EPA 5030C

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 EPA 8260B

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Quality Control Sample ID	Type		Matrix	Inst	rument	Date Prepared	Date Ana	lyzed	MS/MSD Bat	ch Number
15-11-0763-4	Sample		Solid	GC	MS W	11/11/15	11/14/15	14:09	1511145002	
15-11-0763-4	Matrix Spike		Solid	GC	MS W	11/11/15	11/14/15	15:33	1511145002	
15-11-0763-4	Matrix Spike	Duplicate	Solid	GC/	MS W	11/11/15	11/14/15	16:00	1511145002	
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND.	25000	26090	104	26260	105	61-127	1	0-20	
Carbon Tetrachloride	CONDO	25000	24130	97	24850	99	51-135	3	0-29	
Chlorobenzene	ND CO	25000	24870	99	24890	100	57-123	0	0-20	
1,2-Dibromoethane	NDO	25000	25110	100	25200	101	64-124	0	0-20	
1,2-Dichlorobenzene	ND 0	25000	25430	102	25370	101	35-131	0	0-25	
1,2-Dichloroethane	ND	250000	25410	102	25580	102	80-120	1	0-20	
1,1-Dichloroethene	ND	25000	26710	107	26690	107	47-143	0	0-25	
Ethylbenzene	15560	25000	39850	97	40250	99	57-129	1	0-22	
Toluene	ND	25000	25700	103	25760	103	63-123	0	0-20	
Trichloroethene	ND	25000	25940 ^C	11940	25920	104	44-158	0	0-20	
Vinyl Chloride	ND	25000	22810	191 0	22840	91	49-139	0	0-47	
p/m-Xylene	ND	50000	50810	1020	50680	101	70-130	0	0-30	
o-Xylene	ND	25000	24440	98 0	24460	98	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	25000	25190	101	© 24950	100	57-123	1	0-21	
					0	98 100 Seneral Order				
							26.C			



Quality Control - Sample Duplicate

Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

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Los Angeles, CA 90051-1249

Date Received:

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15-11-1098 N/A

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Preparation:

EPA 1010A(M)

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Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
Junction SS25&9	Sample	Sludge	FP3	N/A	11/14/15 16:00	F1114FPD2
Junction SS25&9	Sample Duplicate	Sludge	FP3	N/A	11/14/15 16:00	F1114FPD2
Parameter		Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Ignitability	Connoliance Audit	>212	>212	0	0-25	
	Cana May					
	mo eculia					
	100 07 S.	200				
	ALL	OF THE				
	017	1004				
		45,00	**			
		160	200			
			Mic Ovio			
			Colons			
			900	· ·		
			40%	one.		
				9/0		
				100		
					60	
					C.	



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249 Date Received: Work Order: Preparation: Method: 11/14/15 15-11-1098

N/A EPA 376.2M

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
Well Fluid	Sample	Sludge	N/A	11/14/15 00:00	11/14/15 12:39	F1114SD2
Well Fluid	Sample Duplicate	Sludge	N/A	11/14/15 00:00	11/14/15 12:39	F1114SD2
Parameter		Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Sulfide, Total	Connollance Audit	ND	ND	N/A	0-25	
	Plance Aux	Submitte				
	· Op	the Public	Th.			
		6	In Orovisio			
			Code duri	G.		
			73	oral Orac		
					e.c	



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Method:

EPA 9045D

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Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
15-11-1085-2	Sample	Solid	PH 4	11/14/15 00:0	0 11/14/15 12:33	F1114PHD2
15-11-1085-2	Sample Duplicate	Solid	PH 4	11/14/15 00:0	0 11/14/15 12:33	F1114PHD2
<u>Parameter</u>		Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
рН	Connoliance Audit	6,350	6.380	0	0-25	
	TOO ALIGH	or the Short				
		4ble C	the Oro.			
			Code Code			
			Starting	General		
				1001	66 C	



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Date Received:

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Method:

SM 4500-CIC

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Quality Control Sample ID 15-11-1099-1 15-11-1099-1	Type Sample Sample Duplicate	Matrix Aqueous Aqueous	Instrument BUR02 BUR02	Date Prepared N/A N/A	Date Analyzed 11/14/15 12:06 11/14/15 12:06		nber
<u>Parameter</u> Chloride	Cond Section Section Se	Sample Conc. 6103	DUP Conc. 6103	RPD 0	<u>RPD CL</u> 0-25	Qualifiers	
	Compliance Audit	or the Dublic Off	the Otovisions of				
			during	General Order	R.C.		



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N/A

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Matrix Date Prepared Date Analyzed Duplicate Batch Number Quality Control Sample ID Instrument Type Well Fluid Sample Sludge BUR02 11/14/15 00:00 11/14/15 12:48 F1114CLCD1 Compliance Allow of the Public Utilities Code during Code of Code of the Public Utilities Code of Code of the Public Utilities Code Well Fluid Sample Duplicate BUR02 11/14/15 00:00 11/14/15 12:48 F1114CLCD1 Sludge RPD Parameter RPD CL

Chloride



Quality Control - LCS/LCSD

Southern California Gas Company

M.L. 723B, P.O. Box 513249, Terminal Annex

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Date Received:

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EPA 376.2M

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Quality Control Sample ID	Type	Mat	trix	Instrument	Date Pre	epared Da	te Analyzed	LCS/LCSD E	Batch Number
099-05-001-5592	LCS	Sol	id	N/A	11/14/15	5 11	/14/15 12:39	F1114SL2	
099-05-001-5592	LCSD	Sol	id	N/A	11/14/15	5 11	/14/15 12:39	F1114SL2	A
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. C	L RPD	RPD CL	Qualifiers
Sulfide, Total	Spike Added	0.8000	80	0,8500	85	80-120	6	0-20	
	Jance 4	SES OF HIS	00						
		,	Ouble !	tho.					
			N.	The Chiston					
				ode dr	Or Gen				
					0 0	Orgo			
						50%	2°C		



Quality Control - LCS/LCSD

Southern California Gas Company

M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249

Date Received:

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15-11-1098 N/A

Method:

EPA 9010C/9014

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Quality Control Sample ID	Type	Mat	rix	Instrument	Date Pro	epared Dat	e Analyzed	LCS/LCSD B	atch Number
099-12-810-1003	LCS	Sol	id	UV 8	11/14/18	5 11/	4/15 12:09	F1114CNL1	
099-12-810-1003	LCSD	Sol	id	UV 8	11/14/15	5 11/	4/15 12:09	F1114CNL1	
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cyanide, Total	0.2000 Condo Section	0.1680	84	0.1720	86	80-120	2	0-20	
	Spike Added 0.2000 Stroy Stroy Composition A	SES OTHE	outle of	the o					
			~,	Intes Code of	0,0				
				4,	The Per	Order			
						6	0		



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Preparation:

EPA 3550B

Method:

EPA 8015B (M)

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Num	ber
99-15-490-1869	LCS	Solid	GC 47	11/14/15	11/14/15 14:58	151114B02	
Parameter		Spike Added	Conc. Recov				lifiers
TPH as Diesel		400.0	432.7	108	75-12	3	
	C.						
	Ong mo						
	On Sen	Acon Ses Obnitted and a stable of					
	Charle Ch	258/50					
	Co.	Se 902					
		Low OF They					
		100 45					
		45,00	A				
		"Ic	30				
			The Color				
			0000				
			0000	On			
			90	~ G			
				no non			
				9/0.			
				.0	O _A		
					So _		
					C		



Quality Control - LCS/LCSD

Southern California Gas Company
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Date Received: Work Order: 11/14/15

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Type	N	latrix	Instrument	Date Fre	epared 1	Date Analyzed	LCS/LCSD B	atch Number
LCS	A	queous	GC 47	11/14/15		11/14/15 14:21	151114B01	
LCSD		queous	GC 47	11/14/15		11/14/15 14:40	151114B01	
Spike Added	LCS Con	. LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec.	CL RPD	RPD CL	Qualifiers
2000 ONTAGE	1822	91	1962	98	75-117	7	0-13	
7,	A CONTRACTOR	Red Under Of	the of Ovision					
			OCE OU	of General	On			
	LCS LCSD	LCS A	LCS Aqueous LCSD Aqueous	LCS Aqueous GC 47 LCSD Aqueous GC 47	LCS Aqueous GC 47 11/14/18 LCSD Aqueous GC 47 11/14/18	LCS Aqueous GC 47 11/14/15 LCSD Aqueous GC 47 11/14/15	LCS Aqueous GC 47 11/14/15 11/14/15 14:21 LCSD Aqueous GC 47 11/14/15 11/14/15 14:40	LCS Aqueous GC 47 11/14/15 11/14/15 14:21 1511114B01 LCSD Aqueous GC 47 11/14/15 11/14/15 14:40 1511114B01



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

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Total number of ME compounds allowed: 1 LCS ME CL validation result: Pass

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Date Received: Work Order:

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EPA 3050B

EPA 6010B

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Quality Control Sample ID	Туре	Matrix	Instrumen	t Date Prep	ared Date Ana	lyzed LCS Batch N	lumber
097-01-002-22051	LCS	Solid	ICP 7300	11/14/15	11/14/15	14:01 151114L01	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony		25.00	25.05	100	80-120	73-127	
Arsenic	~	25,00	24,83	99	80-120	73-127	
Barium	500	25.00	26.24	105	80-120	73-127	
Beryllium	Cha lide	25.00	23.97	96	80-120	73-127	
Cadmium	Compliance	25.00	25.28	101	80-120	73-127	
Chromium	10/2 9/10	25.00 25.00	26.36	105	80-120	73-127	
Cobalt	ano.	25.00	27.01	108	80-120	73-127	
Copper	-0	25.00	25.68	103	80-120	73-127	
Lead		25,00	25.50	102	80-120	73-127	
Molybdenum		25.00	25.66	103	80-120	73-127	
Nickel		25,00	2627	109	80-120	73-127	
Selenium		25.00	/23.89/	96	80-120	73-127	
Silver		12.50	12.52	100	80-120	73-127	
Thallium		25.00	26.621 0 Visi	106	80-120	73-127	
Vanadium		25.00	25.81	103	80-120	73-127	
Zinc		25.00	24.47	98	80-120	73-127	
Calcium		25.00	27.02	0108	80-120	73-127	
				103 98 0108 General			
Total number of LCS compounds:	17			of the General			
Total number of ME compounds: 0	I .			"	0		



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EPA 3010A Total

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097-01-003-15490	Type LCS	Aqueou	IS ICP 7300	11/14/15	11/14/15	15:28 151114LA1	
<u>Parameter</u>	5	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony		0.5000	0.4934	99	80-120	73-127	
Arsenic		0.5000	0.4915	98	80-120	73-127	
Barium	5 CO C	0.5000	0.5183	104	80-120	73-127	
Beryllium	and the	0.5000	0.4960	99	80-120	73-127	
Cadmium	Cornollance of	5000	0.5043	101	80-120	73-127	
Chromium	10/12/10	.sooo	0.5112	102	80-120	73-127	
Cobalt	an or	5000	0.5300	106	80-120	73-127	
Copper	-0	noon 1	0.4964	99	80-120	73-127	
Lead	6	0.5000	0.5036	101	80-120	73-127	
Molybdenum	C	0.5000	0.4862	97	80-120	73-127	
Nickel		0.5000	6.5177	104	80-120	73-127	
Selenium	C	0.5000	0,4805	96	80-120	73-127	
Silver	0	0.2500	0.2518	101	80-120	73-127	
Thallium	C	0.5000	0.5356 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	107	80-120	73-127	
Vanadium	C	0.5000	0.5029	101	80-120	73-127	
Calcium	0	0.5000	0.4929	99	80-120	73-127	
Zinc	1.0	0.5000	0.4923	28° G	80-120	73-127	
Fotal number of LCS compound	ls: 17			107 101 198 98 General			
otal number of ME compounds				4/	0.		
Total number of ME compounds	allowed: 1				90		
CS ME CL validation result: Pa	ess				62		



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Type	Matrix	Instrument	Date Frepare	ed Date Analyzed	LCS Batch Number
LCS	Aqueous	Mercury 04	11/13/15	11/13/15 18:31	151113LA3
	Spike Added				
Cond See	370	0.01003	107	33-12	
Oliance	On Ses Honing				
	The Public C	the o			
		The Code one	O.*		
		QUE	General O		
				dor Sc.C	
	LCS	LCS Aqueous Spike Added	LCS Aqueous Mercury 04 Spike Added Conc. Recov	LCS Aqueous Mercury 04 11/13/15 Spike Added Conc. Recovered LCS %	LCS Aqueous Mercury 04 11/13/15 11/13/15 18:31 Spike Added Conc. Recovered LCS %Rec. %Rec.



Southern California Gas Company

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Type	Matrix	Instrument	Date F	repared 1	Date Ana	lyzed	LCS Batch	Number
LCS	Solid	Mercury 05	11/13/	15	11/14/15	15:23	151113L02	1
Cond Plate	Spike Added 0.8350			V				Qualifiers
Tholiance (Nak Submitted Under							
	ole C	the ordinate of the code of	2,0					
		. 40	To One	ral Order	52			
	LCS	LCS Solid Spike Added	LCS Solid Mercury 05 Spike Added Conc. Recove	LCS Solid Mercury 05 11/13 Spike Added Conc. Recovered	LCS Solid Mercury 05 11/13/15 Spike Added Conc. Recovered LCS %Recovered	LCS Solid Mercury 05 11/13/15 11/14/15 Spike Added Conc. Recovered LCS %Rec.	LCS Solid Mercury 05 11/13/15 11/14/15 15:23 Spike Added Conc. Recovered LCS %Rec. %Rec.	LCS Solid Mercury 05 11/13/15 11/14/15 15:23 151113L02 Spike Added Conc. Recovered LCS %Rec. %Rec. CL



Southern California Gas Company

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15-11-1098 **EPA 5030C**

Method:

EPA 8260B

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99-12-796-10429 LC: Parameter	S Solie	GC/MS W	2272 4742	A RESIDENCE OF STREET		
arameter arameter		GC/IVIS VV	11/14/15	11/14/15 10:2	25 151114L007	
	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
enzene	50.00	52.42	105	78-120	71-127	
Carbon Tetrachlorida	50,00	54.16	108	49-139	34-154	
Chlorobenzene	50.00	51.64	103	79-120	72-127	
,2-Dibromoethane	7 70 50.00	49.47	99	80-120	73-127	
,2-Dichlorobenzene	\$0.00	51.28	103	75-120	68-128	
,2-Dichloroethane	50:00 50:00 50:00	50.81	102	80-120	73-127	
,1-Dichloroethene	30.00	56.50	113	74-122	66-130	
thylbenzene	50.00	53.52	107	76-120	69-127	
oluene	50,00 %	53.05	106	77-120	70-127	
richloroethene	50.00	₹53.68	107	80-120	73-127	
/inyl Chloride	50,00	49.21	98	68-122	59-131	
/m-Xylene	100.0	1406.05	106	75-125	67-133	
-Xylene	50.00	50.52	101	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	48.09 1 CS Vis	96	75-125 77-120	70-127	
otal number of LCS compounds: 14		Co	25000			
otal number of ME compounds: 0		G.	2, 6			
otal number of ME compounds allowed:			Arla Cha			
CS ME CL validation result: Pass			S 65			
			**	0.		
				00		
				50		
				0		
				-		



Sample Analysis Summary Report

Work Order: 15-11-1098				Page 1 of 1
Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 1010A(M)	N/A	691	FP3	The second second
EPA 376.2M	N/A	880	N/A	1
EPA 6010B	EPA 3010A Total	935	ICP 7300	1
EPA 6010B	EPA 3050B	935	ICP 7300	1
EPA 7470A	EPA 7470A Total	915	Mercury 04	3
EPA 7471A	EPA 7471A Total	915	Mercury 05	1
EPA 8015B (M)	EPA 3510C	421	GC 47	1
EPA 8015B (M)	EPA 3550B	421	GC 47	1
EPA 8260B	EPA 5030C	927	GC/MS W	2
EPA 9010C/9014	2 On N/A	880	UV8	1
EPA 9045D	C Q ONA	688	PH 4	1
SM 4500-CI C	On Sa NA	688	BUR02	1
	EPA 3550B EPA 5030C N/A N/A N/A	The Or		

Location 1: 7440 Lincoln Way, Garden Grove, CA 92841 Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841



Glossary of Terms and Qualifiers

ork Order:	15-11-1098 Page 1 of 1
Qualifiers	Definition
*	See applicable analysis comment
<	Less than the indicated value.
>	Greater than the indicated value
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without furth clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. To associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery/below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
В	Analyle was present in the associated method blank.
BU	Sample analyzed after holding time expired
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons we also present (or detected).
7	Analyle was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
AL	Analyle positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (254 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range,
Z	Analyle presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL: (714) 895-5494 • FAX: (714) 894-7501

Ex. I-7, page 54 of 85

CHAIN OF CUSTODY FORM

1

SOUTHERN CALIFORNIA GAS COMPANY - ENGINEERING ANALYSIS CENTER

SHIPPING ADDRESS - 8730 E. SLAUSON AVE. ML SC723B, PICO RIVERA, CA 90660-5100 - PHONE: (562)- 806-4344 STREET ADDRESS - 8101 ROSEMEAD BLVD, BLDG H, PICO RIVERA, CA 90660 - EMAIL: EACChemicalSection@Socalgas.com

Sample Sample Preservative Container Type, WA 12. Samue WA 12. Samue WA 13. Samue WA 14. MA 14. MA 15. Samue WA 15. Samue WA 16. Samue WA 17. Samue WA 16. Samue WA 17. Samue WA 18. Samue				The fact	S		C	
Shad ufists on Silviton pressone throng with the sound of	Sample I.D.	Sampling Date	Sampling Time	Collected	Sample Container	Sample	Preservative	
Lisolm 22- Soumer Dodge LOK Lisolm Janes De Soume Sudge LOK	Epurpont Block	seferfu	6:25 pm	S. Paten	1x500L 1x250L 1x250L	Child Supplied	HVO2	Tother Lulowide True Mark + K
Jehnes 22 Seumes Shudze	Wedl Flund	-	mook:9		2. Shunger	hiney -	λų	pH, Flushpoint, TPH-CC., 8260 VOL., TTL Metals (YPTL), Sulfide, Cynmbe Chloride, Potasium
Centeral Or	Junitran SS25 49	->	MI OS:9	Quality Comments	17 Sounce	Shalze	KA!	
		\	\	General On	\	1	1	

Grand Rammerce Hallburn the Walls 0840 year lieus of Just 1	Relinquished By (Print)	(Signature)	Company/ GasCo. Dept.	Date	Time	Received By (Signature)	Company/ GasCo. Dept.
ex 1/4/1/2 0840	Gam Dullon	SAM DACTOR	14	Malis	8:10 P	Paris Krumen Suil V	mer CAC
	Mund Kamme	1/1/1	- th	1/4/1/	0800	You Liws	53
日本 日本 1 日						l	

H:\Chem\Forms\Chain of Custody.xls



SOUTHERN CALIFORNIA GAS COMPANY **Material Release Order**

44193 Release

FOR NON-M&S MATERIAL

Supplier:	In strict conformance with our Bl	anket Purchase Order with	h your firm, the f	ollowing material is ordered.
	Restrictions: Do not produce or su has expired or was canceled, or Invoice as instructed on the Blan			
Ī			7	
	CALSCIENCE ENVIRONMENTAL 7440 LINCOLN WAY GARDEN GROVE, CA 92641-14		T5:	2015-CO13 me Day-ASAP
L	SHAHID BAZZAK SC 7	- 23B] Su	ne Day - ASA !
	P.O. BOX 513249 LOS ANGELES, CA 9005	10/12/0		Date Wanted 11/14/15
Quantity 3	Epugant Black	Description Description	n <u> </u>	
_ 2	Well Fluid	· Control		
_2	Junetium 5525	49	G	
_8	Patriot 909	- "	30 Dela	
			Orderos	
Special In	PLEASE SHOW ABOVE RI	ELEASE NUMBER ON YO	OUR INVOICE. T	HANK YOU.
* Ru		Potusium in m	uetals, sce	· Col.
SHAHID		ACCT. OR W.O. NUMBER	OR PROJ.	11/14/15
SUPERVISOR		MATERIAL RECEIVED BY	-	DATE

ROUTING

WHITE - TO SUPPLIER
YELLOW - ON RECEIPT OF MATERIAL, TO
DISBURSEMENTS, M.L. 205V
PINK - ORIGINATOR'S COPY

FORM #3929NR REV 4/14

Page 49 of 49
WORK ORDER NUMBER: 15-11- 1098

SAMPLE RECEIPT CHECKLIST

COOLER _ / OF _ /

CLIENT: Gas Co.			DA	TE: 11	1 14	/ 201
TEMPERATURE: (Criteria: 0.0°C - 6.0°C, nor Thermometer ID: SC2 (CF:-0.4°C); Temperature Sample(s) outside temperature criteria (☐ Sample(s) outside temperature criteria (☐ Sample(s) received at ambient temperature Ambient Temperature: ☐ Air ☐ Filter	ure (w/o CF): 3. PM/APM contacted bout received on ice/ch	9 °C (w/ CF): y;) illed on same day o			Samp	
0	esent but Not Intact esent but Not Intact	Not Present	□ N/A □ N/A		ed by: _	80 1050
SAMPLE CONDITION: On Second				Yes	No	N/A
Chain-of-Custody (COC) document(s) receive	ad with samples		January and Company	. P		
COC document(s) received complete			917911931919	. 12		
C No analysis sasyasted. C Nat collaggich	had Tille relienviel	ad data II No ratio	iquished time	9		
Sampler's name indicated on COC	Share of the same	******************	saussienten (. 1		
Sample container label(s) consistent with CO	c	***********	*******	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Sample container(s) intact and in good condit	ion		*********	. 0		
Proper containers for analyses requested		Carrie and	economista e	. 0		
Sufficient volume/mass for analyses requeste	ed	0 0/	*********	. 2		
Sampler's name indicated on COC	eived within 15-minut	e holding time	ta transituati	ø		
			********	🗖		K
☐ pH ☐ Residual Chlorine ☐ Dissolved Proper preservation chemical(s) noted on CO Unpreserved aqueous sample(s) received ☐ Volatile Organics ☐ Total Metals ☐ D	for certain analyses	tainer	100°C	. 1		
Container(s) for certain analysis free of heads		************	******	🗆		D
☐ Volatile Organics ☐ Dissolved Gases (☐ Carbon Dioxide (SM 4500) ☐ Ferrous	(RSK-175) ☐ Dissol	ved Oxygen (SM 45	500)			
Tedlar™ bag(s) free of condensation		2		П		P
CONTAINER TYPE:		(Trip Blar	k Lot Numb	er:		
Aqueous: □ VOA □ VOAh □ VOAna₂ □ 10 □ 125PBznna □ 250AGB □ 250CGB □ 25 □ 500PB □ 1AGB □ 1AGBna₂ □ 1AGBs Solid: □ 4ozCGJ □ 8ozCGJ □ 16ozCGJ □ Air: □ Tedlar™ □ Canister □ Sorbent Tube Container: A = Amber, B = Bottle, C = Clear, E = E	00CGBs	125AGB	GBh 125/ GB 1500AG 1 TerraCores [©] (rudgs): /	AGBP D 500 C C C C C C C C C C C C C C C C C C	DAGJS D	
Preservative: \mathbf{b} = buffered, \mathbf{f} = filtered, \mathbf{h} = HCI, \mathbf{n} =	= HNO3, na = NaOH, na	$1_2 = Na_2S_2O_3, p = H_3P$	O4, Labele			7.5
$s = H_0 SO_4$ $u = ultra-pure zona = Zn$	VCH-CO-1- + NaOH			Review	ed by:	1050

2015-04-10 Revision



Calscience



WORK ORDER NUMBER: 15-11-1099

The difference

Analytical Report For



AIR SOIL WATER MARINE CHEMISTRY

Client: Southern California Gas Company

Client Project Name: T\$2015-C013 / Aliso Canyon
Attention: Sharid Razzak
M.b. 723B

P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249

amande Porter

Approved for release on 11/16/2015 by: Amanda Porter Project Manager

ResultLink)

Email your PM)



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

CA FLAP ID: 2944 | ACLASS DID ELAP ID: ADE 1664 USO/IEC 17025 20051 | CSDLAC ID: 10109



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	Quin Gene	
	Al Org	
	C	



Work Order Narrative

Work Order: 15-11-1099 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/14/15. They were assigned to Work Order 15-11-1099.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

1



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

11/14/15 Work Order: 15-11-1099

Preparation: Method:

EPA 3510C EPA 8015B (M)

Units:

ug/L

Project: TS2015-C013 / Aliso Canyon

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Patriot 909	15-11-1099-1-H	11/13/15 19:40	Aqueous	GC 47	11/14/15	11/14/15 14:04	151114B01
Parameter	0	Result	RL		DF	Qua	alifiers
C6	82 Ope	ND	50		1.00		
C7	C 0 0	ND	50		1.00		
C8	ma en ma	53	50		1.00		
C9-C10	13 10 138	450	50		1.00		
C11-C12	90 50 4b	580	50		1.00		
C13-C14	4 3 0	%_710	50		1.00		
C15-C16	Compliance Audin Of the	°360	50		1.00		
C17-C18	Compliance Audit of the	4160	50		1.00		
C19-C20		960 - 15 200 - 15	50		1.00		
C21-C22		260C	50		1.00		
C23-C24		200	0 50		1.00		
C25-C28		140	50 50 50 50 50 50 50		1.00		
C29-C32		170	C 050		1.00		
C33-C36		91	96 50	0.	1.00		
C37-C40		ND	86 50	G.	1.00		
C41-C44		ND	50	mano	1.00		
C6-C44 Total		3800	50	ing eneral	1.00		
Surrogate		Rec. (%)	Co	ntrol Limits	Qualifiers		
n-Octacosane		90	68-	140	60°C		

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Company

M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order: Preparation:

Method: Units:

11/14/15 15-11-1099

EPA 3510C

EPA 8015B (M)

ug/L

Project: TS2015-C013 / Aliso Canyon

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-498-310	N/A	Aqueous	GC 47	11/14/15	11/14/15 12:35	151114801
<u>Parameter</u>	0	Result	RL		DF	Qua	lifiers
C6	an ope	ND	50		1.00		
C7	C 0 0	ND	50		1.00		
C8	ma en ma	ND	50		1.00		
C9-C10	Compliance Audin of the	ND	50		1.00		
C11-C12	90 50 4b	ND	50		1.00		
C13-C14	A 3 3	ND	50		1.00		
C15-C16	10/4/10	CIND	50		1.00		
G17-G18	7	@ NRS	50		1.00		
C19-C20		NO CA	50		1.00		
C21-C22		NDC B	50		1.00		
C23-C24		ND 1/			1.00		
C25-C28		ND 3	50 6 6 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		1.00		
C29-C32		ND	C 050		1.00		
C33-C36		ND	96 50	Ox	1.00		
C37-C40		ND	86 50	G.	1.00		
C41-C44		ND.	50	mano	1.00		
C6-C44 Total		ND	100	ing charal	1.00		
Surrogate		Rec. (%)	Co	ntrol Limits	Qualifiers		
n-Octacosane		95	68-	140	60 C		

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Date Received: 11/14/15 Southern California Gas Company Work Order: 15-11-1099 M.L. 723B, P.O. Box 513249, Terminal Annex Preparation: EPA 3010A Total Los Angeles, CA 90051-1249 **EPA 6010B** Method:

Units:

Page 1 of 2

Project: TS2015-C013 / Aliso Canyon

mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Patriot 909	15-11-1099-1-E	11/13/15 19:40	Aqueous	ICP 7300	11/14/15	11/14/15 15:34	151114LA1
Parameter Parame	0	Result	RL		DF	Qua	lifiers
Antimony	an one	ND	0.0	150	1.00		
Arsenic	C 0 00	0.0113	0.0	100	1.00		
Barium	ma en Ma	2,26	0.0	100	1.00		
Beryllium	35 40 48	ND	0.0	100	1.00		
Cadmium	Co 50.46	0.0557	0.0	100	1_00		
Chromium	Compliance Alidin of the	ND ND	0.0	100	1.00		
Cobalt	10/4 4/0	0.0192	0.0	100	1.00		
Copper		0.118	0.0	100	1.00		
Lead		NB On	0.0	100	1.00		
Molybdenum		0.0508	0.0	100	1.00		
Nickel		0 4 77 6 44	0.0	100	1.00		
Selenium		ND	00 40.00	150	1.00		
Silver		0.0185	10 10 10 0.00 0.00 0.00 0.00 0.00 0.00	0500	1.00		
Thallium		0.0324	90 00	£50	1.00		
Vanadium		0.242	· 60	1000	1.00		
Zinc		0,957	0.0	fog Teral	1,00		
Patriot 909	15-11-1099-1-E	11/13/15 19:40	Aqueous	ICP 7300	11/14/15	11/14/15 15:33	151114LA1
Parameter		Result	RL		DP	Qua	lifiers
Calcium		3260	1.0	0	10.00		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL: (714) 895-5494 • FAX: (714) 894-7501



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

Work Order: Preparation:

Method: Units:

11/14/15 15-11-1099 EPA 3010A Total

EPA 6010B

mg/L

Project: TS2015-C013 / Aliso Canyon

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-003-15490	N/A	Aqueous	ICP 7300	11/14/15	11/14/15 15:26	151114LA1
Parameter	0	Result	RL		DF	Qua	lifiers
Antimony	8000 M	ND	0.0	150	1.00		
Arsenic	C 0 0	ND	0.0	100	1.00		
Barium	man on Ma	ND	0.0	100	1.00		
Beryllium	13 10 15	ND	0.0	100	1.00		
Cadmium	Go 50 46	ND	0.0	100	1.00		
Chromium	Conpliance Audit of the	ND	0.0	100	1.00		
Cobalt	10 HO.	CND	0.0	100	1.00		
Copper	16	NDO	0.0	100	1.00		
Lead		NO C	0.0	100	1.00		
Molybdenum		ND C	0.0	100	1_00		
Nickel		ND Y	0.000 0.000	100	1.00		
Selenium		ND "	6 40.00	150	1.00		
Silver		ND	C 980	0500	1.00		
Thallium		ND	900.	A-50	1.00		
Vanadium		ND	60	1000	1.00		
Calcium		ND	0.1	1000 C	1.00		
Zinc		ND	0.0	100 9/	1.00 1.00 1.00		
					00		
					000		

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Southern California Gas Co	ompany		Date Recei	ved:			11/14/15
M.L. 723B, P.O. Box 51324	19, Terminal Annex		Work Order		15-11-1099		
Los Angeles, CA 90051-12	49		Preparation	1:		EP	A 7470A Total
			Method:				EPA 7470A
			Units:				mg/L
Project: TS2015-C013 / Ali	so Canyon					Pa	ige 1 of 1
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Patriot 909	15-11-1099-1-E	11/13/15 19:40	Aqueous	Mercury 04	11/14/15	11/14/15 13:59	151113LA3
Parameter	0	Result	RL		DF	Qua	alifiers
Mercury	O PROPRIO	ND	0.0	000500	1.00		
Method Blank	089-04-608-7657	N/A	Aqueous	Mercury 04	11/13/15	11/13/15 18:29	151113LA3
Parameter	970 7 0 VA	Result	t RL DF		DF	Qua	alifiers
	On 10 10 10 10 10 10 10 10 10 10 10 10 10	& DUBIC CHIII	de provisions Code du	or General C	à.		
					PORC.		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Date Received: 11/14/15 Southern California Gas Company Work Order: 15-11-1099 M.L. 723B, P.O. Box 513249, Terminal Annex Preparation: **EPA 5030C** Los Angeles, CA 90051-1249 **EPA 8260B** Method: Units: ug/L

Project: TS2015-C013 / Aliso Canyon

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Patriot 909	Connolished Audin Original States	11/13/15 19:40	Aqueous	GC/MS XX	11/14/15	11/14/15 17:11	151114L001
Parameter	0	Result	RL	7	DF	Qua	lifiers
Acetone	0000	ND	20		1.00		
Benzene	C 0 0	ND	0.5	50	1.00		
Bromobenzene	ma con ma	ND	1.0)	1.00		
Bromochloromethane	10 10 10	ND	1.0)	1.00		
Bromodichloromethane	90 50 4b	ND	1.0)	1.00		
Bromoform	4.000	ND ND	1.0)	1.00		
Bromomethane	10/4 1/6	COND	10		1.00		
2-Butanone	7	(ND)	10		1.00		
n-Butylbenzene		6% C	1.0)	1.00		
sec-Butylbenzene		150	0 1.0)	1.00		
ert-Butylbenzene		ND W	0 1.0)	1.00		
Carbon Disulfide		ND 3	O. 40.10		1.00		
Carbon Tetrachloride		ND	C 985	50	1.00		
Chlorobenzene		ND	90 19	lo _v	1.00		
Chloroethane		ND	80	G.	1.00		
Chloroform		ND	1.0	The cho	1.00		
Chloromethane		ND	10	16. A	1.00		
2-Chlorotoluene		ND	1.0		1.00		
4-Chlorotoluene		ND	1.0)	1.00		
Dibromochloromethane		ND	1.0)	600		
1,2-Dibromo-3-Chloropropane		ND	5.0)	1.000		
1,2-Dibromoethane		ND	1.0)	1.00		
Dibromomethane		ND	1.0)	1.00		
1,2-Dichlorobenzene		ND	1.0		1.00		
,3-Dichlorobenzene		ND	1.0		1.00		
,4-Dichlorobenzene		ND	1.0		1.00		
Dichlorodifluoromethane		ND	1.0)	1.00		
,1-Dichloroethane		ND	1.0		1.00		
,2-Dichloroethane		ND	0.5	50	1.00		
,1-Dichlaroethene		ND	1.0		1.00		
:-1,2-Dichloroethene		ND	1.0		1.00		
-1,2-Dichloroethene		ND	1.0		1.00		
,2-Dichloropropane		ND	1.0		1.00		
,3-Dichloropropane		ND	1.0		1.00		
2,2-Dichloropropane		ND	1.0		1.00		

RL: Reporting Limit.

DF: Dilution Factor. MDL: Method Detection Limit.

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Southern California Gas Company	Dat	te Received:		11/14/15	
M.L. 723B, P.O. Box 513249, Terminal Annex	Wo		15-11-1099		
Los Angeles, CA 90051-1249		eparation:		EPA 5030C	
203 Angeles, OA 3000 191240	Me		EPA 8260B		
	Uni			ug/L	
Project: TS2015-C013 / Aliso Canyon	Oil		Page 2 of 4		
Parameter	Result	RL	DF	Qualifiers	
1,1-Dichleropropene	ND	1.0	1.00	<u>Gdamers</u>	
The contract of the contract o					
t-1,3-Dichloropropene	ND	0.50	1.00		
Ethylbenzene	3.0	1.0	1.00		
2-Hexanone	ND	10	1.00		
Isopropylbenzene San	1.8	1.0	1.00		
c-1,3-Dichloropropene t-1,3-Dichloropropene Ethylbenzene 2-Hexanone Isopropylbenzene p-Isopropyltoluene Methylene Chloride 4-Methyl-2-Pentanone Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichloroethene Trichloroethene Trichloroethene Trichloroethene Trichloroethene Trichloroethene Trichloroethene	3.3	1.0	1.00		
Methylene Chloride	ND	10	1.00		
4-Methyl-2-Pentanone	Siz ND	10	1.00		
Naphthalene 40, 9	CALO	10	1.00		
n-Propylbenzene	20 4W	1.0	1.00		
Styrene	ND %	1.0	1.00		
1,1,1,2-Tetrachloroethane	NOTE TO	1.0	1.00		
1,1,2,2-Tetrachloroethane	ND CARO	1.0	1.00		
Tetrachloroethene	ND THE	0/- 10	1.00		
Toluene	30	0/010	1.00		
1,2,3-Trichlorobenzene	ND	92 70	1.00		
1,2,4-Trichlorobenzene	ND	10 MO	1.00		
1,1,1-Trichloroethane	ND	162 00	1.00		
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10 0 0	1.00		
1,1,2-Trichloroethane	ND	10	1.00		
Trichloroethene	ND	1.0	00,1.00		
Trichlorofluoromethane	ND	10	G)		
1,2,3-Trichloropropane	ND	5.0	1.00C		
1,2,4-Trimethylbenzene	50	1.0	1.00		
1,3,5-Trimethylbenzene	22	1.0	1.00		
Vinyl Acetate	ND	10	1.00		
Vinyl Chloride	ND	0.50	1.00		
	29	1.0	1.00		
p/m-Xylene	9.5	1.0			
o-Xylene			1,00		
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00		
Surrogate	Rec. (%)	Control Limits	Qualifiers		
1,4-Bromofluorobenzene	102	80-120			
Dibromofluoromethane	118	78-126			
1,2-Dichloroethane-d4	126	75-135			
Toluene-d8	103	80-120			

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RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Ex. I-7, page 66 of 85



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249

Date Received: Work Order: Preparation:

11/14/15 15-11-1099 **EPA 5030C**

Method: Units:

EPA 8260B

ug/L

Project: TS2015-C013 / Aliso Canyon

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	Conno Section Season of the	N/A	Aqueous	GC/MS XX	11/14/15	11/14/15 13:12	151114L001
Parameter	0	Result	RL		DF	Qua	alifiers
Acetone	de Ope	ND	20		1.00		
Benzene	C 0 00	ND	0.5	50	1.00		
Bromobenzene	ma con ma	ND	1.0)	1.00		
Bromochloromethane	13 10 4/30	ND	1.0	1	1.00		
Bromodichloromethane	90 50 B	ND	1.0	1	1.00		
Bromoform	4 3 7	ND	1.0	1	1.00		
Bromomethane	10 May 1/2	CND	10		1.00		
2-Butanone	16	NDO	10		1.00		
n-Butylbenzene		NB O	1.0	1	1.00		
sec-Butylbenzene		NDC ,	9 1.0	1	1.00		
tert-Butylbenzene		ND Y	0 1.0)	1.00		
Carbon Disulfide		ND 3	Oc 40 10		1.00		
Carbon Tetrachloride		ND	C 985	60	1.00		
Chlorobenzene		ND	96 19	On	1.00		
Chloroethane		ND	86	G.	1.00		
Chloroform		ND	1.0	none	1.00		
Chloromethane		ND	10	16 A	1.00		
2-Chlorotoluene		ND	1.0	(1.00		
4-Chlorotoluene		ND	1.0	1	91.00		
Dibromochloromethane		ND	1.0)	600		
1,2-Dibromo-3-Chloropropane		ND	5.0	1	1.00		
1,2-Dibromoethane		ND	1.0)	1.00		
Dibromomethane		ND	1.0)	1.00		
1,2-Dichlorobenzene		ND	1.0	1	1.00		
1,3-Dichlorobenzene		ND	1.0		1.00		
1,4-Dichlorobenzene		ND	1.0	1	1.00		
Dichlorodifluoromethane		ND	1.0		1.00		
1,1-Dichloroethane		ND	1.0		1.00		
1,2-Dichloroethane		ND	0.5		1.00		
1,1-Dichlaroethene		ND	1.0		1.00		
c-1,2-Dichloroethene		ND	1.0		1.00		
-1,2-Dichloroethene		ND	1.0		1.00		
1,2-Dichloropropane		ND	1.0		1.00		
1,3-Dichloropropane		ND	1.0		1.00		
2,2-Dichloropropane		ND	1.0		1.00		

RL. Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Southern California Gas Company	Dat	te Received:		11/14/15		
M.L. 723B, P.O. Box 513249, Terminal Annex	Wo	rk Order:		15-11-1099		
Los Angeles, CA 90051-1249		eparation:		EPA 5030C		
203 Aligores, OA 3000 1-1243		Method:				
	Uni			EPA 8260B		
Project: TS2015-C013 / Aliso Canyon	Uni	ils.		ug/L Page 4 of 4		
Floject. 132019-00137 Aliso Carlyon				Fage 4 01 4		
<u>Parameter</u>	Result	RL	DF	Qualifiers		
1,1-Dichloropropene	ND	1.0	1.00			
c-1,3-Dichloropropene t-1,3-Dichloropropene Ethylbenzene 2-Hexanone Isopropylbenzene p-Isopropyltoluene Methylene Chloride 4-Methyl-2-Pentanone Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,2,3-Trichloroethane Trichlorofluoromethane 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene	ND	0.50	1-00			
t-1,3-Dichloropropene	ND	0.50	1.00			
Ethylbenzene	ND	1.0	1.00			
2-Hexanone	ND	10	1.00			
Isopropylbenzene	ND	1.0	1.00			
p-Isopropyltoluene	ND	1.0	1.00			
Methylene Chloride	YA ND	10	1.00			
4-Methyl-2-Pentanone	Bix ND	10	1.00			
Naphthalene 40%	OND CND	10	1.00			
n-Propylbenzene	O NO	1.0	1.00			
Styrene	NO Co	1.0	1.00			
1,1,1,2-Tetrachloroethane	ND/n 15-	1.0	1.00			
1,1,2,2-Tetrachloroethane	ND CHILD	1.0	1.00			
Tetrachloroethene	ND The	Ob: 1.0	1.00			
Toluene	ND O	0 01.0	1.00			
1,2,3-Trichlorobenzene	ND	Ox 700_	1.00			
1,2,4-Trichlorobenzene	ND	0000	1.00			
1,1,1-Trichloroethane	ND	1.0%	1,00			
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10 9 9	1.00			
1,1,2-Trichloroethane	ND	1.0), 1.00			
Trichloroethene	ND	1.0	00.1.00			
Trichlorofluoromethane	ND	10	(G)6			
1,2,3-Trichloropropane	ND	5.0	1.000			
1,2,4-Trimethylbenzene	ND	1.0	1.00			
1,3,5-Trimethylbenzene	ND	1.0	1.00			
Vinyl Acetate	ND	10	1.00			
Vinyl Chloride	ND	0.50	1.00			
p/m-Xylene	ND	1.0	1.00			
o-Xylene	ND	1.0	1,00			
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00			
Surrogate	Rec. (%)	Control Limits	Qualifiers			
1,4-Bromofluorobenzene	97	80-120	Manufaction of the second			
Dibromofluoromethane	111	78-126				
1,2-Dichloroethane-d4	118	75-135				
Toluene-d8	101	80-120				

RL Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Southern California Gas Company

Date Received:

11/14/15

M.L. 723B, P.O. Box 513249, Terminal Annex

Work Order:

15-11-1099

Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

Page 1 of 1

Client Sample Number			Lab 5	Sample Number		Date/Tir	ne Collected	Matrix	
Patriot 909			15-11-1099-1			11/13/1	19:40	Aqueous	
Parameter	Results	RL	DF	Qualifiers	<u>Units</u>	Date Prepared	<u>Date</u> <u>Analyzed</u>	Method	
Ignitability	>212	70	1.00		oF.	N/A	11/14/15	EPA 1010A	
pН	7.59	0.01	1.00	BV, BU	pH units	N/A	11/14/15	SM 4500 H+ B	
Sulfide, Total	ND O	0.050	1_00		mg/L	11/14/15	11/14/15	SM 4500 S2 - D	
Chloride	6100 0	100	50.0		mg/L	N/A	11/14/15	SM 4500-CI C	
Cyanide, Total	MONO	0.020	1.00		mg/L	11/14/15	11/14/15	SM 4500-CN E	
Method Blank	Polis	9/19/10		4.4		N/A	4 70	Aqueous	
Parameter	Results	Co RECO	16 DF	Qualifiers	Units	<u>Date</u> Prepared	Date Analyzed	Method	
Sulfide, Total	ND	0.050	7.00		mg/L	11/14/15	11/14/15	SM 4500 S2 - D	
Chloride	ND	2.0 7	6.000		mg/L	N/A	11/14/15	SM 4500-CI C	
Cyanide, Total	ND	0.020	1.080	200	mg/L	11/14/15	11/14/15	SM 4500-CN E	
	Results ND ND ND			CHINES CO	Sions of Ge	neral Order			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249 Date Received: Work Order: Preparation: Method: 11/14/15 15-11-1099 EPA 3010A Total EPA 6010B

Project: TS2015-C013 / Aliso Canyon

Page 1 of 2

Quality Control Sample ID	Type		Matrix	In	strument	Date Prepared	Date Ana	lyzed	MS/MSD Bat	tch Numbe
Patriot 909	Sample		Aqueou	s IC	P 7300	11/14/15	11/14/15	15:34	151114SA1	
Patriot 909	Matrix Spike		Aqueou	s IC	P 7300	11/14/15	11/14/15	15:37	151114SA1	
Patriot 909	Matrix Spike I	Duplicate	Aqueou	s IC	P 7300	11/14/15	11/14/15	15:43	151114SA1	
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	OND The	0.5000	0.2473	49	0.2457	49	72-132	1	0-10	3
Arsenic	0.01929	0.5000	0.6014	118	0.6118	120	80-140	2	0-11	
Barium	2,256	0.5000	2.893	4X	3.054	4X	87-123	4X	0-6	Q
Beryllium	ND92	0.5000	0.5453	109	0.5677	114	89-119	4	0-8	
Cadmium	0.05572	0.5000	0.5323	95	0.5480	98	82-124	3	0-7	
Chromium	ND	0.5000	0,5422	108	0,5708	114	86-122	5	0-8	
Cobalt	0.01920		0.5191	100	0.5351	103	83-125	3	0-7	
Соррег	0.1176	0.5000	0.67420	111	0.7070	118	78-126	5	0-7	
Lead	ND	0.5000	0.4253	85	0,4394	88	84-120	3	0-7	
Molybdenum	0.05082	0.5000	0.5453	99 99 1045	0.5629	102	78-126	3	0-7	
Nickel	0.1773	0.5000	0.6734	199 0	0.6974	104	84-120	3	0-7	
Selenium	ND	0.5000	0.5193	1045	0,0.5492	110	79-127	6	0-9	
Silver	0.01846	0.2500	0.3288	124	0.3411	129	86-128	4	0-7	3
Thallium	0.03243	0.5000	0.2546	44	00.2788	49	79-121	9	8-0	3,4
Vanadium	0.2425	0.5000	0.8265	117	0.8762	0, 127	88-118	6	0-7	3
Calcium	3262	0.5000	3112	4X	31620	126 Order	77-113	4X	0-11	Q
Zinc	0.9568	0.5000	1.561	121	1.595	128	89-131	2	0-8	



Quality Control - Spike/Spike Duplicate

Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

Date Received: Work Order:

11/14/15 15-11-1099 EPA 7470A Total

Preparation: Method:

EPA 7470A

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Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepared	Date Ana	lyzed	MS/MSD Bat	tch Number
15-11-0525-14	Sample	Aqueous	Mercury 04	11/13/15	11/13/15	18:33	151113SA3	
15-11-0525-14	Matrix Spike	Aqueous	Mercury 04	11/13/15	11/13/15	18:35	151113SA3	
15-11-0525-14	Matrix Spike Duplicate	Aqueous	Mercury 04	11/13/15	11/13/15	18:38	151113SA3	
<u>Parameter</u>	Sample Spike Conc. Added	MS Conc.	MS MSD %Rec Conc.	MSD %Rec.	%Rec. CL	RPD	RPD.GL	Qualifiers
Mercury	Matrix Spike Duplicate Sample Coric. Added ND 0.01000	0.01030	103 0.01059	106	55-133	3	0-20	
	Alon Or	he Dubier	,					
		The Land	Do Dio					
			Code di or					
			Ting	eneral O				
				Top	50			
					C			



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received:

11/14/15

Work Order: Preparation: 15-11-1099 N/A

Method:

EPA 1010A

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Project: TS2015-C013 / Aliso Canyon

Туре	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Num	nber
Sample	Aqueous	FP3	N/A	11/14/15 14:00	F1114FPD1	
Sample Duplicate	Aqueous	FP3	N/A	11/14/15 14:00	F1114FPD1	
Complian Section	Sample Conc. >212	DUP Conc. >212	RPD 0	RPD CL 0-25	Qualifiers	8
Ce Audin	of the Aunder Unite Line	the provision				
		ode during	General Order	Ŷ.		
	Sample Sample Duplicate	Sample Aqueous Sample Duplicate Aqueous	Sample Aqueous FP 3 Sample Duplicate Aqueous FP 3	Sample Aqueous FP 3 N/A Sample Duplicate Aqueous FP 3 N/A	Sample Aqueous FP 3 N/A 11/14/15 14:00 Sample Duplicate Aqueous FP 3 N/A 11/14/15 14:00 Sample Cons. DUP Cons. RPD RPD CL	Sample Aqueous FP 3 N/A 11/14/15 14:00 F1114FPD1 Sample Duplicate Aqueous FP 3 N/A 11/14/15 14:00 F1114FPD1



Southern California Gas Company
M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

Date Received:

11/14/15

Work Order: Preparation: 15-11-1099 N/A

Method:

SM 4500 H+ B

Page 2 of 4

Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
Patriot 909	Sample	Aqueous	PH 1	N/A	11/14/15 10:44	F1114PHD1
Patriot 909	Sample Duplicate	Aqueous	PH 1	N/A	11/14/15 10:44	F1114PHD1
Parameter pH	Combilance Audit	Sample Conc. 7.590	DUP Conc. 7.640	RPD 1	RPD CL 0-25	Qualifiers
	Audi	of the Duble U	No.			
		7	Hies Code Code	*		
			Grin	eneral Order		
					g C	



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Date Received: Work Order:

Preparation:

11/14/15

15-11-1099 N/A

Method:

SM 4500 S2 - D

Project: TS2015-C013 / Aliso Canyon

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Quality Control Sample ID Patriot 909	Type Sample	Matrix Aqueous	Instrument N/A		o:00 11/14/15 10:56	Duplicate Batch Number F1114SD1		
Patriot 909	Sample Duplicate	Aqueous	N/A	11/14/15 00:00 11/14/15 10:56 F1114SD1				
Parameter Sulfide, Total	Confoliation of the Confoliation	Sample Conc. ND	DUP Conc. ND	RPD N/A	RPD CL 0-25	Qualifiers		
	Compliance Audit	or the Dublic Ut	the provision					
			Code dull	General On	70 ₇ , 0 ₀			
					800			



Quality Control - Sample Duplicate

Southern California Gas Company
M.L. 723B, P.O. Box 513249, Terminal Annex

Project: TS2015-C013 / Aliso Canyon

Los Angeles, CA 90051-1249

Date Received:

11/14/15

Work Order: Preparation: 15-11-1099 N/A

Method:

SM 4500-CIC

Page 4 of 4

Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
Patriot 909	Sample	Aqueous	BUR02	N/A	11/14/15 12:06	F1114CLCD2
Patriot 909	Sample Duplicate	Aqueous	BUR02	N/A	11/14/15 12:06	F1114CLCD2
Parameter		Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Chloride	Compliance Audit	6103	6103	0	0-25	
	ance Audi	Submitted U.				
		Public	No.			
		-41	The Colons			
			de durin	Gener		
				al Order	2.	
					O,C	



Southern California Gas Company
M.L. 723B, P.O. Box 513249, Terminal Annex

Project: TS2015-C013 / Aliso Canyon

Los Angeles, CA 90051-1249

Date Received:

11/14/15

Work Order: Preparation: 15-11-1099 N/A

Method:

SM 4500 S2 - D

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Quality Control Sample ID	Type	Mat	rix	Instrument	Date Pr	epared D	Date Analyzed	LCS/LCSD E	Batch Number
099-15-853-671	LCS	Aqı	ieous	N/A	11/14/1	5 1	11/14/15 10:56	F1114SL1	
099-15-853-671	LCSD	Aqı	ieous	N/A	11/14/1	5 1	1/14/15 10:56	F1114SL1	
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec.	CL RPD	RPD CL	Qualifiers
Sulfide, Total	1.000 pt de la section de la s	0.8000	80	0,8000	80	80-120	0	0-20	
	Spike Added	Oh The	O Under	the Provisions Code	Or				
				96/	ring energy	Order	Pa _C		



Southern California Gas Company
M.L. 723B, P.O. Box 513249, Terminal Annex

Project: TS2015-C013 / Aliso Canyon

Los Angeles, CA 90051-1249

Date Received:

11/14/15

Work Order: Preparation: 15-11-1099 N/A

Method:

SM 4500-CN E

Page 2 of 6

Type	Ma	trix	Instrument	Date Fre	epared	Date	Analyzed	LCS/LCSD B	atch Number
LCS	Aq	ueous	UV 8	11/14/15	5	11/14	1/15 12:18	F1114CNL2	
LCSD	Aq	ueous	UV 8	11/14/15	5	11/14	1/15 12:18	F1114CNL2	
Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec	CL	RPD	RPD CL	Qualifiers
0.2000 Connolished	0.1700	85	0.1760	88	80-12	20	3	0-20	
	Op OF The	Public Un	the provi						
			os Code du	or Gener					
				,	Orde	66			
	LCS	LCS Aq	LCS Aqueous	LCS Aqueous UV 8	LCS Aqueous UV 8 11/14/15	LCS Aqueous UV 8 11/14/15	LCS Aqueous UV 8 11/14/15 11/14	LCS Aqueous UV 8 11/14/15 11/14/15 12:18 LCSD Aqueous UV 8 11/14/15 11/14/15 12:18	LCS Aqueous UV 8 11/14/15 11/14/15 12:18 F1114CNL2



Southern California Gas Company
M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Project: TS2015-C013 / Aliso Canyon

Date Received:

11/14/15 15-11-1099

Work Order: Preparation:

EPA 3510C

Method:

EPA 8015B (M)

Page 3 of 6

Quality Control Sample ID	Type	Mat	rix	Instrument	Date Fr	epared	Date	Analyzed	LCS/LCSD B	atch Number
099-15-498-310	LCS	Aqı	ieous	GC 47	11/14/1	5	11/14	1/15 14:21	151114B01	
099-15-498-310	LCSD	Aqı	ueous	GC 47	11/14/1	5	11/14	1/15 14:40	151114B01	
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Red	o. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	2000 Onlident	1822 Nal, Subba	91	1962	98	75-11	7	7	0-13	
	**	Ton Ortho	O Under	the province						
				Code du	or General	210				
						Too	60.	0		
	Spike Added 2000 Spike Added			96/	Ting energy	Orde	100	C.		



Quality Control - LCS

Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex

Los Angeles, CA 90051-1249

Total number of ME compounds; 0 Total number of ME compounds allowed: 1 LCS ME CL validation result: Pass

Date Received: Work Order:

15-11-1099

Preparation:

EPA 3010A Total **EPA 6010B**

11/14/15

Method:

Quality Control Sample ID	Туре	Matri	x	Instrument	Date Prep	ared Date Ana	lyzed LCS Batch N	lumber
97-01-003-15490	LCS	Aque	eous	ICP 7300	11/14/15	11/14/15	15:28 151114LA1	
Parameter Parameter		Spike Added	Conc.	Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony		0.5000	0.493	4	99	80-120	73-127	
rsenic	-	0.5000	0.491	5	98	80-120	73-127	
Barium	200	0.5000	0.5183	3	104	80-120	73-127	
Seryllium	Chang.	0.5000 0.5000 0.5000 0.5000	0.496	0	99	80-120	73-127	
Cadmium	Complian	0.5000	0.504	3	101	80-120	73-127	
chromium	10/1	0.9000	0.511	2	102	80-120	73-127	
obalt	97	0.5000	0.530	0	106	80-120	73-127	
copper		0.5000	0.496	4	99	80-120	73-127	
ead		0.5000	0.503	6	101	80-120	73-127	
lolybdenum		0.5000	4,0.486	2	97	80-120	73-127	
lickel		0.5000	0.517	7	104	80-120	73-127	
selenium		0.5000	0.481	6	96	80-120	73-127	
lilver		0.2500	0.251	0	101 107 101 98 98 101 101 101 101 101 101 101	80-120	73-127	
hallium		0.5000	0.535	8/00/	107	80-120	73-127	
anadium/		0.5000	0.5029	0 0 0	101	80-120	73-127	
Calcium		0.5000	0.492	9 00	99	80-120	73-127	
Zinc		0.5000	0.492	3	98	80-120	73-127	



Quality Control - LCS

Southern California Gas Company
M.L. 723B, P.O. Box 513249, Terminal Annex

Project: TS2015-C013 / Aliso Canyon

Los Angeles, CA 90051-1249

Date Received:

11/14/15 15-11-1099

Work Order: Preparation:

EPA 7470A Total

Method:

EPA 7470A

Page 5 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date	e Frepared	Date Ana	llyzed	LCS Batch	Number
099-04-008-7657	LCS	Aqueous	Mercury 04	11/	13/15	11/13/15	18:31	151113LA3	
Parameter		Spike Added	Conc. Recov	ered	LCS %Re	ec.	%Rec.	CL	Qualifiers
Mercury		0.01000	0.01065		107		80-120	3	

Compliance stage of the Duble United Code of General Order of Code of



Southern California Gas Company M.L. 723B, P.O. Box 513249, Terminal Annex Los Angeles, CA 90051-1249

Date Received: Work Order: Preparation: Method:

11/14/15 15-11-1099 **EPA 5030C EPA 8260B**

Project: TS2015-C013 / Aliso Canyon

Page 6 of 6

Quality Control Sample ID	Туре		Matrix	Ins	trument	Date Prepare	d Date A	nalyzed	LCS/LCSD Ba	lch Number
099-14-001-18768	LCS		Aqueous	GC	/MS XX	11/14/15	11/14/	15 10:55	151114L001	
099-14-001-18768	LCSD		Aqueous	GC	/MS XX	11/14/15	11/14/	15 11:29	151114L001	
<u>Parameter</u>	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00 C	48.94	98	48.85	98	80-120	73-127	0	0-20	
Carbon Tetrachloride	50.00	55.76	112	55.28	111	67-139	55-151	1	0-20	
Chlorobenzene	50.00	47.74	95	48.38	97	78-120	71-127	1	0-20	
1,2-Dibromoethane	50.00	C48.42	97	49.04	98	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	45:63 U	91	46.06	92	63-129	52-140	1	0-20	
1,2-Dichloroethane	50.00	C56.07	112	55.89	112	70-130	60-140	0	0-20	
1,1-Dichloroethene	50.00	5408, 0	108	54.22	108	66-126	56-136	0	0-20	
Ethylbenzene	50.00	48.53	97 9	48,58	97	80-123	73-130	0	0-20	
Toluene	50.00	49.39	990	249.42	99	80-120	73-127	0	0-20	
Trichloroethene	50.00	48.26	97 46/	47.68	95	80-122	73-129	1	0-20	
Vinyl Chloride	50.00	35.70	71	37,60	75	70-130	60-140	5	0-20	
p/m-Xylene	100.0	96.63	97	97.65	o, 98	75-123	67-131	1	0-20	
o-Xylene	50.00	47.12	94	47.50°S	95	74-122	66-130	1	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	44.89	90	45.85	0,9275	69-129	59-139	2	0-20	
Total number of LCS compounds	s: 14				940	75-123 74-122 69-129				
Total number of ME compounds:	0				1	0 0				
Total number of ME compounds	allowed: 1					9/0				
CS ME CL validation result: Pas	SS					7	70			
							60			
							0,0			



Sample Analysis Summary Report

Method Extraction Chemist ID Instrument Analytical Location EPA 1010A N/A 691 FP 3 1 EPA 2010B EPA 3010A Total 935 ICP 7300 1 EPA 7470A EPA 7470A Total 935 ICP 7300 1 EPA 8016B (M) EPA 5030C 985 GC/MS XX 2 EPA 8260B N/A 688 PH 1 1 SM 4500 FT B N/A 688 BURD2 1 SM 4500 CT C N/A 688 BURD2 1 SM 4500 CN E N/A 880 UV 8 1	Method				
EPA 6010B EPA 3010A Total 935 ICP 7300 1 EPA 7470A EPA 7470A Total 915 Mercury 04 1 EPA 8015B (M) EPA 3510C 421 GC 47 1 EPA 8260B EPA 5030C 986 GC/MS XX 2 SM 4500 H+ B N/A 688 PH 1 1 SM 4500 S2 - D N/A 880 N/A 1	ncurou	Extraction	Chemist ID	Instrument	Analytical Location
EPA 7470A EPA 7470A Total 915 Mercury 04 1 EPA 8015B (M) EPA 3510C 421 GC 47 1 EPA 8260B EPA 5030C 986 GC/MS XX 2 SM 4500 H+ B N/A 688 PH 1 1 SM 4500 S2 - D N/A 880 N/A 1	PA 1010A	N/A	691	FP3	1
EPA 8015B (M) EPA 3510C 421 GC 47 1 EPA 8260B EPA 5030C 986 GC/MS XX 2 SM 4500 H+ B N/A 68B PH 1 1 SM 4500 S2 - D N/A 880 N/A 1	EPA 6010B	EPA 3010A Total	935	JCP 7300	1
EPA 8260B EPA 5030C 986 GC/MS XX 2 SM 4500 H+ B N/A 688 PH 1 1 SM 4500 S2 - D N/A 880 N/A 1	EPA 7470A	EPA 7470A Total	915	Mercury 04	1
SM 4500 H+ B N/A 688 PH 1 1 SM 4500 S2 - D N/A 880 N/A 1	PA 8015B (M)	EPA 3510C	421	GC 47	1
SM 4500 H+ B N/A 688 PH 1 1 SM 4500 S2 - D N/A 880 N/A 1	PA 8260B	EPA 5030C	986	GC/MS XX	2
	SM 4500 H+ B	N/A	688	PH 1	1
SM 4500-CI C N/A 688 BUR02 1 SM 4500-CN E N/A 880 UV 8 1 Combined to 1 South					1
SM 4500-CN E N/A 880 UV 8 1 Conno Section Sec	SM 4500-CI C	N/A	688	BUR02	1
Compliance Audit of the Subjective	SM 4500-CN E	n/A	880	UV8	1
		Cop of the Bushe	the .		
			Code To		
Code sor			Turino	Sonor	
Code during Cener				9/0,	

Location 1: 7440 Lincoln Way, Garden Grove, CA 92841 Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841



Glossary of Terms and Qualifiers

ork Order	:15-11-1099 Page 1 of 1
Qualifiers	Definition
*	See applicable analysis comment
<	Less than the indicated value.
>	Greater than the indicated value
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without furth clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. T associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference
5	The PDS/PDSD or PES/PBSD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery/below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
В	Analyle was present in the associated method blank.
BU	Sample analyzed after holding time expired
BV	Sample received after holding time expired.
C)	See case narrative.
E	Concentration exceeds the calibration range. 8 4
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons we also present (or detected).
7	Analyle was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
AL	Analyle positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (*A SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
a	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyle presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL: (714) 895-5494 • FAX: (714) 894-7501

CHAIN OF CUSTODY FORM

15-11-1099

SOUTHERN CALIFORNIA GAS COMPANY - ENGINEERING ANALYSIS CENTER

SHIPPING ADDRESS - 8730 E. SLAUSON AVE. ML SC723B, PICO RIVERA, CA 90660-5100 - PHONE: (562)-806-4344 STREET ADDRESS - 8101 ROSEMEAD BLVD. BLDG H, PICO RIVERA, CA 90660 - EMAIL: EACChemicalSection@Socalgas.com

te Time By Collected Sample Sample Preservative Time By 12 755 mt Lygen Container 15 02:40 PM 5. Julba 17 11 11 12 12 12 12 12 12 12 12 12 12 12	Project # 420 5-6013	6013	Requestor	The gen		Sampling L	Sampling Location Asim Compan	n Compon
1/12/16 02:40 PM 5.90-80 1-1967 12 12 12 12 12 12 12 12 12 12 12 12 12	Sample I.D.	Sampling Date	Sampling Time	Collected By		Sample	Preservative	
1400 1 1005 1/20	Pabrial 9001	9/4/1	07:40 PM		waste x1	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Na CA	pt, Plushpoint, Chloride. Cyncolode
Strong Land House	-		_		1, 5002 1/2 1200 X	The d	1,400,	TPH-CL TT 22 MANS & POTESIUM
Geneta orde	->		~	Qurin	to first		Enthalfoot 14C1	Sulfine Subo. usc
	`	`	N	General Orde	· ·	\	1	Ĺ

telinquished By		Company/	Date	Time	Received By	Company/
Print) //	(Signature)	GasCo. Dept.			(Print) (Signature)	e) GasCo. Dept.
Som Malter	SAM DASTON	FAC	11/13/15	8:00 PM	Mort Kommonor	the three conc
ast Kummere	5 But Chi	こなり	11/11	0480	2 - Yau Lieu	6.4

H:\Chem\Forms\Chain of Custody.xls

Calscience

Page 29 of 29 WORK ORDER NUMBER: 15-11- /099

SAMPLE RECEIPT O

112100 200 2001	W-11 W - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
HECKLIST	COOLER _ / OF _ /
	DATE: 11 / /4 / 2015

CLIENT:	Gas Co.			DA	TE: 11	1 14	/ 201
Thermomet ☐ Samp ☐ Samp	er ID: SC2 (CF:-0.4°C); Te le(s) outside temperature (le(s) outside temperature (0°C, not frozen except sedin emperature (w/o CF):	9°C (w/ CF): by;) nilled on same day c] Blank	Ø Samp	ole
	s) received at ambient tem mperature: Air Filter	perature; placed on ice for tra	ansport by courier		Check	ed by: _	802
CUSTODY	SEAL:		3				3,0
Cooler Sample(s)	☐ Present and Injact ☐ Present and Injact	☐ Present but Not Intact☐ Present but Not Intact☐	Not Present Not Present	□ N/A		ked by: _ ked by: _	800
SAMPLE C	ONDITION: "TO, CO	Ma			Yes	No	N/A
Chain-of-Cu	ustody (COC) document(s	received with samples	*************		. 0		
□ Samp	nent(s) received complete	e 77 Matrix 171 Number of o	ontainers		. Jar		
Sampler's n	name indicated on COC	10/6/14		*****	. 1		
Sample con	ntainer label(s) consistent v	vith COC	** * *		. 8		
Sample con	ntainer(s) intact and in good	d condition	(***********	d		
Proper cont	ainers for analyses reques	ted	200		Ø		
Sufficient vo	olume/mass for analyses re	equested	6 Or				
Aqueous	s samples for certain analy	elinquished I No relinquish vith COC d condition sted equested ses received within 15-minut	e notaing time				
₽ pH □	Residual Chlorine Di	ssolved Sulfide	d Oxygen	Ś	🏻	P	
Unprese		eceived for certain analyses	tainer : : : : : : : : : : : : : : : :	e C	മ		
Container(s Volati	s) for certain analysis free of le Organics Dissolved	of headspace Gases (RSK-175) □ Dissol Ferrous Iron (SM 3500) □ F	ved Oxygen (SM 45	500)	8		
Tedlar™ ba	ig(s) free of condensation	*********************		*** *** *** ***	🗆		A
CONTAINE	R TYPE: ,		(Trip Blan	k Lot Numb	er:		9
Aqueous: □ 125PBzn 1500PB	□ VOA	a ₂	125AGB □ 125A 2250PBn □ 500AG	GBh □ 125/ GB Æ 500AG	AGBp □ SJ □ 500	AGJs	
Air: 🗆 Tedla	ar™ □ Canister □ Sorber	nt Tube PUF D	Other Matrix (): 1	J	_ п_	
Container: A Preservative	= Amber, B = Bottle, C = Cle : b = buffered, f = filtered, h = s = H ₂ SO ₄ , u = ultra-pure, zo	ar, E = Envelope, G = Glass, J HCl. n = HNO ₃ , na = NaOH, na nna = Zn(CH ₃ CO ₂) ₂ + NaOH	= Jar, P = Plastic, and a_2 = $Na_2S_2O_3$, p = H_3P	Z = Ziploc/Re O₄, Label	ed/Check	Bag ked by: _ ved by: _	050 228

2015-04-10 Revision

Ex. I-8

Daily Well Work Report



				Gas Company
Field	Name		Operator	
Aliso Canyon	So	uthern California Gas Company		
Daily Summary Job Name		Report Sta	art Date	Report End Date
Oct 2015 - Wellhead Leak	Laurence contraction		11/13/2015	11/14/2015
Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)	Total AFE Amount (Cost)	Norm	nalized AFE-Field Estimate (Cost)
Equalized swab valve w/ 1200 psi Perforated tubing 8387'-8391'. PO open choke on 7" casing. Pump ra After 185 bbls pumped, pony moto surface cracks. Displaced 10 bbls	g kill. Installed target 90 on wellhead flot. Opened swab valve. Tubing Pressure OH. L/D lubricator. Pumped 10 bbls 9.4 ate at 6 bpm. After 80 bbls displaced, ot or went down. Pumps offline. Brought pt. of 9.4 ppg polymer into tubing. Shut dowks. Continue pumping junk shots. Shut	 - 1201 psi. Pumped 6 bbls CaCl2 polymer pill. Began displacing w served increased gas flow and li umps back online at 7 bpm. After wn. Lined up to pump down 2-7/8 	2. RIH w/ tubing pund 1/ 9.4 ppg CaCl2. After quid at surface crack 693 bbls pumpd, bri	ch. Tagged EZSV at 8402'. er displacing tubing volumed, ks. Continued pumping 8 bpm. ne, oil and gas flowing from
Job Phase		Pfani	ned Likely Phase Cost (Actual Phase Field E Cost Var ML (Cost)
D-III Ot-				
Daily Costs Cost Des	Ve	endor Ticket	Field Est (Cos	t) Note
Labor - Contract	G.M. Volkmar	23-2015	Tiod Lat (Cos	M ke Volkmar Supervision
Labor - Contract	Halliburton Energy Se		08	Boots & Coots Estimate
Pumping Services	Halliburton Energy So			Pump Truck, crew, supervisor, standby, pump truck
Labor - Contract	Carbon Wireline	0516		Onyx piping, separator and crew labor. Equipment and standby
Wireline - Production Equip.	Western Wireline	13028		Quad monitors, service charge, substance charge. Millingworth, PGear, C Bottoms
Labor - Contract	Doby Hagar Trucking	est		Supervisor on site
Crane Services	Doby Hagar Trucking	127318		Stinger.
Welding Services	Hurst Welding	691431		Welding Services
Labor - Contract	Ensign Resources	3102664- SO18		Ensign crew and supervisor
Trucking - Vacuum	Doby Hagar Trucking			80 bbl vac truck, labor (victor)
Trucking - Vacuum	Doby Hagar Trucking			130 bbl vac truck, labor (Robert/Andy)
Wireline - Production Equip.	Western Wireline	12647		Supervisor Curis Partain, James Bottoms, mileage, Mast trailer stand by, 2-9/16" Flange
Trucking - Vacuum	Doby Hagar Trucking	23327		130 bbl vac truck, labor (steve b)
Labor - Contract	Geo Drilling Fluids In	c. 117057		Labor - Ryan Lindsey
Rentals - Misc	Pacific Petroleum	185457		Couple equipment and truck to bakersfield to load
Trucking - Vacuum	Pacific Petroleum	184783		Haul cc water from GEO to Socal Gas. Load 1 load brine from SS25 to 69 pad. Used 2x80 bbl vac trucks
Coiled tubing	Halliburton Energy So	ervices 09028763	399	CT 1-1/2" Class I Div II Unit, 6 man crew/lodge, CT Zone II charge, CT Add Hose Package,
Rentals - Misc	PEB (Padilla Electric	Builders) 15-4960		SS4/SS7 generators and trailers
Trucking - Vacuum	Doby Hagar Trucking	127255		Load 1330 bbl CC water and haul to SS-9 site and unload into JJ-8. Mix fresh water into JJ-8

Ex. I-8, page 1 of 2

Daily Well Work Report



Daily Summary				
Daily Costs		-		
Cost Des	Vendor	Ticket	Field Est (Cost)	Note
Crane Services	T & T Trucking	225908		40 ton crane. Operator (Tim)
Rentals - Misc	Pacific Petroleum	R-19468		House Trailer, gray water tanks, portable restroom
Crane Services	T & T Trucking	226059		110 ton crane. Operator (Mike)
Labor - Contract	Steve Cardiff	2015-26		Steve Cardiff
BOPE	Weatherford International	11447535 SR		Choke Manifold, Generator, 2xblower, air compressor, hoses, Super Choke, Spools adapters, API Rings
Labor - Contract	BCI	17140		Labor, Laborers, man lift, mules, air comp, septic tanks, crew with tools, barricades
Rentals - Misc	Pacific Petroleum	185205		Got parts to stabalize HT's.
Labor - Contract	BCI	17138		Equipment, operator, truck, fuel truck
Tanks/Bins	Pacific Petroleum	R-19464		Portable tanks at 69 site, Light Tower
Rentals - Misc	Pacific Petroleum	R-19474		9 x House Trailers, Gray water tanks, 13 x Portable water trailers
Rentals - Misc	Pacific Petroleum	R-19475		10 x generators, containments, fuel trailers, light towers, office trailers
Rentals - Misc	Pacific Petroleum	R-19477		3 x House Trailers, Gray tanks, 3 x PWT, 3 x Generators, Containments
Wireline - Production Equip.	Western Wireline	13027		Marine Wireline unit, Slickline unit, lubricator, flanges, pump
Wireline - Production Equip.	Western Wireline	12931		Offshore unit 306, temp log, baker setting tool, lubricator crew
Trucking - Non-Fluid		4886515		ACME Trucking - Driver Retention 11/2/15-11/15/15 (Preston)
Trucking = Non-Fluid		4884104		AMCE Trucking - Driver Retention 11/2/15- 11/15/2015. Luther
Trucking - Non-Fluid		4884103		ACME Trucking - Driver Retention 11/2/15-11/15/15. Shaun

Report Generated on: 12/21/2015

Ex. I-9

1133370 CALLER STATED THAT DURING WELL KILL ACTIVITIES AN OILY MIST WAS BEING RELEASED INTO THE AIR AS WELL AS OILY LIQUID BEING RELEASED TO THE GROUND IN THE AREA OF THE WELL.

INCIDENT LOCATION	
INCIDENT DTG	DISCOVERED
INCIDENT DATE TIME	11/13/2015 13:17
INCIDENT CAUSE	OTHER
YPE OF INCIDENT	IXED

ATION NEAREST CITY	NORTH RIDGE
(C)	NOR
LOCATION_STREET2	
١	
LOCATION STREET1	
LOCATION ADDRESS	12801 TAMPA AVENUE

CATION_STATE	LOCATION COUNTY	LOCATION ZIP	DISTANCE FROM CITY	DISTANCE UNITS	DIRECTION FROM CITY	LAT_DEG	LAT MIN
	LOS ANGELES	91326					

WATERWAY CLOSED	Z	
AIR CLOSURE TIME		
AIR CORRIDOR DESC		
AIR CORRIDOR CLOSED	Z	
DAMAGE AMOUNT		
ANY DAMAGES	Z	
NIIMBER EATAI ITIES		
ANY EATAI ITIES	z	
NIMBER HOSPITALIZED		

15-6708 SUNNY 20 SW U	STATE AGENCY REPORT NUM	OTHER AGENCY NOTIFIED	WEATHER CONDITIONS	AIR_TEMPERATURE	WIND SPEED	WIND DIRECTION	WATER SUPPLY CONTAMINATED	SHEEN SIZE
	15-6708		SUNNY		72	NS (٦	

CURRENT SPEED | CURRENT DIRECTION | WATER TEMPERATURE

COVERED		
PIPELINE	D	
EXPOSED_UNDERWATER	Z	
PIPELINE_ABOVE_GROUND	ABOVE	
DOT_REGULATED	Э	
PIPELINE_TYPE		
NPDES_COMPLIANCE	ם	

IF REACHED WATERAMOUNT IN WATERUNIT OF MEASURE REACH WATER NO