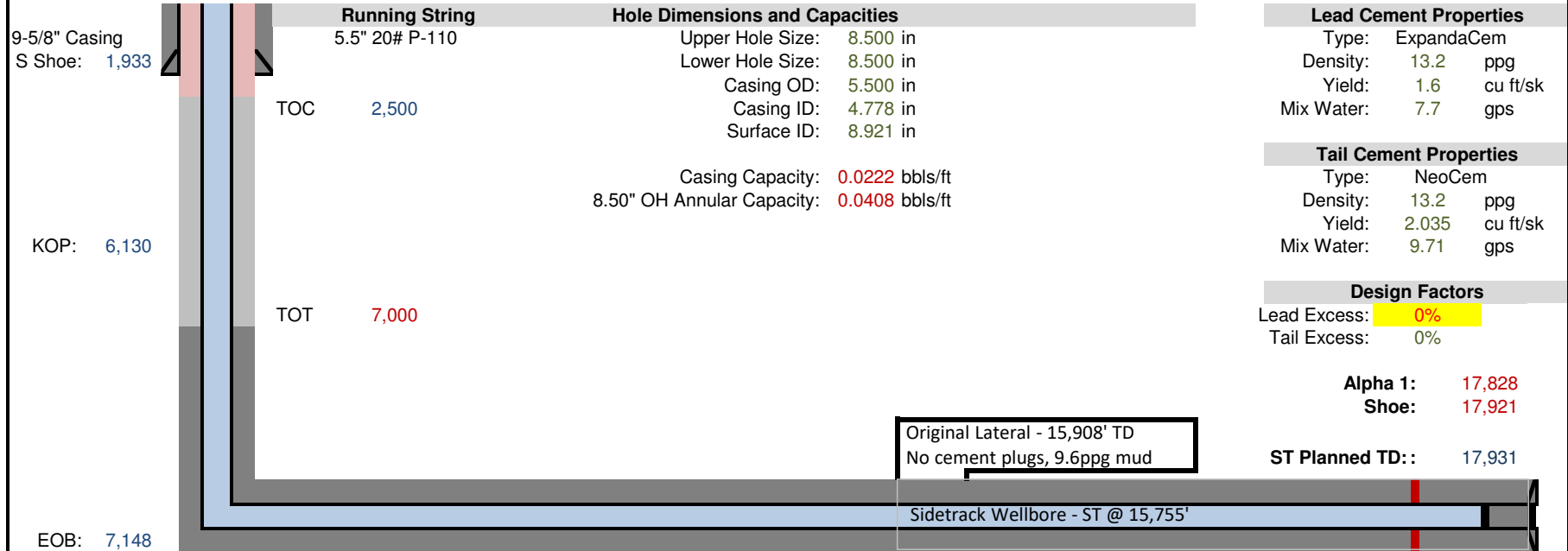


# LARSON AA19-624

## 5-1/2" Production String Cement Job



**Note:** Be sure to review cement calculations with the cement supervisor based on actual running string, cement yield, and pump time. **These are preliminary estimates only.**

Pump Schedule					Job Time (Estimate only)				
Tuned Spacer w/ Surfactant (11.5 ppg)	120.0	bbls			Spacer:	120	bbls	6	bpm
Lead Cement (13.2 ppg)	183.6	bbls	645	sks	Lead Cement:	184	bbls	7	bpm
Tail Cement (13.2 ppg)	446.4	bbls	1232	sks	Tail Cement:	446	bbls	7	bpm
Displacement (FW + Retarder):	397.4	bbls			Shutdown:	0	bbls	0	bpm
					Disp:	397	bbls	6	bpm
					TOTAL:	1147	bbls	191	min
								3.2	hrs

Centralizer Program						
Type	Frequency	From	To	Amount Required		
5-1/2" x 8.5" Halliburton Red-X	1 per 2	2,400	5,131	31		
5-1/2" x 8.5" Halliburton Red-X	1 per 1	5,131	7,248	48	Total Centek: 201	
5-1/2" x 8.5" Halliburton Red-X	1 per 2	7,248	17,931	122		