

# Cement Verification Report - Cementer's Well Service, Inc.

P.O. BOX 336220 • GREELEY, CO 80633 • (970) 353-7299 • FAX (970) 353-7712



COGCC Operator Guidance RULE #308.A.B(2)A.ii

CLIENT: Great Western Operating	Cementor's FIELD TICKET #	400113-D
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## Requested Operator Guidance:

Well Name & Number	Lease	Raindance	Well No.	FC 23 - 312HN
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Well API Number	05-123-51586
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Job Date	7/12/21	Time on	15:00	24 hr time
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Job Type	New Well Surface
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Cementing Company	Cementor's Well Service, Inc	Contact	Nate Kvamme - 303-324-4296
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Ambient conditions	clear / rain / snow / other	85	temp deg F
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Slurry Description	
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a) Purpose	Surface - 9 5/8" 40# CSG, 13 1/2" hole
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b) Cement Class	Type I / II
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c) Cement Yield	1.61 cuft / sk
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d) Cement Density	13.9 PPG
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e) Number of sks	920 sks (94# equiv)
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f) Mix Fluid Type	
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Water / Cement	8.5 Gal / sk
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g) Slurry mixed	263.8 BBLs slurry
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h) Additives used	1.50% CaCl2 3.00% Bentonite
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Total Water Used	361.7 BBLs H2O
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i) Displacement Fluid Vol	155.5 BBLs H2O
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j) Method of Placement	
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k) Set Depth	2,051 feet (ft)
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l) Stage tool depth	n/a
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m) Float Collar Depth	2,011 feet (ft)
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n) Designed Top of Cement	n/a to surface feet (ft)
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o) Centralizer depths	20 Centralizers at Following Depths:, 13.77, 55.12, 96.43, 220.4, 343.47, 467.12, 591.11, 715.1, 839.08, 963.04, 1087.04, 1206.8, 1329.97, 1453.62, 1577.62, 1694.74, 1818.67, 1942.7, 1984.04, 2035.03
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## Charts - (pressure, density, pump rate)

Landed Plug @	1660 psi	Final Lift Pressure @	525 psi
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Cement Density (as weighed during job) @	13.9 PPG
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## Job notes

a) Plug down	Y / N	Time	19:00	24 hr time
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b) Floats held	Y / N	7/12/21
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c) Full Returns	Y / N	Lost Circulation	Y / N
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d) Cement to surface	Y / N	28.0 BBLs to surface
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e) If no returns, top off	n/a BBLs
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f) Top off detail	-
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DATE: DATE: 7/12/21



Great Western Operating Company, LLC

Lease: Raindance  
Well: FC 23 - 312HN  
API# 05-123-51586

Date &  
Time On 7/12/21  
15:00

Item	Event	Date	Time (24 hr)	Density (PPG)	Pump Rate (BPM)	Incremental (Line Item) Volume (BBLs)	Cumulative Volume (BBLs)	Pressure (PSI)	Comment
Pre-job	1 Call Out	7/11/21	12:00						Great Western Call out w/ 3 hr notice
	2 Leave Yard	7/11/21	14:15						Cementers leaves yard to travel to location
On Location: Pre-job	3 Arrive On Location	7/11/21	15:00						Arrive on location
	4 Spot Trucks	7/11/21	15:05						Spot trucks on location
	5 Rig Up	7/11/21	15:07						Rig up water & Cementer's Bulk Truck, prep pump and mixing operation
	6 Safety Meeting	7/11/21	15:12						Pre-job safety meeting with IKON12 rig crew, GWO company man & Cementer's crew
	7 Rig Up	7/11/21	15:17						Rig up cement head w/plug
	8 Fill Lines	7/11/21	15:19	8.34	2.00				Fill lines with up to 5 bbls of fresh water
Initial Job Start	9 Pressure Test	7/11/21	0:00	8.34	-			-	Pressure test pumps and lines
	10 Pump Spacer	7/11/21	17:00	8.34	4.00	20	20	-	Pump dye fresh water @ 20 BBLs
Cementing	11 Pump Cement	7/11/21	17:05	13.90	4.00	263.84	283.84	45	Pump Cement @ 920 SKS
									Type I/II cement with 1.5% CaCl2 & 3.0% Bentonite @ 1.61 cuft/sk & 13.9 PPG 263.84 BBLs slurry
Displacement	12 Drop Plug	7/11/21	18:15			n/a			Shut down cementing operation & release top plug
	13 Initial Displacement	7/11/21	18:17	8.34	2.00	4.00	287.84	-	Send plug with 4.0 BBLs H2O @ 2.0 BPM
	14 Plug Drop Verification	7/11/21	18:21			n/a			Visual verification plug released from head
	15 Displacement	7/11/21	18:23	8.34	5.00	113.53	397.37	80-450	Continued Displacement with total fresh water @ 155.5 BBLs H2O
	16 Spacer To Surface	7/11/21	18:50	8.34	5.00	117.53	401.37	385	Identified Spacer, looking for Cement / green water
	17 Cement To Surface	7/11/21	18:53	8.34	5.00	127.53	411.37	390	Identify Cement to surface w/ 28 BBLs back
	18 Drop Rate	7/11/21	18:58	8.34	2.50	145.53	429.37	400	Drop rate to 2.5 BPM for last 10 BBLs of Displacement to land plug
Casing Test	19 Land Plug	7/11/21	19:00	8.34	2.50	155.53	439.37	1,660	Land Plug @ 1,660 PSI
									with final lift pressure @ 525 PSI
								1,660	Start 30 min casing test w/ pressure @ 1,660 PSI
								1,677	10 min into casing test, pressure @ 1,677 PSI
								1,695	20 min into casing test, pressure @ 1,695 PSI
Post Job & Testing	20 Check Floats	7/11/21	19:00	n/a	0	0	0	1,708	30 min into casing test, pressure @ 1,708 PSI
	21 End Job	7/11/21	19:33						BBLs back (.25-1BBL expected)
	22 Safety Meeting	7/11/21	19:35						Bleed off pressure, job complete
	27 Rig Down	7/11/21	19:38						Pre-rig down safety meeting, wash up equipment
									Rig down Cementer's Equipment, leave location

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Great Western Operating Company, LLC

## Surface Cement Job Graph

### COMPANY DETAILS

Date	7/12/21	API #	05-123-51586	Well No.	FC 23 - 312HN
County	Weld	State	CO	Lease	Raindance

Client Great Western Operating Company, LLC

Contact / email

### JOB DETAILS

TIME ON	15:00	24 hr	Depth	2,051	ft.	Pressure Test @	1,660	psi
START TIME	16:58	7/12/21	Bottom of Surface	2,051	ft.	10 min	1,677	psi
END TIME	19:44	7/12/21	Plug Landed @	2,012	ft.	20 min	1,695	psi
			Plug Landed @	19:00	24 hr	30 min	1,708	psi

### SUMMARY GRAPH

