

# 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 #	400118-D
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**Requested Operator Guidance:**

Well Name & Number	Lease	Raindance	Well No.	FC 23 - 232HN
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Well API Number	05-123-51581
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Job Date	7/17/21	Time on	10:30	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	81	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	361.9	BBLs H2O
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i) Displacement Fluid Vol	155.7	BBLs H2O
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j) Method of Placement	
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k) Set Depth	2,057	feet (ft)
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l) Stage tool depth	n/a
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m) Float Collar Depth	2,013	feet (ft)
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n) Designed Top of Cement	n/a	to surface
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o) Centralizer depths	20 Centralizers at Following Depths: 54.55, 96.06, 137.21, 220.21, 344.79, 468.92, 592.93, 717.1, 831.28, 955.75, 1080.23, 1202.39, 1326.87, 1451.34, 1575.82, 1695.84, 1820.4, 1944.86, 1986.35, 2040.8	
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**Charts - (pressure, density, pump rate)**

Landed Plug @	1690	psi	Final Lift Pressure @	550	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		7/17/21
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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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# Surface Cement Job Report - Cementer's Well Service, Inc.

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DATE: DATE: 7/17/21



Great Western Operating Company, LLC

Lease: Raindance  
Well: FC 23 - 232HN  
API# 05-123-51581

Date & Time On 7/17/21 10:30

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	7/17/21	9:45						Great Western Call out w/ 3 hr notice
	2 Leave Yard	7/17/21	9:45						Cementer's leaves yard to travel to location
On Location: Pre-job	3 Arrive On Location	7/17/21	10:30						Arrive on location
	4 Spot Trucks	7/17/21	10:35						Spot trucks on location
	5 Rig Up	7/17/21	10:37						Rig up water & Cementer's Bulk Truck, prep pump and mixing operation
	6 Safety Meeting	7/17/21	10:42						Pre-job safety meeting with IKON12 rig crew, GWO company man & Cementer's crew
	7 Rig Up	7/17/21	10:47						Rig up cement head w/plug
	8 Fill Lines	7/17/21	10:49	8.34	2.00				Fill lines with up to 5 bbls of fresh water
Initial Job Start	9 Pressure Test	7/17/21	0:00	8.34	-			-	Pressure test pumps and lines
	10 Pump Spacer	7/17/21	11:16	8.34	4.00	20	20	-	Pump dye fresh water @ 20 BBLs
Cementing	11 Pump Cement	7/17/21	11:21	13.90	4.00	263.90	283.90	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	7/17/21	12:30			n/a			Shut down cementing operation & release top plug
	13 Initial Displacement	7/17/21	12:32	8.34	2.00	4.00	287.90	-	Send plug with 4.0 BBLs H <sub>2</sub> O @ 2.0 BPM
	14 Plug Drop Verification	7/17/21	12:36			n/a			Visual verification plug released from head
	15 Displacement	7/17/21	12:38	8.34	5.00	106.68	390.58	80-450	Continued Displacement with total fresh water @ 155.7 BBLs H <sub>2</sub> O
	16 Spacer To Surface	7/17/21	13:02	8.34	5.00	110.68	394.58	385	Identified Spacer, looking for Cement / green water
	17 Cement To Surface	7/17/21	13:05	8.34	5.00	120.68	404.58	390	Identify Cement to surface w/ 35 BBLs back
	18 Drop Rate	7/17/21	13:10	8.34	2.50	145.68	429.58	400	Drop rate to 2.5 BPM for last 10 BBLs of Displacement to land plug
Casing Test	21 Casing Test	7/17/21	13:12	n/a	0	0	0	1,690	Land Plug @ 1,690 PSI
									with final lift pressure @ 550 PSI
Casing Test	22 Casing Test	7/17/21	13:22	n/a	0	0	0	1,696	Start 30 min casing test w/ pressure @ 1,690 PSI
									10 min into casing test, pressure @ 1,696 PSI
									20 min into casing test, pressure @ 1,707 PSI
Casing Test	23 Casing Test	7/17/21	13:32	n/a	0	0	0	1,707	30 min into casing test, pressure @ 1,707 PSI
									1,715 PSI
Post Job & Testing	24 Check Floats	7/17/21	13:43	n/a	0	0	0	1	BBLs back (.25-1BBL expected)
	25 End Job	7/17/21	13:45						Bleed off pressure, job complete
	26 Safety Meeting	7/17/21	13:47						Pre-rig down safety meeting, wash up equipment
	27 Rig Down	7/17/21	13:50						Rig down Cementer's Equipment, leave location

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Great Western Operating Company, LLC

## Surface Cement Job Graph

### COMPANY DETAILS

Date	7/17/21	API #	05-123-51581	Well No.	FC 23 - 232HN
County	Weld	State	CO	Lease	Raindance

Client Great Western Operating Company, LLC

Contact / email

### JOB DETAILS

TIME ON	10:30	24 hr	Depth	2,057	ft.	Pressure Test @	1,690	psi
START TIME	11:17	7/17/21	Bottom of Surface	2,057	ft.	10 min	1,696	psi
END TIME	13:54	7/17/21	Plug Landed @	2,014	ft.	20 min	1,707	psi
			Plug Landed @	13:12	24 hr	30 min	1,715	psi

### SUMMARY GRAPH

