



02055246

## CEMENT JOB REPORT



CUSTOMER Petroleum Development Corpor.		DATE 05-JUL-11		F.R. # 1001833887		SERV. SUPV. CHASE M MURCHISON	
LEASE & WELL NAME		LOCATION		COUNTY-PARISH-BLOCK			
PUCKETT #34A-7D - API 05045143600000		7-7S-96W		Garfield Colorado			
DISTRICT		DRILLING CONTRACTOR RIG #		TYPE OF JOB			
Grand Junction				Surface			
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		PHYSICAL SLURRY PROPERTIES			
9-5/8" Top Cem Plug, Nitrile cvr, Phc		Float Collar, Al Flap, 9-5/8 - 8rd		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT <sup>3</sup>	WATER GPS
		Float Shoe 9-5/8 - 8rd					PUMP TIME HR:MIN
							Bbl SLURRY
							Bbl MIX WATER
MATERIALS FURNISHED BY BJ							
Type III with Additives				194	14.2	1.47	7.35
Fresh Water					8.34		176
Fresh Water					8.34		20
Premium Lite Cement				1,317	12.5	1.97	10.62
Available Mix Water 1000 Bbl. Available Displ. Fluid 400 Bbl.							TOTAL
							708.35
							366.80
HOLE		TBG-CSG-D.P.		COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	SIZE	WGT.	TYPE	DEPTH	GRADE
16		2375	9.625	36	CSG	2500	J-55
						2375	
						2331	
LAST CASING		PKR-CMT RET-BR PL-LINER		PERF. DEPTH		TOP CONN	
SIZE	WGT	TYPE	DEPTH	BRAND & TYPE	DEPTH	TOP	BTM
20	52.73		100	no packer	0		
						9.625	8RND
						WATER BASED ML	
						9	
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED
176	BBLS	Fresh Water	8.34	1000	0	0	0
						0	0
						3520	2816
						up right rig tank	
EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:							
PRESSURE/RATE DETAIL				EXPLANATION			
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW X CO. REP. X	
	PIPE	ANNULUS				TEST LINES 3500 PSI	
						CIRCULATING WELL - RIG X BJ	
14:30						safty meeting /leave yard	
17:00						arive on loc/ spot trucks	
17:22						rig up meeting/ rig up	
20:30						safty meeting	
20:56	360		2	20	H2O	pump paresite	
21:07	3500					psi test	
21:17	200		4	20	H2O	spacer	
21:42	302		4.8	50	SLURRY	lead cement 12.5ppg	
22:11	308		4.8	150	SLURRY	lead cement 12.5ppg	
22:23	437		4.8	200	SLURRY	lead cement 12.5ppg	
22:54	408		4.8	350	SLURRY	lead cement 12.5ppg	
23:01	264		4.8	400	SLURRY	lead cement 12.5ppg	
23:15	281		4.8	450	SLURRY	lead cement 12.5ppg	
23:30	255		4.8	50	SLURRY	tail cement 14.2ppg	
23:38						drop plug	
23:45	216		7	50	H2O	displacement	
23:53	272		6	100	H2O	displacement	
23:53	272			176	H2O	bump plug 1bbl back test flouts	
04:37	28		3	10	SLURRY	14.2 ppg cement to surface TOP OUT	
05:20						END JOB THANK YOU CHASE& BHI CREW	
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
Y N	850	Y N	1	756	0	Y N	

## Andrews, David

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**From:** Andrews, David  
**Sent:** Tuesday, July 19, 2011 3:52 PM  
**To:** rcjevne@aol.com  
**Cc:** Ellsworth, Stuart; King, Kevin; Krabacher, Jay; Weems, Mark; Longworth, Mike  
**Subject:** RE: 34A-7D Surface Cement Report  
**Attachments:** PDC Top Out 07-05-2011.xls; PDC\_2008\_10.doc; Oxy\_2011\_06.doc; 2055138.PDF[1].pdf; 2053760.pdf

Randy,

As discussed, please review the attached files, and call to discuss PDC's next steps. On the attached spreadsheet, the yellow and green cells are inputs. Other cells are calculated values. The most significant unknown input is Annular Fluid Weight (weight of fluid above the top of lead cement). I usually assume 0.0 ppg for a completely evacuated annulus (air void), 5.0 ppg as an average value for a partially-evacuated annulus, or 8.3 ppg for a water-filled annulus. As you are aware, evacuated or partially-evacuated annuli are common on the Roan Plateau, because of significant lost circulation zones in the upper +/-1800' of the hole. When I have requested surface casing CBL's from other operators in the past, a value of 5.0 ppg generally gives a decent TOC estimate. The analytical model assumes that any cement losses to the hole would be from the lead cement.

For the Puckett 34A-7D, I estimate that the annular lead cement TOC is likely at a depth ranging from 416' (assumes a 0.0 ppg annular fluid weight) to 1238' (same calculation with a 8.3 ppg annular fluid weight). This would have required top-out volumes of 66 bbls to 196 bbls, respectively. PDC only topped out with 10 bbls of 14.2 ppg slurry. Therefore, it is likely that there is a significant void between the primary TOC and the top-out cement.

Two example variances are attached, one from PDC in 2008, and a recent Oxy variance. Information contained in the Word files has been presented in COGCC's past Staff Reports to our Commissioners.

In this case, PDC would be required to submit a variance request on a Sundry Notice (recent Oxy example attached and 2008 PDC example attached), with a demonstration explaining why the current wellbore configuration of the Puckett 34A-7D well is protective of fresh water (groundwater) resources. Considering that this is a repeat situation for PDC, I am not ruling out issuance of a Notice of Alleged Violation for failure to comply with Rule 317.h. Following the 2008 variance request, PDC personnel assured me that adequacy of surface casing cement jobs would be reviewed following every job to evaluate the need for a CBL or remedial cement prior to drilling out the surface casing shoe. That does not appear to have been the case for the Puckett 34A-7D well.

Thanks,

**David D. Andrews, P.E., P.G.**  
Engineering Supervisor - Western Colorado

**State of Colorado**  
**Oil and Gas Conservation Commission**  
707 Wapiti Court, Suite 204  
Rifle, Colorado 81650  
Office Phone: (970) 625-2497 Ext. 1  
Cell Phone: (970) 456-5262  
Fax: (970) 625-5682  
E-mail: [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us)  
Website: <http://www.colorado.gov/cogcc>

**From:** [rcjevne@aol.com](mailto:rcjevne@aol.com) [<mailto:rcjevne@aol.com>]  
**Sent:** Tuesday, July 19, 2011 2:07 PM  
**To:** Andrews, David  
**Subject:** Re: 34A-7D Surface Cement Report

Yes, My # is 307-851-2957

-----Original Message-----

From: Andrews, David <[David.Andrews@state.co.us](mailto:David.Andrews@state.co.us)>

To: rcjevne <[rcjevne@aol.com](mailto:rcjevne@aol.com)>; Longworth, Mike <[Mike.Longworth@state.co.us](mailto:Mike.Longworth@state.co.us)>; Kellerby, Shaun <[Shaun.Kellerby@state.co.us](mailto:Shaun.Kellerby@state.co.us)>

Sent: Tue, Jul 19, 2011 8:50 am

Subject: RE: 34A-7D Surface Cement Report

Randy,

I have some concerns with the surface casing cement job on this well. Please reply with the PDC engineer contact information for this location. From what I recall, you already drilled out the surface casing shoe on this well, drilled the production hole, and set production casing, correct?

Thanks,

**David D. Andrews, P.E., P.G.**

Engineering Supervisor - Western Colorado

**State of Colorado**

**Oil and Gas Conservation Commission**

707 Wapiti Court, Suite 204

Rifle, Colorado 81650

Office Phone: (970) 625-2497 Ext. 1

Cell Phone: (970) 456-5262

Fax: (970) 625-5682

E-mail: [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us)

Website: <http://www.colorado.gov/cogcc>

**From:** [rcjevne@aol.com](mailto:rcjevne@aol.com) [<mailto:rcjevne@aol.com>]

**Sent:** Tuesday, July 19, 2011 4:17 AM

**To:** Longworth, Mike; Andrews, David; Kellerby, Shaun

**Subject:** 34A-7D Surface Cement Report

I get a paper copy & e-mailed report so I just Forward the report !, Depends on which engineer I get, what kind of report I get !

I'll review it from now on to make sure you don't have a problem with it.

Thanx Randy



## Andrews, David

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**From:** Andrews, David  
**Sent:** Monday, July 18, 2011 8:16 AM  
**To:** Longworth, Mike; rcjevne@aol.com  
**Subject:** RE: PDC surface 100183387  
**Attachments:** Northwest Area Notification Procedures Rev2\_09-21-2010.pdf

**Importance:** High

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

RE: Puckett 34A-7D, API # 05-045-143600000

I am your primary point-of-contact for post-job cement summaries (see attached – Subsequent Reports section). This submittal was not sufficient because COGCC does not have software for opening your attachments in \*.PBA, \*.EVE, and \*.JMD formats.

I was able to gather the following information from the PDF files attached to your email below: 9.625" csg set at 2375', lift pressure of 272 psi prior to bumping the plug, 12.5 ppg lead slurry weight, and 14.2 ppg tail slurry weight.

**Please reply with the following information:**

- Actual hole size (permitted size was 17.5")
- Sacks and yield for the lead cement (12.5 ppg slurry)
- Sacks and yield for the tail cement (14.2 ppg slurry)
- Sacks, yield, and slurry weight for the top-out cement

Thanks,

**David D. Andrews, P.E., P.G.**  
Engineering Supervisor - Western Colorado

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**Oil and Gas Conservation Commission**  
707 Wapiti Court, Suite 204  
Rifle, Colorado 81650  
Office Phone: (970) 625-2497 Ext. 1  
Cell Phone: (970) 456-5262  
Fax: (970) 625-5682  
E-mail: [David.Andrews@state.co.us](mailto:David.Andrews@state.co.us)  
Website: <http://www.colorado.gov/cogcc>

**From:** Longworth, Mike  
**Sent:** Monday, July 11, 2011 11:18 AM  
**To:** Andrews, David  
**Subject:** FW: PDC surface 100183387

**THANK YOU!**

**MIKE LONGWORTH**  
**FIELD INSPECTOR (GARFIELD AND RIO BLANCO COUNTIES)**  
**OFFICE: 970.243.1183**

**From:** rcjevne@aol.com [<mailto:rcjevne@aol.com>]  
**Sent:** Tuesday, July 05, 2011 1:20 PM  
**To:** Kellerby, Shaun; Longworth, Mike  
**Subject:** Fwd: PDC surface 100183387

Surface Cement F/ Puckett 34A-7D, API # 05-045-143600000.

-----Original Message-----

From: Murchison, Chase M <[Chase.Murchison@bakerhughes.com](mailto:Chase.Murchison@bakerhughes.com)>  
To: Reese, Tina E <[Tina.Reese@bakerhughes.com](mailto:Tina.Reese@bakerhughes.com)>; Phillips, Steven P <[Steven.Phillips@bakerhughes.com](mailto:Steven.Phillips@bakerhughes.com)>; Smith, Jarrod C <[Jarrod.Smith@bakerhughes.com](mailto:Jarrod.Smith@bakerhughes.com)>  
Cc: rcjevne <[rcjevne@aol.com](mailto:rcjevne@aol.com)>  
Sent: Tue, Jul 5, 2011 10:52 am  
Subject: PDC surface 100183387