

QUICKSILVER RESOURCES INC-EBUSINESS
DO NOT MAIL-801 CHERRY ST
FORT WORTH, Texas

K-Diamond Federal 21-21

DHS 6

Post Job Summary

Cement Surface Casing

Prepared for: Ryan Hord
Date Prepared: July 31, 2011
Version: 1

Service Supervisor: ASHBY, ANDREW

Submitted by: Joshua Anglin

HALLIBURTON

Wellbore Geometry

Job Tubulars					MD		TVD		Excess	Shoe Joint Length
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	Top ft	Bottom ft	%	ft
Open Hole Section	Surface Open Hole		12.250		0.00	1,200.00			100.00	0.00
Casing	Surface Casing	9.63	8.921	36.00	0.00	1,200.00				40.00

Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	SUPER FLUSH 101	10.00	0.00	20.0 bbl	20.0 bbl
1	2	Cement Slurry	VariCem V1	12.30		200.0 sacks	200.0 sacks
1	3	Cement Slurry	VariCem V1	13.50		195.0 sacks	195.0 sacks
1	4	Spacer	Water Based Mud	8.40	0.00	90.0 bbl	90.0 bbl
1	5	Cement Slurry	HalCem Top Out	15.80		24.0 sacks	24.0 sacks

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Fluids Pumped

Stage/Plug # 1 Fluid 1: SUPER FLUSH 101
SUPER FLUSH 101 - SBM (12199)

Fluid Density: 10.00 lbm/gal
Fluid Volume: 20.00 bbl
Pump Rate: 0.00 bbl/min

Stage/Plug # 1 Fluid 2: VariCem V1
 VARICEM (TM) CEMENT
0.125 lbm Poly-E-Flake

Fluid Weight: 12.30 lbm/gal
Slurry Yield: 2.24 ft3/sack
Total Mixing Fluid: 12.95 Gal
Surface Volume: 200.0 sacks
Sacks: 200.0 sacks
Calculated Fill: 700.00 ft
Calculated Top of Fluid: 0.00 ft
Estimated Top of Fluid:

Stage/Plug # 1 Fluid 3: VariCem V1
 VARICEM (TM) CEMENT
0.125 lbm Poly-E-Flake

Fluid Weight: 13.50 lbm/gal
Slurry Yield: 1.72 ft3/sack
Total Mixing Fluid: 9.07 Gal
Surface Volume: 195.0 sacks
Sacks: 195.0 sacks
Calculated Fill: 500.00 ft
Calculated Top of Fluid: 700.00 ft
Estimated Top of Fluid:

Stage/Plug # 1 Fluid 4: Water Based Mud
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.40 lbm/gal
Fluid Volume: 90.00 bbl
Pump Rate: 0.00 bbl/min

Stage/Plug # 1 Fluid 5: HalCem Top Out
 HALCEM (TM) SYSTEM
2 % Calcium Chloride

Fluid Weight: 15.80 lbm/gal
Slurry Yield: 1.20 ft3/sack
Total Mixing Fluid: 5.26 Gal
Surface Volume: 24.0 sacks
Sacks: 24.0 sacks
Estimated Top of Fluid:

Job Summary

Job Information

Job Start Date	7/7/2011 8:00:00 AM
Job MD	1,217.0 ft
Job TVD	1,217.0 ft
Height of Plug Container/Swage Above Rig Floor	5.0 ft
Surface Temperature at Time of Job	80 degF
Mud Type	LSND
Actual Mud Density	9 lbm/gal
Pipe Movement During Hole Circulation	Reciprocated
Pipe Movement During Cementing	None
Calculated Displacement	89.68 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Length of Rat Hole	1.00 ft

Cementing Equipment

Number of Centralizers Used	12
Pipe Centralization	Through Entire Cement Column
Did Float Equipment Hold?	Yes
Brand of Plug set used?	Halliburton
Did Plugs Bump?	Unknown
Did Stage Cementing Tool Open Properly?	Unknown

Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump	Pressure (psig)	Comments
07/06/2011 16:30		Call Out					Crew Called out for Job. Requested on location @ 21:00. Plug Container# D0776,C
07/06/2011 18:00		Pre-Convoy Safety Meeting					Met w/crew to discuss safety and hazards of travel to location
07/06/2011 18:15		Depart from Service Center or Other Site					Entered into Journey Management.
07/06/2011 21:00		Arrive At Loc					Ended Journey Management. Still Logging, haven't started casing.
07/06/2011 21:30		Assessment Of Location Safety Meeting					Met w/crew to discuss hazards of site, location of materials and safety precautions.
07/07/2011 05:00		Other					Spot Equipment - Casing crew finished & off location.
07/07/2011 05:30		Pre-Rig Up Safety Meeting					Met w/crew to discuss the best way to rig up, safety and hazards involved.
07/07/2011 05:45		Rig-Up Equipment					Rig up Ground & Standpipe
07/07/2011 07:00		Pre-Job Safety Meeting					Met w/Rig Crew, Co. Rep, and our crew to discuss job procedures, contingencies, and safety measures.

HALLIBURTON

Date/Time	Char t #	Activity Code	Pump Rate	Cum Vol	Pump	Pressure (psig)	Comments
07/07/2011 07:15		Rig-Up Equipment					Rig-up the rig floor.
07/07/2011 07:41		Other	2	3		45.0	Fill Lines with fresh water for pressure test - Leak on the manifold - tighten & pump additional 1 bbl.
07/07/2011 07:47		Test Lines				5365.0	Pressure test iron to 5000 psi - psi started falling immediately, checked for leaks - no leaks - pressured up to 5365 psi & lost 70 psi in 4 min.
07/07/2011 07:59		Pump Water	1.7	5		45.0	Fresh Water Spacer
07/07/2011 07:59		Pump Spacer	3.2	20		81.0	SuperFlush 101 Spacer
07/07/2011 08:06		Pump Water	3	10		60.0	Fresh Water Spacer
07/07/2011 08:10		Pump Lead Cement	5.2	79.8		183.0	200 sks VariCem V1 Lead @ 12.3 lbm/gal, 2.24 cuft/sk, 12.95 gal/sk - (bbl counter read 68.9 bbls)
07/07/2011 08:23		Pump Tail Cement	5	59.7		140.0	195 sks VariCem V1 Tail @ 13.5 lbm/gal, 1.72 cuft/sk, 9.07 gal/sk - (bbls counter read 53 bbls)
07/07/2011 08:35		Shutdown					Shutdown / Drop Top Plug (Co. Rep Witnessed)
07/07/2011 08:43		Pump Displacemen t	4	90.5		31.0	Displacement = 90 bbls Mud
07/07/2011 08:47		Other	5.5			129.0	Increase Rate to 5.5 bpm

HALLIBURTON

Date/Time	Char t #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
07/07/2011 08:53		Pump Water	5.5					207.0	Had trouble w/getting mud - Co. Rep. said to swap to water to finish displacement.
07/07/2011 08:59		Slow Rate	3					318.0	Slow displacement rate to 3 bpm to bump plug.
07/07/2011 09:03		Bump Plug	3					769.0	Bump plug after 88 barrels displacement gone. Over pressure to 1000 psi per Co. Rep.
07/07/2011 09:12		Check Floats						878.0	Held for 8 min, bled off pressure - 1/2 bbl back.
07/07/2011 11:12		Other							Mix Calcium Chloride into mix water and mix up 5 bbls of cement
07/07/2011 11:21		Pump Water	1	2				33.0	Pump Water Spacer to clear tubing.
07/07/2011 11:23		Pump Cap Cement	1	2.5				36.0	24 sks of G-Neat Cement w/ 2% CaCl @ 15.8 lbm/gal, 1.20 cuft/sk, 5.26 gal/sk
07/07/2011 11:25		Shutdown							Pump until we see good cement to surface - Co. Rep. shutdown @ 2.5 bbls gone.
07/07/2011 11:30		End Job							Job Complete
07/07/2011 11:35		Post-Job Safety Meeting (Pre Rig-Down)							Met w/crew to discuss rigging down safely.
07/07/2011 11:45		Rig-Down Equipment							Rig everything down.
07/07/2011 14:15		Pre-Convoy Safety Meeting							Met w/crew to discuss fit-for-duty, safety and hazards of travel back.

HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
07/07/2011 14:30		Depart Location for Service Center or Other Site							Entered into Journey Management.
07/07/2011 14:30		Other							Thanks for using Halliburton!!!

The Road to Excellence Starts with Safety

Sold To #: 346707		Ship To #: 2864112		Quote #:		Sales Order #: 8297231	
Customer: QUICKSILVER RESOURCES INC-EBUSINESS				Customer Rep: Hord, Ryan			
Well Name: K-Diamond Federal			Well #: 21-21			API/UWI #:	
Field:		City (SAP): CRAIG		County/Parish:		State: Colorado	
Legal Description: Section 21 Township 6N Range 92W							
Contractor: DHS			Rig/Platform Name/Num: 6				
Job Purpose: Cement Surface Casing							
Well Type: Exploratory / Wildcat				Job Type: Cement Surface Casing			
Sales Person: SCOTT, KYLE			Srvc Supervisor: ASHBY, ANDREW			MBU ID Emp #: 450544	

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ASHBY, ANDREW A		450544	BONE, JEFFERSON Eldon		491216	FUCHS, ANDREW Peter		489821
GAMBLES, BRAYDEN Kade		469413						

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10616259	80 mile	10991613	80 mile	11019277	80 mile	11071474	80 mile
11127525	80 mile	11189139	80 mile	11526494	80 mile		

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
TOTAL	Total is the sum of each column separately							

Job

Formation Name					Job Times			
Formation Depth (MD)	Top	Bottom			Called Out	Date	Time	Time Zone
Form Type	BHST				On Location	06 - Jul - 2011	16:30	MST
Job depth MD	1217. ft		Job Depth TVD	1217. ft	Job Started	07 - Jul - 2011	08:00	MST
Water Depth	Wk Ht Above Floor		5. ft		Job Completed	07 - Jul - 2011	11:30	MST
Perforation Depth (MD)	From	To			Departed Loc	07 - Jul - 2011	14:30	MST

Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Surface Open Hole				12.25				.	1200.		
Surface Casing	Unknown		9.625	8.921	36.		J-55	.	1200.		

Sales/Rental/3rd Party (HES)

Description	Qty	Qty uom	Depth	Supplier
PLUG,CMTG,TOP,9 5/8,HWE,8.16 MIN/9.06 MA	1	EA		

Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			

Insert Float										Plug Container			
Stage Tool										Centralizers			

Miscellaneous Materials

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

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft3/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	SUPER FLUSH 101	SUPER FLUSH 101 - SBM (12199)	20.00	bbl	10.	.0	.0	.0	
2	VariCem V1	VARICEM (TM) CEMENT (452009)	200.0	sacks	12.3	2.24	12.95		12.95
	0.125 lbm	POLY-E-FLAKE (101216940)							
	12.954 Gal	FRESH WATER							
3	VariCem V1	VARICEM (TM) CEMENT (452009)	195.0	sacks	13.5	1.72	9.07		9.07
	0.125 lbm	POLY-E-FLAKE (101216940)							
	9.065 Gal	FRESH WATER							
4	Water Based Mud		90.00	bbl	8.4	.0	.0	.0	
5	HalCem Top Out	HALCEM (TM) SYSTEM (452986)	24.0	sacks	15.8	1.2	5.26		5.26
	2 %	CALCIUM CHLORIDE - HI TEST PELLET (100005053)							
	5.26 Gal	FRESH WATER							

Calculated Values

Pressures

Volumes

Displacement		Shut In: Instant		Lost Returns		Cement Slurry		Pad	
Top Of Cement		5 Min		Cement Returns		Actual Displacement		Treatment	
Frac Gradient		15 Min		Spacers		Load and Breakdown		Total Job	

Rates

Circulating		Mixing		Displacement		Avg. Job	
Cement Left In Pipe	Amount	40 ft	Reason	Shoe Joint			
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID

The Information Stated Herein Is Correct	Customer Representative Signature
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Lab Data

HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Lead

Job Information

Request/Slurry	159997/1	Rig Name	DHS DRILLING #6	Date	06/JUL/2011
Submitted By	Craig Dube	Job Type	Surface Casing	Bulk Plant	Vernal
Customer	Quicksilver Resources Inc.	Location	Moffat	Well	K-Diamond Federal 21-21

Well Information

Casing/Liner Size	9 5/8"	Depth MD	1200 ft	BHST	96 F
Hole Size	12 1/4"	Depth TVD	0 ft	BHCT	82 F

Drilling Fluid Information

Mud Company	Type	Density	PV/YP
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Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
		VariCem				Slurry Density	12.30 PPG
						Slurry Yield	2.23 ft3/sk
0.125	lb/sk	Pol-E-Flake	Bulk	Jul 06, 2011		Water Requirement	12.91 GPS

Water Source	Fresh Water
Water Chloride	N/A ppm

Operation Test Results Request ID 159997/1

Thickening Time, Request Test ID:1603768, Historical Data

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
82	800	14	5	02:03	02:18	02:28	02:40

Job Information

Request/Slurry	159998/1	Rig Name	DHS DRILLING #6	Date	06/JUL/2011
Submitted By	Craig Dube	Job Type	Surface Casing	Bulk Plant	Vernal
Customer	Quicksilver Resources Inc.	Location	Moffat	Well	K-Diamond Federal 21-21

Well Information

Casing/Liner Size	9 5/8"	Depth MD	1200 ft	BHST	99 F
Hole Size	12 1/4"	Depth TVD	1200 ft	BHCT	82 F

Drilling Fluid Information

Mud Company	Type	Density	PV/YP
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Cement Information - Tail Design

<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<u>Cement Properties</u>	
		VariCem				Slurry Density	13.50 PPG
						Slurry Yield	1.73 ft3/sk
9.20	gal/sack	Fresh Water	Lab	May 29, 2011		Water Requirement	9.2 GPS

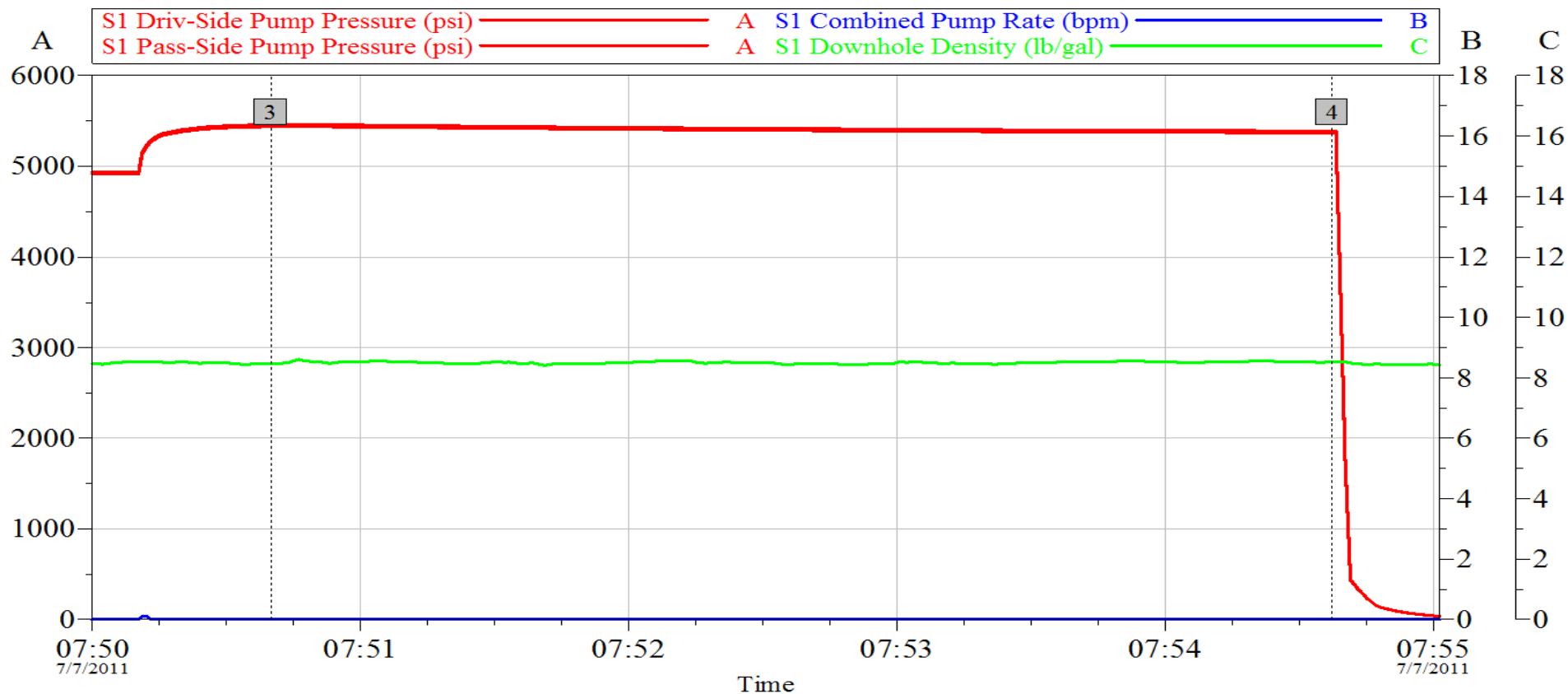
Water Source	Fresh Water
Water Chloride	N/A ppm

Operation Test Results Request ID 159998/1

Thickening Time, Request Test ID:1603717, Historical Data

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
82	800	14	12	01:34	01:54	02:04	02:34

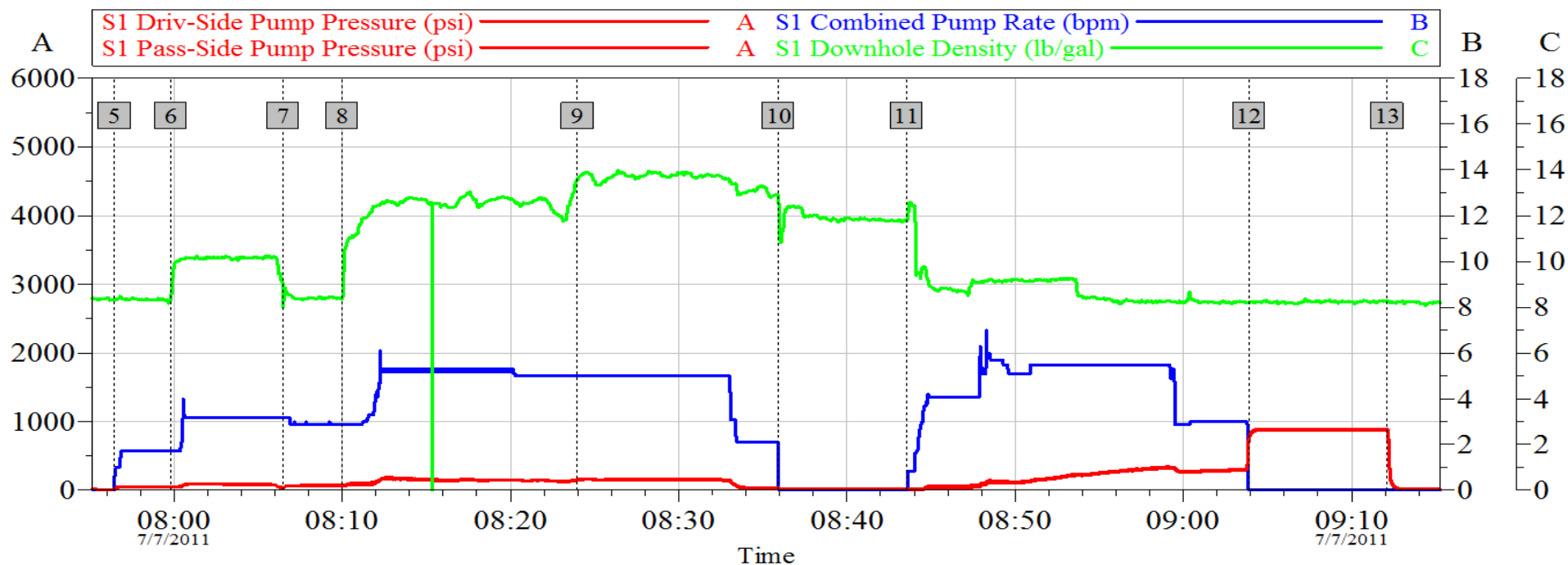
QuickSilver Resources - R.Diamond Federal# 21-21 9.625" Surface - Pressure Test



Global Event Log							
Intersection		PSI		RATE		Intersection	
3		5435		0.000		4	
Start Pressure Test		07:50:40		07:54:37		End Pressure Tesst	

Customer:	QuickSilver Resources	Job Date:	07-Jul-2011	Sales Order #:	8297231
Well Description:	R.Diamond Federal# 21-21	UWI:			

QuickSilver Resources - R.Diamond Federal# 21-21 9.625" Surface



Global Event Log									
Intersection			PSI	RATE	Intersection			PSI	RATE
5	Pump Water	07:56:28	18.29	0.459	6	Pump SuperFlush	07:59:50	45.00	1.700
7	Pump Water	08:06:30	29.01	3.200	8	Pump Lead Cement	08:10:00	68.00	2.900
9	Pump Tail Cement	08:23:59	140.0	5.000	10	Shutdown / Drop Plug	08:35:56	15.83	0.000
11	Pump Displacement	08:43:33	-4.000	0.000	12	Bump Plug	09:03:56	769.0	0.000
13	Check Floats	09:12:07	878.0	0.000					

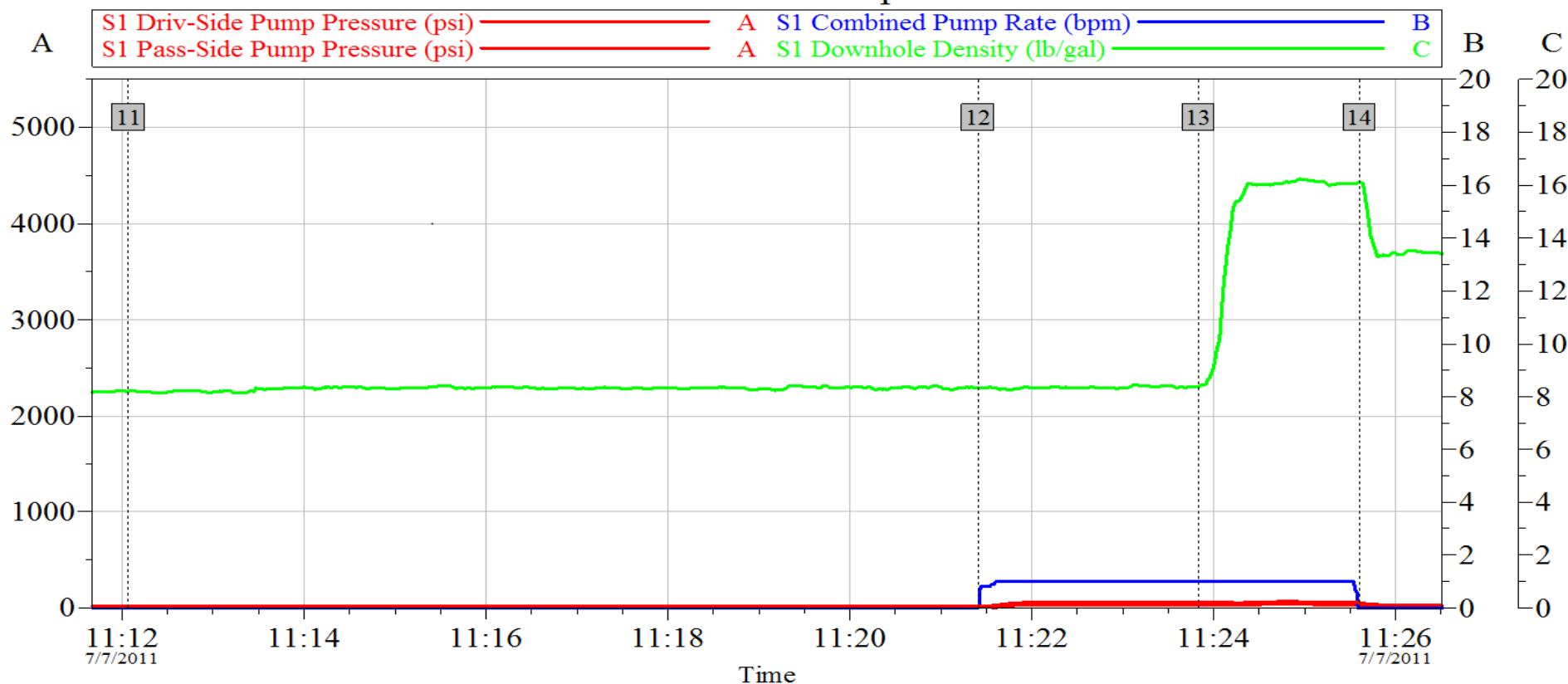
Customer: QuickSilver Resources
Well Description: R.Diamond Federal# 21-21

Job Date: 07-Jul-2011
UWI:

Sales Order #: 8297231

OptiCem v6.4.9
07-Jul-11 13:27

QuickSilver Resources - R.Diamond Federal# 21-21 9.625" Surface - Top Out



Global Event Log					
Intersection		PSI	RATE	Intersection	
11 Mix CaCl Water / Cement	11:12:04	-4.000	0.000	12 Pump Water	11:21:25 -5.000 0.024
13 Pump Cap Cement	11:23:50	33.00	1.000	14 Shutdown	11:25:36 24.29 0.000

Customer: QuickSilver Resources
Well Description: R.Diamond Federal# 21-21

Job Date: 07-Jul-2011
UWI:

Sales Order #: 8297231

OptiCem v6.4.9
07-Jul-11 12:24