CEMENT TREATMENT REPORT

Customer:	St. Croix Operating	Well:	Armstrong 1	Ticket:	ICT 2719
City, State:		County:	Washington CO	Date:	11/5/2019
Field Rep:	Tom Thomas	S-T-R:	21-3S-51W	Service:	PTA

Downhole Information	
Hole Size:	7 7/8 in
Hole Depth:	4200 ft
Casing Size:	in
Casing Depth:	ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	bbls

Calculated Slurry	
Weight:	13.8 # / sx
Water Sx:	6.89 gal / sx
Yield:	1.42 ft^3 / sx
Bbls / Ft.:	
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	45.5 bbls
Total Sacks:	180 sx

Product	% #	#
Class A	60.00	10152
Poz	40.00	5328
Gel	4.00	619
CaCl		
Gypsum		
Metso		
Kol Seal		
Flo Seal		
Salt (bww)		
	Total	16,099

TIME	RATE	PSI	BBLs	REMARKS
900A				ON LOCATION
905A				SAFETY MEETING
910A				RIG UP
935A	4.0	200.0	5.0	H2O AHEAD
937A	4.0	250.0	15.2	CEMENT 60 SKS H-PLUG @ 4060 FT T.O.C. 3808 FT
941A	4.0	100.0	5.0	DISPLACE H2O
945A				SWITCH TO RIG PUMP FOR 5 MINS
1035A	4.0	250.0	5.0	H2O AHEAD
1036A	4.0	325.0	10.1	CEMENT 40 SKS H-PLUG @ 3040 FT T.O.C. 2872 FT
1039A	4.0	100.0	5.0	DISPLACE H2O
1045A				SWITCH TO RIG PUMP FOR 3.6 MINS
1245P	3.5	250.0	5.0	H2O AHEAD
1247P	3.5	300.0	12.6	CEMENT 50 SKS H-PLUG @ 570 FT T.O.C. 370 FT
1251P	3.5	100.0	4.8	DISPLACE H2O
223P	2.0	75.0	3.8	CEMENT 15 SKS H-PLUG @ 60 FT T.O.C. SURFACE
230P	2.0	50.0	1.3	CEMENT 5 SKS H-PLUG IN RATHOLE
240P				WASH UP
250P				RIG DOWN
315P				LEFT LOCATION

	CREW	UNIT
Cementer	Jimmie Cottrell	73
Pump Operator	Kaleb Compton	209
Bulk #1	Cory Davis	194
Bulk #2		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
3.5 bpm	182 psi	73 bbls

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202