

	PDC ENERGY	YARD CALL	3/21/2019	17:00	DISTRICT Brighton									
	Challenger 9N	RTS DATE	3/21/2019	11:00 PM										
		YARD RTN	3/22/2019	11:00 AM										
CUSTOMER INFORMATION		1.08d												
Customer Name	PDC ENERGY	WELL INFORMATION		WELL DATA		TUBULAR DATA								
Customer #:	1000700	API #:	05-123-45892	Casing Size	5.5	5.5 20#								
AFE #:	DR003022	Field Name:	Wattenberg	Depth	14040									
Cust Rep on Loc:	Antonio Barrientos	Well Name:	Challenger 9N	TVD	6833ft	6833ft								
Cust Phone #:		Well Type:	Oil	MD	14047ft	14047ft								
Order Placed By:	Antonio Barrientos	Formation:	Nio	OH	8.5"									
Phone #:		Rig Contractor:	Ensign	OH Depth	1678-14047'									
Proposed Job Amt:	\$94,479.02	Rig Name/Num.:	Ensign 152	BHST	200°F									
JOB INFORMATION		Rig Phone:		BHCT	180°F									
Ticket #:	BCO-1903-0074	County:	Weld	Est. BHST/BHCT	200°F / 180°F (0) (2.99°F/100ft)									
PO #:		State:	CO	MD / TVD	14,088 ft / 6,700 ft									
Order Taken By:	Laeger	Latitude:	40.33015	Mud Weight & Type	10#, Water Based									
Order Date:	3/20/2019	Longitude:	-105	Open Hole	8.5" OH (1678-14047')									
CJES Acct. Manager:	Michael Salyers	Township:	SENW 8 4N64W	Previous Casing	9.625 36# (0-1678')									
CJES Engineer	Michael Salyers	Quote Number:	1-BCO_190317135151	CEMENTING PLUG										
			<table border="1"> <tr> <th>Qty</th> <th>Size</th> <th>Type</th> <th>Material</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Qty	Size	Type	Material				
Qty	Size	Type	Material											
COMMENTS														
SPECIAL JOB INSTRUCTIONS														
5.5 head bowl and swage plug , 1600# Sapp, Latex														
DIRECTIONS TO WELL														
Cr 51 and CR 48 , E 1/2 , S into														
Emergency Contacts														
Nearest Hospital	Greeley, CO			Phone Number:	911									
Police Department	Greeley, CO			Phone Number:	911									
Fire Department	Greeley, CO			Phone Number:	911									
Designated Emergency Vehicle	C&J Pickup		Vehicle Location: lease entrance											
MSDS on Dash of Emergency Vehicle? (y/n)	yes													
Muster Area #1	lease entrance													
Muster Area #2	upwind													
Cell Phone Service on location? (y/n)	yes													
If not, nearest working phone														
Iron Tracking														
	Taken Out			Returned										
Iron Type	Taken By	Date Out	Time Out	Returned By	Date In	Time In								

<div>C&J ENERGY SERVICES</div>	PDC ENERGY	YARD CALL	3/21/2019	17:00	DISTRICT
	Challenger 9N	RTS DATE	3/21/2019	11:00 PM	Brighton
		YARD RTN	3/22/2019	11:00 AM	
Personnel/Equipment					
Driver	Assignment	Tractor	Trailer	Comments	
Brian Douglass	Supervisor	130971	449087		
James McFarland	operator	746030	445052		
Mike Arthur	Bulker				
Luis Balbuena	Bulker	201400	444002		
Jared Cross	Bulker				
BLEND INFO					
Amount	Units	System/Additives	Density (ppg)	Yield (cuft/sk)	Water Req. (gal/sk)
0	SX	0			
0.00					
0.00	SX	80 bbls water + 1600 lbs SAPP			
80.00	bbl	+20.0 PPB CJ890			
0	SX	80 bbls ppg Weighted Spacer - 80 bbls of 12.5 ppg Weighted Spacer: 66.3 bbl Fresh Water + 17570 lbs Barite + 80 lbs Citric Acid + 997 lbs MS Spacer + 40 lbs X-Air			
80.00	bbl	+219.63 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJ776+12.46 PPB CJ801	12.5		
25	SX	C&J Non Latex Lead 1-1			
6.00	bbl	50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011	14	1.37	5.98
755	SX	C&J Latex Lead 1-1			
184.00	bbl	50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011+1.0 GPS CJ550L+0.2 GPS CJ891	14	1.37	4.71
1340	SX	C&J Tail 1-1			
291.00	bbl	65 % CJ914+35 % CJ010-74 +0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511	14.5	1.22	5.41
0	SX	Displacement			
311.00	bbl	Treated Water	8.34		
0	SX				
0	SX				

Job Summary

Ticket Number	Ticket Date
TN# BCO-1903-0074	3/21/2019

COUNTY	COMPANY	API Number
Weld	PDC ENERGY	05-123-45892
WELL NAME	RIG	JOB TYPE
Challenger 9N	Ensign 152	Production Casing
SURFACE WELL LOCATION	CJES Field Supervisor	CUSTOMER REP
40.33015 -104.57526	Brian Douglass	Antonio Barrientos

EMPLOYEES
Mike Arthur
James McFarland
Jared Cross

WELL PROFILE			
Max Treating Pressure (psi):		Bottom Hole Static Temperature (°F):	
Bottom Hole Circulating Temperature (°F):		Well Type:	

Open Hole

1	Size (in)	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)
	8.5	1678	14047		
2	Size (in)	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)

Casing/Tubing/Drill Pipe

Type	Size (in)	Weight (lb/ft)	Grade	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)
Surface	9 5/8	36		0	1678		
Type	Size (in)	Weight (lb/ft)	Grade	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)
Production	5.5	20		0	14040		
Type	Size (in)	Weight (lb/ft)	Grade	TMD From (ft)	TMD to (ft)	TVD From (Ft)	TVD to (Ft)

CEMENT DATA

Stage 1:	From Depth (ft):	2458	To Depth (ft):	2605
Type: non latex lead	Volume (sacks):	25	Volume (bbls):	6

Cement & Additives:	Density (ppg)	Yield (ft³/sk)	Water Req.
50%CJ914+50%CJ010-74+2%CJ020+.4%CJ548+.3%CJ240+10%CJ041+.3%CJX157011	14	1.37	5.98

Stage 2:	From Depth (ft):	2605	To Depth (ft):	6915
Type: latex lead	Volume (sacks):	755	Volume (bbls):	184

Cement & Additives:	Density (ppg)	Yield (ft³/sk)	Water Req.
50%CJ914+50%CJ010-74+2%CJ020+.4%CJ548+.3%CJ240+10%CJ041+.3%CJX157011+1C	14	1.37	4.71

Stage 3:	From Depth (ft):	6915	To Depth (ft):	14047
Type: non latex tail	Volume (sacks):	1340	Volume (bbls):	291

Cement & Additives:	Density (ppg)	Yield (ft³/sk)	Water Req.
65%CJ914+35%CJ010-74+.3%CJ704+.15%CJ210K+.5%CJ511	14.5	1.22	5.41

Stage 4:	From Depth (ft):		To Depth (ft):	
Type:	Volume (sacks):		Volume (bbls):	

Cement & Additives:	Density (ppg)	Yield (ft³/sk)	Water Req.

SUMMARY

	Stage 1	Stage 2
Preflushes:		
80 bbls of SAPP	311	
80 bbls of Weighted Spacer	311	
6 bbls of Fresh Water		
Total Preflush/Spacer Volume (bbl):	166	
Total Slurry Volume (bbl):	481	
Total Fluid Pumped		
Returns to Surface:	Spacer	50 bbls

Job Notes (fluids pumped / procedures / tools / etc.):

Pumped job per program and customers request.

Thank You For Using
 CJES O-TEX Cementing

Customer Representative Signature:

Cement Job Log



Customer:	PDC ENERGY		Date:	3/21/2019		Serv. Supervisor:	Brian Douglass				
Cust. Rep.:	Antonio Barrientos		Ticket #:	BCO-1903-0074		Serv. Center	Brighton - 3021				
Lease:	Challenger 9N		API Well #:	05-123-45892		County:	Weld	State:	CO		
Well Type:	Oil		Rig:	Ensign 152		Type of Job:	Production Casing				
Materials Furnished by C&J ENERGY SERVICES											
Plugs		Casing Hardware			Physical Slurry Properties						
					Sacks of Cement	Fluid Dens (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Mix Water (bbls)
0											
80 bbls water + 1600 lbs SAPP		+20.0 PPB CJ890								80.00	
80 bbls ppg Weighted Spacer - 80 bbls of		+219.63 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJ776+12.46 PPB CJ801				12.5				80.00	
C&J Non Latex Lead 1-1		50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011			25	14		1.37	5.98	6.00	4
C&J Latex Lead 1-1		50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011+1.0 GPS CJ550L+0.2 GPS CJ891			755	14		1.37	4.71	184.00	85
C&J Tail 1-1		65 % CJ914+35 % CJ010-74 +0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511			1340	14.5		1.22	5.41	291.00	173
Displacement		Treated Water				8.34				311.00	
50 % CJ914+50 % CJ010-74+2.0 % CJ020											
Displacement Chemicals:											

Cement Job Log



Customer:	PDC ENERGY				Date: 3/21/2019				Serv. Supervisor: Brian Douglass			
Cust. Rep.:	Antonio Barrientos				Ticket #: BCO-1903-0074				Serv. Center Brighton - 3021			
Lease:	Challenger 9N				API Well #: 05-123-45892				County: Weld		State: CO	
Well Type:	Oil				Rig: Ensign 152				Type of Job: Production Casing			
OPEN HOLE DATA				TUBULAR DATA								
8.5" OH (1678'-14047')				5.5" 20# (0-14040')		SIZE WEIGHT	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS				
9.625 36# (0-1678')				TOP		BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
									14011			
WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)				WATER ON LOC (bbl)	
TYPE	DENSITY	VOLUME	TYPE	DENSITY								
MUD	10.0 ppg	311 bbl	H2O	8.3 ppg	1250		5000				1000	
Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press. (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details					
11:00 PM						0	arrive on location					
11:05 PM						0	tailgate meeting					
11:10 PM						0	spot trucks and containment					
11:25 PM						0	rig in					
4:45 AM						0	safety meeting					
5:10 AM	3	470				5	fill lines					
5:14 AM						5	pressure test lines to 5000 psi (hold for 5 mins)					
5:20 AM	5	450				80	sapp					
5:37 AM	5	500				3	fresh h2o					
5:38 AM	7	700				80	weighted spacer					
5:55 AM	4	400				3	fresh h2o					
5:58 AM	4	400				6	non latex lead cement @ 14.0 ppg (25sx)					
6:00 AM	6	200				184	latex lead cement @ 14.0 ppg(755sx)					
6:30 AM	7.5	320				291	non latex tail cement @ 14.0 ppg (755sx)					
7:15 AM						652	shutdown/ drop plug					
7:16 AM						652	wash pump					
7:28 AM	8	1500				311	963 displace fluid with treated water					
8:08 AM	3	1250				963	last 20 bbls to 3bpm					
8:14 AM						963	bump plug 500 psi over					
8:19 AM	2	2431			1.3	964.3	open WSS @ 2bpm (set trips to 5000psi)					
8:20 AM	4	1400				964.3	displace 5 bbls @ 4bpm					
8:22 AM						964.3	check float					
8:30 AM						964.3	rig out					
10:00 AM						964.3	leave location					
Left Yard	3/21/19 10:00 PM			Left Loc.	3/22/19 10:00 AM			Start Pump	3/22/19 5:10 AM			
Arrived Loc.	3/21/19 11:00 PM			Returned Yd.	3/22/19 11:00 AM			End Pump	3/22/19 8:22 AM			
Bumped Plug (psi)	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Standby Charged(hrs)	Casing Reciprocation		
Yes	1250	yes	n/a	0	2458	yes	4500	n/a	0	n/a		
							Brian Douglass		3/21/2019			
							Service Supervisor		Date			



PDC ENERGY

Prepared for
John Sinesi / Mike Schweizer

05-123-45892
Challenger 9N

*Located in
Weld County, CO*

Prepared by
Michael Salyers
on
Sunday, March 17, 2019

Serviced from the Brighton Facility
For Customer Service Call: 303-857-7948

Rig Name: Ensign 152

Proposal Version: 0

17-Mar-19

1:54 PM

Michael Salyers

43357:2.05c

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Production Casing

0

Job Data

MD / TVD	14,088 ft / 6,700 ft	Casing	5.5 in. 20#, (0 to 14,088 ft)
Est. BHST/BHCT	200°F / 180°F (0) (2.99°F/100ft)	Open Hole	8.5 in. O.H. (1,679 to 14,088 ft)
Mud Weight & Type	10#, Water Based	Previous Casing	9.625 in. 36# (0 to 1,679 ft)
		Round Trip Miles	80
Comment	Spacer Recipe: Y = 3.43 cf/sk, WR = 21.3 gal/sk, SKWT = 135 lb/sk - Total Mix fluid for Latex lead is 6.0 gal/sk		

C&J Latex Lead 1-1	4,500	8.500	5.500	0%	0.229	1,030.8	183.6
C&J Tail 1-1	7,088	8.500	5.500	0%	0.229	1,623.7	289.2
Shoe Track	42	4.778			0.125	5.23	0.9

80 bbls water + 1600 lbs SAPP

Concentration	Item Code	Description
20 PPB	CJ890	Dust Flush
Spacer Volume (bbl)		
80.00		

80 bbls ppg Weighted Spacer

80 bbls of 12.5 ppg Weighted Spacer: 66.3 bbl Fresh Water + 17570 lbs Barite + 80 lbs Citric Acid + 997 lbs MS Spacer + 40 lbs X-Air

Concentration	Item Code	Description
219.63 PPB	CJ300	Barite
1 PPB	CJ209	CI-Tric (powder citric acid)
0.5 PPB	CJ776	X-Air P (Antifoam)
12.46 PPB	CJ801	PureBond MS Spacer
Volume (bbl)		
80.00		

C&J Non Latex Lead 1-1

Concentration	Item Code	Description
50 %	CJ914	Class G Cement
50 %	CJ010-74	Pozzolan Extender (74 LB/cuft) Class F
2.0 %	CJ020	Bentonite (cementing grade)
0.4 %	CJ548	MT Fluid Loss/Gas Migration
0.3 %	CJ240	Synthetic Retarder
10.0 %	CJ041	Undensified Silica Fume
0.3 %	CJX157011	Solid Antifoam
Slurry Density (ppg)		
14.00		
Volume (sx)	25	Yield (cf/sx)
Excess (%)	0	Water (gps)
		5.98

Production Casing

0

C&J Latex Lead 1-1				
	Concentration	Item Code	Description	
	50 %	CJ914	Class G Cement	
	50 %	CJ010-74	Pozzolan Extender (74 LB/cuft) Class F	
	2.0 %	CJ020	Bentonite (cementing grade)	
	0.4 %	CJ548	MT Fluid Loss/Gas Migration	
	0.3 %	CJ240	Synthetic Retarder	
	10.0 %	CJ041	Undensified Silica Fume	
	0.3 %	CJX157011	Solid Antifoam	
	1 GPS	CJ550L	Fluid Loss (Latex)	
	0.2 GPS	CJ891	Latex Stabilizer-RS	
Top Depth (ft)		2,500	Slurry Density (ppg)	14.00
Volume (sx)		755	Yield (cf/sx)	1.37
Excess (%)		0	Water (gps)	4.71
C&J Tail 1-1				
	Concentration	Item Code	Description	
	65 %	CJ914	Class G Cement	
	35 %	CJ010-74	Pozzolan Extender (74 LB/cuft) Class F	
	0.3 %	CJ704	Anti Settling Control	
	0.15 %	CJ210K	LT Retarder	
	0.5 %	CJ511	HT Fluid Loss (Salt Tolerant)	
Top Depth (ft)		7,000	Slurry Density (ppg)	14.50
Volume (sx)		1,340	Yield (cf/sx)	1.22
Excess (%)		0	Water (gps)	5.41
Displacement				
			Volume (bbl)	311.50