

### The Road to Excellence Starts with Safety

Sold To #: 306454	Ship To #: 3649000	Quote #:	Sales Order #: 0902291357
Customer: BLACK HILLS EXPLORATION & PROD-EBIZ		Customer Rep: BETO KENNEDY	
Well Name: HOMER DEEP UNIT	Well #: 7-23BH	API/UWI #: 05-045-22810-00	
Field: SOUTH SHALE RIDGE	City (SAP): PARACHUTE	County/Parish: GARFIELD	State: COLORADO
Legal Description: NE SW-7-8S-98W-1851FSL-2420FWL			
Contractor: ENSIGN DRLG		Rig/Platform Name/Num: ENSIGN 161	
Job BOM: 7521			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HAM2616		Srv Supervisor: John Keane	
Job			

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	1006ft Job Depth TVD 1006 FT
Water Depth	Wk Ht Above Floor 5 FT
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
Open Hole Section			14.75				0	1006	0	1006
Casing		10.75	10.05	40.5	STC	J-55	0	1008	0	1008

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe						Top Plug	10.75	1	HES
Float Shoe	10.75	1		1006		Bottom Plug			
Float Collar	10.75	1		966		SSR plug set			
Insert Float						Plug Container	10.75	1	HES
Stage Tool						Centralizers			

Miscellaneous Materials										
Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size

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	12.3 VariCem	VARICEM (TM) CEMENT	150	sack	12.3	2.38		8	13.74	
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	12.8 VariCem	VARICEM (TM) CEMENT	250	sack	12.8	2.11		8	11.78	

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	Displacement Fluid	FRESH WATER	94.5	bbl	8.4			10	
Cement Left In Pipe		Amount	ft	Reason				Shoe Joint	
Comment 28 BBL CEMENT CIRCULATED TO SURFACE									

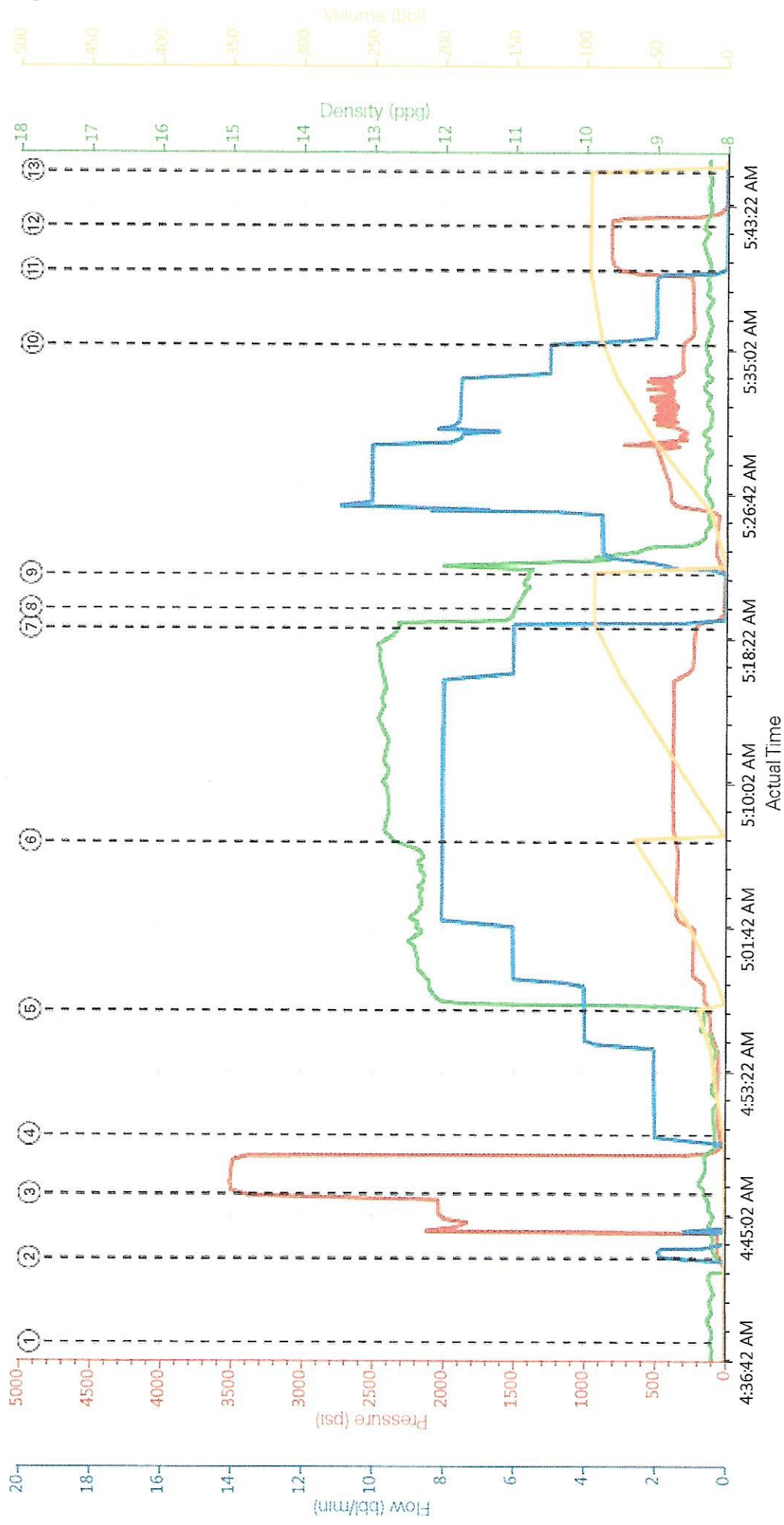
## 4.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	Call Out	4/1/2015	18:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/1/2015	20:30:00	USER					WITH HES
Event	3	Arrive At Loc	Arrive At Loc	4/1/2015	22:00:00	USER					RIG DRILLING UPON HES ARRIVAL
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	4/1/2015	22:15:00	USER					WITH HES
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/2/2015	02:00:00	USER					WITH HES
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/2/2015	02:15:00	USER					1 F-550 PICKUP, 1 ELITE, 1 660 BULK TRUCK, 1 BODY LOAD BULK TRUCK
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/2/2015	02:15:01	USER					WITH HES, BLACK HILLS, AND ENSIGN 161
Event	8	Start Job	Start Job	4/2/2015	04:38:00	COM5					TD 1006 FT, TP 1008.2 FT, HOLE 14.75 IN, SHOE 45.34 FT, CSG 10.75 IN 40.5 LB/FT J-55, MWT 9.0 LB/GAL
Event	9	Prime Pumps	Fill Lines	4/2/2015	04:42:52	USER	51.00	8.13	1.90	2.0	
Event	10	Test Lines	Test Lines	4/2/2015	04:46:33	COM5	3504.00	8.28	0.00	2.0	LOW TEST AT 2025 PSI, HIGH TEST AT 3504 PSI, PRESSURE HOLDING
Event	11	Pump Spacer 1	Pump Fresh Water Spacer	4/2/2015	04:49:59	COM5	48.00	8.16	4.00	20.0	RETURNS AT 1 BBL AWAY
Event	12	Pump Lead Cement	Pump Lead Cement	4/2/2015	04:57:08	COM5	115.00	12.30	8.00	64.0	MIXED AT 12.3 LB/GAL, 150 SKS, 2.38 FT3/SK, 13.74 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	13	Pump Tail Cement	Pump Tail Cement	4/2/2015	05:06:51	COM5	376.00	12.80	8.00	94.0	MIXED AT 12.8 LB/GAL, 250 SKS, 2.11 FT3/SK, 11.78



Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	14	Shutdown	Shutdown	4/2/2015	05:19:12	USER	224.00	12.65	6.00	94.0	GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	15	Drop Top Plug	Drop Top Plug	4/2/2015	05:20:19	USER	9.00	10.89	0.00	94.0	PLUG LAUNCHED
Event	16	Pump Displacement	Pump Displacement	4/2/2015	05:22:19	COM5	9.00	8.33	10.0	84.0	FRESH WATER
Event	17	Slow Rate	Slow Rate	4/2/2015	05:35:32	USER	294.00	8.30	2.00	10.5	SLOWED AT 84 BBL AWAY
Event	18	Bump Plug	Bump Plug	4/2/2015	05:39:49	COM5	280.0	8.23	2.00	94.5	PLUG BUMPED AT CALCULATED DISPLACEMENT
Event	19	Check Floats	Check Floats	4/2/2015	05:42:24	USER	820.00	8.27	0.00	94.5	FLOATS HOLDING, 1 BBL RETURNED TO THE TRUCK
Event	20	End Job	End Job	4/2/2015	05:45:31	COM5					GOOD CIRCULATION, PIPE WAS STATIC, NO ADD HOURS CHARGED, RIG DID NOT USE SUGAR, 28 BBL CEMENT CIRCULATED TO SURFACE
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/2/2015	06:00:00	USER					WITH HES
Event	22	Rig-Down Equipment	Rig-Down Equipment	4/2/2015	06:10:00	USER					
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/2/2015	07:00:00	USER					WITH HES
Event	24	Crew Leave Location	Crew Leave Location	4/2/2015	07:10:00	USER					
Event	25	Comment	Comment	4/2/2015	07:11:00	USER					THANKS FOR USING HALLIBURTON, JOHN KEANE , AND CREW

# BLACK HILLS EXPLORATION & PRODUCTION - HOMER DEEP UNIT 7-23BH - 10.75 IN. SURFACE



- ① Start Job 6,8 19,0,3
- ② Fill Lines 51,8 13,1 9,0,6
- ③ Test Lines 3499,8 28,0,13
- ④ Pump Fresh Water Spacer 48,8 16,2,12
- ⑤ Pump Lead Cement 115,8 59,4,3,1
- ⑥ Pump Tail Cement 376,12 75,8,5,2
- ⑦ Shutdown 224,12 65,6,32,8
- ⑧ Drop Top Plug 9,10 89,0,40,2
- ⑨ Pump Displacement 9,10 71,0,43,3
- ⑩ Slow Rate 294,8 3,2 9,58,8
- ⑪ Bump Plug 797,8 23,0,35,7
- ⑫ Check Floats 820,8 27,0,35,7
- ⑬ End Job 3,8 26,0,0

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