

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 3819619		Quote #: 0022374706		Sales Order #: 0904436887				
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: Ruben Hernandez						
Well Name: ROBIN			Well #: 9-15HZ		API/UWI #: 05-123-45247-00					
Field: WATTENBERG		City (SAP): HUDSON		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-9-1N-65W-318FSL-874FEL										
Contractor: NABORS DRLG				Rig/Platform Name/Num: NABORS X22						
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX41066				Srv Supervisor: Steven Markovich						
Job										
Formation Name										
Formation Depth (MD)		Top				Bottom				
Form Type						BHST				
Job depth MD		18334ft				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	183	0	0
Casing		5.5	4.892	17	LTC	HCP110	0	18334	0	0
Open Hole Section			7.875				1830	18345	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			18334		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				
88.91 lbm/bbl		BARITE, BULK (100003681)								
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)							
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	ElastiCem	ELASTICEM (TM) SYSTEM	630	sack	13.2	1.57		6	7.54
7.54 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	1330	sack	13.5	1.68		6	7.98
8 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
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	402	bbl	8.34				
Comment Spacer to surface at 370bbls away bringing 55bbls of Spacer to surface. Estimated top of Tail cement 5301' Estimated top of Lead cement 390' Wet shoe sub burst at 4663psi then pumped a 5bbl wet shoe.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	11/20/2017	03:45:00	USER				Job called out with an on location time of 07:30
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/20/2017	07:00:00	USER				JSA with HES crew on driving safety and directions to the rig.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	11/20/2017	07:25:00	USER				Arrived on location, rig had 3000' of casing to run.
Event	4	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	11/20/2017	07:40:00	USER				JSA and hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	11/20/2017	07:50:00	USER				Rigged up HES lines and equipment.
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	11/20/2017	12:45:00	USER	8.51	13.00	0.00	JSA with HES and rig crew on job procedure and job safety.
Event	7	Start Job	Start Job	11/20/2017	13:05:11	COM4	5.01	12.00	0.00	TD 18345' TP 18334' WSS 18325' 5 1/2" 17# production casing. 7 7/8" open hole 9 5/8" 36# surface casing at 1830'.
Event	8	Test Lines	Test Lines	11/20/2017	13:13:20	COM4	8.47	172.00	0.00	Set kick outs to 500psi and do a kick out test then bring pressure up to 6000psi and hold.
Event	9	Check Weight	Check weight	11/20/2017	13:24:58	COM4	8.50	111.00	0.00	Weight verified by pressurized scales.
Event	10	Pump Spacer 1	Pump Spacer 1	11/20/2017	13:44:57	COM4	11.36	557.00	2.20	Pump 80bbl of 10.5ppg 6.25yield spacer. Added 56 gallons of Musol A and Dual

										Spacer B on the fly. Pumped at 5bbl/min 465psi.
Event	11	Check Weight	Check weight	11/20/2017	13:48:41	COM4	10.95	257.00	5.20	Weight verified by pressurized scales.
Event	12	Check Weight	Check weight	11/20/2017	13:50:11	COM4	10.34	465.00	5.50	Weight verified by pressurized scales.
Event	13	Drop Top Plug	Drop Bottom Plug	11/20/2017	14:02:31	COM4	10.52	135.00	2.70	Plugs pre loaded into HES head. Plug dropped and loaded in front of company rep
Event	14	Pump Lead Cement	Pump Lead Cement	11/20/2017	14:02:53	COM4	11.46	341.00	6.40	Pump 176bbls (630sks) of 13.2ppg 1.57yield Lead cement. Pumped at 7.5bbl/min 731psi.
Event	15	Check Weight	Check weight	11/20/2017	14:09:35	COM4	12.45	26.00	0.00	Weight verified by pressurized scales.
Event	16	Check Weight	Check weight	11/20/2017	14:14:06	COM4	13.29	840.00	7.50	Weight verified by pressurized scales.
Event	17	Check Weight	Check weight	11/20/2017	14:15:27	COM4	13.28	875.00	7.50	Weight verified by pressurized scales.
Event	18	Pump Tail Cement	Pump Tail Cement	11/20/2017	14:34:25	COM4	13.38	455.00	8.00	Pump 398bbls (1330sks) of 13.5ppg 1.68yield tail cement. Pumped at 8bbl/min 595psi.
Event	19	Check Weight	Check weight	11/20/2017	14:35:39	COM4	13.52	576.00	8.00	Weight verified by pressurized scales.
Event	20	Shutdown	Shutdown	11/20/2017	15:30:16	COM4	0.14	34.00	0.00	Shutdown, and clean pumps and lines
Event	21	Drop Top Plug	Drop Top Plug	11/20/2017	15:46:52	COM4				Plugs pre loaded into HES head. Plug dropped and loaded in front of company rep
Event	22	Pump Displacement	Pump Displacement	11/20/2017	15:46:59	COM4	-0.26	4.00	0.00	Pump 425bbls. First 20bbls with MMCR then 405bbls of

Biocide water. Pumped at 9bbl min and slow rate with pressure increase. Spacer to surface at 370bbbls away bringing 55bbbls of spacer to surface.

Event	23	Bump Plug	Bump Plug	11/20/2017	16:47:22	COM4	8.33	2228.00	2.70	Bumed plug at 425bbbls away. Final lifting pressure was 2228psi, took pressure 500psi over and held.
Event	24	Test Lines	Test Lines	11/20/2017	16:48:37	COM4	8.34	2823.00	0.00	Brought pressure up to 3000psi for casing test.
Event	25	Other	Other	11/20/2017	17:02:44	COM4	8.36	3129.00	0.20	Kicked in pumps to burst wet shoe sub.
Event	26	Other	Other	11/20/2017	17:04:02	COM4	8.41	4663.00	2.40	Wet shoe sub burst at 4663psi.
Event	27	Other	Other	11/20/2017	17:04:08	COM4	8.40	3255.00	2.50	Brought rate up to 5bbl/min and pumped 5bbl wet shoe.
Event	28	End Job	End Job	11/20/2017	17:07:06	COM4				Thank you Steve Markovich and crew

3.0 Attachments

3.1 Anadarko Robin 9-15HZ Production Job Chart

