



Cement Jobs by Well

Well Name: Apache Canyon 18-07

Conductor Casing Cement

API/UWI 05071088870000	Location T34S-R67W-S18	Field Name Purgatoire River	Permit Number 20062624	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,684.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/7/2006 11:30	Rig Release Date 8/9/2006 13:00

Conductor Casing Cement, 8/7/2006 12:15

Type Casing	Cementing Start Date 8/7/2006	Cementing End Date 8/7/2006	Wellbore Original Hole	String Conductor, 23.0ftKB
Cementing Company Wal-Mart	Evaluation Method	Cement Evaluation Results		

Comment
Cmt'd w/ 12 sks Redi-Crete

1, 3.0-23.0ftKB

Top Depth (ftKB) 3.0	Bottom Depth (ftKB) 23.0	Full Return? Yes	Vol Cement Ret (bbl) 0.0	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min) 1	Final Pump Rate (bbl/min) 1	Avg Pump Rate (bbl/min) 1		Final Pump Pressure (psi) 0.0	Plug Bump Pressure (psi) 0.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

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Fluid Type	Fluid Description	Amount (sacks) 12	Class A	Volume Pumped (bbl)
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack) 1.00	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 18.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc

Surface Casing Cement, 8/7/2006 20:45

Type Casing	Cementing Start Date 8/7/2006	Cementing End Date 8/7/2006	Wellbore Original Hole	String Surface, 365.2ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment
Cmt'd w/186 sks, circ 25 bbl to pit

1, 3.0-370.0ftKB

Top Depth (ftKB) 3.0	Bottom Depth (ftKB) 370.0	Full Return? Yes	Vol Cement Ret (bbl) 28.0	Top Plug? Yes	Bottom Plug? No
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 2	Avg Pump Rate (bbl/min) 2		Final Pump Pressure (psi) 135.0	Plug Bump Pressure (psi) 0.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Spacer

Fluid Type Spacer	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 48.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 370.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc

Cement

Fluid Type Cement	Fluid Description 14.0	Amount (sacks) 186	Class G	Volume Pumped (bbl) 55.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 370.0	Percent Excess Pumped (%)	Yield (ft³/sack) 1.66	Mix H2O Ratio (gal/sack) 7.76
Free Water (%)	Density (lb/gal) 14.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc

Displacement

Fluid Type Displacement	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 20.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 319.1	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)



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Gr Elev (ft) 7,684.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/7/2006 11:30	Rig Release Date 8/9/2006 13:00

Cement Fluid Additives		
Add	Type	Conc

Production Casing Cement, 8/9/2006 16:30				
Type Casing	Cementing Start Date 8/9/2006	Cementing End Date 8/9/2006	Wellbore Original Hole	String Production, 2,184.8ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment
Cmt'd w/ 130 & 250 sks, no fluids to surface

1, 1,460.0-2,220.0ftKB					
Top Depth (ftKB) 1,460.0	Bottom Depth (ftKB) 2,220.0	Full Return? No	Vol Cement Ret (bbl) 0.0	Top Plug? Yes	Bottom Plug? No
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 3	Avg Pump Rate (bbl/min) 3		Final Pump Pressure (psi) 545.0	Plug Bump Pressure (psi) 1,350.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB) 2,137.0	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Spacer				
Fluid Type Spacer	Fluid Description 8.6	Amount (sacks)	Class	Volume Pumped (bbl) 200.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 2,220.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.60	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

LCM				
Fluid Type LCM	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 60.0
Estimated Top (ftKB) 400.0	Estimated Bottom Depth (ftKB) 0.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 9.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

1st Stage cmt				
Fluid Type 1st Stage cmt	Fluid Description 13.0	Amount (sacks) 130	Class Prem Lite	Volume Pumped (bbl) 47.0
Estimated Top (ftKB) 1,460.0	Estimated Bottom Depth (ftKB) 2,220.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 10.58
Free Water (%)	Density (lb/gal) 13.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Displacement				
Fluid Type Displacement	Fluid Description 13.0	Amount (sacks)	Class	Volume Pumped (bbl) 51.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 2.1	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 13.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

2, 1,276.0-1,450.0ftKB					
Top Depth (ftKB) 1,276.0	Bottom Depth (ftKB) 1,450.0	Full Return? No	Vol Cement Ret (bbl) 0.0	Top Plug? Yes	Bottom Plug? Yes
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 3	Avg Pump Rate (bbl/min) 3		Final Pump Pressure (psi) 5.0	Plug Bump Pressure (psi) 1,700.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

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Spacer					
Fluid Type Spacer	Fluid Description 8.6	Amount (sacks)	Class	Volume Pumped (bbl) 100.0	
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,450.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.60	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc

LCM					
Fluid Type LCM	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 40.0	
Estimated Top (ftKB) 230.0	Estimated Bottom Depth (ftKB) 1,450.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 9.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc

2nd Stage cmt					
Fluid Type 2nd Stage cmt	Fluid Description 13.0	Amount (sacks) 250	Class	Volume Pumped (bbl) 91.0	
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,450.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 10.58	
Free Water (%)	Density (lb/gal) 13.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc

Displacement					
Fluid Type Displacement	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 34.0	
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,450.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc

Cement Squeeze, 1/22/2007 00:00				
Type Squeeze	Cementing Start Date 1/22/2007	Cementing End Date	Wellbore Original Hole	String Production, 2,184.8ftKB
Cementing Company	Evaluation Method	Cement Evaluation Results		

<stagenum>, 754.0-1,101.0ftKB					
Top Depth (ftKB) 754.0	Bottom Depth (ftKB) 1,101.0	Full Return? No	Vol Cement Ret (bbl)	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min)	Final Pump Rate (bbl/min)	Avg Pump Rate (bbl/min)		Final Pump Pressure (psi)	Plug Bump Pressure (psi)
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

<typ>					
Fluid Type	Fluid Description	Amount (sacks)	Class	Volume Pumped (bbl)	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal)	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc



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Gr Elev (ft) 7,684.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/7/2006 11:30	Rig Release Date 8/9/2006 13:00

<stagenum>, 0.0-802.0ftKB					
Top Depth (ftKB) 0.0	Bottom Depth (ftKB) 802.0	Full Return? No	Vol Cement Ret (bbl)	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min)	Final Pump Rate (bbl/min)	Avg Pump Rate (bbl/min)		Final Pump Pressure (psi)	Plug Bump Pressure (psi)
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

<typ>				
Fluid Type	Fluid Description	Amount (sacks)	Class	Volume Pumped (bbl)
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal)	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc