

# 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	Cementer's FIELD TICKET #	400119-D
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**Requested Operator Guidance:**

Well Name & Number	Lease	Raindance	Well No.	FC 23 - 232HNX
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Well API Number	05-123-51580			
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Job Date	7/18/21	Time on	8:00	24 hr time
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Job Type	New Well Surface			
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Cementing Company	Cementer'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	263.9	BBLs slurry		
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h) Additives used	1.50%	CaCl2	3.00%	Bentonite
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Total Water Used	359.3	BBLs H2O		
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i) Displacement Fluid Vol	153.1	BBLs H2O		
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j) Method of Placement				
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k) Set Depth	2,024	feet (ft)		
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l) Stage tool depth	n/a			
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m) Float Collar Depth	1,980	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: 13.34, 54.68, 95.86, 220.1, 301.8, 425.57, 548.79, 672.3, 794.91, 919.56, 1043.79, 1167.91, 1292.22, 1416.56, 1540.73, 1664.67, 1788.65, 1912.62, 1953.95, 2008.03			
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Charts - (pressure, density, pump rate)

Landed Plug @	1690	psi	Final Lift Pressure @	530	psi
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Cement Density (as weighed during job) @	13.9	PPG
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**Job notes**

a) Plug down	<input checked="" type="radio"/> Y / <input type="radio"/> N	Time	13:12	24 hr time
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b) Floats held	<input checked="" type="radio"/> Y / <input type="radio"/> N	7/18/21		
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c) Full Returns	<input checked="" type="radio"/> Y / <input type="radio"/> N	Lost Circulation	<input checked="" type="radio"/> Y / <input type="radio"/> N
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d) Cement to surface	<input checked="" type="radio"/> Y / <input type="radio"/> N	35.0	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: 7/18/21



Great Western Operating Company, LLC

Lease: Raindance  
Well: FC 23 - 232HNX  
API# 05-123-51580

Date & Time On 7/18/21 8:00

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	7/18/21	9:45						Great Western Call out w/ 3 hr notice
	2 Leave Yard	7/18/21	7:15						Cementer's leaves yard to travel to location
On Location: Pre-job	3 Arrive On Location	7/18/21	8:00						Arrive on location
	4 Spot Trucks	7/18/21	8:05						Spot trucks on location
	5 Rig Up	7/18/21	8:07						Rig up water & Cementer's Bulk Truck, prep pump and mixing operation
	6 Safety Meeting	7/18/21	8:12						Pre-job safety meeting with IKON12 rig crew, GWO company man & Cementer's crew
	7 Rig Up	7/18/21	8:17						Rig up cement head w/plug
	8 Fill Lines	7/18/21	8:19	8.34	2.00				Fill lines with up to 5 bbls of fresh water
Initial Job Start	9 Pressure Test	7/18/21	0:00	8.34	-			-	Pressure test pumps and lines
	10 Pump Spacer	7/18/21	10:02	8.34	4.00	20	20	-	Pump dye fresh water @ 20 BBLs
Cementing	11 Pump Cement	7/18/21	10:07	13.90	4.00	263.89	283.89	45	Pump Cement @ 920 SKS
									Type I/II cement with 1.5% CaCl <sub>2</sub> & 3.0% Bentonite @ 1.61 cuft/sk & 13.9 PPG
Displacement	12 Drop Plug	7/18/21	11:15			n/a			Shut down cementing operation & release top plug
	13 Initial Displacement	7/18/21	11:17	8.34	2.00	4.00	287.89	-	Send plug with 4.0 BBLs H <sub>2</sub> O @ 2.0 BPM
	14 Plug Drop Verification	7/18/21	11:21			n/a			Visual verification plug released from head
	15 Displacement	7/18/21	11:23	8.34	5.00	104.05	387.95	80-450	Continued Displacement with total fresh water @ 153.1 BBLs H <sub>2</sub> O
	16 Spacer To Surface	7/18/21	13:25	8.34	5.00	108.05	391.95	385	Identified Spacer, looking for Cement / green water
	17 Cement To Surface	7/18/21	13:28	8.34	5.00	118.05	401.95	390	Identify Cement to surface w/ 35 BBLs back
	18 Drop Rate	7/18/21	13:33	8.34	2.50	143.05	426.95	400	Drop rate to 2.5 BPM for last 10 BBLs of Displacement to land plug
Casing Test	21 Casing Test	7/18/21	14:40	n/a	0	0	0	1,706	Land Plug @ 1,690 PSI
									with final lift pressure @ 530 PSI
Casing Test	22 Casing Test	7/18/21	14:50	n/a	0	0	0	1,729	Start 30 min casing test w/ pressure @ 1,690 PSI
									10 min into casing test, pressure @ 1,706 PSI
									20 min into casing test, pressure @ 1,729 PSI
Casing Test	23 Casing Test	7/18/21	15:00	n/a	0	0	0	1,753	30 min into casing test, pressure @ 1,753 PSI
Post Job & Testing	24 Check Floats	7/18/21	15:01	n/a	0	0	0	1	BBLs back (.25-1BBL expected)
	25 End Job	7/18/21	15:03						Bleed off pressure, job complete
	26 Safety Meeting	7/18/21	15:05						Pre-rig down safety meeting, wash up equipment
	27 Rig Down	7/18/21	15:08						Rig down Cementer's Equipment, leave location

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Great Western Operating Company, LLC

## Surface Cement Job Graph

### COMPANY DETAILS

Date	7/18/21	API #	05-123-51580	Well No.	FC 23 - 232HNX
County	Weld	State	CO	Lease	Raindance

Client Great Western Operating Company, LLC

Contact / email

### JOB DETAILS

TIME ON	8:00	24 hr	Depth	2,024	ft.	Pressure Test @	1,690	psi
START TIME	10:00	7/18/21	Bottom of Surface	2,024	ft.	10 min	1,706	psi
END TIME	15:14	7/18/21	Plug Landed @	1,980	ft.	20 min	1,729	psi
			Plug Landed @	13:12	24 hr	30 min	1,753	psi

### SUMMARY GRAPH

