

The Road to Excellence Starts with Safety

Sold To #: 300466	Ship To #: 3848049	Quote #: 0022448582	Sales Order #: 0904886137
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep: Levi Rogers	
Well Name: AZUL		Well #: 13-22HZ	API/UWI #: 05-123-46119-00
Field: WATTENBERG	City (SAP): HUDSON	County/Parish: WELD	State: COLORADO
Legal Description: SE SW-13-1N-66W-702FSL-2326FWL			
Contractor: PRECISION DRLG		Rig/Platform Name/Num: PRECISION 464	
Job BOM: 7523 7523			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Steven Markovich	

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	12500ft Job Depth TVD
Water Depth	Wk Ht Above Floor
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	1850	0	0
Casing		5.5	4.892	17	LTC	HCP110	0	12488	0	0
Open Hole Section			7.875				1850	12509	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			12488	Top Plug	5.5		HES
Float Shoe	5.5				Bottom Plug	5.5		HES
Float Collar	5.5				SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		HES
Stage Tool	5.5				Centralizers	5.5		HES

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	Tuned Spacer III	Tuned Spacer III	60	bbl	10.5	6.96				
37.58 gal/bbl		FRESH WATER								
0.70 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
0.25 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)								

0.70 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)							
79.92 lbm/bbl		BARITE, BULK (100003681)							
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	Gasstop B1	GASSTOP (TM) SYSTEM	400	sack	13.2	1.6		6	7.69
0.10 %		FE-2 (100001615)							
0.50 %		SCR-100 (100003749)							
5.09 Gal		FRESH WATER							
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
3	EconoCem	ECONOCEM (TM) SYSTEM	700	sack	13.5	1.68		6	7.99
0.20 %		SA-1015, 50 LB SACK (102077046)							
7.99 Gal		FRESH WATER							
0.35 %		HR-5, 50 LB SK (100005050)							
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
4	Biocide Water and MMCR	Biocide Water and MMCR	20	bbl	8.34				
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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
5	Biocide Water	Biocide Water	269	bbl	8.34				
Mix Water: pH 7		Mix Water Chloride: 0 ppm			Mix Water Temperature: 62 °F °C				
Comment Bumped plug at 289bbls away, final lift pressure was 3247psi. After 15min casing test pressure was 4025psi. Checked floats and after 4bbls back floats held. Kicked in pumps at 2bbl/min to burst plug. Plug burst at 5231psi. Increased rate to 4bbl/min and pumped a 3bbl wet shoe. Check floats again and after 2.5bbls back floats held. Estimated Top of Tail Cement 5730' Estimated Top of Lead Cement 2042' Estimated Top of Spacer 721'.									

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	5/29/2018	04:00:00	USER	Job called out with and on location time of 0800
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/29/2018	07:30:00	USER	JSA with HES crew on driving safety and route to rig.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	5/29/2018	08:00:00	USER	Arrived on location, rig still running casing. 2000' to run.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	5/29/2018	08:10:00	USER	JSA and Hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	5/29/2018	08:15:00	USER	Rigged up HES lines and equipment.
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	5/29/2018	10:45:00	USER	Safety meeting with HES and rig crew on job safety and procedure.
Event	7	Start Job	Start Job	5/29/2018	11:05:45	COM4	TD 12509' TP 12500' FC 12488' 5 1/2" 17# Production Casing, 7 7/8" Open Hole, 9 5/8" 36# Surface Casing at 1850' . TVD 7300' Mud Weight 9.1ppg.
Event	8	Test Lines	Test Lines	5/29/2018	11:09:59	COM4	Set kick outs to 500psi and check kicks outs then bring pressure up to 6000psi and hold.
Event	9	Pump Spacer 1	Pump Spacer 1	5/29/2018	11:22:44	COM4	Pump 60bbbls of 10.5ppg 6.96yield Tuned Spacer. Added 40 gallons of Musol A and Dual Spacer B on the fly. Pumped at 3bbl/min 450psi.
Event	10	Drop Bottom Plug	Drop Bottom Plug	5/29/2018	11:37:49	USER	Plug pre loaded into HES head. Plug dropped and loaded in front of company rep.
Event	11	Pump Lead Cement	Pump Lead Cement	5/29/2018	11:39:16	COM4	Pump 114bbbls of 13.2ppg 1.6yield Lead Cement mixed with Latex. Pumped at 8bbl/min 1060psi.
Event	12	Check Weight	Check weight	5/29/2018	11:41:35	COM4	Weight verified by pressurized scales.

Event	13	Check Weight	Check weight	5/29/2018	11:43:55	COM4	Weight verified by pressurized scales.
Event	14	Pump Tail Cement	Pump Tail Cement	5/29/2018	11:53:58	COM4	Pump 209bbls of 13.5ppg 1.68yield Tail Cement. Pumped at 8bbl/min 890psi.
Event	15	Check Weight	Check weight	5/29/2018	11:54:30	COM4	Weight verified by pressurized scales.
Event	16	Shutdown	Shutdown	5/29/2018	12:29:24	COM4	Shutdown and clean pumps and lines.
Event	17	Drop Top Plug	Drop Top Plug	5/29/2018	12:39:30	COM4	Plug pre loaded into HES head. Plug dropped and loaded in front of company rep.
Event	18	Pump Displacement	Pump Displacement	5/29/2018	12:39:33	COM4	Pump 289bbs of H2O. First 20bbls with MMCR. Pumped at 8bbl/min and slowed rate with pressure increase.
Event	19	Displ Reached Cement	Displ Reached Cmnt	5/29/2018	12:45:12	COM4	Displacement reached cement.
Event	20	Bump Plug	Bump Plug	5/29/2018	13:20:33	COM4	Bumped plug at 289bbls away, final lift pressure was 3247psi. brought pressure 500psi over and held. Started 15 min casing test. The pressure after the 15 mins was 4025psi. Checked floats and after 4bbls back floats held.
Event	21	Other	Other	5/29/2018	13:38:18	COM4	Kicked in pumps at 2bbl/min to burst plug.
Event	22	Other	Other	5/29/2018	13:40:55	COM4	Plug burst at 5231psi. Increased rate to 4bbl/min and pumped a 3bbl wet shoe. Choked floats and after 2.5bbls back floats held.
Event	23	End Job	End Job	5/29/2018	13:43:42	COM4	Thank you Steve Markovich and crew.

3.0 Attachments

3.1 Job Chart

