

The Road to Excellence Starts with Safety

Sold To #: 300466	Ship To #: 3890105	Quote #: 0022463971	Sales Order #: 0905262393
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep: Levi	
Well Name: Hendu		Well #: 23-12HZ	API/UWI #: 05-123-47263-00
Field: WATTENBERG	City (SAP): HUDSON	County/Parish: WELD	State: COLORADO
Contractor: PRECISION DRLG		Rig/Platform Name/Num: PRECISION 464	
Job BOM: 7523 7523			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Nathaniel Moore	
Job			

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	12490 ft 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	1882	0	1882
Casing		5.5	4.892	17	LTC	HCP110	0	20432	0	7283
Open Hole Section			8.5				1860	20442	1882	7283

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make	
Guide Shoe	5.5				Top Plug	5.5		HES	
Float Shoe	5.5			12477	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				
0.70 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)									
79.92 lbm/bbl	BARITE, BULK (100003681)									
0.70 gal/bbl	MUSOL(R) A, 5 GAL PAIL (100064220)									

37.58 gal/bbl		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	
2	Gasstop B1	GASSTOP (TM) SYSTEM	640	sack	13.2	1.56		6	7.71	
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	490	sack	13.5	1.68		6	7.98	
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	bbbl	8.34					
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
0.50 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)								
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	289	bbbl	8.34					
Cement Left In Pipe		Amount	5 ft			Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride: <300 ppm			Mix Water Temperature:			68 °F °C	
Cement Temperature:		## °F °C	Plug Displaced by: 8.3 lb/gal kg/m3 XXXX			Disp. Temperature:			## °F °C	
Plug Bumped?		Yes	Bump Pressure: 2750 psi MPa			Floats Held?			Yes	
Cement Returns:		## bbl m3	Returns Density: ## lb/gal kg/m3			Returns Temperature:			## °F °C	
Comment Approximate top of spacer 650'.										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Other	Callout	11/8/2018	07:00:00	USER	OL time 1430. Verify equipment and materials.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	11/8/2018	10:30:00	USER	Journey management conducted with crew.
Event	3	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/8/2018	11:00:00	USER	Sign in with customer. Spot in and rig up equipment.
Event	4	Other	Meet with Customer rep	11/8/2018	11:10:00	USER	TD 12490' 7 7/8" hole. TP 12477' 5.5" 17# casing. TVD 7270'. WSS 12470'. Surface 1850' 9.625" 36#. MW 9.2 ppg OBM. Water test: PH 7 Chlorides <500 ppm Temp 66 degrees.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	11/8/2018	16:00:00	USER	Discuss job procedure with HES and rig crew
Event	6	Start Job	Start Job	11/8/2018	16:32:25	COM4	Rig circulated bottoms up through Weatherford rotating cement head. Fill lines 3 bbl water
Event	7	Test Lines	Test Lines	11/8/2018	16:38:20	COM4	500 psi kickout test and 6500 psi pressure test
Event	8	Pump Spacer 1	Pump Spacer 1	11/8/2018	16:44:52	COM4	60 bbl tuned spacer 10.5 ppg with surfactants and biocide
Event	9	Shutdown	Shutdown	11/8/2018	17:07:11	COM4	
Event	10	Drop Plug	Drop Plug	11/8/2018	17:11:14	COM4	Drop weatherford bottom plug
Event	11	Pump Lead Cement	Pump Lead Cement	11/8/2018	17:11:22	COM4	640 sks 178 bbl 13.2 ppg 1.56 ft3/sk 7.71 gal/sk GasStop Lead
Event	12	Check Weight	Check Weight	11/8/2018	17:16:12	COM4	13.2 ppg
Event	13	Pump Tail Cement	Pump Tail Cement	11/8/2018	17:41:57	COM4	490 sks 13.5 ppg EconoCem 1.68 ft3/sk 7.98 gal/sk
Event	14	Check Weight	Check Weight	11/8/2018	17:58:07	COM4	13.5 ppg

Event	15	Shutdown	Shutdown	11/8/2018	18:03:07	COM4	Wash pumps and lines
Event	16	Drop Top Plug	Drop Top Plug	11/8/2018	18:10:43	COM4	Weatherford top plug
Event	17	Pump Displacement	Pump Displacement	11/8/2018	18:10:48	COM4	289 bbl water displacement with MMCR in the first 20 bbl and biocide throughout. Rotated until 250 bbl away.
Event	18	Bump Plug	Bump Plug	11/8/2018	18:47:18	COM4	2200 psi final pump pressure. Pressured up to 3000 psi for 15 minute casing test.
Event	19	Pressure Up Well	Pressure Up Well	11/8/2018	19:00:52	COM4	4570 psi to rupture wet shoe sub. Pumped 3 bbl wet shoe.
Event	20	Shutdown	Shutdown	11/8/2018	19:02:38	COM4	
Event	21	End Job	End Job	11/8/2018	19:04:34	COM4	
Event	22	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	11/8/2018	19:05:00	USER	Discuss rig down with HES and rig crew.
Event	23	Safety Meeting - Departing Location	Safety Meeting - Departing Location	11/8/2018	22:00:00	USER	Journey management with crew.

3.0 Attachments

3.1 Job Chart

