

*The Road to Excellence Starts with Safety*

Sold To #: 300466	Ship To #: 3848051	Quote #: 0022427249	Sales Order #: 0904768193
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep: Luke Rains	
Well Name: AZUL		Well #: 13-31HZ	API/UWI #: 05-123-46112-00
Field: WATTENBERG	City (SAP): HUDSON	County/Parish: WELD	State: COLORADO
Legal Description: SE SW-13-1N-66W-745FSL-2446FWL			
Contractor: PRECISION DRLG		Rig/Platform Name/Num: PRECISION 464	
Job BOM: 7523 7523			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Nicholas Peterson	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	13,129'	Job Depth TVD	7,271'
Water Depth		Wk Ht Above Floor	6'
Perforation Depth (MD)	From		To

**Well Data**

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36		J-55	0	1903	0	1903
Casing	0	5.5	4.892	17	LTC	HCP110	0	13129	0	0
Open Hole Section			7.875				1903	13139	1903	7271

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5	1	WEATH	13,129	Top Plug	5.5	1	WEATH
Float Shoe					Bottom Plug	5.5	1	WEATH
Wet Shoe Sub	5.5	1	WEATH	13,118	Plug Container	5.5	1	HES
					Centralizers	5.5	209	WEATH

**Fluid Data**

Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Spacer	Tuned Spacer III	60	bbl	10.5	6.43	41.3	4	2,478	

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Lead	GASSTOP (TM) SYSTEM	400	sack	13.2	1.6	7.7	8	3,080
3	Tail	ECONOCEM (TM) SYSTEM	770	sack	13.5	1.68	7.99	8	6,152
4	Displacement	Biocide Water and MMCR	20	bbl	8.34			8	
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							
5	Displacement	Biocide Water	240	bbl	8.34			8	
Cement Left In Pipe		Amount	0 ft			Reason			Wet Shoe
Mix Water:	pH 7.0	Mix Water Chloride:	0 ppm			Mix Water Temperature:	60 °F		
Cement Temperature:	## °F	Plug Displaced by:	8.33 lb/gal			Disp. Temperature:	60 °F		
Plug Bumped?	Yes	Bump Pressure:	2,760 psi			Floats Held?	Yes		
Cement Returns:	0 bbl	Returns Density:	## lb/gal			Returns Temperature:	## °F		
<b>Comment:</b> Pumped 60 bbls Tuned Spacer, 113 bbls Lead, 230 bbls Tail, 305 bbls fresh water displacement. No spacer back to surface.									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	4/10/2018	18:00:00	USER	CREW CALLED OUT AT 18:00, REQUESTED ON LOCATION 00:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660 10866484, Bulk 660 11689672, SOFTSIDE, 12051660 AND PUMP 11189145.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/10/2018	20:45:00	USER	DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	4/10/2018	23:00:00	USER	STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location	4/10/2018	23:30:00	USER	END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,902', 5.5" CASING: 17 LB/FT TOTAL 13,129', 7.875" HOLE, TD 13,139', 11' SHOE TRAC, TVD- 7,271', WF- 9.2, 209 CENTRALIZERS. PUMP FRESH WATER DISPLACEMENT WITH MMCR FIRST 20 BBLS. CASING LANDED @ 02:00 04/11/2018. RIG CIRCULATED 2 BOTTOMS UP.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/10/2018	23:45:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/11/2018	00:15:00	USER	CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Rig-Up Completed	Rig-Up Completed	4/11/2018	02:00:00	USER	WAITED ON RIG TO FINISH RUNNING DRILL PIPE.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/11/2018	03:30:00	USER	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	4/11/2018	03:50:30	COM5	BEGIN RECORDING JOB DATA.

Event	10	Test Lines	Test Lines	4/11/2018	03:57:03	COM5	PRESSURE TESTED IRON TO 6,000 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 800 PSI, 5TH GEAR STALL OUT @ 1,980 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	4/11/2018	04:03:02	COM5	PUMP 60 BBLs OF TUNED SPACER III @ 10.5 LB/GAL. 20 GALS D-AIR, 40 GALS MUSOL, 40 GALS DUAL SPACER B. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. CALCULATED HOS @ 1,293.6', CALCULATED TOS @ 723.71'. PUMP RATE 4 BBLs/MIN @ 380 PSI.
Event	12	Shutdown	Shutdown	4/11/2018	04:20:15	USER	SHUTDOWN TO BUILD TUB OF LEAD LATEX CEMENT.
Event	13	Drop Bottom Plug	Drop Bottom Plug	4/11/2018	04:23:52	USER	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	14	Pump Lead Cement	Pump Lead Cement	4/11/2018	04:25:50	COM5	PUMPED 400 SKS OF GAS STOP @ 13.2 LB/GAL, 1.6 FT3/SK, 7.7 GAL/SK. 113.27 BBLs, HOL CALCULATED @ 3,665.70', TOL CALCULATED @ 2,017.31'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLs/MIN @ 874 PSI.
Event	15	Pump Tail Cement	Pump Tail Cement	4/11/2018	04:44:24	COM5	PUMP 770 SKS OF ECONOCEM @ 13.5 LB/GAL, 1.68 FT3/SK, 7.99 GAL/SK, 230.39 BBLs. HOT CALCULATED @ 7,455.99', TOT CALCULATED @ 5,688.01'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLs/MIN @ 727 PSI.
Event	16	Bump Plug	Bump Plug	4/11/2018	05:17:35	USER	BOTTOM PLUG LANDED AND PRESSURED UP. CALCULATED LEAD 113 BBLs WAS PUMPED AND 195 BBLs INTO TAIL PUMPED WHEN PRESSURE SPIKED ON BOTTOM PLUG. CASING VOLUME WAS 305 BBLs. 308 BBLs TOTAL WAS PUMPED FOLLOWING THE BOTTOM PLUG ON PUMPS BBL COUNTER.
Event	17	Other	Other	4/11/2018	05:30:04	USER	CHECKED PLUG CONTAINER TO VERIFY WITH CUSTOMER THAT THE TOP PLUG WAS STILL IN THE PLUG CONTAINER.

CUSTOMER HAD US PRESSURE UP TO 3,000 PSI. PRESSURE FELL OFF IMMEDIATELY ALLOWING US TO START MOVING CEMENT OUT OF CASING AGAIN.

Event	18	Drop Top Plug	Drop Top Plug	4/11/2018	05:47:10	COM5	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	19	Pump Displacement	Pump Displacement	4/11/2018	05:47:59	COM5	BEGIN CALCULATED DISPLACEMENT OF 305 BBLS WITH FRESH WATER. PUMPED THE FIRST 20 BBLS WITH MMCR, PUMPED 250 BBLS WITH BIOCID. PUMP RATE 8 BBLS/MIN @ 2,760 PSI.
Event	20	Bump Plug	Bump Plug	4/11/2018	06:35:43	COM5	PLUG BUMPED AT CALCULATED DISPLACEMENT. 2,760 PSI PRESSURED 500 PSI OVER BUMP.
Event	21	Other	Other	4/11/2018	06:43:00	USER	PRESSURE FELL OFF DURING CASING PRESSURE TEST @ 3,403 PSI.
Event	22	End Job	End Job	4/11/2018	06:47:39	COM5	STOP RECORDING JOB DATA.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/11/2018	07:00:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	24	Rig-Down Equipment	Rig-Down Equipment	4/11/2018	07:30:00	USER	RIG DOWN BULK AND MIXING EQUIPMENT.
Event	25	Rig-Down Completed	Rig-Down Completed	4/11/2018	09:30:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/11/2018	09:45:00	USER	DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	27	Depart Location	Depart Location	4/11/2018	10:00:00	USER	THANK YOU FOR USING HALLIBURTON - NICK PETERSON AND CREW.

3.0 Attachments

3.1 Job Chart

