



Cement

Well Name: Thornton 21K-443

Cement

Surface Casing Cement, Casing, 7/27/2013 12:00

Type Casing	String Surface, 938.0ftKB	Start Date 7/27/2013	Cementing End Date 7/27/2013	Wellbore Original Hole	Job Drilling - original, 7/26/2013 13:00	Cementing Company Cementers Energy	Cement Objective	Eval Method Returns to Surface
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Cement Stages

Stg # 1	Description Surface Casing Cement				Objective		Top Depth (ftKB) 15.0	Bottom Depth (ftKB) 938.0	Pump Start Date 7/27/2013			Pump End Date 7/27/2013		Top Plug? Yes	Btm Plug? No		
Initial Pump Rate (bbl/min) 4		Final Pump Rate (bbl/min) 5		Avg Pump Rate (bbl/min)		Final Pump Pressure (psi) 300.0	Plug Bump Pressure (psi) 800.0		Pressure Held (psi) 0.0		Pressure Release Date		Full Return? Yes	Vol Cement Ret (bbl) 5.0		Volume Lost (bbl)	
Recip? No	Stroke (ft)	Recip Rate (...)	Rotat... No	RPM (rpm)	Pipe Movement Note		MD Tagged (...)	Tag Method		Tag Wt (100...	Prop... No	Depth Plug...	Tag Cement Date		Drill Out Date		Drill Out Dia (...)

Cement Fluids

Fluid	Est Top (ftKB)	Est Btm (ftKB)	Pump Start Date	Pump End Date	Class	Amount (sacks)	Mix H2O Ratio (gal/sack)	Yield (ft³/sack)	Vol Pumped (bbl)	Excess (%)	Dens (lb/gal)
Tail	15.0	938.0	7/27/2013	7/27/2013	G	840		1.18	176.5	100.0	15.20

Intermediate Casing Cement, Casing, 8/2/2013 21:30

Type Casing	String Intermediate, 7,891.0ftKB	Start Date 8/2/2013	Cementing End Date 8/3/2013	Wellbore Original Hole	Job Drilling - original, 7/26/2013 13:00	Cementing Company BJ Services Company	Cement Objective	Eval Method Returns to Surface
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Cement Stages

Stg # 1	Description Intermediate Casing Cement				Objective			Top Depth (ftKB) 15.0	Bottom Depth (ftKB) 7,891.0	Pump Start Date 8/2/2013		Pump End Date 8/3/2013		Top Plug? No	Btm Plug? No			
Initial Pump Rate (bbl/min) 4		Final Pump Rate (bbl/min) 6		Avg Pump Rate (bbl/min)		Final Pump Pressure (psi) 1,900.0		Plug Bump Pressure (psi) 2,402.0		Pressure Held (psi) 0.0		Pressure Release Date		Full Return? Yes	Vol Cement Ret (bbl) 0.0		Volume Lost (bbl)	
Recip? No	Stroke (ft)	Recip Rate (...)	Rotat... No	RPM (rpm)	Pipe Movement Note			MD Tagged (...)	Tag Method		Tag Wt (100...)	Prop... No	Depth Plug...	Tag Cement Date		Drill Out Date		Drill Out Dia (...)

Cement Fluids

Fluid	Est Top (ftKB)	Est Btm (ftKB)	Pump Start Date	Pump End Date	Class	Amount (sacks)	Mix H2O Ratio (gal/sack)	Yield (ft³/sack)	Vol Pumped (bbl)	Excess (%)	Dens (lb/gal)
Lead	200.0	5,000.0	8/2/2013	8/3/2013	Premium Lite	330		2.99	175.7		11.20
Tail	5,000.0	7,891.0	8/2/2013	8/3/2013	50/50 Poz	315		1.38	77.4		14.60