

*The Road to Excellence Starts with Safety*

Sold To #: 300466	Ship To #: 3841667	Quote #: 0022414851	Sales Order #: 0904697003
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep: Albert Bryan	
Well Name: AZUL		Well #: 13-12HZ	API/UWI #: 05-123-45909-00
Field: WATTENBERG	City (SAP): HUDSON	County/Parish: WELD	State: COLORADO
Legal Description: SE SW-13-1N-66W-917FSL-1399FWL			
Contractor:		Rig/Platform Name/Num: Xtreme 22	
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	12607ft	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	1852	0	0
Casing		5.5	4.892	17	LTC	HCP110	0	12607	0	0
Open Hole Section			8.5				1852	12630	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			12607	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	80	bbl	10.5	6.25				
37.58 gal/bbl		<b>FRESH WATER</b>								
0.70 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>								
0.25 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>								

0.70 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>								
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
2	ElastiCem	ELASTICEM (TM) SYSTEM	780	sack	13.2	1.57		6	7.53	
7.53 Gal		<b>FRESH WATER</b>								
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
3	EconoCem	ECONOCEM (TM) SYSTEM	950	sack	13.5	1.68		6	7.99	
8 Gal		<b>FRESH WATER</b>								
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
4	Biocide Water and MMCR	Biocide Water and MMCR	20	bbl	8.34					
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>								
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
5	Biocide Water	Biocide Water	272	bbl	8.34					
Mix Water: pH 7		Mix Water Chloride: 0 ppm			Mix Water Temperature: 64 °F °C					
<b>Comment</b> Spacer to surface at 250bbbls away. 42bbbls of spacer to surface. Bumped plug at 292bbbls away, final lifting pressure was 2302psi. WSS sheered at 4898psi then pumped a 3bbl wet shoe. Estimated Top of Tail Cement 5664' Estimated Top of Lead Cement 529'.										

## 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	3/10/2018	13:00:00	USER	Job called out with an on location time of 18:00
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/10/2018	18:00:00	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	3/10/2018	18:15:00	USER	Arrived on location, rig still running casing
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	3/10/2018	18:20:00	USER	JSA and Hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	3/10/2018	18:35:00	USER	Rigged up HES lines and equipment.
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/10/2018	22:00:00	USER	JSA with HES and rig crew on job safety and procedure.
Event	7	Start Job	Start Job	3/10/2018	22:30:41	COM4	TD 12630' TP 12607' FC 12605' WSS 12599' 5 1/2" 17# Production casing, 8 1/2" open hole, 9 5/8" 36# Surface casing at 1852'
Event	8	Test Lines	Test Lines	3/10/2018	22:35:16	COM4	Set kick outs to 500psi and check kick outs, then bring pressure up to 5000psi and hold.
Event	9	Pump Spacer 1	Pump Spacer 1	3/10/2018	22:49:55	COM4	Pump 80bbbls of 10.5ppg 6.25yield Tuned Spacer. Added 55 gallons of Musol A and Dual Spacer B on the fly. Pumped at 3.5bbbl/min 260psi.
Event	10	Check Weight	Check Weight	3/10/2018	22:51:07	USER	Weight verified by pressurized scales.
Event	11	Check Weight	Check Weight	3/10/2018	22:55:44	USER	Weight verified by pressurized scales.
Event	12	Drop Bottom Plug	Drop Bottom Plug	3/10/2018	23:08:35	USER	Plugs pre loaded into HES head. Plugs loaded and dropped in front of company rep.

Event	13	Pump Lead Cement	Pump Lead Cement	3/10/2018	23:12:41	COM4	Pump 218bbls (780sks) of 13.2ppg 1.57yield Lead Cement. Pumped at 7bbl/min 752psi
Event	14	Check Weight	Check weight	3/10/2018	23:22:52	COM4	Weight verified by pressurized scales.
Event	15	Pump Tail Cement	Pump Tail Cement	3/10/2018	23:45:17	COM4	Pump 284.25bbls (950sks) of 13.5ppg 1.68yield Tail Cement. Pumped at 7.5bbl/min 650psi.
Event	16	Check Weight	Check weight	3/10/2018	23:46:57	COM4	Weight verified by pressurized scales.
Event	17	Shutdown	Shutdown	3/11/2018	00:27:03	COM4	Shutdown
Event	18	Clean Lines	Clean Lines	3/11/2018	00:31:23	COM4	Clean pumps and lines.
Event	19	Drop Top Plug	Drop Top Plug	3/11/2018	00:36:37	COM4	Plugs pre loaded into HES head. Plugs loaded and dropped in front of company rep.
Event	20	Pump Displacement	Pump Displacement	3/11/2018	00:41:11	COM4	Pump 292bbls of H2O. First 20bbls with MMCR then add biocide on the fly. Spacer to surface at 250bbls away. 42bbls of spacer to surface.
Event	21	Bump Plug	Bump Plug	3/11/2018	01:19:40	USER	Bumped plug at 292bbls away, final lifting pressure was 2302psi. Brought pressure 500psi over and held.
Event	22	Other	Other	3/11/2018	01:20:40	USER	Kicked in pumps at 2bbl/min to shear WSS. Had a leak on the floor shutdown and removed pressure to fix.
Event	23	Other	Other	3/11/2018	01:34:28	USER	Kicked in pumps at 2bbl/min to shear WSS. WSS sheered at 4898psi. Brought rate up to 5bbl/min and pumped 3bbl wet shoe.
Event	24	End Job	End Job	3/11/2018	01:41:47	COM4	Thank you Steve Markovich and crew.

3.0 Attachments

3.1 Job Chart

