

HALLIBURTON

iCem[®] Service

ANADARKO PETROLEUM CORP-EBUS

Ft. Lupton District, Colorado

For: Steve Martinez

Date: Tuesday, April 29, 2025

Oxy 9.625" Multi-Stage Intermediate Glade West

Weld, Platteville

Sincerely,

Thomas Haas and Crew

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1.0 Cementing Job Summary

1.1 Executive Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the Oxy 9-5/8 Multi-Stage Glade West. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

This space is provided to enter in a brief summary of the job. Below are some important items to discuss:

- **Quality of circulation – 100% THROUGHOUT JOB**
- **Final Circulating Pressure and Pump Rate 4bbl/min 950 psi 1st stage/ 4bbl/min 700 psi 2nd Stage**
- **Returns to Surface 85 bbl of cement 1st Stage/ 35 bbl of cement 2nd Stage**
- **Any deviation from plan- PUMPED AS PLANNED**
- **Abnormalities on job chart- NONE**

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Rockies Cement Team

1.1 Job Overview

API #:	05-123-52915
City, County:	Platteville, Weld
SO#:	910037472

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	4/28/25	9:00
Called Out Time:	4/28/25	3:00
Arrived On Location:	4/28/25	10:00
Job Started:	4/28/25	19:52
Job Completed:	4/29/25	06:11
Departed Location:	4/29/25	07:30

	Description	Units	Value
1	Surface temperature at the time of the job	Degrees	80
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	10.1
4	Casing set depth (shoe)	ft	11021
5	TVD	ft	11021
6	Float collar depth	ft	10937
7	Length of rate hole	ft	21
8	Previous casing shoe depth	ft	2356
	DV Tool Set Depth	ft	6580
9	Pre-job mud circulation time	hh:mm	08:00

10	Pre-job mud circulation rate	bpm	7
11	Pre-job mud circulation volume	bbls	2500
12	Mud circulation pressure at start of cement	psi	290
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	Y
15	Calculated displacement	bbls	800.6
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	85BBL cmt 1 ST Stage 110 bbl cmt 2 nd Stage
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	950 4bbl/min 1 st Stage bbl/min 2 nd Stage
20	Number of Centralizers	-	255
21	Number of bottom plugs	-	0
22	Number of trucks used preparing/during job	-	4
23	Add hours? If Yes, put #	Y/N and hours	n
24	NPT? If Yes, put #	Y/N and hours	n

	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
pH	7.0		6.0 - 8.0	Chemicals in water can cause severe retardation
Temperature	65	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	300	ppm	3000 ppm	Can shorten thickening time

1.1 Actual Pump Schedule

Stage 1

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	10.5	80	3.25	21.26	138.2	2938
Lead Cement	12.5	248.6	1.98	10.04	705	7078
Tail Cement	13.2	69.2	1.69	7.94	230	1826
Top Plug	1					
Displacement Fluid 1	8.34 FW	10				
Displacement Fluid 2	10.1 WF	308.7				
Displacement Fluid 2	10.5	20	3.25	21.26	34.6	758
Displacement Fluid 2	10.1 WF	461.9				

Stage 2

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	10.5	60	3.25	21.26	103.7	2205
Lead Cement	12.5	407	1.97	10.02	1160	11623
Tail Cement	13.2	31.6	1.69	7.93	105	833
Top Plug	1					
Displacement Fluid	8.33 FW					
Displacement Fluid	10.1 WF	471.7				

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Pump A Pressure (psi)	Dnwhol e Density (ppg)	Cmb Pump Rate (bbl/mi n)	Cmb Stg Total (bbl)	Comments
Event	1	Call Out	Call Out	4/28/2025	03:00:00	USER					CREW CALLED OUT FOR JOB.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/28/2025	09:15:00	USER					PRE-CONVOY SAFETY MEETING AT HES LOCATON TO DISCUSS ROUTE AND DRIVING HAZARDS.

Event	3	Crew Leave Yard	Crew Leave Yard	4/28/2025	09:30:00	USER	CREW DEPARTS HALLIBURTON FACILITIES FOR LOCATION.
Event	4	Arrive At Loc	Arrive At Loc	4/28/2025	10:00:00	USER	CREW ARRIVES ON LOCATION. MET WITH CO MAN TO DISCUSS JOB. TD-11042 12-1/4" OH, TP-11021' 9-5/8 47# L-80, FC-10937', PC-2356' 13-3/8 # J55, DV TOOL AT 6580', PACKER AT 6597' TVD-11021', 10.1 PPG OBM. 1 TOP PLUG FOR SATGE 1, 1 CLOSING TOOL, 1 TOP PLUG FOR SECOND STAGE.. WATER 65* 7.0 PH, 0 CHLORIDES.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/28/2025	12:00:00	USER	PRE-RIG UP SAFTEY MEETING WITH ALL HES EMPLOYEES TO DISCUSS HAZARDS OF LOCATION AND

											DISCUSS RIG UP SEQUENCE.
Event	6	Rig-up Lines	Rig-up Lines	4/28/2025	12:15:00	USER					RIG UP PUMPS AND LINES.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/28/2025	19:30:00	USER	2.01	7.95	0.00	8.15	SAFTEY NMEETING WITH HES, COMPANY MAN, AND RIG HANDS.
Event	8	Start Job	Start Job	4/28/2025	19:53:16	USER	4.01	7.94	0.00	0.00	START JOB DATA RECORDING.
Event	9	Other	Fill Lines	4/28/2025	19:53:53	USER	4.13	8.04	0.00	0.00	FILL LINES WITH 3 BBL OF FRESH WATER.
Event	10	Test Lines	Test Lines	4/28/2025	19:54:52	NONE	195.62	8.34	0.00	2.04	PRESSURE TESTED LINES TO 5000 PSI, 500 EKO TEST AT 400 PSI, 5TH GEAR STALL AT 2400PSI.
Event	11	Pump Spacer	Pump Spacer	4/28/2025	20:04:25	USER	85.95	8.35	0.00	0.00	PUMPED 80 BBL OF 10.5 PPG TUNED SPACER. 3.25 CUFT/SK AND 21.26 GAL/SK VERIFIED WEIGHT WITH PRSSURIZED MUD SCALES.
Event	12	Shutdown	Shutdown	4/28/2025	20:07:07	USER	281.78	10.49	4.19	5.71	SHUTDOWN TO A WING CRACKED ON A BULK HOSE.

Event	13	Resume Pumping	Resume Pumping	4/28/2025	20:15:02	USER	168.92	10.47	0.00	6.17	HOSE REMOVED FROM SERVICE. RESUME PUMPING SPACER.
Event	14	Pump Lead Cement	Pump Lead Cement	4/28/2025	20:28:13	USER	87.89	10.62	2.78	88.50	PUMPED 248.6 BBLS OF 12.5 PPG ISOBOND, 705 SKS 1.98 CUFT/SK, 10.04 GAL/SK. VERIFIED BY PRESSURISED MUD SCALES. TOC ESTIMATED AT 5437'.
Event	15	Pump Tail Cement	Pump Tail Cement	4/28/2025	21:07:58	USER	306.99	12.88	7.00	4.07	PUMPED 69.2 BBLS OF 13.2 PPG ELASTICEM, 230 SKS 1.69 CUFT/SK, 7.94 GAL/SK. VERIFIED BY PRESSURISED MUD SCALES. TOC ESTIMATED AT 9892'.
Event	16	Shutdown	Shutdown	4/28/2025	21:20:33	USER	166.33	13.03	3.77	84.62	SHUTDOWN TO DROP TOP PLUG.
Event	17	Drop Top Plug	Drop Top Plug	4/28/2025	21:24:25	USER	13.59	13.33	0.00	84.90	PLUG LEFT PLUG CONTAINER, VERIFIED BY TOOL HAND.
Event	18	Pump Displacement	Pump Displacement	4/28/2025	21:25:18	USER	14.27	13.29	0.00	84.90	WASH UP ON THE PLUG WITH 10 BBL OF WATER.
Event	19	Shutdown	Shutdown	4/28/2025	21:29:28	USER	12.57	0.76	0.00	99.73	SHUTDOWN TO SWAP TO MUD.

Event	20	Pump Displacement	Pump Displacement	4/28/2025	21:32:44	USER	2.62	8.50	0.00	0.00	BEGIN DISPLACEMENT WITH 10.1 PPG OBM, PUMP 308.7 BBL.
Event	21	Pump Spacer	Pump Spacer	4/28/2025	22:20:29	USER	45.81	9.18	0.00	317.19	PUMPED 20 BBLS OF 10.5 PPG TUNED SPACER. 3.25 CUFT/SK AND 21.26 GAL/SK VERIFIED WEIGHT WITH PRSSURIZED MUD SCALES.
Event	22	Pump Displacement	Pump Displacement	4/28/2025	22:25:43	USER	57.77	10.69	3.96	335.57	RESUME PUMPING DISPLACEMENT WITH 10.1 PPG OBM, TOTAL DISPLACEMENT OF 800.6 BBL.
Event	23	Bump Plug	Bump Plug	4/29/2025	00:05:41	NONE	1396.86	9.78	0.00	827.48	PLUG BUMPED AT CALCULATED DISPLACEMENT. FINAL CIRCULATING PRESSURE OF 950 PSI AT 4BBL/MIN. HELD PRESSURE AT 1450 PSI FOR 3 MIN. 76 BBL OF CEMENT TO SURFACE.
Event	24	Set Packer	Set Packer	4/29/2025	00:08:51	USER	1701.77	9.78	0.00	828.29	PRESSURE UP TO SET PACKER, PACKER SET AT 2490 PSI.

Event	25	Release Casing Pressure	Release Casing Pressure	4/29/2025	00:39:43	USER	535.74	9.77	0.00	836.23	RELEASED PRESSURE BACK TO THE TRUCK, 7 BBL BACK.
Event	26	Drop Opening Device For Multiple Stage Cementer	Drop Opening Device For Multiple Stage Cementer	4/29/2025	00:42:31	USER	-3.90	9.68	0.00	836.23	DROP FREE FALL OPENING TOOL.
Event	27	Open Multiple Stage Cementer	Open Multiple Stage Cementer	4/29/2025	01:08:03	USER	69.33	9.80	0.98	836.67	PRESSURED UP TO OPEN DV TOOL, TOOL DIDNT OPEN.
Event	28	Open Multiple Stage Cementer	Open Multiple Stage Cementer	4/29/2025	01:19:49	USER	0.10	9.76	0.00	842.96	DV TOOL OPENED AT 900 PSI, HES PUMPED 20 BBL OF OBM, TURNED THE WELL OVER TO THE RIG 85 BBL OF CEMENT CIRCULATED TO SURFACE.
Event	29	Start Job	Start Job	4/29/2025	03:04:14	NONE	5.18	8.61	0.00	21.96	START JOB DATA RECORDING FOR 2ND STAGE.
Event	30	Pump Water	Fill Lines	4/29/2025	03:04:52	USER	1.29	8.61	0.00	21.96	FILL LINES WITH 3 BBL OF FRESH WATER.
Event	31	Test Lines	Test Lines	4/29/2025	03:06:39	NONE	28.69	8.56	0.00	3.04	PRESSURE TESTED LINES TO 5200 PSI, 500 EKO TEST AT 900

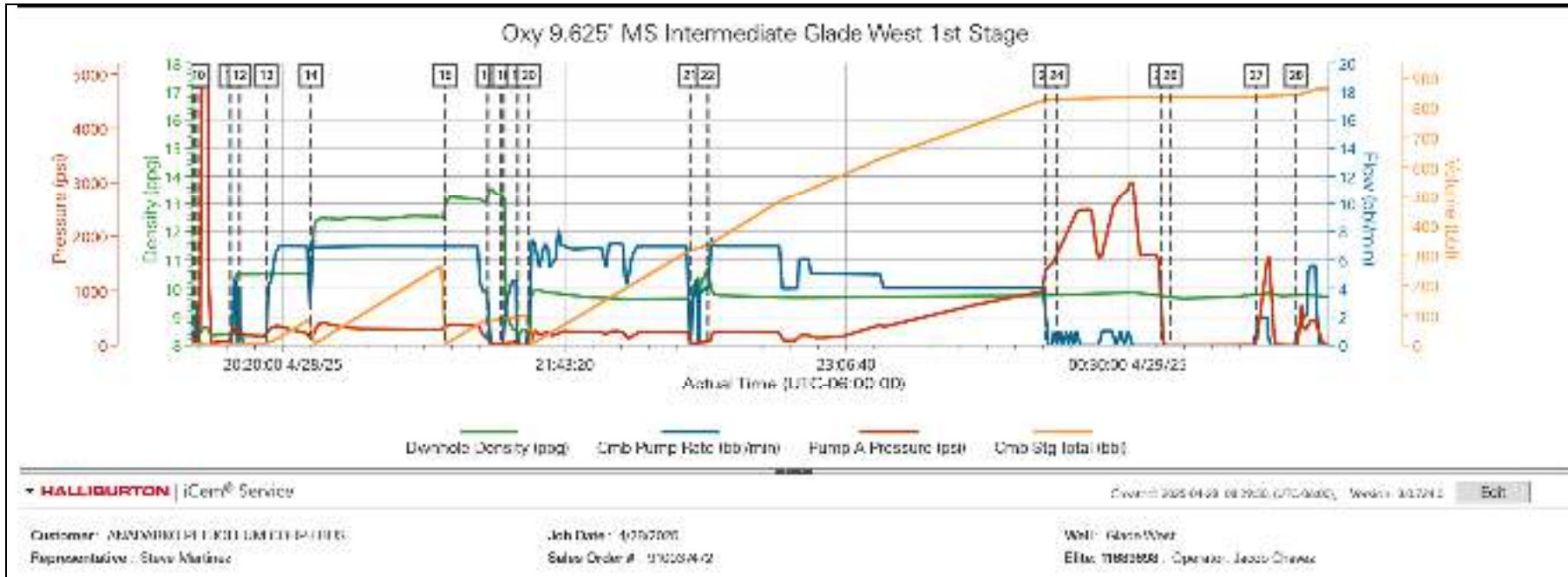
											PSI, 5TH GEAR STALL AT 2800PSI.
Event	32	Pump Spacer 1	Pump Spacer 1	4/29/2025	03:16:07	NONE	10.16	8.55	0.00	0.00	PUMPED 60 BBLS OF 10.5 PPG TUNED SPACER. 3.25 CUFT/SK AND 21.26 GAL/SK VERIFIED WEIGHT WITH PRSSURIZED MUD SCALES.
Event	33	Pump Lead Cement	Pump Lead Cement	4/29/2025	03:25:18	NONE	132.10	10.54	7.15	57.37	PUMPED 407 BBLS OF 12.5 PPG ISOBOND, 1160 SKS 1.98 CUFT/SK, 10.04 GAL/SK. VERIFIED BY PRESSURISED MUD SCALES. TOC ESTIMATED AT SURFACE.
Event	34	Pump Tail Cement	Pump Tail Cement	4/29/2025	04:28:11	NONE	289.92	12.49	7.19	0.06	PUMPED 31.6 BBLS OF 13.2 PPG ELASTICEM, 105 SKS 1.69 CUFT/SK, 7.94 GAL/SK. VERIFIED BY PRESSURISED MUD SCALES. TOC EST. AT SURFACE.
Event	35	Shutdown	Shutdown	4/29/2025	04:35:38	NONE	128.64	13.13	0.00	44.80	SHUTDOWN TO DROP TOP PLUG.

Event	36	Drop Top Plug	Drop Top Plug	4/29/2025	04:38:47	NONE	12.45	13.20	0.00	44.80	PLUG LEFT PLUG CONTAINER, VERIFIED BY TOOL HAND.
Event	37	Pump Displacement	Pump Displacement	4/29/2025	04:38:59	USER	27.30	12.99	2.92	44.96	BEGIN PUMPING DISPLACEMENT, FIRST 10 BBL WITH FRESH WATER, FOLLOWED BY 471.7 BBL OF 10.1 PPG OBM.
Event	38	Bump Plug	Bump Plug	4/29/2025	06:04:23	NONE	1593.98	8.54	0.00	497.88	PLUG BUMPED AT CALCULATED DISPL. FINAL CIRCULATING PRESSURE OF 1100 PSI AT 4BBL/MIN. HELD PRESSURE AT 2100. 35 BBL OF CEMENT TO SURFACE.
Event	39	Release Casing Pressure	Release Casing Pressure	4/29/2025	06:09:19	USER	2167.13	8.63	0.00	498.90	RELEASED PRESSURE BACK TO THE TRUCK, 5 BBL BACK.
Event	40	End Job	End Job	4/29/2025	06:11:14	NONE	11.65	8.52	0.00	498.90	END RECORDING.
Event	41	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/29/2025	06:15:00	USER	99.52	8.71	0.00	10.58	PRE-RIG DOWN SAFTEY MEETING TO DISCUSS HAZRDS OF LOCATION AND SEQUENCE OF RIG DOWN.

Event	42	Rig Down Lines	Rig Down Lines	4/29/2025	06:20:00	USER	-3.87	8.70	0.00	17.54	RIG DOWN PUMPS AND LINES.
Event	43	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/29/2025	07:15:00	USER					PRE-CONVOY SAFETY MEETING ON LOCATON TO DISCUSS ROUTE AND DRIVING HAZARDS.
Event	44	Crew Leave Location	Crew Leave Location	4/29/2025	07:30:00	USER					LEAVE LOCATION, THANK YOU FOR CHOOSING HES. THOMAS HAAS AND CREW.

Attachments

2.2 1ST STAGE.png



2.3 Stage 2.png

