



WELL STIMULATION REPORT

Bayswater Exploration

Flaherty 13-8-3

05-123-47439-00

April 19, 2024 - April 28, 2024

Engineering Executive Summary

On Friday, April 19, 2024 the stimulation of treatment(s) was performed in the Niobrara formation on the Flaherty 13-8-3 well in WELD county, COLORADO.

The proposed treatment(s) consisted of:

11,000	gallons of	15% HCl
8,279,889	gallons of	Dry FR
0	gallons of	FR Water
184,778	gallons of	Treated Water
693,000	pounds of	100 Mesh Premium White
6,302,972.5	pounds of	30/50 Premium White
0	pounds of	SS-200 Premium White

The actual treatment(s) consisted of:

33,932	gallons of	15% HCl
8,080,671	gallons of	Dry FR
532,364	gallons of	FR Water
155,181	gallons of	Treated Water
703,448	pounds of	100 Mesh Premium White
6,046,384	pounds of	30/50 Premium White
0	pounds of	SS-200 Premium White

21 of 22 treatment(s) were fully completed. 0 treatment(s) were skipped, and 1 treatment(s) were screened out or otherwise cut short of design.

The well was first opened Friday, April 19, 2024 at 18:42 with an opening pressure of 1,257.92 psi.

The total amount of proppant pumped was 6,749,832.0 lbm with an average concentration of 0.77 ppg and maximum concentration of 4.0 ppg. Treating pressure averaged 6354.07 psi and rate averaged 91.13 bpm. Total clean volume was 8,802,148.0 gallons.

The operation came offline at 13:23 and the well was shut in Sunday, April 28, 2024 at 13:39 with a final shut-in pressure of 3,860.09 psi. A more detailed description of the actual treatment can be found further down in this report.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well.

Regards,

Thomas Nowak

Isaac Attobrah

Crew Service Leader

Crew Lead Engineer

WELL COMPLETION DATA

Treatment Interval	Perforation Top (ft)	Perforation Bottom (ft)	Plug Depth (ft)	Vertical Depth (ft)	Perforation Count	Cluster Count	Cluster Spacing (ft)	Perforation Phasing	SalesOrder Number	Formation	Sub Formation
1	11631	11791	11811	6383	32	6	32	120	909263868	Niobrara	Niobrara
2	11431	11591	11611	6381	32	6	32	120	909263868	Niobrara	Niobrara
3	11231	11391	11411	6382	32	6	32	120	909263868	Niobrara	Niobrara
4	11031	11191	11211	6380	32	6	32	120	909263868	Niobrara	Niobrara
5	10831	10991	11011	6378	32	6	32	120	909263868	Niobrara	Niobrara
6	10631	10791	10811	6377	32	6	32	120	909263868	Niobrara	Niobrara
7	10431	10591	10611	6377	32	6	32	120	909263868	Niobrara	Niobrara
8	10231	10391	10411	6377	32	6	32	120	909263868	Niobrara	Niobrara
9	10031	10191	10211	6376	32	6	32	120	909263868	Niobrara	Niobrara
10	9831	9991	10011	6378	32	6	32	120	909263868	Niobrara	Niobrara
11	9631	9791	9811	6378	32	6	32	120	909263868	Niobrara	Niobrara
12	9431	9591	9611	6378	32	6	32	120	909263868	Niobrara	Niobrara
13	9231	9391	9411	6379	32	6	32	120	909263868	Niobrara	Niobrara
14	9031	9191	9211	6379	32	6	32	120	909263868	Niobrara	Niobrara
15	8831	8991	9011	6379	32	6	32	120	909263868	Niobrara	Niobrara
16	8631	8791	8811	6379	32	6	32	120	909263868	Niobrara	Niobrara
17	8431	8591	8611	6380	32	6	32	120	909263868	Niobrara	Niobrara
18	8231	8391	8411	6382	32	6	32	120	909263868	Niobrara	Niobrara
19	8031	8191	8211	6382	32	6	32	120	909263868	Niobrara	Niobrara
20	7831	7991	8011	6381	32	6	32	120	909263868	Niobrara	Niobrara
21	7631	7791	7811	6381	32	6	32	120	909263868	Niobrara	Niobrara
22	7431	7591	7611	6381	32	6	32	120	909263868	Niobrara	Niobrara

FLUID SYSTEM SUMMARY

Treatment Interval	15% HCl		Dry FR		FR Water		Treated Water		Total Fluid		Slurry Volume
	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Pumped (gal)
1	500	3000	378315	49831	0	388616	8399	5964	387214	447411	465759.84
2	500	2000	378128	385195	0	0	8399	14504	387027	401699	418051.2
3	500	2000	377942	385040	0	6282	8399	7770	386841	401092	415246.86
4	500	2000	377756	387512	0	0	8399	15956	386655	405468	419587.14
5	500	2000	377569	394811	0	0	8399	15411	386468	412222	427774.2
6	500	1000	377383	398032	0	7183	8399	8568	386282	414783	429392.88
7	500	1000	377197	394507	0	364	8399	8048	386096	403919	418241.88
8	500	1000	377011	385891	0	7170	8399	7434	385910	401495	415020.06
9	500	1000	376824	382831	0	9274	8399	6720	385723	399825	413568.12
10	500	1000	376638	387738	0	8504	8399	6216	385537	403458	417534.18
11	500	968	376452	392193	0	7207	8399	5838	385351	406206	420125.16
12	500	2000	376265	382259	0	7389	8399	5712	385164	397360	412017.06
13	500	964	376079	374878	0	4257	8399	7056	384978	387155	401532.18
14	500	1000	375893	261322	0	46599	8399	4704	384792	313625	324350.04
15	500	3000	375707	389355	0	575	8399	15036	384606	407966	413779.8
16	500	2000	375520	387948	0	0	8399	4452	384419	394400	413308.98
17	500	2000	375334	396671	0	9114	8399	3990	384233	411775	425874.96
18	500	1000	375148	391995	0	7552	8399	3234	384047	403781	417377.94
19	500	1000	374961	386402	0	7145	8399	2520	383860	397067	412340.04
20	500	1000	374775	393508	0	0	8399	2436	383674	396944	411158.16
21	500	1000	374589	394537	0	7463	8399	1974	383488	404974	419785.8
22	500	2000	374403	378215	0	7670	8399	1638	383302	389523	404903.94

FLUID SYSTEM SUMMARY

Treatment Interval	15% HCl		Dry FR		FR Water		Treated Water		Total Fluid		Slurry Volume
	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Pumped (gal)
Total	11000	33932	8279889	8080671	0	532364	184778	155181	8475667	8802148	9116730.42

PROPPANT SUMMARY

Treatment Interval	100 Mesh Premium White		30/50 Premium White		SS-200 Premium White		Total	
	Proposed (lbm)	Pumped (lbm)	Proposed (lbm)	Pumped (lbm)	Proposed (lbm)	Pumped (lbm)	Proposed (lbm)	Pumped (lbm)
1	31500	37098	286498.75	289601	0	0	317998.75	326699
2	31500	31500	286498.75	286499	0	0	317998.75	317999
3	31500	31550	286498.75	289550	0	0	317998.75	321100
4	31500	31640	286498.75	286578	0	0	317998.75	318218
5	31500	31500	286498.75	286586	0	0	317998.75	318086
6	31500	31200	286498.75	289660	0	0	317998.75	320860
7	31500	31500	286498.75	286490	0	0	317998.75	317990
8	31500	32980	286498.75	288200	0	0	317998.75	321180
9	31500	31220	286498.75	289540	0	0	317998.75	320760
10	31500	32240	286498.75	288700	0	0	317998.75	320940
11	31500	32080	286498.75	283160	0	0	317998.75	315240
12	31500	30680	286498.75	286280	0	0	317998.75	316960
13	31500	31570	286498.75	289500	0	0	317998.75	321070
14	31500	31940	286498.75	199300	0	0	317998.75	231240
15	31500	31200	286498.75	93100	0	0	317998.75	124300
16	31500	34460	286498.75	286760	0	0	317998.75	321220
17	31500	31540	286498.75	292540	0	0	317998.75	324080
18	31500	31530	286498.75	287900	0	0	317998.75	319430
19	31500	31780	286498.75	286800	0	0	317998.75	318580
20	31500	31600	286498.75	286740	0	0	317998.75	318340
21	31500	31540	286498.75	286220	0	0	317998.75	317760
22	31500	31100	286498.75	286680	0	0	317998.75	317780

PROPPANT SUMMARY

Treatment Interval	100 Mesh Premium White		30/50 Premium White		SS-200 Premium White		Total	
	Proposed (lbm)	Pumped (lbm)	Proposed (lbm)	Pumped (lbm)	Proposed (lbm)	Pumped (lbm)	Proposed (lbm)	Pumped (lbm)
Total	693000	703448	6302972.5	6046384	0	0	6995972.5	6749832

ADDITIVE SUMMARY

Treatment Interval	28% HCl		DCA-13001		DCA-17008		DCA-21008		DCA-21009		DCA-23010		DCA-23011	
	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)	Proposed (lbs)	Pumped (lbs)	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)
1	252.5	1515	378.32	397	1	6	40	0	40	0	0	0	756.63	1047
2	252.5	1010	378.13	386	1	4	40	0	40	0	0	0	756.26	973
3	252.5	1010	377.94	391	1	4	40	0	40	0	0	0	755.88	866
4	252.5	1010	377.76	385	1	4	40	0	40	0	0	0	755.51	971
5	252.5	1010	377.57	394	1	4	40	0	40	0	0	0	755.14	1018
6	252.5	505	377.38	403	1	2	40	0	40	0	0	0	754.77	968
7	252.5	505	377.2	400	1	2	40	0	40	0	0	0	754.39	959
8	252.5	505	377.01	389	1	2	40	0	40	0	0	0	754.02	946
9	252.5	505	376.82	373	1	2	40	10	40	10	0	0	753.65	937
10	252.5	505	376.64	389	1	2	40	20	40	20	0	0	753.28	954
11	252.5	489	376.45	401	1	1.94	40	0	40	0	0	0	752.9	965
12	252.5	1010	376.26	373	1	4	40	0	40	0	0	0	752.53	918
13	252.5	487	376.08	376	1	1.93	40	0	40	0	0	0	752.16	895
14	252.5	505	375.89	302	1	2	40	0	40	0	0	81.07	751.79	617
15	252.5	1260	375.71	413	1	6	40	0	40	0	0	0	751.41	954
16	252.5	1010	375.52	440	1	4	40	0	40	0	0	0	751.04	904
17	252.5	1010	375.33	398	1	4	40	10	40	10	0	0	750.67	979
18	252.5	505	375.15	393	1	2	40	0	40	0	0	0	750.3	976
19	252.5	505	374.96	385	1	2	40	10	40	10	0	43.84	749.92	951
20	252.5	505	374.78	388	1	2	40	0	40	0	0	25	749.55	1001
21	252.5	505	374.59	395	1	2	40	0	40	0	0	46.86	749.18	1055
22	252.5	1010	374.4	378	1	4	40	10	40	10	0	44.92	748.81	955

ADDITIVE SUMMARY

Treatment Interval	28% HCl		DCA-13001		DCA-17008		DCA-21008		DCA-21009		DCA-23010		DCA-23011	
	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)	Proposed (lbs)	Pumped (lbs)	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)
Total	5555	16881	8279.89	8549	22	67.87	880	60	880	60	0	241.69	16559.79	20809

ADDITIVE SUMMARY

Treatment Interval	DCA-32019M		MP-D1	
	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)
1	1	6	0	0
2	1	4	0	0
3	1	4	0	0
4	1	4	0	0
5	1	4	0	0
6	1	2	0	0
7	1	2	0	0
8	1	2	0	0
9	1	2	0	0
10	1	2	0	0
11	1	1.94	0	0
12	1	4	0	0
13	1	1.93	0	0
14	1	2	0	0
15	1	6	0	2840
16	1	4	0	0
17	1	4	0	0
18	1	2	0	0
19	1	2	0	0
20	1	2	0	0
21	1	2	0	0
22	1	4	0	0

ADDITIVE SUMMARY

Treatment Interval	DCA-32019M		MP-D1	
	Proposed (gal)	Pumped (gal)	Proposed (lbs)	Pumped (lbs)
Total	22	67.87	0	2840

AVG / MAX TECHNICAL DATA

Treatment Interval	Treatment Status	Average Pressure (psi)	Average Slurry Rate (bpm)	Average Proppant Conc (ppg)	Maximum Pressure (psi)	Maximum Slurry Rate (bpm)	Maximum Proppant Conc (ppg)
1	Completed	5987	87.42	0.73	8195	102.32	4
2	Completed	5910	94.27	0.87	6986	100.56	3
3	Completed	6559	82.16	0.81	7268	94.58	4
4	Completed	6453	85.42	0.77	8409	91.16	3
5	Completed	6070	94.41	0.84	7097	100.24	4
6	Completed	6938	92.63	0.79	8010	100.52	3
7	Completed	6701	95.27	0.79	9137	100.92	3
8	Completed	6120	93.37	0.77	6599	100.43	4
9	Completed	6005	95.28	0.77	7414	100.72	2.98
10	Completed	5865	97.8	0.79	7483	101.03	2.5
11	Completed	6196	94.53	0.75	7574	100.28	3.15
12	Completed	6885	93.57	0.83	7584	100.43	3.01
13	Completed	6057	95.14	0.81	8821	102.11	4
14	Cut	6559	90.33	0.7	8113	100.37	2
15	Completed	6909	46.1	0.26	8641	80.13	1.85
16	Completed	6266	94.91	0.86	7392	100.05	3.01
17	Completed	6368	96.15	0.76	7919	101	4
18	Completed	6581	94.97	0.74	7079	100.53	4
19	Completed	6348	97.53	0.82	7479	101.68	4
20	Completed	6210	96.54	0.8	7754	100.64	3.99
21	Completed	6628	89.59	0.76	8031	100.46	2.98
22	Completed	6162	97.39	0.86	7514	103.63	4

BREAKDOWN TECHNICAL DATA

Treatment Interval	Ball Seat Volume (bbl)	Ball Seat Pressure (psi)	Ball Seat Rate (bpm)	Formation Break Pressure (psi)	Formation Break Rate (bpm)
1	1660	4959	14.85	8108	9.61
2	241.03	4602	18.73	6914	18.68
3	0	0	0	6444	17.87
4	0	0	0	5774	10
5	0	0	0	3779	9.86
6	0	0	0	5689	11.33
7	0	0	0	6050	10.35
8	0	0	0	5916	33.23
9	0	0	0	5120	10.62
10	0	0	0	5208	37.64
11	0	0	0	5275	11.4
12	0	0	0	7540	41.8
13	0	0	0	6336	60.35
14	0	0	0	5208	9.61
15	0	0	0	6999	14.41
16	0	0	0	5267	9.44
17	0	0	0	7884	44.68
18	0	0	0	6284	39.08
19	0	0	0	5168	10.36
20	0	0	0	4880	11.05
21	0	0	0	6907	27.03
22	0	0	0	5787	10.92

PRESSURE TECHNICAL DATA

Treatment Interval	Open Well Pressure (psi)	Initial Shut In Pressure (psi)	Fracture Gradient (psi/ft)	Max Annulus Pressure (psi)	5 Min Pressure (psi)	10 Min Pressure (psi)	15 Min Pressure (psi)	Final Shut In Pressure (psi)
1	1257	3858	1.04	17.5	0	0	0	8.82
2	3066	4363	1.12	17.16	0	0	0	3911
3	4789	3958	1.05	15.19	0	0	0	3945
4	3303	3985	1.06	8.93	0	0	0	3935
5	3287	4948	1.21	49.18	0	0	0	4176
6	3399	3945	1.05	22.88	0	0	0	3860
7	3362	4696	1.17	56.39	0	0	0	4696
8	3446	3976	1.06	47.32	0	0	0	3961
9	3463	4108	1.08	25.46	0	0	0	4055
10	3400	4420	1.13	49.94	0	0	0	4215
11	3449	4129	1.08	31.53	0	0	0	4076
12	4594	4466	1.13	63.8	0	0	0	4200
13	3402	4320	1.11	38.68	0	0	0	4249
14	3495	4493	1.14	32.92	0	0	0	4421
15	3477	4856	1.19	62.89	0	0	0	4786
16	3552	4238	1.1	29.35	0	0	0	4164
17	3545	4147	1.08	50.58	0	0	0	4083
18	3540	4158	1.08	33.91	0	0	0	4069
19	3543	4316	1.11	27.6	0	0	0	4177
20	3658	4141	1.08	23.32	0	0	0	4080
21	3568	4183	1.09	19.59	0	0	0	4179
22	3697	4227	1.1	41.53	4007	3916	3867	3860

TREATMENT TIME TECHNICAL DATA

Treatment Interval	Start Date (YYYY-MM-DD)	Well Open Time (YYYY-MM-DD hh-mm-ss)	Start Time (YYYY-MM-DD hh-mm-ss)	End Time (YYYY-MM-DD hh-mm-ss)	Well Shut In Time (YYYY-MM-DD hh-mm-ss)	Total Pump Time (hh:mm:ss)	Down Time (hh:mm:ss)
1	2024-04-19T00:00:00	2024-04-19T18:42:26	2024-04-19T18:43:21	2024-04-20T02:04:47	2024-04-20T02:07:34	02:49:06	04:32:20
2	2024-04-20T00:00:00	2024-04-20T10:07:37	2024-04-20T10:08:24	2024-04-20T12:12:42	2024-04-20T12:13:44	02:04:18	00:00:00
3	2024-04-20T00:00:00	2024-04-20T19:00:02	2024-04-20T19:01:34	2024-04-20T21:16:43	2024-04-20T21:18:04	02:15:09	00:00:00
4	2024-04-21T00:00:00	2024-04-21T03:47:33	2024-04-21T03:48:19	2024-04-21T05:58:34	2024-04-21T05:59:17	02:10:15	00:00:00
5	2024-04-21T00:00:00	2024-04-21T14:51:14	2024-04-21T14:51:40	2024-04-21T16:50:43	2024-04-21T16:51:31	01:59:03	00:00:00
6	2024-04-22T00:00:00	2024-04-22T02:15:00	2024-04-22T02:15:39	2024-04-22T04:15:16	2024-04-22T04:18:47	01:59:37	00:00:00
7	2024-04-22T00:00:00	2024-04-22T10:43:16	2024-04-22T10:43:37	2024-04-22T12:56:14	2024-04-22T12:59:25	02:12:37	00:00:00
8	2024-04-22T00:00:00	2024-04-22T19:42:23	2024-04-22T19:43:54	2024-04-22T21:38:53	2024-04-22T21:39:55	01:54:59	00:00:00
9	2024-04-23T00:00:00	2024-04-23T03:42:44	2024-04-23T03:43:20	2024-04-23T05:32:38	2024-04-23T05:33:20	01:49:18	00:00:00
10	2024-04-23T00:00:00	2024-04-23T13:29:55	2024-04-23T13:30:13	2024-04-23T15:16:33	2024-04-23T15:17:03	01:46:20	00:00:00
11	2024-04-23T00:00:00	2024-04-23T22:56:48	2024-04-23T22:57:21	2024-04-24T00:52:06	2024-04-24T00:53:05	01:54:45	00:00:00
12	2024-04-24T00:00:00	2024-04-24T13:00:33	2024-04-24T13:00:41	2024-04-24T14:52:04	2024-04-24T14:52:52	01:51:23	00:00:00
13	2024-04-24T00:00:00	2024-04-24T22:49:30	2024-04-24T22:49:52	2024-04-25T00:43:16	2024-04-25T00:47:58	01:53:24	00:00:00
14	2024-04-25T00:00:00	2024-04-25T07:07:44	2024-04-25T07:08:32	2024-04-25T08:44:31	2024-04-25T08:44:41	01:35:59	00:00:00
15	2024-04-25T00:00:00	2024-04-25T14:51:52	2024-04-25T14:52:10	2024-04-25T22:39:36	2024-04-25T22:41:50	07:47:26	00:00:00
16	2024-04-26T00:00:00	2024-04-26T02:50:20	2024-04-26T02:51:15	2024-04-26T04:49:00	2024-04-26T04:49:46	01:57:45	00:00:00
17	2024-04-26T00:00:00	2024-04-26T14:24:52	2024-04-26T14:25:19	2024-04-26T16:21:14	2024-04-26T16:21:38	01:55:55	00:00:00
18	2024-04-26T00:00:00	2024-04-26T22:16:22	2024-04-26T22:16:49	2024-04-27T00:07:03	2024-04-27T00:08:20	01:50:14	00:00:00
19	2024-04-27T00:00:00	2024-04-27T08:34:06	2024-04-27T08:34:44	2024-04-27T10:20:39	2024-04-27T10:21:10	01:45:55	00:00:00
20	2024-04-27T00:00:00	2024-04-27T16:33:30	2024-04-27T16:33:54	2024-04-27T18:19:34	2024-04-27T18:20:51	01:45:40	00:00:00
21	2024-04-28T00:00:00	2024-04-28T03:24:24	2024-04-28T03:25:00	2024-04-28T05:27:55	2024-04-28T05:28:07	02:02:55	00:00:00
22	2024-04-28T00:00:00	2024-04-28T11:34:24	2024-04-28T11:34:47	2024-04-28T13:23:14	2024-04-28T13:39:10	01:48:27	00:00:00

QA / QC TECHNICAL DATA

Treatment Interval	Gel Viscosity (cP)	Fluid Temperature (F)	Gel pH	Interval Comments	Technology Application
1	0	60	0	Bio: 18.85 Geo: 10.947 Bleach: 58 Pump Down: 5964 USG Flush: 13988 USG Wireline: 36 shots of deep 6 gun	PNP
2	0	60	0	Bio: 12.6 Geo: 14.5 Bleach: 29 Pump Down: 7350 USG Flush: 10668 USG Wireline: 32 shots of 6 gun	PNP
3	0	60	0	Bio: 10.802 Geo: 11.02 Bleach: 47.487 Pump Down: 7770 USG Flush: 14355 USG Wireline: 32 shots of 6 gun	PNP
4	0	60	0	Bio: 14.5 Geo: 12.397 Bleach: 30.160 Pump Down: 9492 USG Flush: 10290 USG Wireline: 32 shots of 6 gun	PNP
5	0	60	0	Bio: 10.8 Geo: 13.7 Bleach: 28.2 Pump Down: 9366 USG Flush: 10080 USG Wireline: 32 shots of 6 gun	PNP
6	0	60	0	Bio: 10.512 Geo: 14.862 Bleach: 25.737 Pump Down: 8568 USG Flush: 14810 USG Wireline: 32 shots on 6 guns	PNP
7	0	60	0	Bio: 9.969 Geo: 12.688 Bleach: 23.563 Pump Down: 7140 USG Flush: 9702 USG Wireline: 32 shots on 6 guns Completed with 93% sand (294;999 lbs) into formation; cut due to high pressure.	PNP
8	0	60	0	Bio: 11.237 Geo: 13.775 Bleach: 27.187 Pump Down: 7434 USG Flush: 14640 USG Injection test: 14645 USG Wireline: 32 shots on 6 guns	PNP
9	0	60	0	Bio: 12.69 Geo: 13.78 Bleach: 29 Pump Down: 6720 USG Flush: 13597 USG Wireline: 32 shots on 6 guns Diverter 1st Drop Div 1315: 5 lbs Div 1325: 5 lbs 0 Psi 2nd Drop Div 1315: 5 lbs Div 1325: 5 lbs 69 Psi	PNP

QA / QC TECHNICAL DATA

Treatment Interval	Gel Viscosity (cP)	Fluid Temperature (F)	Gel pH	Interval Comments	Technology Application
10	0	60	0	Bio: 10.8 Geo: 13.4 Bleach: 27.1 Pump Down: 6216 USG Flush: 13085 USG Wireline: 32 shots on 6 guns Diverter 1st Drop Div 1315: 10 lbs Div 1325: 10 lbs 0 Psi 2nd Drop Div 1315: 10 lbs Div 1325: 10 lbs 121 Psi	PNP
11	0	60	0	Bio: 10.150 Geo: 12.905 Bleach: 30.586 Pump Down: 5838 USG Flush: 11229 USG Wireline: 32 shots on 6 guns	PNP
12	0	60	0	Bio: 10.88 Geo: 11.42 Bleach: 32.27 Pump Down: 5712 USG Flush: 13135 USG Wireline: 32 shots on 6 guns	PNP
13	0	60	0	Bio: 11.237 Geo: 10875 Bleach: 32.824 Pump Down: 7056 USG Flush: 2921 USG Wireline: 32 shots on 6 guns	PNP
14	0	60	0	Bio: 11.78 Geo: 9.43 Bleach: 32.27 Pump Down: 4704 USG Flush: 12303 USG Wireline: 32 shots on 6 guns Cut short due to pressure 73% of proppant placed.	PNP
15	0	60	0	Bio: 5.8 Geo: 0 Bleach: 13.055 Pump Down: 5124 USG Flush: 8148 USG Wireline: 40 shots on 8 guns Ran 2800 lb of PFM Cut sand due to high pressure 49% sand placed	PNP
16	0	60	0	Bio: Geo: 8.700 Bleach: 13.050 Pump Down: 4452 USG Flush: 11141 USG Wireline: 32 shots on 6 guns Diverter 1st Drop Div 1315: lbs Div 1325: lbs Psi 2nd Drop Div 1315: lbs Div 1325: lbs Psi	PNP
17	0	60	0	Bio: 8.156 Geo: 12.688 Bleach: 29.840 Pump Down: 3990 USG Flush: 15382 USG Wireline: 32 shots on 6 guns Diverter 1st Drop Div 1315: 5 lbs Div 1325: 5 lbs 252Psi 2nd Drop Div 1315: 5 lbs Div 1325: 5 lbs 189 Psi	PNP
18	0	60	0	Bio: 11.02 Geo: 12.542 Bleach: 25.513 Pump Down: 3234 USG Flush: 11147 USG Wireline: 32 shots on 6 guns	PNP

QA / QC TECHNICAL DATA

Treatment Interval	Gel Viscosity (cP)	Fluid Temperature (F)	Gel pH	Interval Comments	Technology Application
19	0	60	0	Bio: 9 Geo: 11.9 Bleach: 27.9 Pump Down: 2520 USG Flush: 15443 USG Wireline: 32 shots on 6 guns Diverter 1st Drop Div 1315: 5 lbs Div 1325: 5 lbs 180 Psi 2nd Drop Div 1315: 5 lbs Div 1325: 5 lbs 59 Psi	PNP
20	0	60	0	Bio: 10.077 Geo: 12.687 Bleach: 27.452 Pump Down: 2436 USG Flush: 9482 USG Wireline: 32 shots on 6 guns	PNP
21	0	60	0	Bio: 12.180 Geo: 13.754 Bleach: 35.435 Pump Down: 1974 USG Flush: 15030 USG Wireline: 32 shots on 6 guns	PNP
22	0	60	0	Bio: 10.8 Geo: 10.5 Bleach: 27.2 Pump Down: 1632 USG Flush: 11143 USG Wireline: 32 shots on 6 guns Diverter 1st Drop Div 1315: 5 lbs Div 1325: 5 lbs 0 Psi 2nd Drop Div 1315: 5 lbs Div 1325: 5 lbs 0 Psi	PNP

TUBULAR DATA

Type	OD (in)	Weight (lbm/ft)	Top MD (ft)	Bottom MD (ft)	Volume Factor (gal/ft)
Casing	5.5	20	0	11888	0.931

CLUSTER DATA

Treatment Interval	Cluster Number	Top Depth MD (ft)	Bottom Depth MD (ft)	Cluster Length (ft)	Perforation Density (spf)	Perforation Diameter (inches)	Perforation Phasing (deg)	Total Perforations	Formation	Sub Formation
1	1	11790	11791	1	6	0.35	120	6	Niobrara	Niobrara
1	2	11758	11759	1	6	0.35	120	6	Niobrara	Niobrara
1	3	11726	11727	1	6	0.35	120	6	Niobrara	Niobrara
1	4	11694	11695	1	6	0.35	120	6	Niobrara	Niobrara
1	5	11662	11663	1	4	0.35	120	4	Niobrara	Niobrara
1	6	11631	11632	1	4	0.35	120	4	Niobrara	Niobrara
2	1	11590	11591	1	6	0.35	120	6	Niobrara	Niobrara
2	2	11558	11559	1	6	0.35	120	6	Niobrara	Niobrara
2	3	11526	11527	1	6	0.35	120	6	Niobrara	Niobrara
2	4	11494	11495	1	6	0.35	120	6	Niobrara	Niobrara
2	5	11462	11463	1	4	0.35	120	4	Niobrara	Niobrara
2	6	11431	11432	1	4	0.35	120	4	Niobrara	Niobrara
3	1	11390	11391	1	6	0.35	120	6	Niobrara	Niobrara
3	2	11358	11359	1	6	0.35	120	6	Niobrara	Niobrara
3	3	11326	11327	1	6	0.35	120	6	Niobrara	Niobrara
3	4	11294	11295	1	6	0.35	120	6	Niobrara	Niobrara
3	5	11262	11263	1	4	0.35	120	4	Niobrara	Niobrara
3	6	11231	11232	1	4	0.35	120	4	Niobrara	Niobrara
4	1	11190	11191	1	6	0.35	120	6	Niobrara	Niobrara
4	2	11158	11159	1	6	0.35	120	6	Niobrara	Niobrara
4	3	11126	11127	1	6	0.35	120	6	Niobrara	Niobrara
4	4	11094	11095	1	6	0.35	120	6	Niobrara	Niobrara

CLUSTER DATA

Treatment Interval	Cluster Number	Top Depth MD (ft)	Bottom Depth MD (ft)	Cluster Length (ft)	Perforation Density (spf)	Perforation Diameter (inches)	Perforation Phasing (deg)	Total Perforations	Formation	Sub Formation
4	5	11062	11063	1	4	0.35	120	4	Niobrara	Niobrara
4	6	11031	11032	1	4	0.35	120	4	Niobrara	Niobrara
5	1	10990	10991	1	6	0.35	120	6	Niobrara	Niobrara
5	2	10958	10959	1	6	0.35	120	6	Niobrara	Niobrara
5	3	10926	10927	1	6	0.35	120	6	Niobrara	Niobrara
5	4	10894	10895	1	6	0.35	120	6	Niobrara	Niobrara
5	5	10862	10863	1	4	0.35	120	4	Niobrara	Niobrara
5	6	10831	10832	1	4	0.35	120	4	Niobrara	Niobrara
6	1	10790	10791	1	6	0.35	120	6	Niobrara	Niobrara
6	2	10758	10759	1	6	0.35	120	6	Niobrara	Niobrara
6	3	10726	10727	1	6	0.35	120	6	Niobrara	Niobrara
6	4	10694	10695	1	6	0.35	120	6	Niobrara	Niobrara
6	5	10662	10663	1	4	0.35	120	4	Niobrara	Niobrara
6	6	10631	10632	1	4	0.35	120	4	Niobrara	Niobrara
7	1	10590	10591	1	6	0.35	120	6	Niobrara	Niobrara
7	2	10558	10559	1	6	0.35	120	6	Niobrara	Niobrara
7	3	10526	10527	1	6	0.35	120	6	Niobrara	Niobrara
7	4	10494	10495	1	6	0.35	120	6	Niobrara	Niobrara
7	5	10462	10463	1	4	0.35	120	4	Niobrara	Niobrara
7	6	10431	10432	1	4	0.35	120	4	Niobrara	Niobrara
8	1	10390	10391	1	6	0.35	120	6	Niobrara	Niobrara
8	2	10358	10359	1	6	0.35	120	6	Niobrara	Niobrara

CLUSTER DATA

Treatment Interval	Cluster Number	Top Depth MD (ft)	Bottom Depth MD (ft)	Cluster Length (ft)	Perforation Density (spf)	Perforation Diameter (inches)	Perforation Phasing (deg)	Total Perforations	Formation	Sub Formation
8	3	10326	10327	1	6	0.35	120	6	Niobrara	Niobrara
8	4	10294	10295	1	6	0.35	120	6	Niobrara	Niobrara
8	5	10262	10263	1	4	0.35	120	4	Niobrara	Niobrara
8	6	10231	10232	1	4	0.35	120	4	Niobrara	Niobrara
9	1	10190	10191	1	6	0.35	120	6	Niobrara	Niobrara
9	2	10158	10159	1	6	0.35	120	6	Niobrara	Niobrara
9	3	10126	10127	1	6	0.35	120	6	Niobrara	Niobrara
9	4	10094	10095	1	6	0.35	120	6	Niobrara	Niobrara
9	5	10062	10063	1	4	0.35	120	4	Niobrara	Niobrara
9	6	10031	10032	1	4	0.35	120	4	Niobrara	Niobrara
10	1	9990	9991	1	6	0.35	120	6	Niobrara	Niobrara
10	2	9958	9959	1	6	0.35	120	6	Niobrara	Niobrara
10	3	9926	9927	1	6	0.35	120	6	Niobrara	Niobrara
10	4	9894	9895	1	6	0.35	120	6	Niobrara	Niobrara
10	5	9862	9863	1	4	0.35	120	4	Niobrara	Niobrara
10	6	9831	9832	1	4	0.35	120	4	Niobrara	Niobrara
11	1	9790	9791	1	6	0.35	120	6	Niobrara	Niobrara
11	2	9758	9759	1	6	0.35	120	6	Niobrara	Niobrara
11	3	9726	9727	1	6	0.35	120	6	Niobrara	Niobrara
11	4	9694	9695	1	6	0.35	120	6	Niobrara	Niobrara
11	5	9662	9663	1	4	0.35	120	4	Niobrara	Niobrara
11	6	9631	9632	1	4	0.35	120	4	Niobrara	Niobrara

CLUSTER DATA

Treatment Interval	Cluster Number	Top Depth MD (ft)	Bottom Depth MD (ft)	Cluster Length (ft)	Perforation Density (spf)	Perforation Diameter (inches)	Perforation Phasing (deg)	Total Perforations	Formation	Sub Formation
12	1	9590	9591	1	6	0.35	120	6	Niobrara	Niobrara
12	2	9558	9559	1	6	0.35	120	6	Niobrara	Niobrara
12	3	9526	9527	1	6	0.35	120	6	Niobrara	Niobrara
12	4	9494	9495	1	6	0.35	120	6	Niobrara	Niobrara
12	5	9462	9463	1	4	0.35	120	4	Niobrara	Niobrara
12	6	9431	9432	1	4	0.35	120	4	Niobrara	Niobrara
13	1	9390	9391	1	6	0.35	120	6	Niobrara	Niobrara
13	2	9358	9359	1	6	0.35	120	6	Niobrara	Niobrara
13	3	9326	9327	1	6	0.35	120	6	Niobrara	Niobrara
13	4	9294	9295	1	6	0.35	120	6	Niobrara	Niobrara
13	5	9262	9263	1	4	0.35	120	4	Niobrara	Niobrara
13	6	9231	9232	1	4	0.35	120	4	Niobrara	Niobrara
14	1	9190	9191	1	6	0.35	120	6	Niobrara	Niobrara
14	2	9158	9159	1	6	0.35	120	6	Niobrara	Niobrara
14	3	9126	9127	1	6	0.35	120	6	Niobrara	Niobrara
14	4	9094	9095	1	6	0.35	120	6	Niobrara	Niobrara
14	5	9062	9063	1	4	0.35	120	4	Niobrara	Niobrara
14	6	9031	9032	1	4	0.35	120	4	Niobrara	Niobrara
15	1	8990	8991	1	6	0.35	120	6	Niobrara	Niobrara
15	2	8958	8959	1	6	0.35	120	6	Niobrara	Niobrara
15	3	8926	8927	1	6	0.35	120	6	Niobrara	Niobrara
15	4	8894	8895	1	6	0.35	120	6	Niobrara	Niobrara

CLUSTER DATA

Treatment Interval	Cluster Number	Top Depth MD (ft)	Bottom Depth MD (ft)	Cluster Length (ft)	Perforation Density (spf)	Perforation Diameter (inches)	Perforation Phasing (deg)	Total Perforations	Formation	Sub Formation
15	5	8862	8863	1	4	0.35	120	4	Niobrara	Niobrara
15	6	8831	8832	1	4	0.35	120	4	Niobrara	Niobrara
16	1	8790	8791	1	6	0.35	120	6	Niobrara	Niobrara
16	2	8758	8759	1	6	0.35	120	6	Niobrara	Niobrara
16	3	8726	8727	1	6	0.35	120	6	Niobrara	Niobrara
16	4	8694	8695	1	6	0.35	120	6	Niobrara	Niobrara
16	5	8662	8663	1	4	0.35	120	4	Niobrara	Niobrara
16	6	8631	8632	1	4	0.35	120	4	Niobrara	Niobrara
17	1	8590	8591	1	6	0.35	120	6	Niobrara	Niobrara
17	2	8558	8559	1	6	0.35	120	6	Niobrara	Niobrara
17	3	8526	8527	1	6	0.35	120	6	Niobrara	Niobrara
17	4	8494	8495	1	6	0.35	120	6	Niobrara	Niobrara
17	5	8462	8463	1	4	0.35	120	4	Niobrara	Niobrara
17	6	8431	8432	1	4	0.35	120	4	Niobrara	Niobrara
18	1	8390	8391	1	6	0.35	120	6	Niobrara	Niobrara
18	2	8358	8359	1	6	0.35	120	6	Niobrara	Niobrara
18	3	8326	8327	1	6	0.35	120	6	Niobrara	Niobrara
18	4	8294	8295	1	6	0.35	120	6	Niobrara	Niobrara
18	5	8262	8263	1	4	0.35	120	4	Niobrara	Niobrara
18	6	8231	8232	1	4	0.35	120	4	Niobrara	Niobrara
19	1	8190	8191	1	6	0.35	120	6	Niobrara	Niobrara
19	2	8158	8159	1	6	0.35	120	6	Niobrara	Niobrara

CLUSTER DATA

Treatment Interval	Cluster Number	Top Depth MD (ft)	Bottom Depth MD (ft)	Cluster Length (ft)	Perforation Density (spf)	Perforation Diameter (inches)	Perforation Phasing (deg)	Total Perforations	Formation	Sub Formation
19	3	8126	8127	1	6	0.35	120	6	Niobrara	Niobrara
19	4	8094	8095	1	6	0.35	120	6	Niobrara	Niobrara
19	5	8062	8063	1	4	0.35	120	4	Niobrara	Niobrara
19	6	8031	8032	1	4	0.35	120	4	Niobrara	Niobrara
20	1	7990	7991	1	6	0.35	120	6	Niobrara	Niobrara
20	2	7958	7959	1	6	0.35	120	6	Niobrara	Niobrara
20	3	7926	7927	1	6	0.35	120	6	Niobrara	Niobrara
20	4	7894	7895	1	6	0.35	120	6	Niobrara	Niobrara
20	5	7862	7863	1	4	0.35	120	4	Niobrara	Niobrara
20	6	7831	7832	1	4	0.35	120	4	Niobrara	Niobrara
21	1	7790	7791	1	6	0.35	120	6	Niobrara	Niobrara
21	2	7758	7759	1	6	0.35	120	6	Niobrara	Niobrara
21	3	7726	7727	1	6	0.35	120	6	Niobrara	Niobrara
21	4	7694	7695	1	6	0.35	120	6	Niobrara	Niobrara
21	5	7662	7663	1	4	0.35	120	4	Niobrara	Niobrara
21	6	7631	7632	1	4	0.35	120	4	Niobrara	Niobrara
22	1	7590	7591	1	6	0.35	120	6	Niobrara	Niobrara
22	2	7558	7559	1	6	0.35	120	6	Niobrara	Niobrara
22	3	7526	7527	1	6	0.35	120	6	Niobrara	Niobrara
22	4	7494	7495	1	6	0.35	120	6	Niobrara	Niobrara
22	5	7462	7463	1	4	0.35	120	4	Niobrara	Niobrara
22	6	7431	7432	1	4	0.35	120	4	Niobrara	Niobrara

STAGE DESCRIPTION

Treatment Interval	Acid		Breakdown		Flush		Overflush		PLF		Pad		Pre-Flush	
	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)
1	500	3000	1000	1196	10835	32846	0	0	328680	343527	37800	60878	0	0
2	500	2000	1000	2544	10648	18731	0	0	328680	330153	37800	40921	0	0
3	500	2000	1000	472	10462	14355	0	0	328680	337519	37800	36987	0	1989
4	500	2000	1000	340	10276	22310	0	0	328680	326722	37800	44604	0	0
5	500	2000	1000	390	10089	18743	0	0	328680	341639	37800	40084	0	0
6	500	1000	1000	591	9903	18815	0	0	328680	347545	37800	38264	0	0
7	500	1000	1000	210	9717	1457	0	0	328680	346915	37800	46504	0	659
8	500	1000	1000	552	9531	14640	0	0	328680	357664	37800	17993	0	2212
9	500	1000	1000	729	9344	9466	0	4130	328680	335161	37800	38107	0	4512
10	500	1000	1000	441	9158	5768	0	7317	328680	338391	37800	39336	0	4989
11	500	968	1000	450	8972	15535	0	0	328680	364847	37800	18568	0	0
12	500	2000	1000	441	8785	6933	0	6202	328680	338003	37800	33091	0	4978
13	500	964	1000	208	8599	8334	0	0	328680	326800	37800	42440	0	0
14	500	1000	1000	1486	8413	7395	0	4909	328680	242723	37800	39268	0	2005
15	500	2000	1000	370	8227	87497	0	0	328680	178088	37800	124975	0	0
16	500	2000	1000	507	8040	15250	0	0	328680	338684	37800	16738	0	0
17	500	2000	1000	1207	7854	9001	0	6382	328680	341987	37800	41657	0	5551
18	500	1000	1000	290	7668	16108	0	0	328680	341226	37800	41923	0	0
19	500	1000	1000	462	7481	9223	0	6221	328680	331313	37800	41972	0	4356
20	500	1000	1000	517	7295	13305	0	0	328680	321232	37800	37572	0	0
21	500	1000	1000	665	7109	8850	0	6180	328680	342446	37800	33222	0	4627
22	500	2000	1000	684	6923	4907	0	6235	328680	332137	37800	37965	0	3957

STAGE DESCRIPTION

Treatment Interval	Acid		Breakdown		Flush		Overflush		PLF		Pad		Pre-Flush	
	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)
Total	11000	32932	22000	14752	195329	359469	0	47576	7230960	7204722	831600	913069	0	39835

STAGE DESCRIPTION

Treatment Interval	Shut-In		Spacer		Wireline Pump-In		Total	
	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)
1	0	0	0	0	0	5964	378815	447411
2	0	0	0	0	0	7350	378628	401699
3	0	0	0	0	0	7770	378442	401092
4	0	0	0	0	0	9492	378256	405468
5	0	0	0	0	0	9366	378069	412222
6	0	0	0	0	0	8568	377883	414783
7	0	34	0	0	0	7140	377697	403919
8	0	0	0	0	0	7434	377511	401495
9	0	0	0	0	0	6720	377324	399825
10	0	0	0	0	0	6216	377138	403458
11	0	0	0	0	0	5838	376952	406206
12	0	0	0	0	0	5712	376765	397360
13	0	0	0	1353	0	7056	376579	387155
14	0	0	0	10135	0	4704	376393	313625
15	0	0	0	0	0	15036	376207	407966
16	0	0	0	16769	0	4452	376020	394400
17	0	0	0	0	0	3990	375834	411775
18	0	0	0	0	0	3234	375648	403781
19	0	0	0	0	0	2520	375461	397067
20	0	0	0	20882	0	2436	375275	396944
21	0	0	0	6010	0	1974	375089	404974
22	0	0	0	0	0	1638	374903	389523

STAGE DESCRIPTION

Treatment Interval	Shut-In		Spacer		Wireline Pump-In		Total	
	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)	Proposed (gal)	Pumped (gal)
Total	0	34	0	55149	0	134610	8290889	8802148

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
1	1	Wireline Pump-In	Treated Water		0	0	0	22	5964	5964	5964
	2	Breakdown	FR Water		0	0	0	8.66	1196	1156	7160
	3	Acid	15% HCl		0	0	0	9.63	1000	1000	8160
	4	Pad	FR Water		0	0	0	9.73	1372	1430	9532
	5	Acid	15% HCl		0	0	0	9.73	1000	1000	10532
	6	Pad	FR Water		0	0	0	9.73	642	664	11174
	7	Pad	Dry FR		0	0	0	19.16	21171	21028	32345
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	50.38	16258	16472	48603
	9	Flush	Dry FR		0	0	0	65.12	12402	12409	61005
	10	Flush	FR Water		0	0	0	32.24	3125	3256	64130
	11	Acid	15% HCl		0	0	0	9.81	1000	1000	65130
	12	Pad	FR Water		0	0	0	34.32	37693	37878	102823
	13	PLF	FR Water	100 Mesh Premium White	0.25	0.25	0.25	93.95	58457	59529	161280
	14	PLF	FR Water	100 Mesh Premium White	0.25	2.22	1.24	100.55	1180	1202	162460
	15	PLF	FR Water	100 Mesh Premium White	0.68	1.49	1.08	98.66	13536	14358	175996
	16	PLF	FR Water	30/50 Premium White	0.25	0.25	0.25	93.92	11939	12221	187935
	17	PLF	FR Water	30/50 Premium White	0.25	2	1.12	99.24	62036	66155	249971
	18	PLF	FR Water	30/50 Premium White	2	2	2	100.64	10951	12101	260922
	19	PLF	FR Water	30/50 Premium White	0.25	0.25	0.25	100.93	9665	9864	270587
	20	PLF	FR Water	30/50 Premium White	0.25	2	1.12	101.08	63332	67088	333919
	21	PLF	FR Water	30/50 Premium White	2	2	2	100.32	10993	12060	344912
	22	PLF	FR Water	30/50 Premium White	0.25	0.25	0.25	100.61	43643	44711	388555

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
1	23	PLF	FR Water	30/50 Premium White	0.25	4	2.12	100.3	41537	45629	430092
	24	Flush	FR Water		0	0	0	100.6	3331	3325	433423
	25	Flush	FR Water		0	0	0	86.79	13988	14260	447411
2	1	Wireline Pump-In	Treated Water		0	0	0	18	7350	7350	454761
	2	Breakdown	Treated Water		0	0	0	9.32	2544	2541	457305
	3	Acid	15% HCl		0	0	0	10.22	1000	1000	458305
	4	Pad	Treated Water		0	0	0	10.35	2058	2151	460363
	5	Acid	15% HCl		0	0	0	10.25	1000	1000	461363
	6	Pad	Dry FR		0	0	0	12.3	1120	1188	462483
	7	Pad	Dry FR		0	0	0	48.13	37743	37918	500226
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	99.06	53163	54127	553389
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	99.78	21787	22799	575176
	10	PLF	Dry FR	100 Mesh Premium White	1.5	1.5	1.5	99.58	3374	3641	578550
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.8	14949	15228	593499
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.68	62927	66727	656426
	13	PLF	Dry FR	30/50 Premium White	2	2	2	99.57	11183	12322	667609
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.83	11702	11933	679311
	15	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.72	63944	67732	743255
	16	PLF	Dry FR	30/50 Premium White	2	2	2	98.89	11045	12168	754300
	17	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.28	45294	46140	799594
	18	PLF	Dry FR	30/50 Premium White	0.25	3	1.63	99.83	30785	33134	830379
	19	Flush	Dry FR		0	0	0	100.01	4345	4360	834724

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
2	20	Flush	Dry FR		0	0	0	100.07	11834	11891	846558
	21	Flush	Treated Water		0	0	0	67.95	2552	2701	849110
3	1	Wireline Pump-In	Treated Water		0	0	0	22	7770	7770	856880
	2	Breakdown	FR Water		0	0	0	6.85	472	533	857352
	3	Acid	15% HCl		0	0	0	9.95	1000	1000	858352
	4	Pad	FR Water		0	0	0	10.76	476	518	858828
	5	Pad	Dry FR		0	0	0	13.74	4076	4178	862904
	6	Pad	FR Water		0	0	0	10.97	515	416	863419
	7	Acid	15% HCl		0	0	0	10.93	1000	1000	864419
	8	Pad	FR Water		0	0	0	11.21	450	477	864869
	9	Pad	Dry FR		0	0	0	41.49	31470	31194	896339
	10	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	78.27	52411	53163	948750
	11	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	84.97	22632	23539	971382
	12	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	84.99	11965	12131	983347
	13	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	87.02	62988	66265	1046335
	14	PLF	Dry FR	30/50 Premium White	2	2	2	90.05	11483	12536	1057818
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	90.33	12083	12258	1069901
	16	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	93.91	63926	67151	1133827
	17	PLF	Dry FR	30/50 Premium White	2	2	2	90.51	7190	7825	1141017
	18	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	85.62	48785	49367	1189802
	19	PLF	Dry FR	30/50 Premium White	0.25	4	2.12	84.77	40543	44104	1230345
	20	PLF	Dry FR	30/50 Premium White	4	4	4	85.05	3513	3469	1233858

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
3	21	Pre-Flush	Dry FR		0	0	0	85.14	1989	1976	1235847
	22	Flush	Dry FR		0	0	0	85.21	9986	10005	1245833
	23	Flush	FR Water		0	0	0	67.78	4369	4372	1250202
4	1	Wireline Pump-In	Treated Water		0	0	0	18	9492	9492	1259694
	2	Breakdown	Treated Water		0	0	0	6.52	340	410	1260034
	3	Acid	15% HCl		0	0	0	10.09	1000	1000	1261034
	4	Pad	Treated Water		0	0	0	10.19	1608	1671	1262642
	5	Acid	15% HCl		0	0	0	10.12	1000	1000	1263642
	6	Pad	Dry FR		0	0	0	12.16	690	702	1264332
	7	Pad	Dry FR		0	0	0	60.98	42306	42300	1306638
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	90.82	47363	47955	1354001
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	90.78	21807	22660	1375808
	10	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	90.77	13403	13594	1389211
	11	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	90.79	62926	65942	1452137
	12	PLF	Dry FR	30/50 Premium White	2	2	2	90.7	24048	26084	1476185
	13	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	90.88	63420	66460	1539605
	14	PLF	Dry FR	30/50 Premium White	2	2	2	90.86	11056	12011	1550661
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	90.96	46664	47266	1597325
	16	PLF	Dry FR	30/50 Premium White	0.25	3	1.62	90.83	30582	32634	1627907
	17	PLF	Dry FR	30/50 Premium White	3	3	3	90.64	5453	5991	1633360
	18	Flush	Dry FR		0	0	0	90.91	3927	3963	1637287
	19	Flush	Dry FR		0	0	0	32.15	13867	13797	1651154

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
4	20	Flush	Treated Water		0	0	0	40.89	4516	4655	1655670
5	1	Wireline Pump-In	Treated Water		0	0	0	18	9366	9366	1665036
	2	Breakdown	Treated Water		0	0	0	5.85	390	423	1665426
	3	Acid	15% HCl		0	0	0	10.03	1000	1000	1666426
	4	Pad	Treated Water		0	0	0	10.05	1901	2022	1668327
	5	Acid	15% HCl		0	0	0	10.02	1000	1000	1669327
	6	Pad	Dry FR		0	0	0	10.03	581	582	1669908
	7	Pad	Dry FR		0	0	0	55.56	37602	37519	1707510
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	90.18	51597	52257	1759107
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	99.72	22200	23068	1781307
	10	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.83	10947	11091	1792254
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.83	1108	1123	1793362
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.13	99.81	62941	66178	1856303
	13	PLF	Dry FR	30/50 Premium White	2	2	2	99.8	12568	13683	1868871
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.96	9622	9770	1878493
	15	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.92	63924	67166	1942417
	16	PLF	Dry FR	30/50 Premium White	2	2	2	99.88	12321	13413	1954738
	17	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.05	48485	49172	2003223
	18	PLF	Dry FR	30/50 Premium White	0.25	3.99	2.12	99.76	40737	44259	2043960
	19	PLF	Dry FR	30/50 Premium White	4	4	4	99.39	5189	5801	2049149
	20	Flush	Dry FR		0	0	0	100.14	4767	4788	2053916
	21	Flush	Dry FR		0	0	0	100.16	10222	10282	2064138

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
5	22	Flush	Treated Water		0	0	0	79.99	3754	3811	2067892
6	1	Wireline Pump-In	Treated Water		0	0	0	22	8568	8568	2076460
	2	Breakdown	FR Water		0	0	0	8.04	591	569	2077051
	3	Acid	15% HCl		0	0	0	11.25	1000	1000	2078051
	4	Pad	FR Water		0	0	0	11.39	450	460	2078501
	5	Pad	Dry FR		0	0	0	41.53	37814	37784	2116315
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	80.34	53333	53958	2169648
	7	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	99.2	21744	22531	2191392
	8	PLF	Dry FR	100 Mesh Premium White	1.5	1.5	1.5	99.96	8767	9348	2200159
	9	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.23	14656	14870	2214815
	10	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.2	62973	66086	2277788
	11	PLF	Dry FR	30/50 Premium White	2	2	2	100.03	11650	12660	2289438
	12	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.23	10148	10289	2299586
	13	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.95	63942	67043	2363528
	14	PLF	Dry FR	30/50 Premium White	2	2	2	99.81	11056	12002	2374584
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.27	44660	45192	2419244
	16	PLF	Dry FR	30/50 Premium White	0.25	3	1.62	100.05	30742	32712	2449986
	17	PLF	Dry FR	30/50 Premium White	3	3	3	99.8	13874	15509	2463860
	18	Flush	Dry FR		0	0	0	100.29	4005	3949	2467865
	19	Flush	Dry FR		0	0	0	100.42	8668	8685	2476533
	20	Flush	FR Water		0	0	0	83.83	6142	6178	2482675
7	1	Wireline Pump-In	Treated Water		0	0	0	18	7140	7140	2489815

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
7	2	Breakdown	Treated Water		0	0	0	5.34	210	293	2490025
	3	Acid	15% HCl		0	0	0	10.44	1000	1000	2491025
	4	Pad	Treated Water		0	0	0	12.19	698	665	2491723
	5	Pad	Dry FR		0	0	0	52.08	45806	45724	2537529
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	99.85	55174	55886	2592703
	7	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	100.04	21928	22720	2614631
	8	PLF	Dry FR	100 Mesh Premium White	1.5	1.5	1.5	99.93	4500	4778	2619131
	9	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.04	18183	18430	2637314
	10	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.97	62907	65932	2700221
	11	PLF	Dry FR	30/50 Premium White	2	2	2	99.85	10940	11866	2711161
	12	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.03	9389	9495	2720550
	13	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.01	64046	67085	2784596
	14	PLF	Dry FR	30/50 Premium White	2	2	2	99.91	12388	13418	2796984
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.17	43749	44303	2840733
	16	PLF	Dry FR	30/50 Premium White	0.25	2.99	1.62	100.04	30667	32637	2871400
	17	PLF	Dry FR	30/50 Premium White	3	3	3	94.03	13044	14604	2884444
	18	Pre-Flush	Dry FR		0	0	0	33.72	659	599	2885103
	19	Flush	FR Water		0	0	0	2.99	330	385	2885433
	20	Flush	Dry FR		0	0	0	4.14	1127	1146	2886560
	21	Shut-In	FR Water		0	0	0	2.61	34	136	2886594
8	1	Wireline Pump-In	Treated Water		0	0	0	22	7434	7434	2894028
	2	Breakdown	FR Water		0	0	0	7.19	552	631	2894580

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
8	3	Acid	15% HCl		0	0	0	10.5	1000	1000	2895580
	4	Pad	FR Water		0	0	0	10.43	579	598	2896159
	5	Pad	Dry FR		0	0	0	32.75	17414	17315	2913573
	6	PLF	Dry FR	100 Mesh Premium White	0.15	0.15	0.15	51.85	2000	2007	2915573
	7	PLF	Dry FR	100 Mesh Premium White	0.15	0.15	0.15	68.33	16702	16776	2932275
	8	PLF	Dry FR	100 Mesh Premium White	0.15	0.15	0.15	69.73	1027	1030	2933302
	9	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	85.88	52242	52656	2985544
	10	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	100.12	22133	22878	3007677
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.1	12044	12176	3019721
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.06	62950	65920	3082671
	13	PLF	Dry FR	30/50 Premium White	2	2	2	99.94	12751	13773	3095422
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.2	9686	9793	3105108
	15	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.05	63911	66618	3169019
	16	PLF	Dry FR	30/50 Premium White	2	2	2	99.84	11222	12145	3180241
	17	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.24	43808	44264	3224049
	18	PLF	Dry FR	30/50 Premium White	0.25	4	2.12	99.91	40690	44255	3264739
	19	PLF	Dry FR	30/50 Premium White	4	4	4	99.69	6498	6869	3271237
	20	Pre-Flush	Dry FR		0	0	0	100.3	2212	2186	3273449
	21	Flush	Dry FR		0	0	0	100.32	8601	8605	3282050
	22	Flush	FR Water		0	0	0	59.09	6039	6091	3288089
9	1	Wireline Pump-In	Treated Water		0	0	0	20	6720	6720	3294809
	2	Breakdown	FR Water		0	0	0	7.37	729	796	3295538

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
9	3	Acid	15% HCl		0	0	0	10.68	1000	1000	3296538
	4	Pad	FR Water		0	0	0	21.92	4415	4287	3300953
	5	Pad	Dry FR		0	0	0	63.11	33692	33659	3334645
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	90.35	51385	51908	3386030
	7	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	100.1	21853	22593	3407883
	8	PLF	Dry FR	100 Mesh Premium White	1.5	1.5	1.5	100.11	10765	11403	3418648
	9	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.26	62910	65560	3481558
	10	PLF	Dry FR	30/50 Premium White	2	2	2	100.06	11634	12523	3493192
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.34	9410	9525	3502602
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.26	64013	66972	3566615
	13	PLF	Dry FR	30/50 Premium White	2	2	2	100.1	14505	15695	3581120
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.44	45493	46044	3626613
	15	PLF	Dry FR	30/50 Premium White	0.25	2.98	1.61	100.23	30516	32488	3657129
	16	PLF	Dry FR	30/50 Premium White	2.98	2.98	2.98	99.82	12677	14248	3669806
	17	Pre-Flush	Dry FR		0	0	0	100.31	4512	4444	3674318
	18	Flush	Dry FR		0	0	0	100.39	9466	9530	3683784
	19	Overflush	FR Water		0	0	0	81.56	4130	4173	3687914
10	1	Wireline Pump-In	Treated Water		0	0	0	20	6216	6216	3694130
	2	Breakdown	FR Water		0	0	0	7.4	441	567	3694571
	3	Acid	15% HCl		0	0	0	10.11	1000	1000	3695571
	4	Pad	FR Water		0	0	0	11.75	746	745	3696317
	5	Pad	Dry FR		0	0	0	69.33	38590	38680	3734907

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
10	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	100.55	52156	52671	3787063
	7	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	100.41	21915	22662	3808978
	8	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.39	12000	12141	3820978
	9	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.27	63008	65992	3883986
	10	PLF	Dry FR	30/50 Premium White	2	2	2	100.12	11183	12109	3895169
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.3	9551	9662	3904720
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.26	63999	67041	3968719
	13	PLF	Dry FR	30/50 Premium White	2	2	2	100.16	10981	11901	3979700
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.36	44049	44600	4023749
	15	PLF	Dry FR	30/50 Premium White	0.25	2.5	1.37	100.15	25610	27040	4049359
	16	PLF	Dry FR	30/50 Premium White	2.5	2.5	2.5	99.86	23939	26472	4073298
	17	Pre-Flush	Dry FR		0	0	0	99.99	4989	4922	4078287
	18	Flush	Dry FR		0	0	0	100.22	5768	5778	4084055
	19	Overflush	FR Water		0	0	0	90.01	7317	7335	4091372
11	1	Wireline Pump-In	Treated Water		0	0	0	22	5838	5838	4097210
	2	Breakdown	FR Water		0	0	0	6.75	450	614	4097660
	3	Acid	15% HCl		0	0	0	11.19	968	968	4098628
	4	Pad	FR Water		0	0	0	12.46	613	578	4099241
	5	Pad	Dry FR		0	0	0	32.8	17955	17953	4117196
	6	PLF	Dry FR	30/50 Premium White	0.15	0.15	0.15	81.46	20046	20228	4137242
	7	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	99.68	58449	59156	4195691
	8	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	99.92	22616	23465	4218307

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
11	9	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.81	14465	14668	4232772
	10	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.85	62972	65993	4295744
	11	PLF	Dry FR	30/50 Premium White	2	2	2	99.78	11903	12909	4307647
	12	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.1	10894	11050	4318541
	13	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.03	63931	66955	4382472
	14	PLF	Dry FR	30/50 Premium White	2	2	2	99.91	11925	12926	4394397
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.12	49074	49703	4443471
	16	PLF	Dry FR	30/50 Premium White	0.25	3.14	1.7	99.75	32197	34368	4475668
	17	PLF	Dry FR	30/50 Premium White	3.15	3.15	3.15	96.62	6375	7199	4482043
	18	Flush	Dry FR		0	0	0	79.07	4306	4287	4486349
	19	Flush	Dry FR		0	0	0	62.36	5085	5128	4491434
	20	Flush	FR Water		0	0	0	47.01	6144	6139	4497578
12	1	Wireline Pump-In	Treated Water		0	0	0	20	5712	5712	4503290
	2	Breakdown	FR Water		0	0	0	8.33	441	439	4503731
	3	Acid	15% HCl		0	0	0	9.65	1000	1000	4504731
	4	Pad	FR Water		0	0	0	9.43	482	497	4505213
	5	Acid	15% HCl		0	0	0	9.46	1000	1000	4506213
	6	Pad	FR Water		0	0	0	10.36	264	278	4506477
	7	Pad	Dry FR		0	0	0	58.05	32345	32444	4538822
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	82.09	1784	1789	4540606
	9	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	84.53	52323	53076	4592929
	10	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	90.29	21822	22663	4614751

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
12	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	91.34	14375	14578	4629126
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.03	62945	66084	4692071
	13	PLF	Dry FR	30/50 Premium White	2	2	2	99.98	10802	11740	4702873
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.14	9582	9717	4712455
	15	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.09	63982	67068	4776437
	16	PLF	Dry FR	30/50 Premium White	2	2	2	99.88	10998	11938	4787435
	17	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.11	43907	44486	4831342
	18	PLF	Dry FR	30/50 Premium White	0.25	3	1.63	99.71	30712	32742	4862054
	19	PLF	Dry FR	30/50 Premium White	3.01	3.01	3.01	99.58	14771	16594	4876825
	20	Pre-Flush	Dry FR		0	0	0	100.19	4978	4931	4881803
	21	Flush	Dry FR		0	0	0	100.35	6933	6985	4888736
	22	Overflush	FR Water		0	0	0	89.08	6202	6256	4894938
13	1	Wireline Pump-In	Treated Water		0	0	0	22	7056	7056	4901994
	2	Breakdown	FR Water		0	0	0	7.11	208	379	4902202
	3	Acid	15% HCl		0	0	0	9.87	964	964	4903166
	4	Pad	FR Water		0	0	0	10.82	752	662	4903918
	5	Pad	Dry FR		0	0	0	60.64	41688	41611	4945606
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	97.62	4132	4120	4949738
	7	Spacer	Dry FR		0	0	0	97.03	1353	1365	4951091
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	99.77	42102	42723	4993193
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.49	0.87	98.92	21737	22673	5014930
	10	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.61	12088	12260	5027018

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
13	11	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.64	63262	66138	5090280
	12	PLF	Dry FR	30/50 Premium White	2	2	2	99.51	11221	12104	5101501
	13	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.69	9775	9884	5111276
	14	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.61	64288	67025	5175564
	15	PLF	Dry FR	30/50 Premium White	2	2	2	99.4	11194	12091	5186758
	16	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.48	44116	44696	5230874
	17	PLF	Dry FR	30/50 Premium White	0.25	3.99	2.12	99.22	40217	44298	5271091
	18	PLF	Dry FR	30/50 Premium White	4	4	4	99.11	2668	3136	5273759
	19	Flush	Dry FR		0	0	0	89.02	5037	4993	5278796
	20	Flush	FR Water		0	0	0	23.72	376	352	5279172
	21	Flush	FR Water		0	0	0	7.51	2921	3002	5282093
14	1	Wireline Pump-In	Treated Water		0	0	0	20	4704	4704	5286797
	2	Breakdown	FR Water		0	0	0	8.65	1486	1512	5288283
	3	Acid	15% HCl		0	0	0	9.94	1000	1000	5289283
	4	Pad	FR Water		0	0	0	50.83	39268	39468	5328551
	5	PLF	FR Water	100 Mesh Premium White	0.25	0.25	0.25	78.95	936	944	5329487
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	78.98	4712	4720	5334199
	7	Spacer	Dry FR		0	0	0	79.06	10135	10173	5344334
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	89.9	34730	35215	5379064
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	99.72	21753	22578	5400817
	10	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.79	12103	12279	5412920
	11	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.66	62938	66185	5475858

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
14	12	PLF	Dry FR	30/50 Premium White	2	2	2	99.54	11128	12108	5486986
	13	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.79	9681	9823	5496667
	14	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.67	63799	67068	5560466
	15	PLF	Dry FR	30/50 Premium White	2	2	2	99.41	11103	12092	5571569
	16	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	95.29	9840	9981	5581409
	17	Pre-Flush	Dry FR		0	0	0	70.07	2005	2013	5583414
	18	Flush	Dry FR		0	0	0	44.05	7395	7455	5590809
	19	Overflush	FR Water		0	0	0	35.8	4909	5032	5595718
15	1	Wireline Pump-In	Treated Water		0	0	0	22	15036	15036	5610754
	2	Breakdown	Dry FR		0	0	0	4.28	370	409	5611124
	3	Acid	15% HCl		0	0	0	9.92	1000	1000	5612124
	4	Pad	Dry FR		0	0	0	9.71	462	492	5612586
	5	Pad	Dry FR		0	0	0	42.71	38787	38767	5651373
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	74.73	4559	4624	5655932
	7	Flush	Dry FR		0	0	0	70.85	25116	25178	5681048
	8	Flush	Dry FR		0	0	0	10.05	671	748	5681719
	9	Acid	15% HCl		0	0	0	9.69	1000	1000	5682719
	10	Pad	Dry FR		0	0	0	9.46	311	322	5683030
	11	Pad	Dry FR		0	0	0	47.36	59684	59804	5742714
	12	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	80	3101	3150	5745815
	13	Flush	Dry FR		0	0	0	64.7	17391	17459	5763206
	14	Flush	FR Water		0	0	0	21.37	575	611	5763781

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
15	15	Pad	Dry FR		0	0	0	29.41	6454	6390	5770235
	16	PLF	Dry FR	100 Mesh Premium White	0.15	0.15	0.15	28.27	21210	21287	5791445
	17	PLF	Dry FR	100 Mesh Premium White	0.99	0.15	0.57	24.4	424	429	5791869
	18	PLF	Dry FR	100 Mesh Premium White	0.5	0.5	0.5	24.38	1096	1114	5792965
	19	PLF	Dry FR	100 Mesh Premium White	0.5	0.5	0.5	24.35	11652	11850	5804617
	20	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	24.26	9777	9843	5814394
	21	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	24.27	395	393	5814789
	22	PLF	Dry FR	100 Mesh Premium White	0.26	0.34	0.3	24.28	1485	1502	5816274
	23	PLF	Dry FR	100 Mesh Premium White	0.34	1.85	1.1	24.79	16078	16613	5832352
	24	PLF	Dry FR	100 Mesh Premium White	1.3	1.5	1.4	25.56	3328	3521	5835680
	25	PLF	Dry FR	SS-200 Premium White	0.25	0.25	0.25	24.54	12107	12162	5847787
	26	PLF	Dry FR	30/50 Premium White	0.25	1.1	0.68	26.38	14975	15230	5862762
	27	PLF	Dry FR	30/50 Premium White	0.65	1.17	0.91	27.31	3044	3149	5865806
	28	PLF	Dry FR	30/50 Premium White	0.74	0.86	0.8	27.25	4439	4580	5870245
	29	PLF	Dry FR	30/50 Premium White	0.86	0.92	0.89	27.33	2257	2345	5872502
	30	PLF	Dry FR	30/50 Premium White	0.92	1.13	1.02	27.34	7738	8036	5880240
	31	Flush	Dry FR		0	0	0	27.48	7673	7651	5887913
	32	Flush	Dry FR		0	0	0	17.87	3323	3115	5891236
	33	Flush	Dry FR		0	0	0	27.13	7666	7075	5898902
	34	Flush	15% HCl		0	0	0	10.04	1000	1000	5899902
	35	Flush	Dry FR		0	0	0	10.97	348	374	5900250
	36	Flush	Dry FR		0	0	0	26.06	6348	6323	5906598

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
15	37	Flush	Dry FR		0	0	0	3.76	297	344	5906895
	38	Pad	Dry FR		0	0	0	39.09	12378	12701	5919273
	39	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	50	6569	6820	5925842
	40	PLF	Dry FR	30/50 Premium White	0.25	1.41	0.83	59.65	41927	44384	5967769
	41	Flush	Dry FR		0	0	0	66.39	11631	11760	5979400
	42	Flush	Dry FR		0	0	0	4.52	570	692	5979970
	43	Pad	Dry FR		0	0	0	34.45	6899	6989	5986869
	44	PLF	Dry FR	30/50 Premium White	0.5	0.5	0.5	55.46	11927	12441	5998796
	45	Flush	Dry FR		0	0	0	43.6	3445	3509	6002241
	46	Flush	Dry FR		0	0	0	3.52	1443	1558	6003684
16	1	Wireline Pump-In	Treated Water		0	0	0	22	4452	4452	6008136
	2	Breakdown	Dry FR		0	0	0	4.72	507	596	6008643
	3	Acid	15% HCl		0	0	0	9.99	1000	1000	6009643
	4	Pad	Dry FR		0	0	0	9.9	3004	3086	6012647
	5	Acid	15% HCl		0	0	0	10.14	1000	1000	6013647
	6	Pad	Dry FR		0	0	0	12.45	852	894	6014499
	7	Pad	Dry FR		0	0	0	43.99	12882	13002	6027381
	8	PLF	Dry FR	30/50 Premium White	0.15	0.15	0.15	69.06	8703	8893	6036084
	9	Spacer	Dry FR		0	0	0	85.46	16769	17017	6052853
	10	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	97.14	50525	51705	6103378
	11	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	99.68	21888	22919	6125266
	12	PLF	Dry FR	SS-200 Premium White	0.25	0.25	0.25	99.87	14015	14186	6139281

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
16	13	PLF	Dry FR	30/50 Premium White	0.25	1.99	1.12	99.71	62771	66670	6202052
	14	PLF	Dry FR	30/50 Premium White	2	2	2	99.61	10945	12046	6212997
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.79	9249	9473	6222246
	16	PLF	Dry FR	30/50 Premium White	0.25	1.99	1.12	99.72	63852	67729	6286098
	17	PLF	Dry FR	30/50 Premium White	2	2	2	99.63	8302	8898	6294400
	18	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.86	43819	44868	6338219
	19	PLF	Dry FR	30/50 Premium White	0.25	3.01	1.63	99.67	30782	33289	6369001
	20	PLF	Dry FR	30/50 Premium White	3.01	3.01	3.01	99.51	13833	15743	6382834
	21	Flush	Dry FR		0	0	0	99.81	3894	3860	6386728
	22	Flush	Dry FR		0	0	0	99.98	4939	4991	6391667
	23	Flush	Dry FR		0	0	0	31.91	6417	6992	6398084
17	1	Wireline Pump-In	Treated Water		0	0	0	20	3990	3990	6402074
	2	Breakdown	FR Water		0	0	0	7.94	1207	1194	6403281
	3	Acid	15% HCl		0	0	0	9.74	1000	1000	6404281
	4	Pad	FR Water		0	0	0	9.68	945	943	6405226
	5	Acid	15% HCl		0	0	0	9.73	1000	1000	6406226
	6	Pad	FR Water		0	0	0	10.53	580	592	6406806
	7	Pad	Dry FR		0	0	0	69.46	40132	40086	6446938
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	100.02	52283	52884	6499221
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	100	21878	22711	6521099
	10	PLF	Dry FR	SS-200 Premium White	0.25	0.25	0.25	99.96	11951	12088	6533050
	11	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.88	62835	65872	6595885

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
17	12	PLF	Dry FR	30/50 Premium White	2	2	2	99.82	12672	13756	6608557
	13	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.99	15142	15326	6623699
	14	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.92	64016	67023	6687715
	15	PLF	Dry FR	30/50 Premium White	2	2	2	99.79	12092	13121	6699807
	16	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	99.91	47166	47701	6746973
	17	PLF	Dry FR	30/50 Premium White	0.25	4	2.12	99.66	41952	45688	6788925
	18	Pre-Flush	Dry FR		0	0	0	96.38	5551	5487	6794476
	19	Flush	Dry FR		0	0	0	78.43	9001	9042	6803477
	20	Overflush	FR Water		0	0	0	71.96	6382	6371	6809859
18	1	Wireline Pump-In	Treated Water		0	0	0	22	3234	3234	6813093
	2	Breakdown	FR Water		0	0	0	7.29	290	326	6813383
	3	Acid	15% HCl		0	0	0	10.27	1000	1000	6814383
	4	Pad	FR Water		0	0	0	10.4	418	413	6814801
	5	Pad	Dry FR		0	0	0	58.65	41505	41480	6856306
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	90.01	53541	54111	6909847
	7	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	96.85	21939	22676	6931786
	8	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	96.89	18048	18257	6949834
	9	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	99.88	62939	65877	7012773
	10	PLF	Dry FR	30/50 Premium White	2	2	2	99.98	10961	11881	7023734
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.16	11834	11972	7035568
	12	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.15	64001	66897	7099569
	13	PLF	Dry FR	30/50 Premium White	2	2	2	100.07	11303	12243	7110872

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
18	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.17	43914	44373	7154786
	15	PLF	Dry FR	30/50 Premium White	0.25	4	2.12	99.91	40683	44328	7195469
	16	PLF	Dry FR	30/50 Premium White	4	4	4	99.47	2063	2308	7197532
	17	Flush	Dry FR		0	0	0	100.21	4961	4862	7202493
	18	Flush	Dry FR		0	0	0	100.39	4303	4306	7206796
	19	Flush	FR Water		0	0	0	84.79	6844	6834	7213640
19	1	Wireline Pump-In	Treated Water		0	0	0	20	2520	2520	7216160
	2	Breakdown	FR Water		0	0	0	7.36	462	486	7216622
	3	Acid	15% HCl		0	0	0	10.47	1000	1000	7217622
	4	Pad	FR Water		0	0	0	10.76	462	483	7218084
	5	Pad	Dry FR		0	0	0	66.02	41510	41628	7259594
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	100.29	51099	51827	7310693
	7	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.87	100.27	21841	22703	7332534
	8	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.34	12079	12278	7344613
	9	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.23	62964	66248	7407577
	10	PLF	Dry FR	30/50 Premium White	2	2	2	100.17	10986	11973	7418563
	11	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.41	11264	11438	7429827
	12	PLF	Dry FR	30/50 Premium White	0.25	1.99	1.12	100.29	63854	67058	7493681
	13	PLF	Dry FR	30/50 Premium White	2	2	2	100.18	11002	11976	7504683
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.48	43993	44652	7548676
	15	PLF	Dry FR	30/50 Premium White	0.25	4	2.12	100.24	42231	46236	7590907
	16	Pre-Flush	Dry FR		0	0	0	100.44	4356	4308	7595263

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
19	17	Flush	Dry FR		0	0	0	100.56	9223	9262	7604486
	18	Overflush	FR Water		0	0	0	87.59	6221	6264	7610707
20	1	Wireline Pump-In	Treated Water		0	0	0	22	2436	2436	7613143
	2	Breakdown	Dry FR		0	0	0	6.6	517	427	7613660
	3	Acid	15% HCl		0	0	0	10.86	1000	1000	7614660
	4	Pad	Dry FR		0	0	0	11.87	498	510	7615158
	5	Pad	Dry FR		0	0	0	68.22	37074	37134	7652232
	6	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	99.78	3951	3999	7656183
	7	Spacer	Dry FR		0	0	0	98.93	11302	11337	7667485
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	93.56	3891	3947	7671376
	9	Spacer	Dry FR		0	0	0	93.57	9580	9605	7680956
	10	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	93.63	23730	24029	7704686
	11	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	93.68	22553	23384	7727239
	12	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	98.74	12886	13059	7740125
	13	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.18	62969	66004	7803094
	14	PLF	Dry FR	30/50 Premium White	2	2	2	100.1	11413	12387	7814507
	15	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.26	9803	9940	7824310
	16	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.22	63995	67085	7888305
	17	PLF	Dry FR	30/50 Premium White	2	2	2	100.14	12828	13941	7901133
	18	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.36	50271	50948	7951404
	19	PLF	Dry FR	30/50 Premium White	0.25	3.98	2.12	100.14	40517	44075	7991921
	20	PLF	Dry FR	30/50 Premium White	3.99	3.99	3.99	100.22	2425	2607	7994346

ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
20	21	Flush	Dry FR		0	0	0	100.49	3823	3745	7998169
	22	Flush	Dry FR		0	0	0	100.61	3586	3608	8001755
	23	Flush	Dry FR		0	0	0	72.58	5896	5951	8007651
21	1	Wireline Pump-In	Treated Water		0	0	0	20	1974	1974	8009625
	2	Breakdown	FR Water		0	0	0	8.92	665	989	8010290
	3	Acid	15% HCl		0	0	0	10	1000	1000	8011290
	4	Pad	FR Water		0	0	0	10.8	618	616	8011908
	5	Pad	Dry FR		0	0	0	45.85	32604	32624	8044512
	6	PLF	Dry FR	30/50 Premium White	0.15	0.15	0.15	77.08	11563	11653	8056075
	7	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	76.49	5628	5701	8061703
	8	Spacer	Dry FR		0	0	0	68.59	6010	6028	8067713
	9	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	66.56	19299	19560	8087012
	10	PLF	Dry FR	100 Mesh Premium White	0.25	0.15	0.2	69.97	1558	1574	8088570
	11	PLF	Dry FR	100 Mesh Premium White	0	0.25	0.13	70.08	3867	3893	8092437
	12	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	74.44	16374	16594	8108811
	13	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	88.38	21904	22686	8130715
	14	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	97.11	12607	12771	8143322
	15	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.06	62929	65992	8206251
	16	PLF	Dry FR	30/50 Premium White	2	2	2	99.97	10937	11879	8217188
	17	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.18	9527	9651	8226715
	18	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.14	64037	67100	8290752
	19	PLF	Dry FR	30/50 Premium White	2	2	2	99.92	12285	13349	8303037

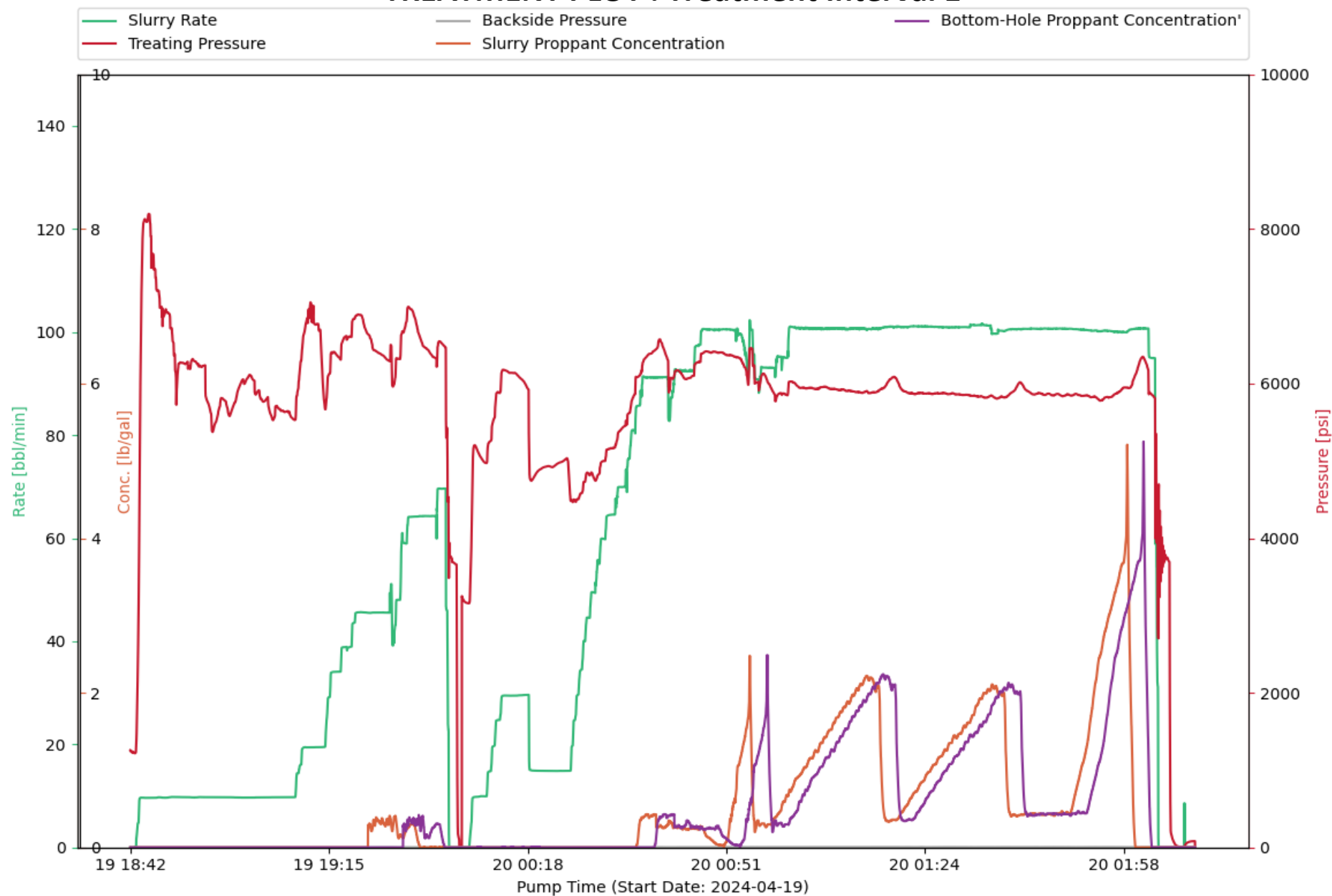
ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
21	20	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.2	44441	45021	8347478
	21	PLF	Dry FR	30/50 Premium White	0.25	2.98	1.61	100.12	30555	32594	8378033
	22	PLF	Dry FR	30/50 Premium White	2.98	2.98	2.98	99.99	14935	16803	8392968
	23	Pre-Flush	Dry FR		0	0	0	94.98	4627	4606	8397595
	24	Flush	Dry FR		0	0	0	65.69	8850	8903	8406445
	25	Overflush	FR Water		0	0	0	45.73	6180	6225	8412625
22	1	Wireline Pump-In	Treated Water		0	0	0	20	1638	1638	8414263
	2	Breakdown	FR Water		0	0	0	5.91	684	743	8414947
	3	Acid	15% HCl		0	0	0	10.5	1000	1000	8415947
	4	Pad	FR Water		0	0	0	10.36	415	426	8416362
	5	Acid	15% HCl		0	0	0	10.54	1000	1000	8417362
	6	Pad	FR Water		0	0	0	11.83	336	350	8417698
	7	Pad	Dry FR		0	0	0	57.77	37214	37240	8454912
	8	PLF	Dry FR	100 Mesh Premium White	0.25	0.25	0.25	100.58	51733	52474	8506645
	9	PLF	Dry FR	100 Mesh Premium White	0.25	1.5	0.88	100.8	21888	22751	8528533
	10	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.78	11949	12118	8540482
	11	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.69	62982	66265	8603464
	12	PLF	Dry FR	30/50 Premium White	2	2	2	100.7	11246	12249	8614710
	13	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.81	9550	9711	8624260
	14	PLF	Dry FR	30/50 Premium White	0.25	2	1.12	100.77	64025	67380	8688285
	15	PLF	Dry FR	30/50 Premium White	2	2	2	100.7	12599	13736	8700884
	16	PLF	Dry FR	30/50 Premium White	0.25	0.25	0.25	100.83	44937	45655	8745821

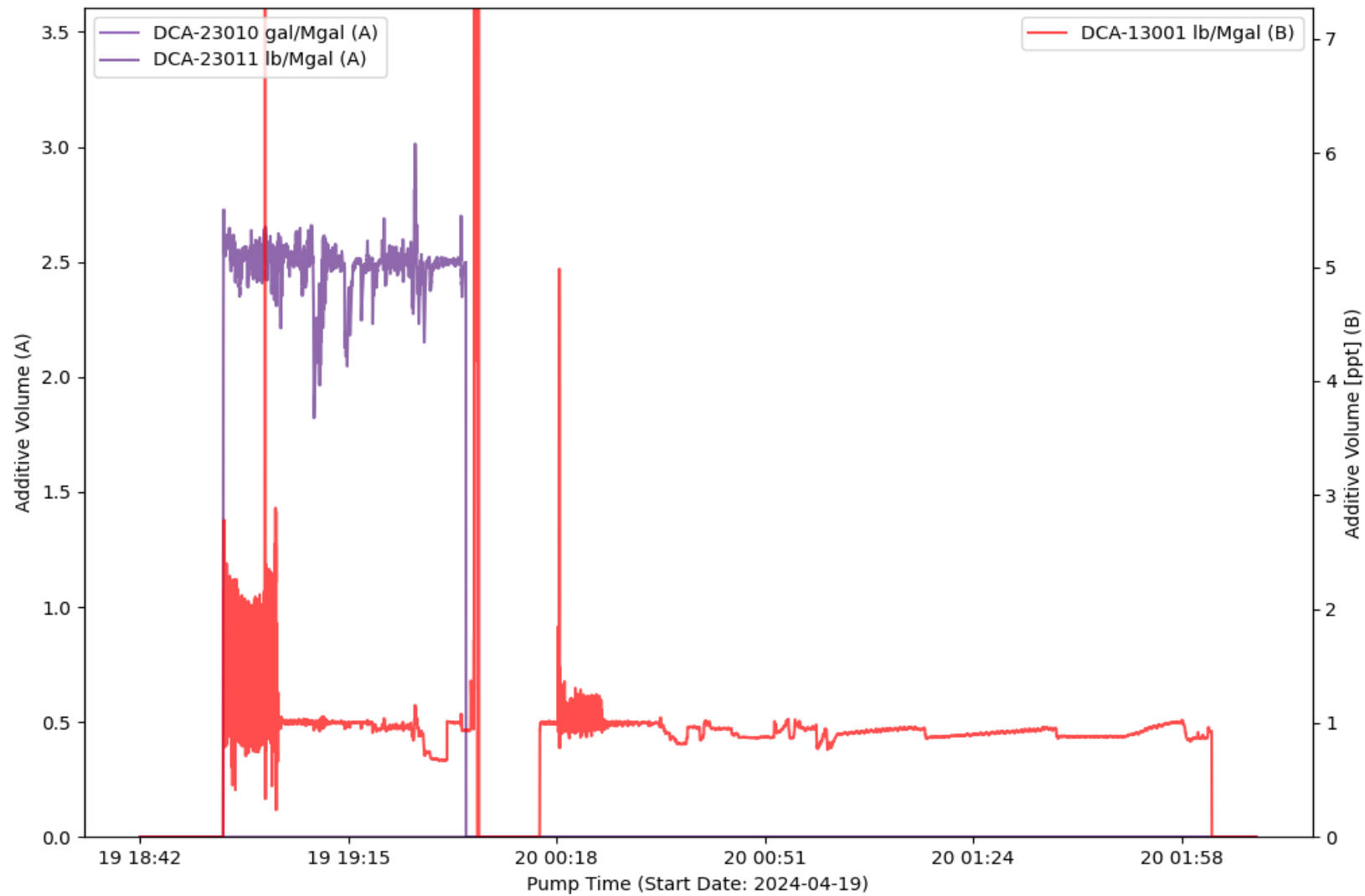
ACTUAL DESIGN

Treatment Interval	Stage Number	Stage Description	Fluid Description	Proppant Type	Proppant Conc. At Start (ppg)	Proppant Conc. At End (ppg)	Slurry Proppant Conc. (ppg)	Slurry Rate (bpm)	Actual Clean Volume (gal)	Slurry Volume (gal)	Total Clean Volume (gal)
22	17	PLF	Dry FR	30/50 Premium White	0.25	4	2.12	100.69	41228	45029	8787049
	18	Pre-Flush	Dry FR		0	0	0	100.68	3957	3894	8791006
	19	Flush	Dry FR		0	0	0	93.65	4907	4934	8795913
	20	Overflush	FR Water		0	0	0	82.44	6235	6311	8802148
Total									8802148	9116730	

TREATMENT PLOT : Treatment Interval 1



CHEMISTRY PLOT : Treatment Interval 1



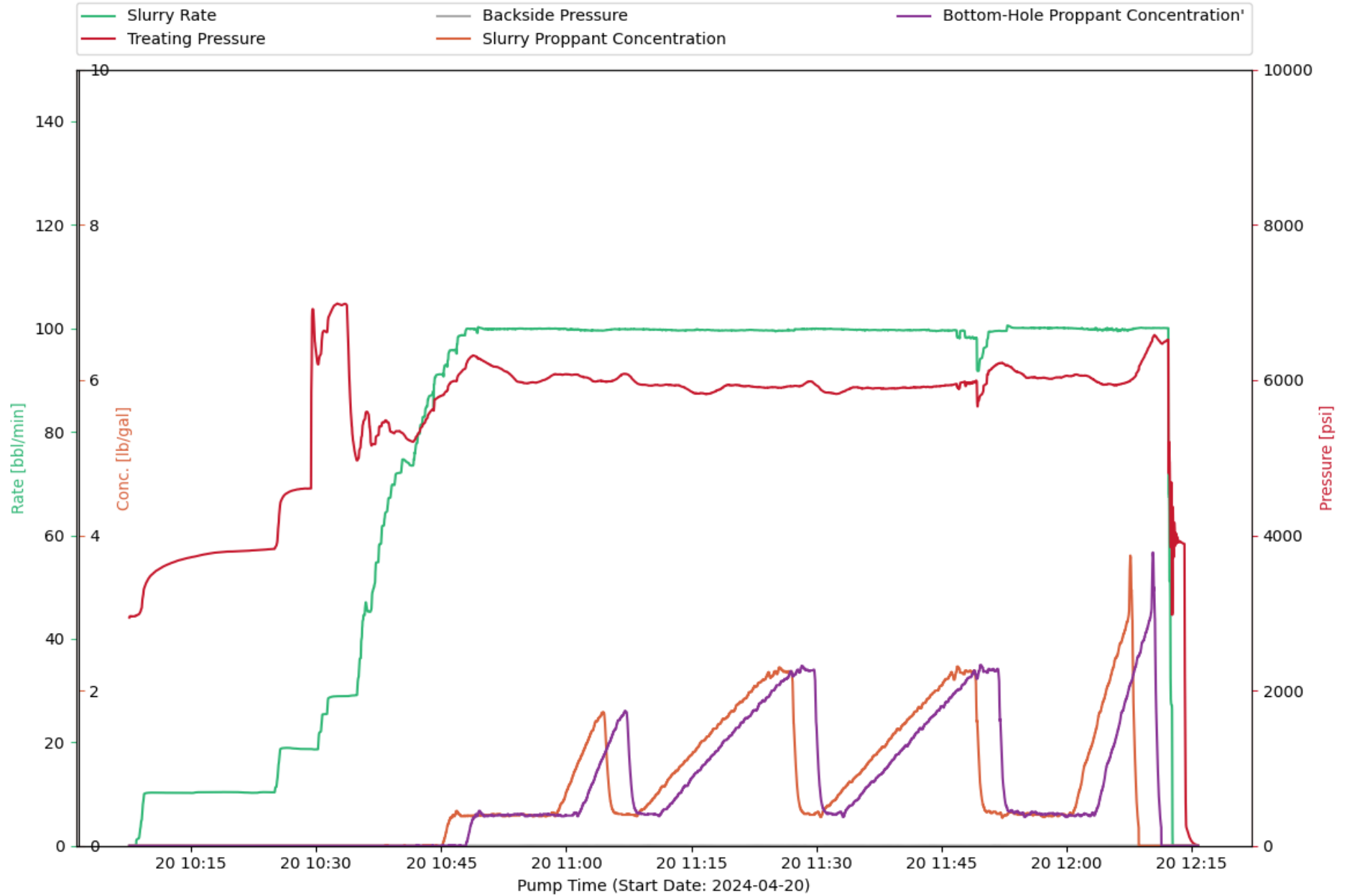
EVENT LOG : TREATMENT INTERVAL 1

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-19T18:42:26	0	1257	0	0	0	0	0
2	Start Pumping	2024-04-19T18:43:21	0	1229	0	0	6.99	0.17	0
3	Break Formation	2024-04-19T18:45:43	9.61	8108	0	0	867.83	824.56	0
4	Pump Acid	2024-04-19T18:46:33	9.63	7484	0	0	1203	1162	0
5	Pump Acid	2024-04-19T18:52:30	9.73	6201	0	0	3574	3592	0
6	Spot Acid	2024-04-19T19:12:41	19.4	7043	0	0	12697	12662	0
7	Flush Acid	2024-04-19T19:14:04	19.44	6686	0	0	13836	13783	0
8	Spot Acid	2024-04-19T19:14:17	19.43	6696	0	0	14015	13960	0
9	Flush Acid	2024-04-19T19:15:02	19.49	5721	0	0	14638	14576	0
10	Stop Pumping	2024-04-19T19:35:54	1.63	3570	0	0	57960	58096	4862
11	ISIP	2024-04-19T19:35:59	0	3937	0	0	57961	58096	4862
12	Shut In Well	2024-04-19T19:37:08	0	3661	0	0	57964	58096	4862
13	Suspending Job	2024-04-19T19:38:02	0	-1.3	0	0	57964	58096	4862
14	Open Well	2024-04-20T00:07:03	0	3250	0	0	57964	58114	4862
15	Start Pumping	2024-04-20T00:08:14	0	3156	0	0	57964	58114	4862
16	Pump Acid	2024-04-20T00:09:23	9.81	5185	0	0	58173	58441	4862
17	Ball on Seat	2024-04-20T00:22:59	14.85	4959	0	0	69631	69937	4862
18	Break Formation	2024-04-20T00:24:03	14.83	4998	0	0	70298	70605	4862
19	Spot Acid	2024-04-20T00:24:45	14.86	5025	0	0	70731	71044	4862
20	Flush Acid	2024-04-20T00:25:19	15.1	4483	0	0	71086	71399	4862
21	Stop Pumping	2024-04-20T02:04:47	0	3676	0	0	441446	459791	349981
22	ISIP	2024-04-20T02:05:43	0	3698	0	0	441446	459791	349981

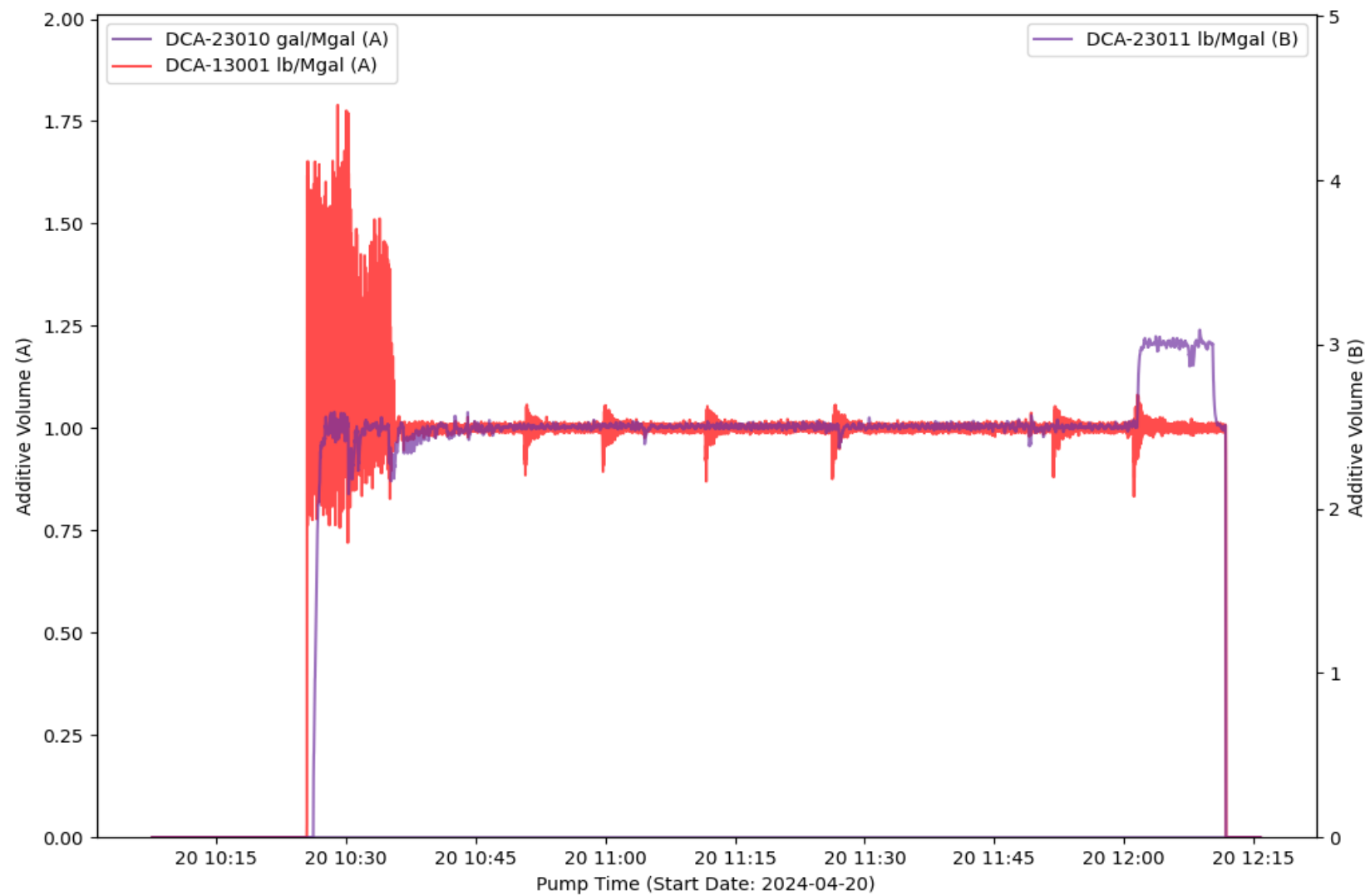
EVENT LOG : TREATMENT INTERVAL 1

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
23	Shut In Well	2024-04-20T02:07:34	0	8.82	0	0	441446	459791	349981
24	Suspending Job	2024-04-20T02:10:04	0	81.17	0	0	441446	459814	349981

TREATMENT PLOT : Treatment Interval 2



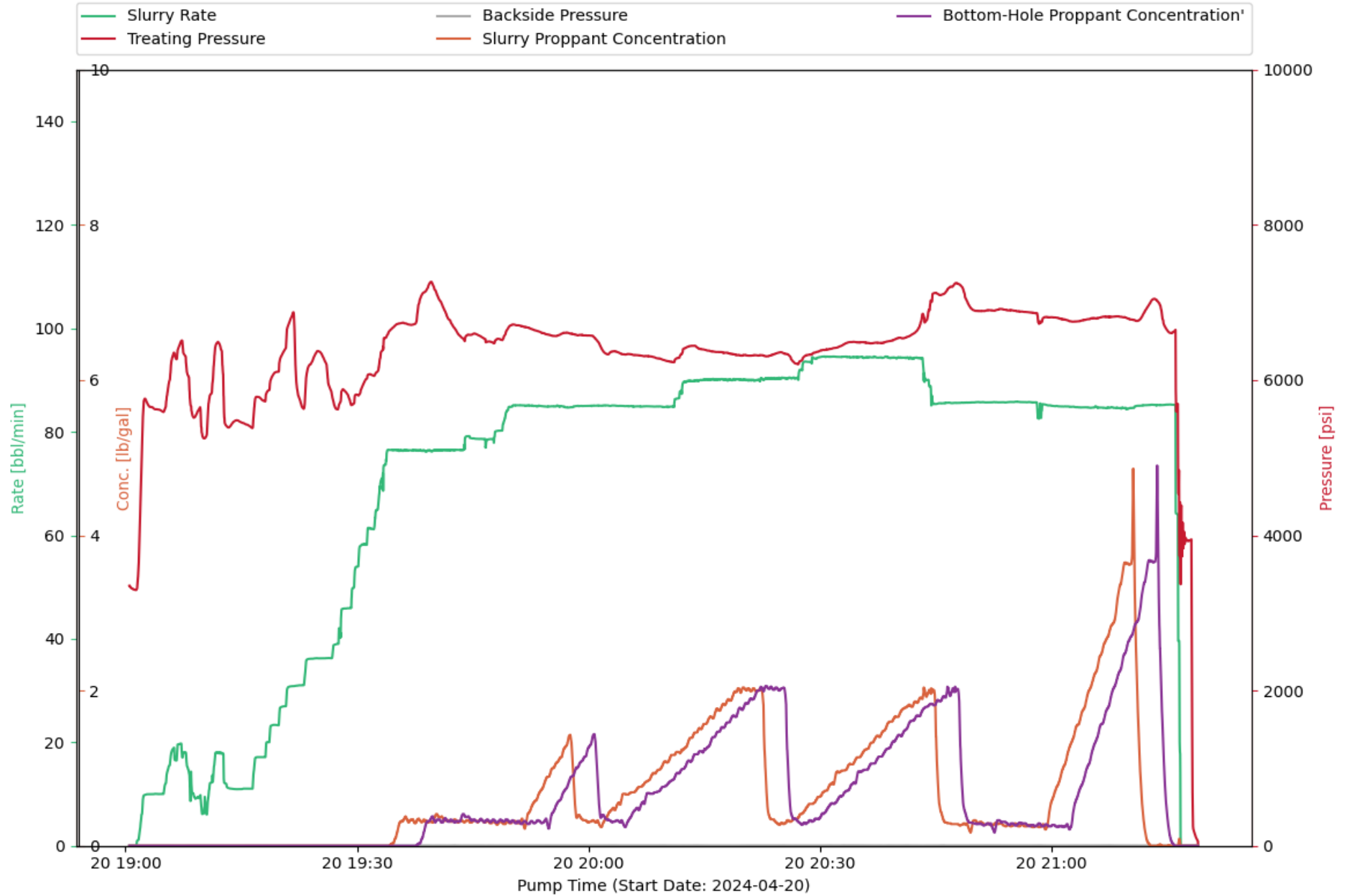
CHEMISTRY PLOT : Treatment Interval 2



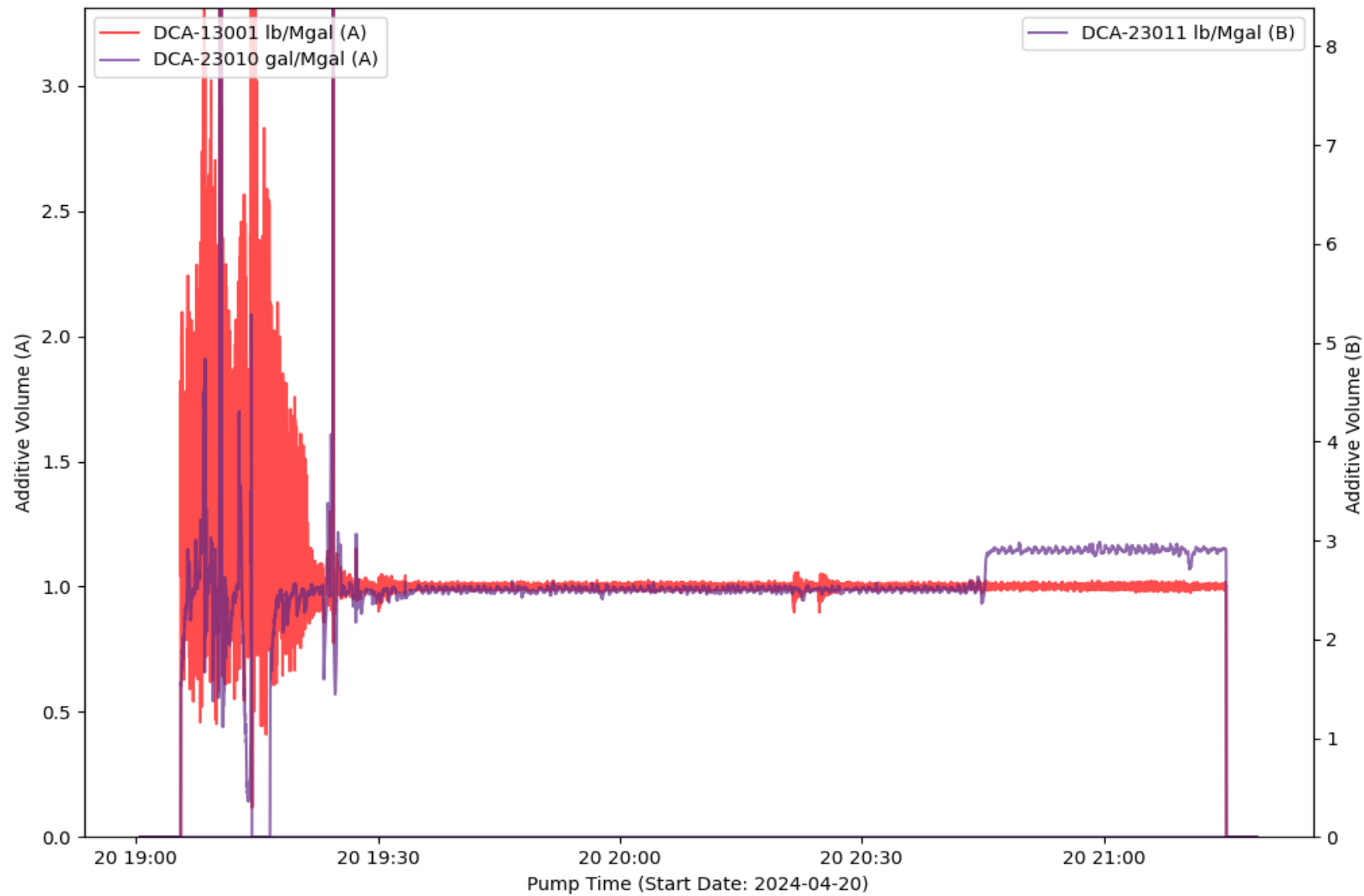
EVENT LOG : TREATMENT INTERVAL 2

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Start Pumping	2024-04-20T10:08:24	0	2969	0	0	0	0	0
2	Pump Acid	2024-04-20T10:14:56	10.22	3715	0	0	2551	2548	0
3	Pump Acid	2024-04-20T10:22:11	10.25	3804	0	0	5610	5699	0
4	Ball on Seat	2024-04-20T10:29:22	18.73	4602	0	0	10070	10219	0
5	Break Formation	2024-04-20T10:29:34	18.68	6914	0	0	10227	10377	0
6	Spot Acid	2024-04-20T10:33:39	28.92	6972	0	0	14676	14806	0
7	Flush Acid	2024-04-20T10:34:51	29.11	4974	0	0	16144	16275	0
8	Spot Acid	2024-04-20T10:36:10	45.3	5587	0	0	18342	18489	0
9	Flush Acid	2024-04-20T10:36:37	45.61	5160	0	0	19163	19317	0
10	Stop Pumping	2024-04-20T12:12:42	2.47	3004	0	0	394343	410700	349531
11	ISIP	2024-04-20T12:12:44	0	4367	0	0	394345	410700	349531
12	Shut In Well	2024-04-20T12:13:44	0	3912	0	0	394349	410700	349531
13	Suspending Job	2024-04-20T12:15:45	0	9.88	0	0	394349	410700	349531

TREATMENT PLOT : Treatment Interval 3



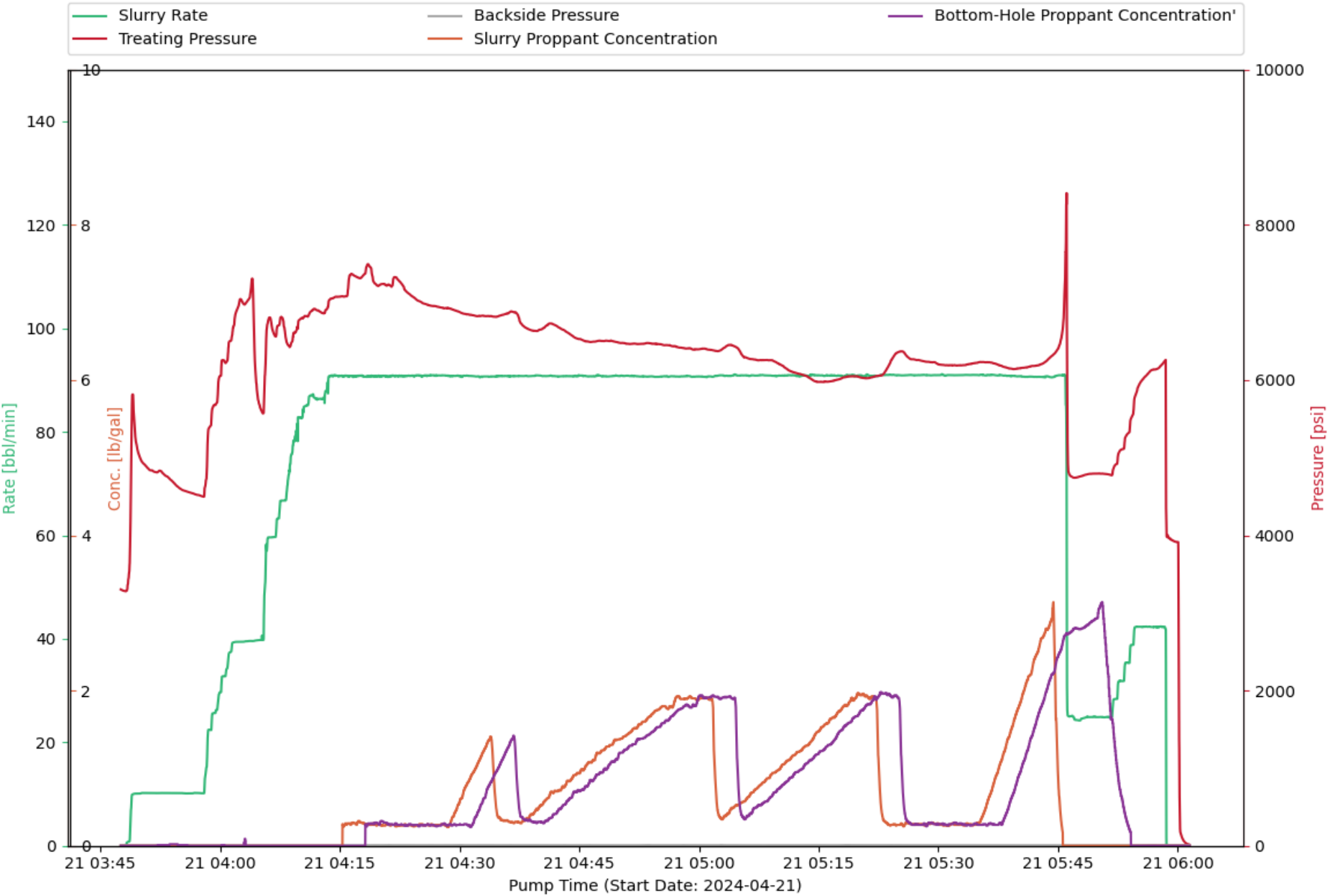
CHEMISTRY PLOT : Treatment Interval 3



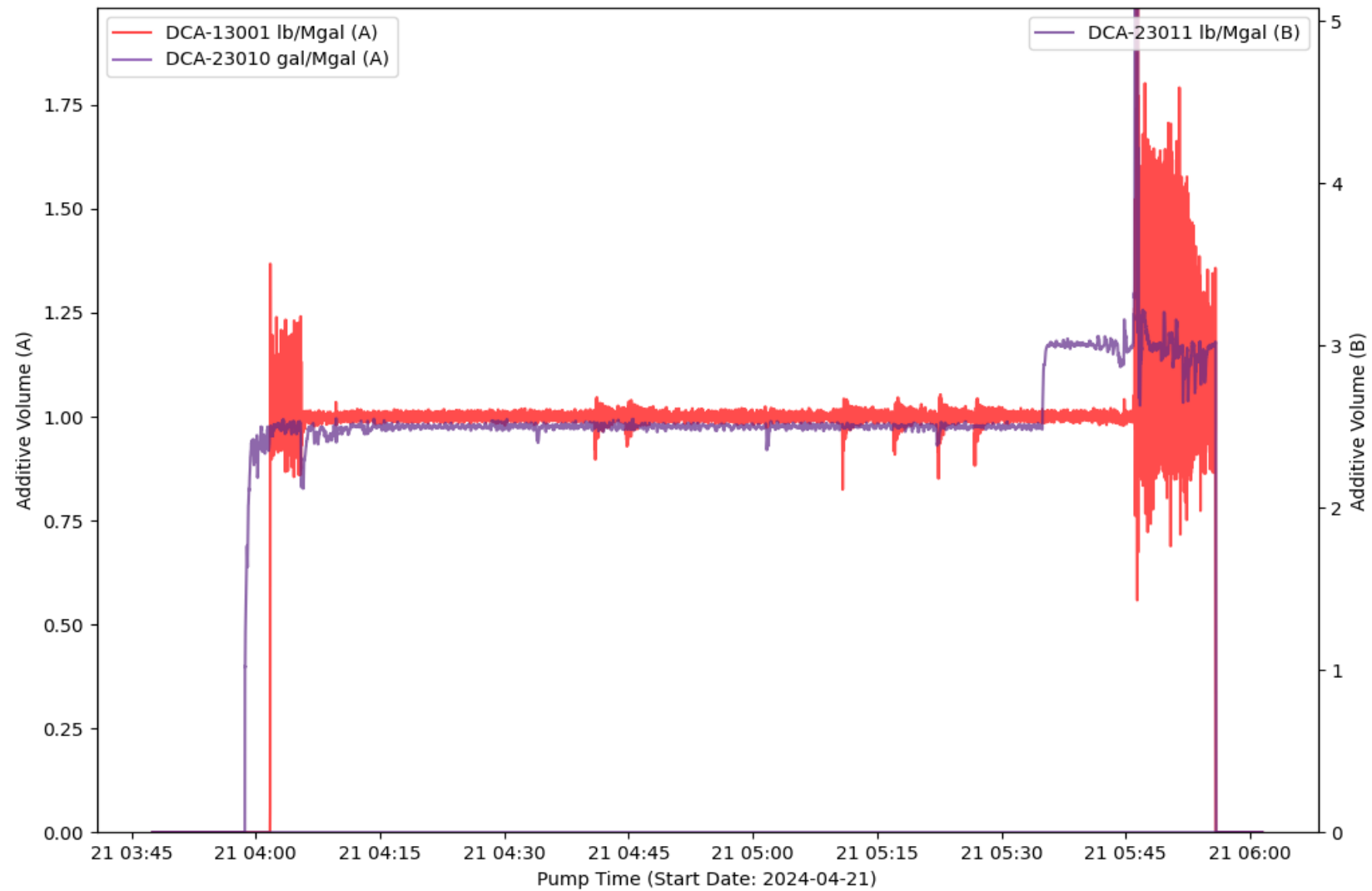
EVENT LOG : TREATMENT INTERVAL 3

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Start Pumping	2024-04-20T19:01:34	1.06	3399	0	0	0	0.75	0
2	Pump Acid	2024-04-20T19:03:17	9.95	5653	0	0	479.2	535.79	0
3	Pump Acid	2024-04-20T19:14:38	10.93	5477	0	0	6547	6691	0
4	Spot Acid	2024-04-20T19:21:45	30.86	6875	0	0	12410	12562	0
5	Flush Acid	2024-04-20T19:22:51	31.01	5662	0	0	13850	13999	0
6	Spot Acid	2024-04-20T19:25:58	36.27	6224	0	0	18805	18635	0
7	Flush Acid	2024-04-20T19:27:27	39.01	5622	0	0	21142	20970	0
8	Stop Pumping	2024-04-20T21:16:43	6.61	3738	0	0	393295	407541	320754
9	ISIP	2024-04-20T21:16:50	0	4385	0	0	393319	407543	320754
10	Shut In Well	2024-04-20T21:18:04	0	3945	0	0	393322	407543	320754
11	Suspending Job	2024-04-20T21:18:59	0	59.16	0	0	393322	407543	320754

TREATMENT PLOT : Treatment Interval 4



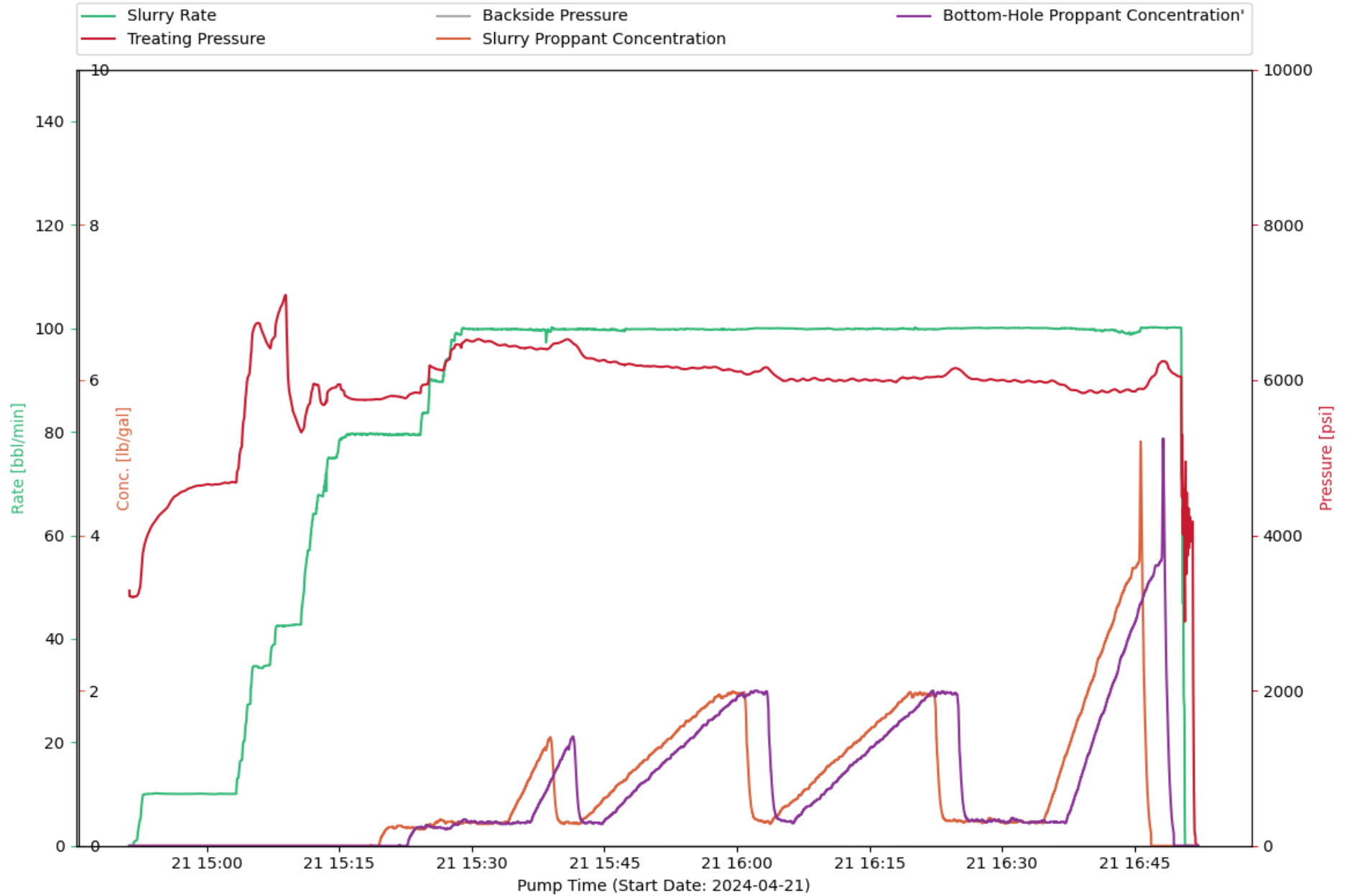
CHEMISTRY PLOT : Treatment Interval 4



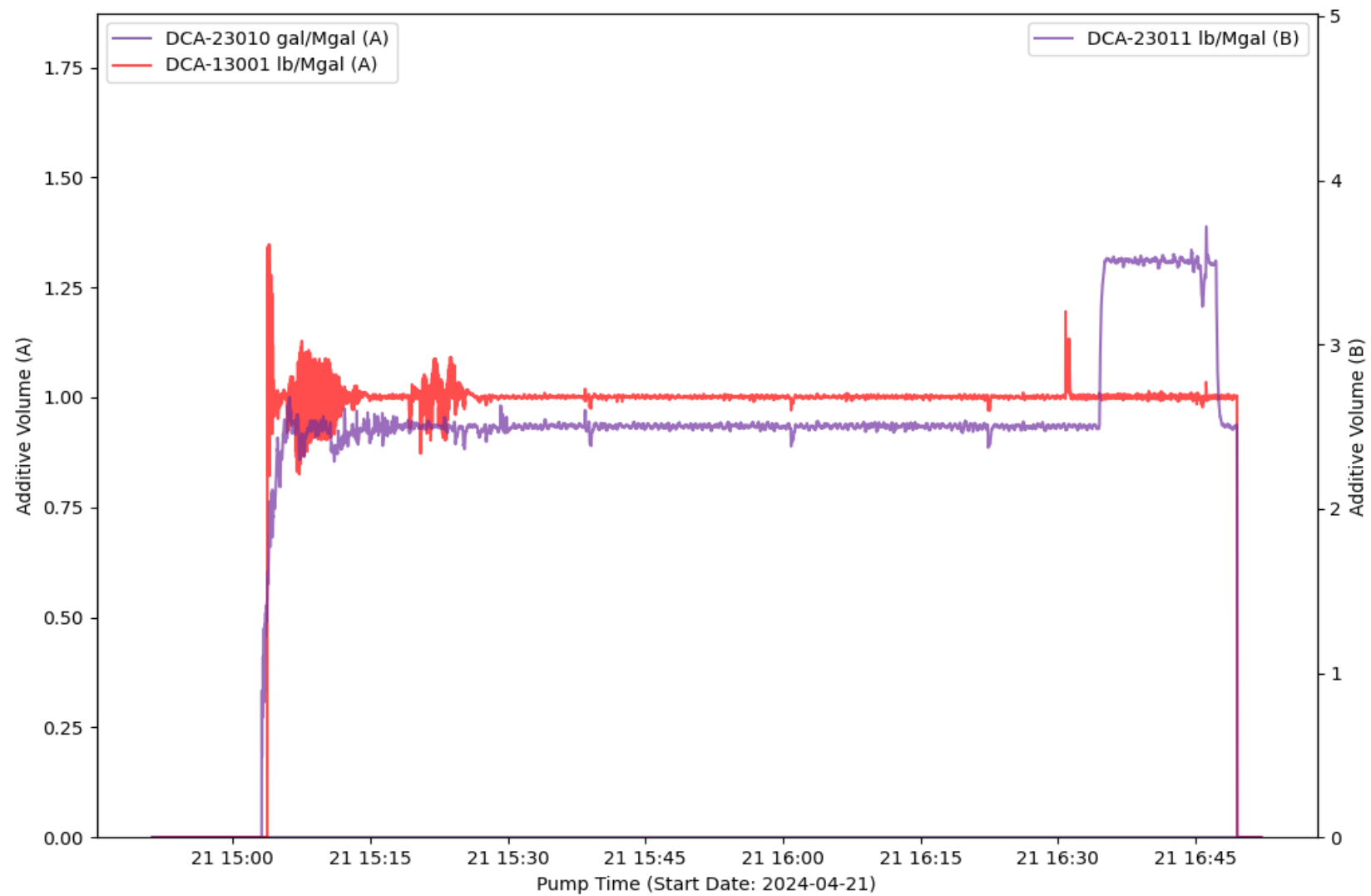
EVENT LOG : TREATMENT INTERVAL 4

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-21T03:47:33	0	3303	0	0	0	0	0
2	Start Pumping	2024-04-21T03:48:19	0.65	3295	0	0	0.14	1.8	0
3	Break Formation	2024-04-21T03:49:06	10	5774	0	0	75.25	153	0
4	Pump Acid	2024-04-21T03:49:43	10.09	5069	0	0	346.99	416.84	0
5	Pump Acid	2024-04-21T03:55:58	10.12	4560	0	0	2955	3088	0
6	Spot Acid	2024-04-21T04:04:00	39.58	7308	0	0	12122	12211	0
7	Flush Acid	2024-04-21T04:05:21	39.79	5572	0	0	14389	14473	0
8	Spot Acid	2024-04-21T04:06:12	59.61	6808	0	0	16288	16370	0
9	Flush Acid	2024-04-21T04:06:57	59.68	6561	0	0	18181	18257	0
10	Stop Pumping	2024-04-21T05:58:34	1.66	4179	0	0	395969	410108	308980
11	ISIP	2024-04-21T05:58:38	0	3980	0	0	395975	410108	308980
12	Shut In Well	2024-04-21T05:59:17	0	3936	0	0	395978	410108	308980
13	Suspending Job	2024-04-21T06:01:28	0	15.6	0	0	395978	410108	308980

TREATMENT PLOT : Treatment Interval 5



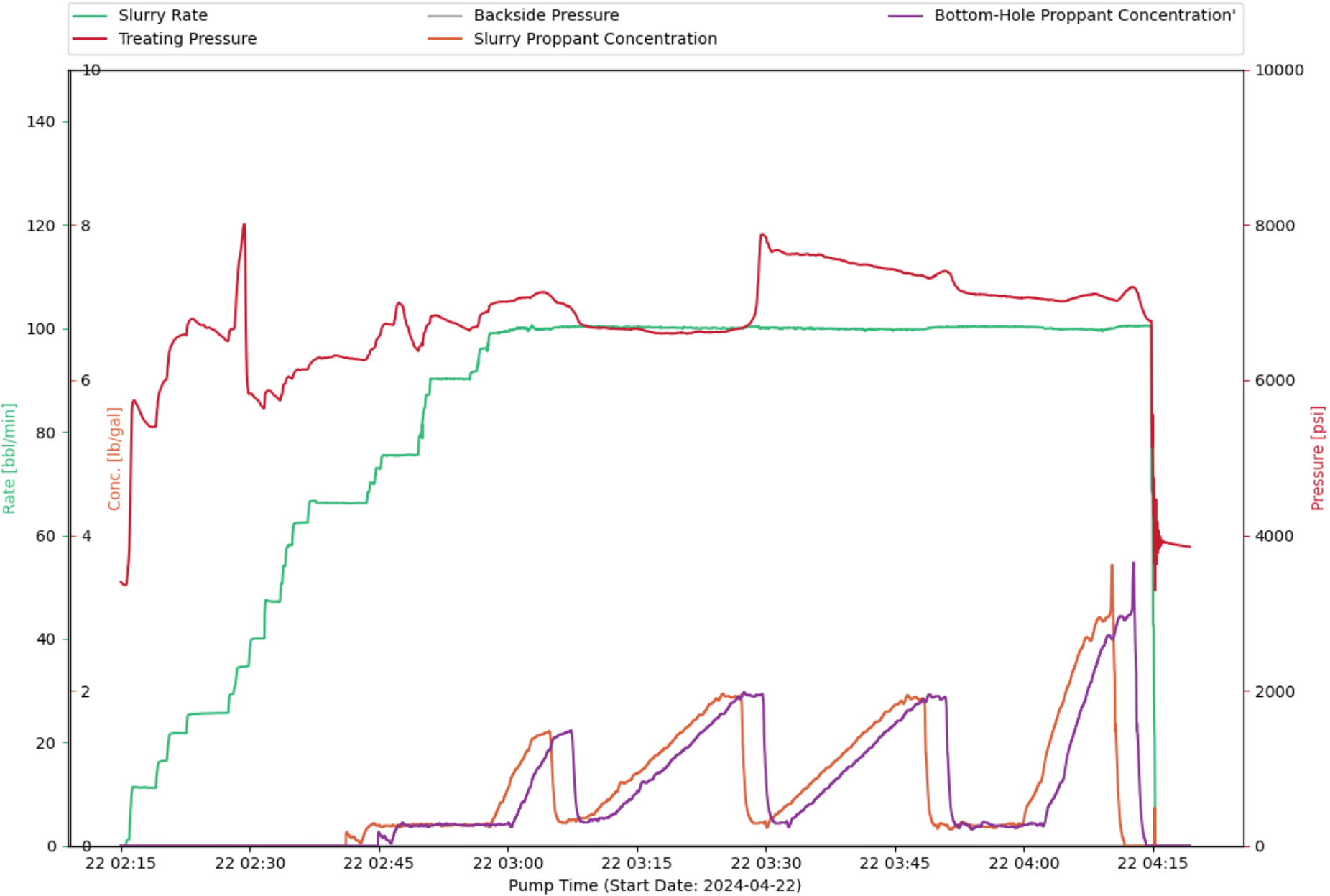
CHEMISTRY PLOT : Treatment Interval 5



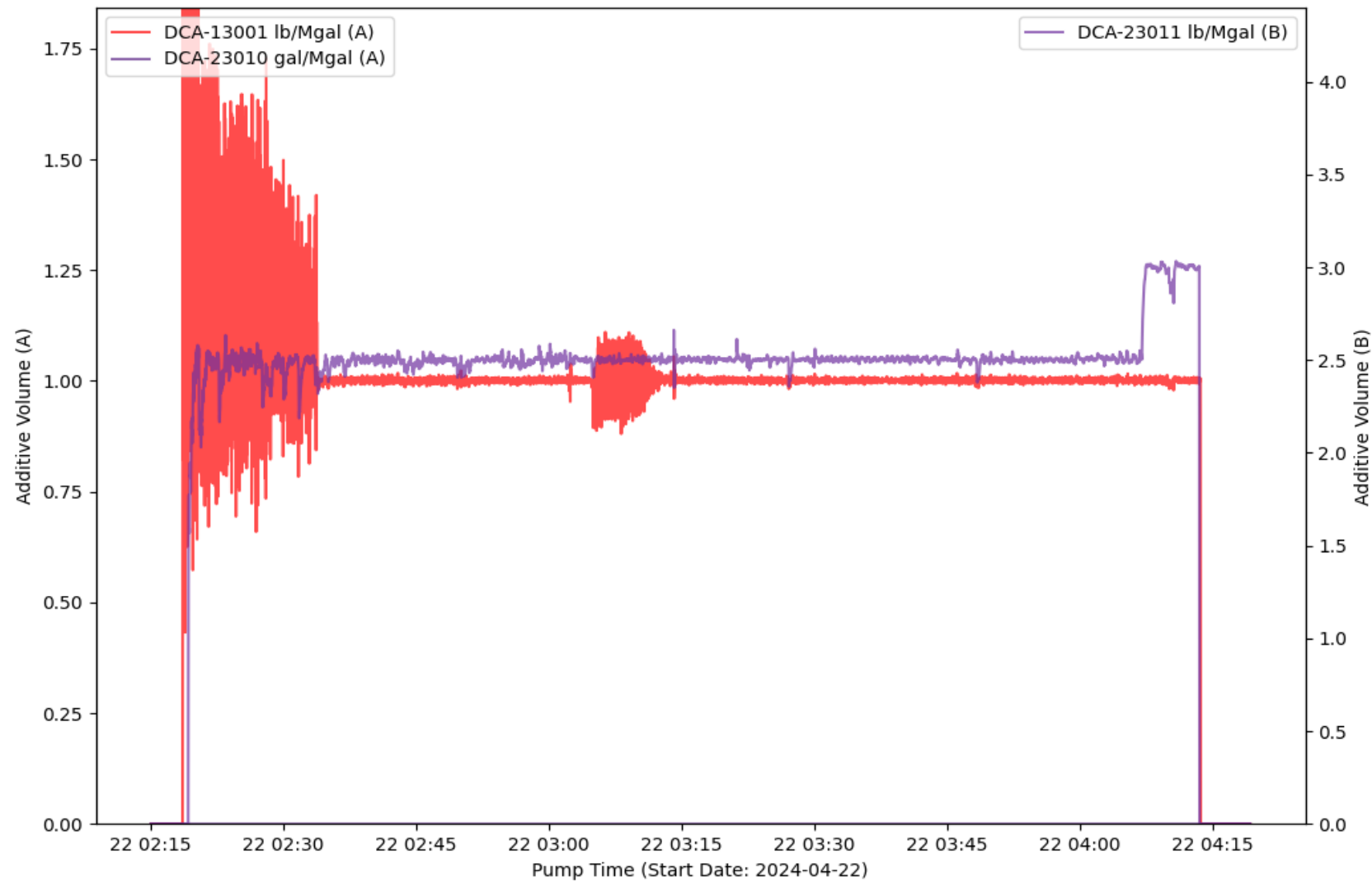
EVENT LOG : TREATMENT INTERVAL 5

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-21T14:51:14	0	3287	0	0	0	0	0
2	Start Pumping	2024-04-21T14:51:40	0.01	3208	0	0	0	0.01	0
3	Break Formation	2024-04-21T14:52:46	9.86	3779	0	0	127.25	170.65	0
4	Pump Acid	2024-04-21T14:53:23	10.03	4030	0	0	396.59	430.45	0
5	Pump Acid	2024-04-21T15:00:33	10.02	4650	0	0	3298	3452	0
6	Spot Acid	2024-04-21T15:08:55	42.56	7096	0	0	12129	12227	0
7	Flush Acid	2024-04-21T15:10:34	42.72	5354	0	0	15105	15197	0
8	Spot Acid	2024-04-21T15:12:34	67.61	5939	0	0	19881	19965	0
9	Flush Acid	2024-04-21T15:13:03	67.59	5689	0	0	21265	21346	0
10	Stop Pumping	2024-04-21T16:50:43	1.4	2889	0	0	402852	418411	343005
11	ISIP	2024-04-21T16:50:47	0	4879	0	0	402854	418411	343005
12	Shut In Well	2024-04-21T16:51:31	0	4175	0	0	402857	418411	343005
13	Suspending Job	2024-04-21T16:52:11	0	4.76	0	0	402857	418411	343005

TREATMENT PLOT : Treatment Interval 6



CHEMISTRY PLOT : Treatment Interval 6



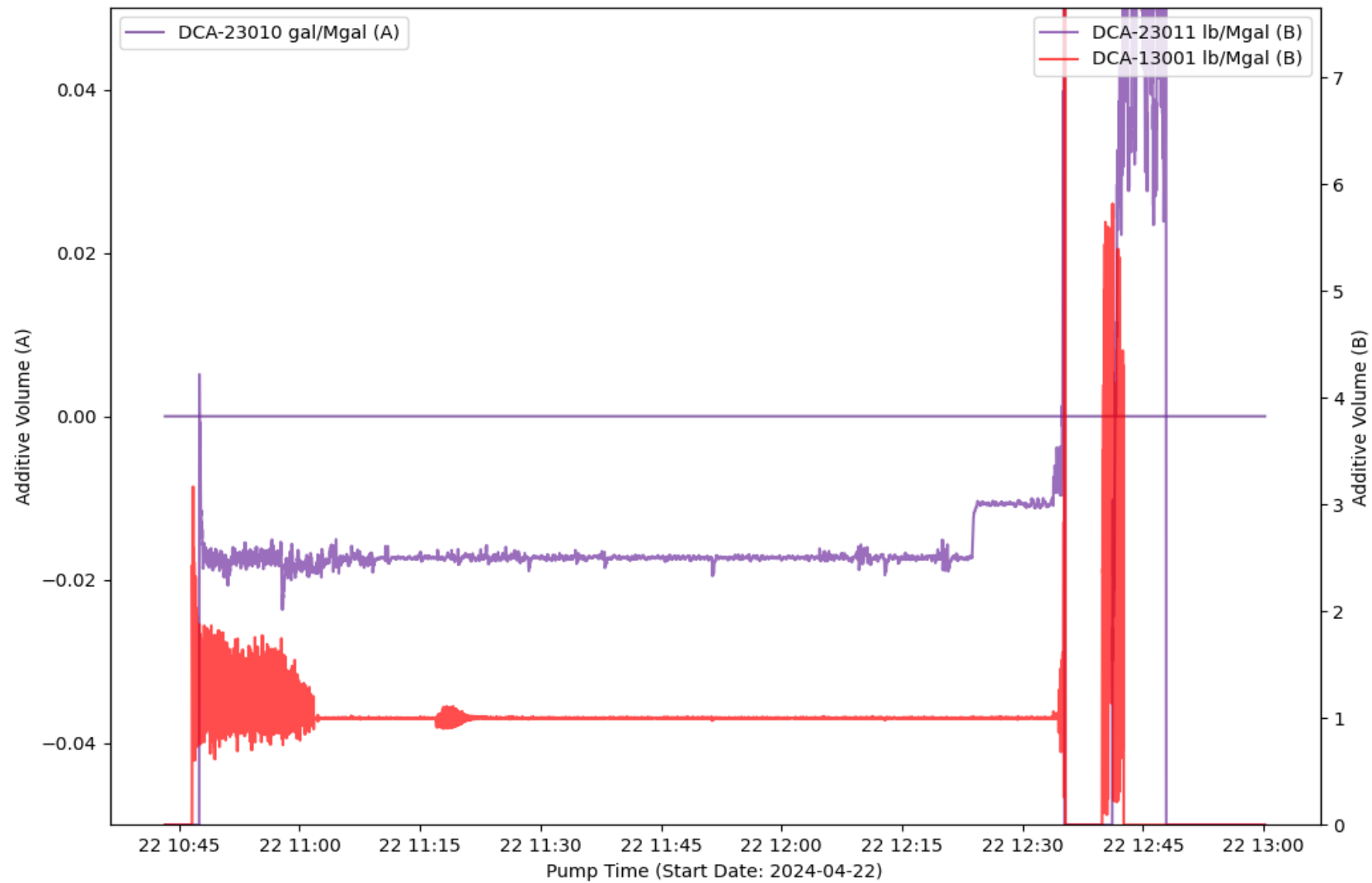
EVENT LOG : TREATMENT INTERVAL 6

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-22T02:15:00	0	3399	0	0	0	0	0
2	Start Pumping	2024-04-22T02:15:39	0.7	3365	0	0	11.69	0.93	0
3	Break Formation	2024-04-22T02:16:50	11.33	5689	0	0	376.45	362.44	0
4	Pump Acid	2024-04-22T02:17:18	11.25	5576	0	0	599.29	576.7	0
5	Spot Acid	2024-04-22T02:29:17	34.63	7997	0	0	12065	11929	0
6	Flush Acid	2024-04-22T02:29:54	35.49	5819	0	0	12968	12831	0
7	Stop Pumping	2024-04-22T04:15:16	1.65	3981	0	0	406209	420832	325400
8	ISIP	2024-04-22T04:15:20	0	4464	0	0	406211	420832	325400
9	Shut In Well	2024-04-22T04:18:47	0	3860	0	0	406214	420832	325400

TREATMENT PLOT : Treatment Interval 7



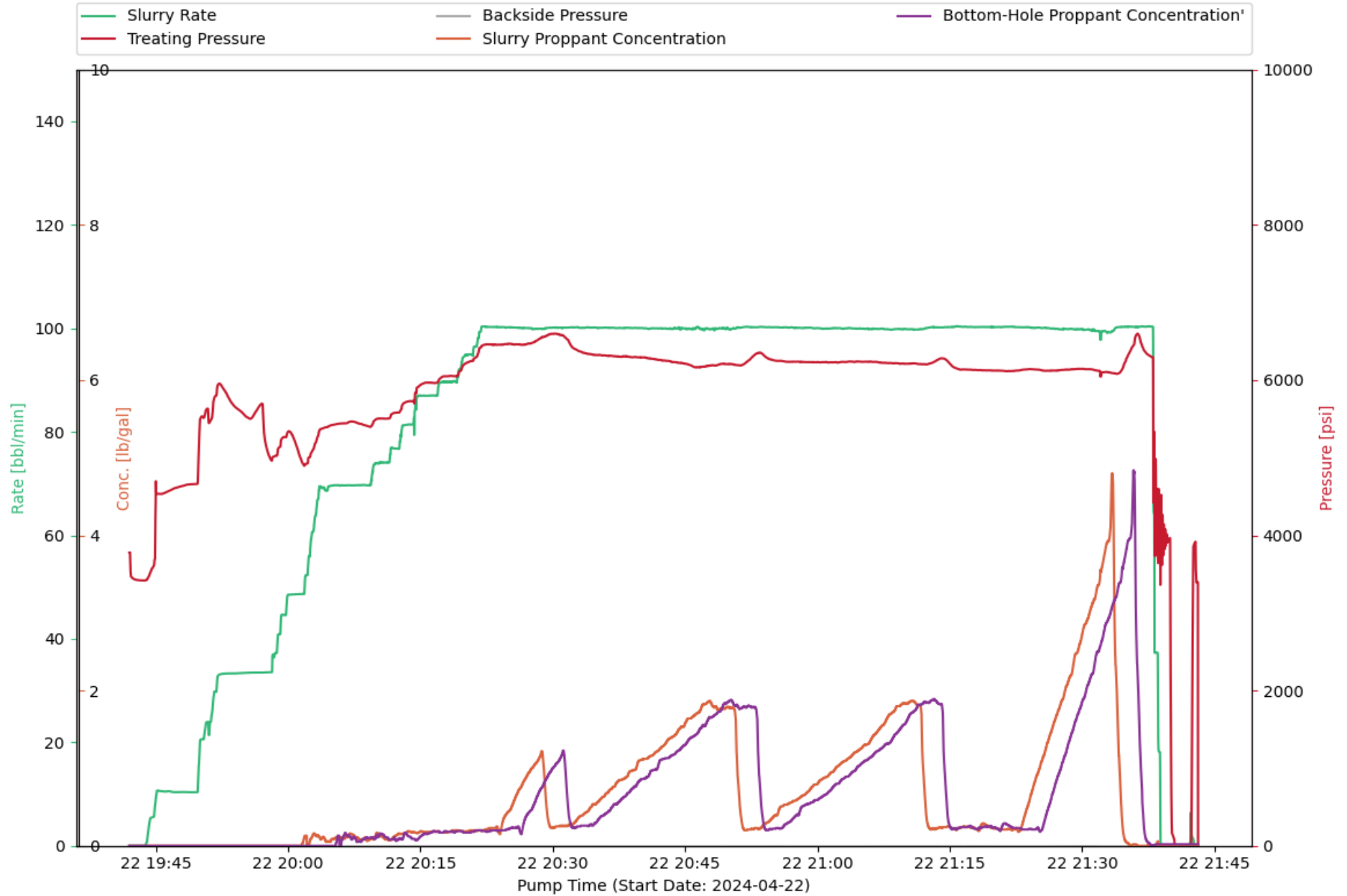
CHEMISTRY PLOT : Treatment Interval 7



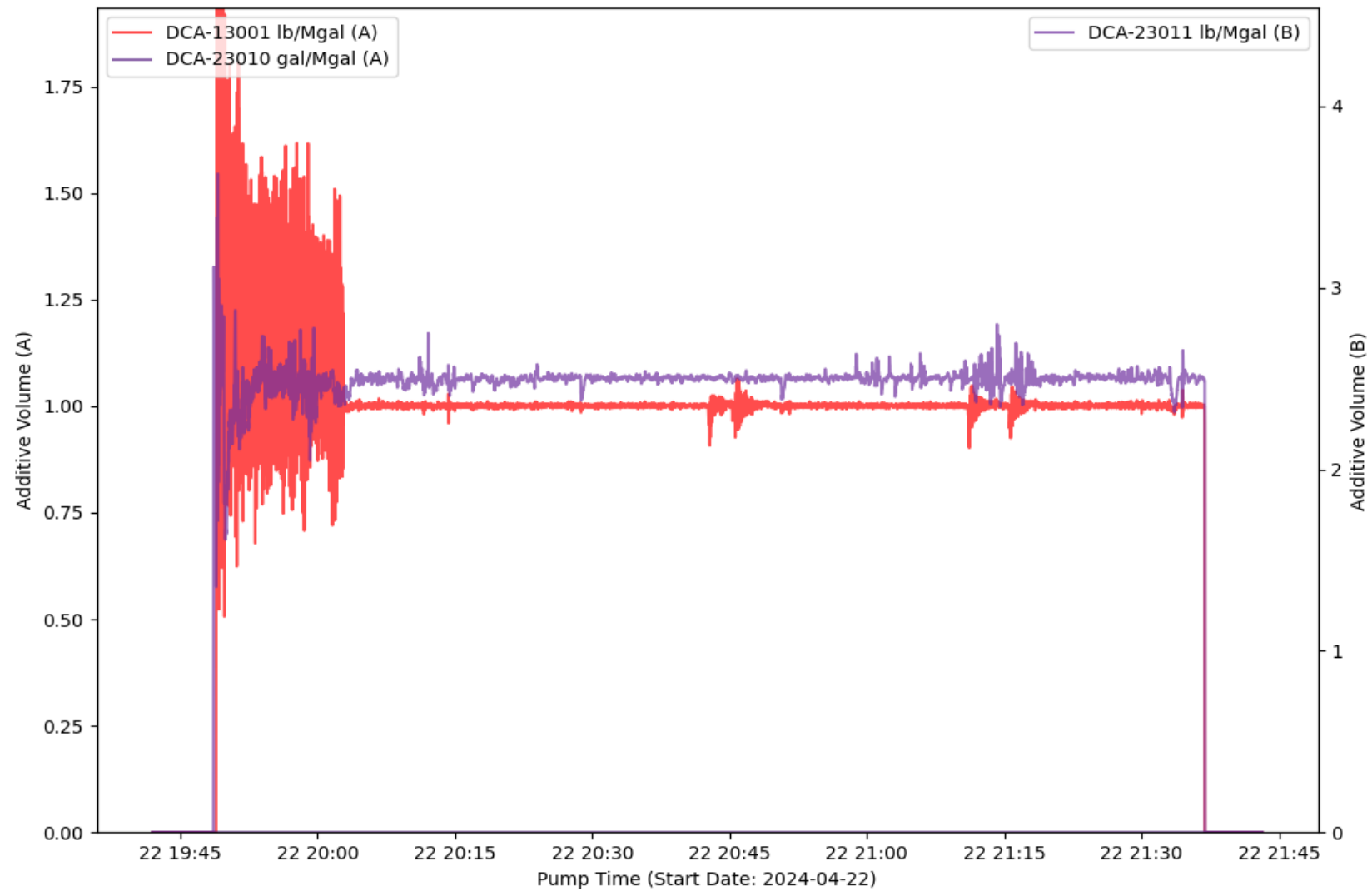
EVENT LOG : TREATMENT INTERVAL 7

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-22T10:43:16	0	3362	0	0	0	0	0
2	Start Pumping	2024-04-22T10:43:37	0.05	3341	0	0	0	0.04	0
3	Break Formation	2024-04-22T10:44:39	10.35	6050	0	0	74.74	175.92	0
4	Pump Acid	2024-04-22T10:44:56	10.44	5872	0	0	217.91	300.34	0
5	Spot Acid	2024-04-22T10:55:59	29.69	7674	0	0	11496	11405	0
6	Flush Acid	2024-04-22T10:56:04	29.71	4994	0	0	11600	11509	0
7	Stop Pumping	2024-04-22T12:56:14	1.22	6910	0	2.67	396761	411067	314746
8	ISIP	2024-04-22T12:56:30	0	6547	0	2.67	396775	411067	314746
9	Shut In Well	2024-04-22T12:59:25	0	4701	0	2.65	396780	411067	314746
10	Suspending Job	2024-04-22T13:00:09	0	0.25	0	2.63	396780	411067	314746

TREATMENT PLOT : Treatment Interval 8



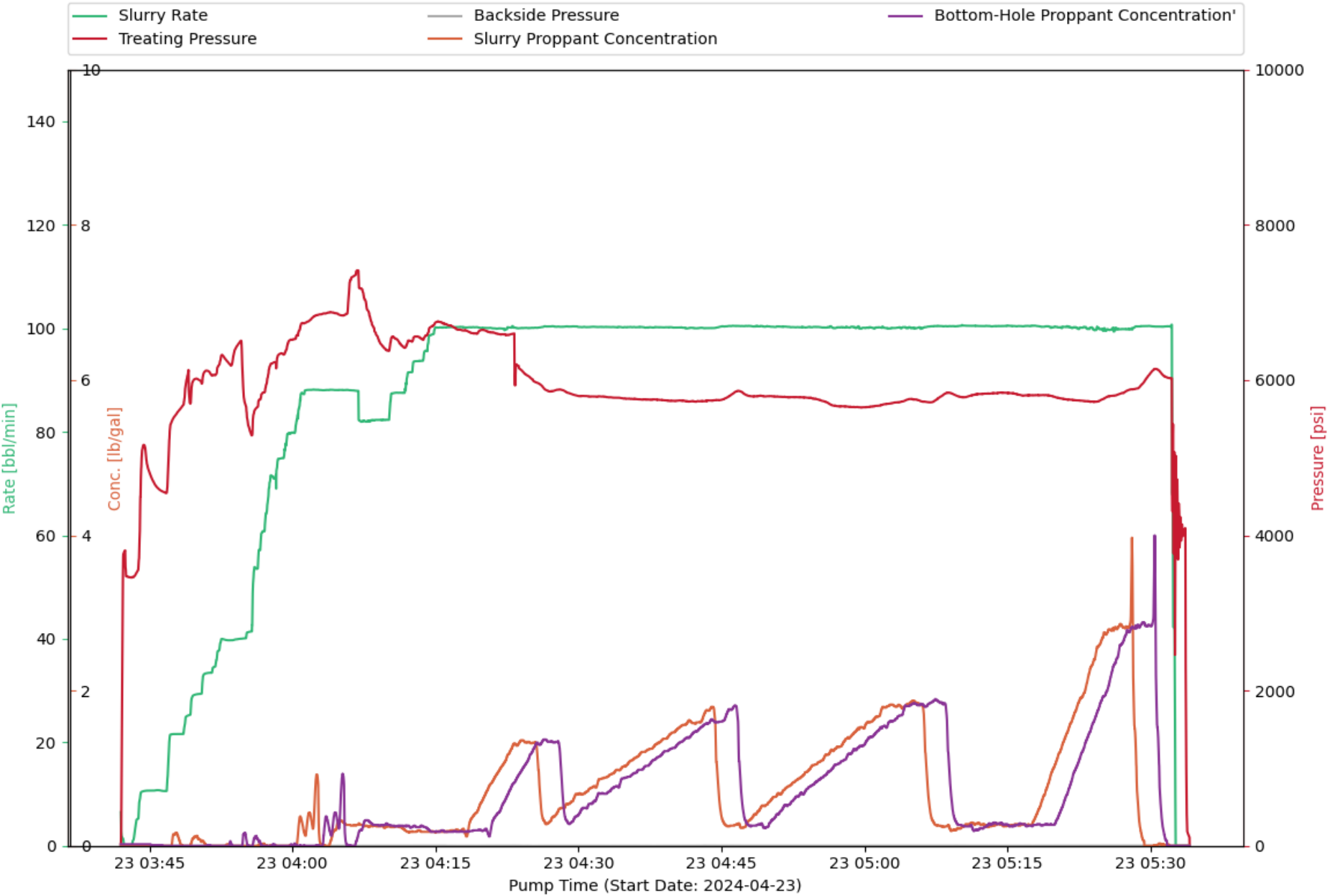
CHEMISTRY PLOT : Treatment Interval 8



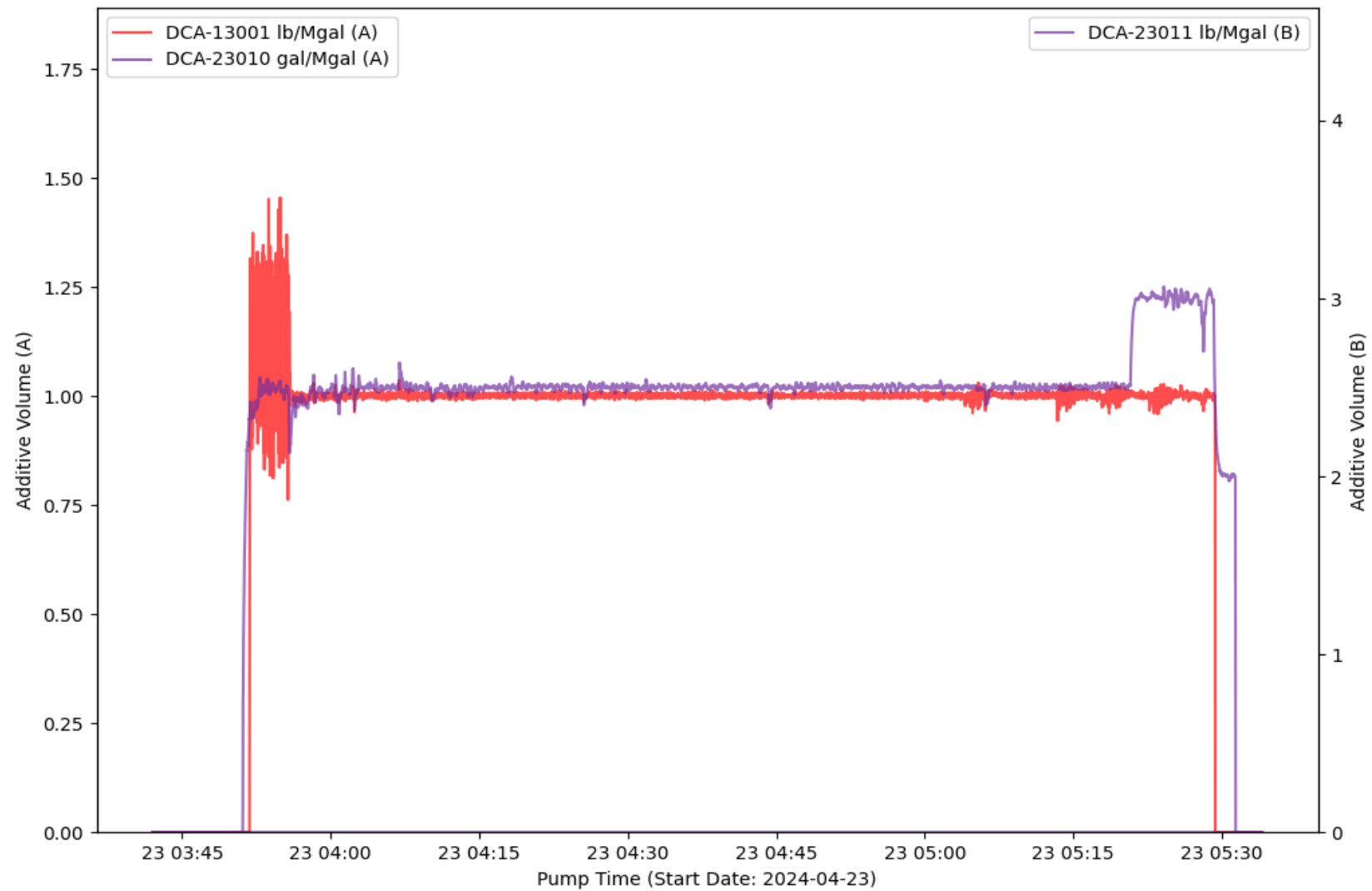
EVENT LOG : TREATMENT INTERVAL 8

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-22T19:42:23	0	3446	0	0	0	0	0
2	Start Pumping	2024-04-22T19:43:54	0.53	3427	0	0	0	0.76	0
3	Pump Acid	2024-04-22T19:45:57	10.5	4544	0	0	559.47	638.36	0
4	Break Formation	2024-04-22T19:52:30	33.23	5916	0	0	5223	5248	0
5	Spot Acid	2024-04-22T19:57:04	33.49	5696	0	0	11626	11633	0
6	Flush Acid	2024-04-22T19:58:06	33.57	4963	0	0	13084	13095	0
7	Stop Pumping	2024-04-22T21:38:53	3	3361	0	0.02	394041	407565	303061
8	ISIP	2024-04-22T21:38:58	0	4521	0	0.02	394057	407565	303061
9	Shut In Well	2024-04-22T21:39:55	0	3961	0	0.02	394060	407565	303062
10	Suspending Job	2024-04-22T21:43:08	0	3392	0	0.02	394060	407604	303062

TREATMENT PLOT : Treatment Interval 9



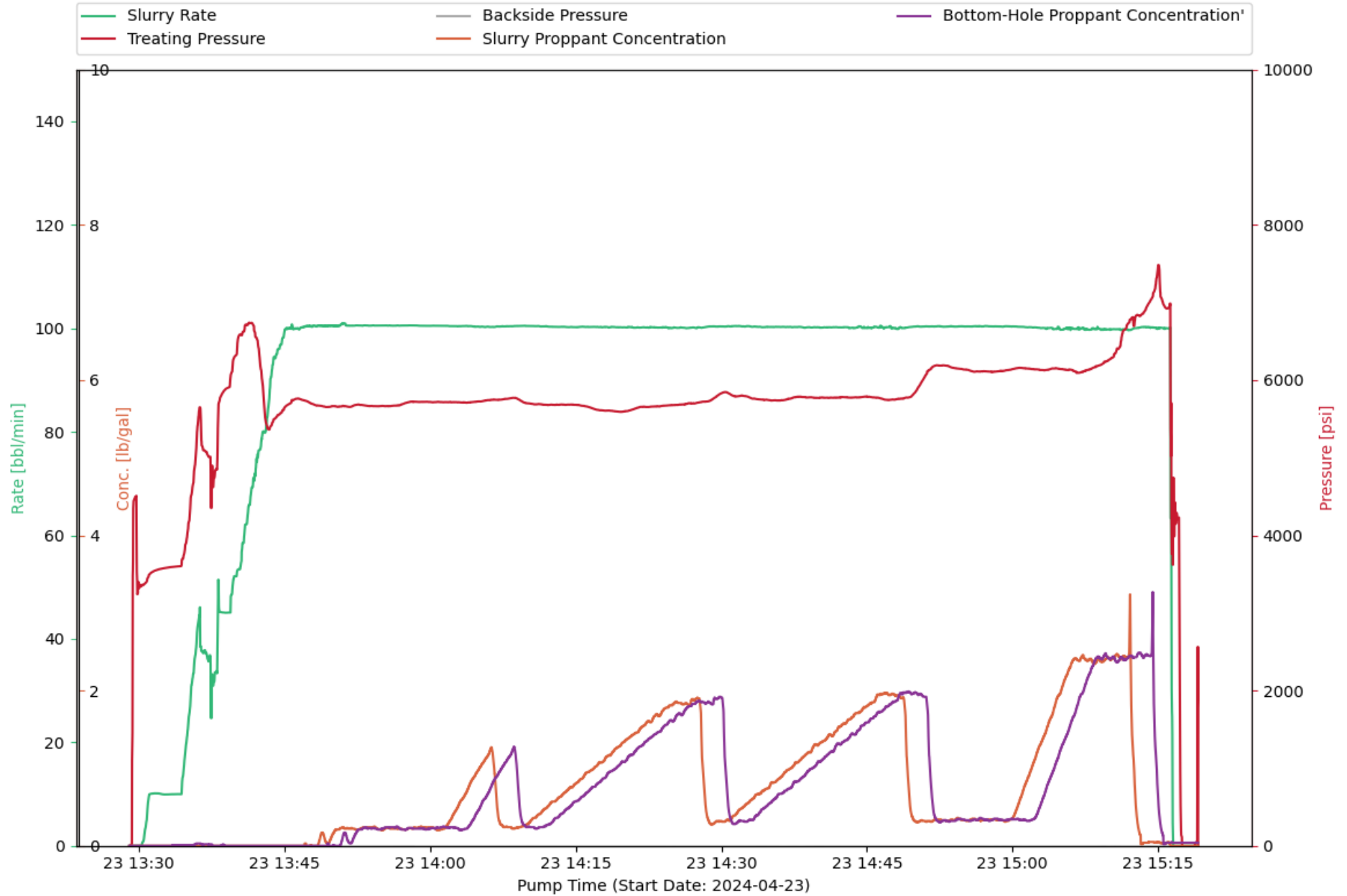
CHEMISTRY PLOT : Treatment Interval 9



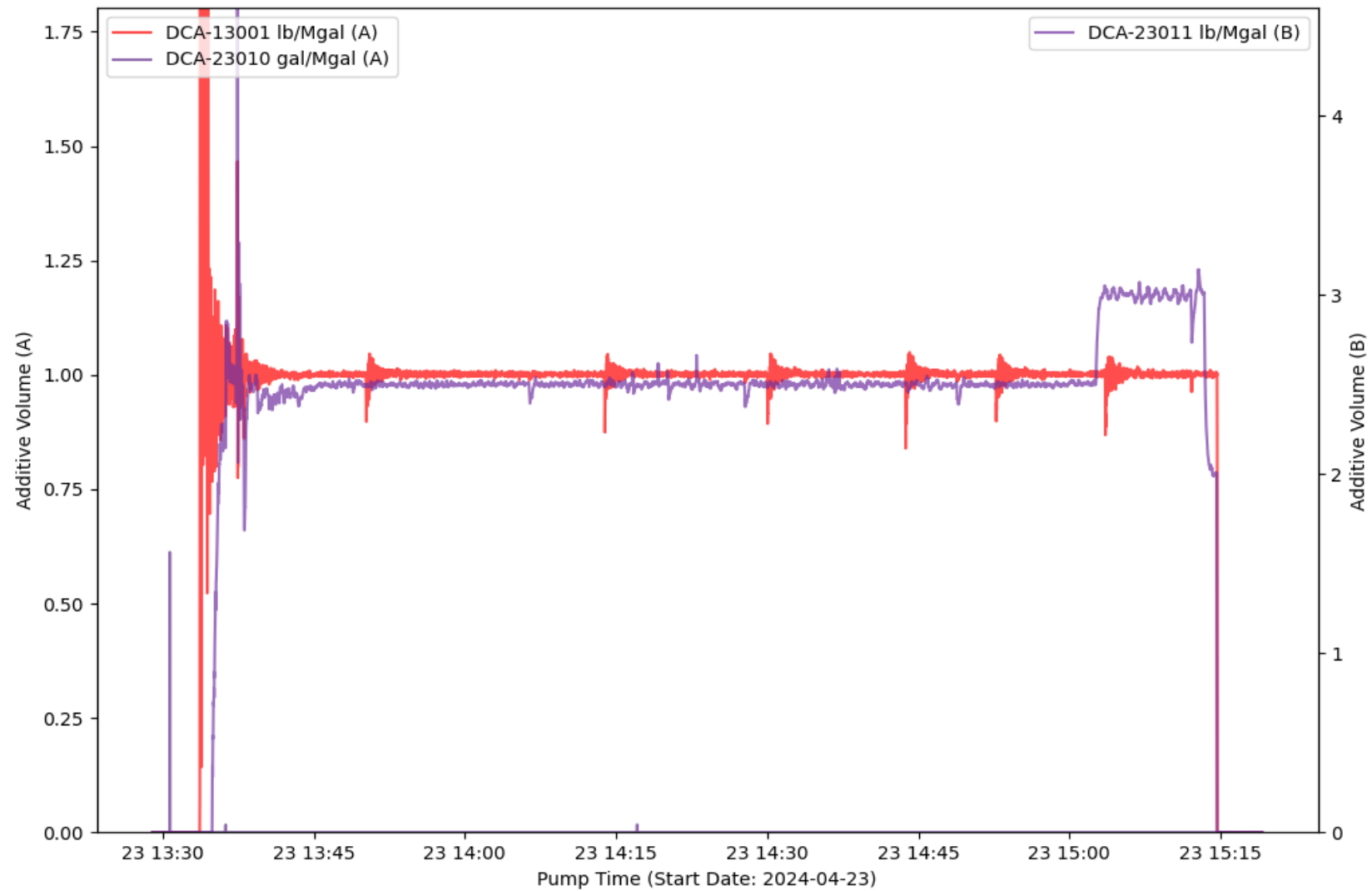
EVENT LOG : TREATMENT INTERVAL 9

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-23T03:42:44	0	3463	0	0.02	0	0	0
2	Start Pumping	2024-04-23T03:43:20	1.2	3461	0	0.02	0	5.6	0
3	Break Formation	2024-04-23T03:44:33	10.62	5120	0	0.02	321.49	383.85	0
4	Pump Acid	2024-04-23T03:45:27	10.68	4683	0	0.01	736.6	781.39	0
5	Spot Acid	2024-04-23T03:54:35	40.02	6506	0	0	11639	11531	280.34
6	Flush Acid	2024-04-23T03:55:43	41.43	5288	0	0	13591	13477	280.34
7	Stop Pumping	2024-04-23T05:32:38	0.04	4360	0	0	393101	406824	310226
8	ISIP	2024-04-23T05:33:07	0	4237	0	0	393104	406824	310226
9	Shut In Well	2024-04-23T05:33:20	0	4055	0	0	393104	406824	310226

TREATMENT PLOT : Treatment Interval 10



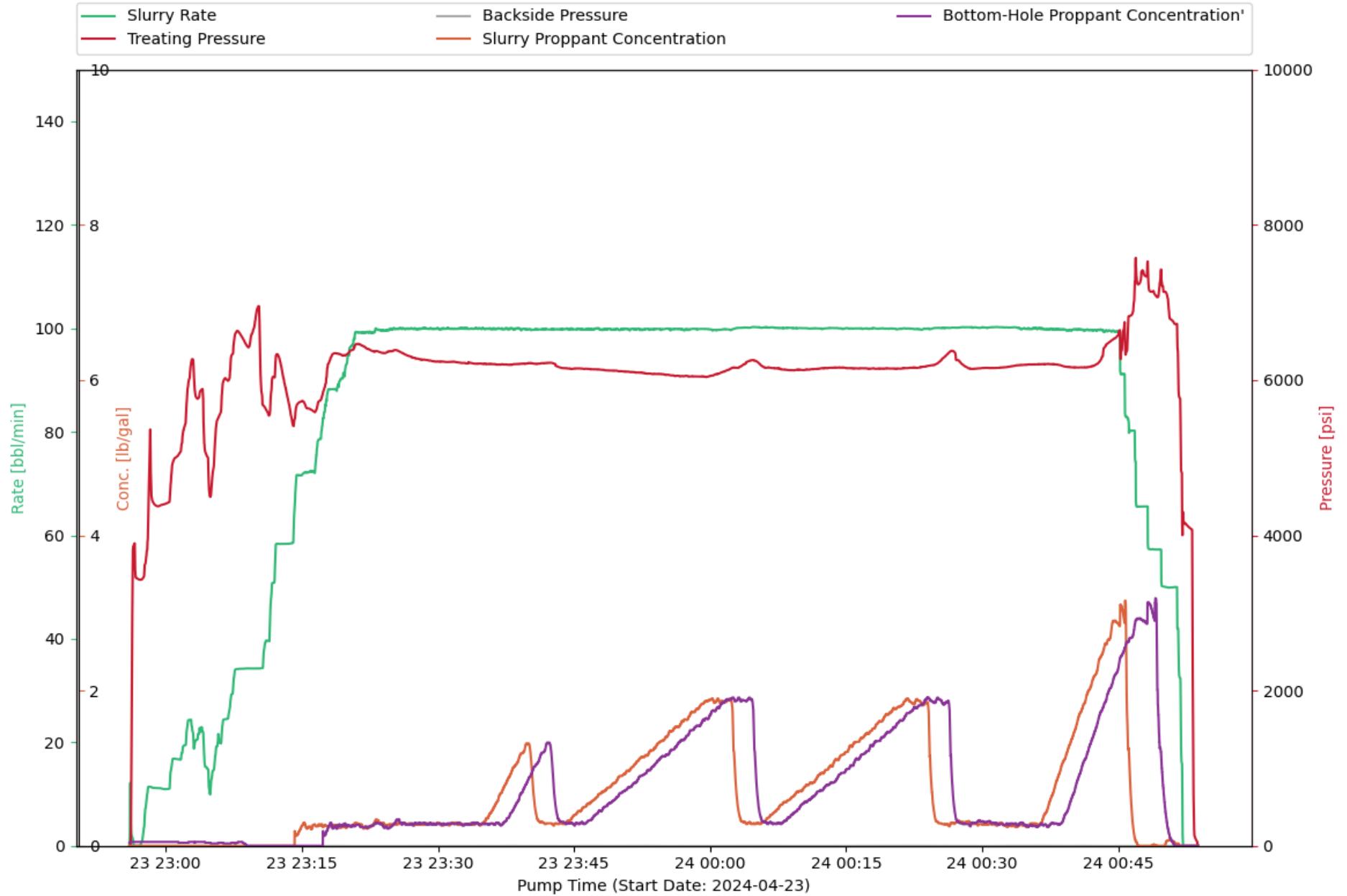
CHEMISTRY PLOT : Treatment Interval 10



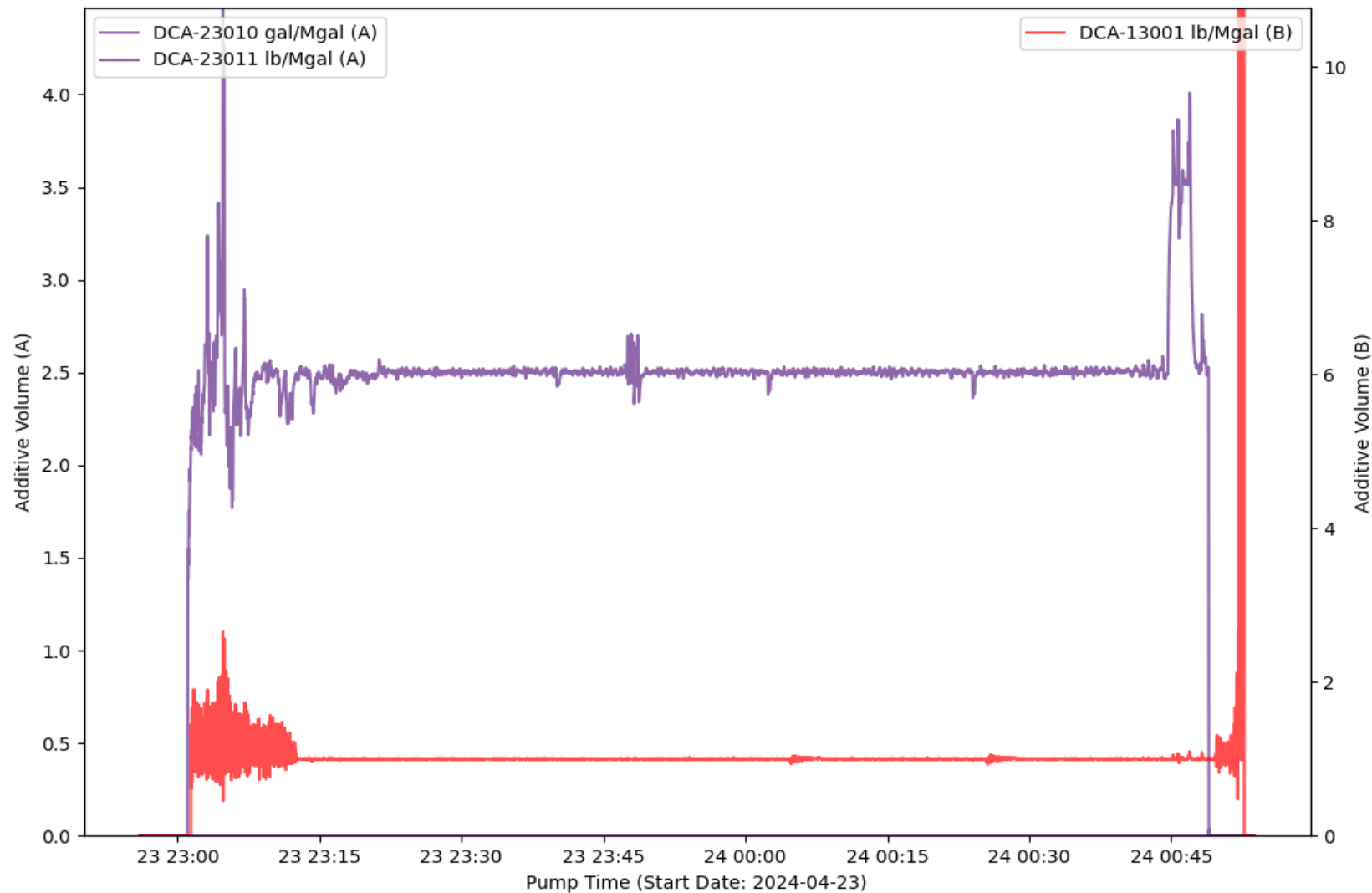
EVENT LOG : TREATMENT INTERVAL 10

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-23T13:29:55	0	3400	0	0	0	0	0
2	Start Pumping	2024-04-23T13:30:13	0.01	3354	0	0	0.03	0.01	0
3	Pump Acid	2024-04-23T13:32:04	10.11	3563	0	0	448.37	574.41	0
4	Break Formation	2024-04-23T13:36:26	37.64	5208	0	0.02	3944	4098	0
5	Spot Acid	2024-04-23T13:40:03	52.12	6329	0	0	10194	10404	0
6	Flush Acid	2024-04-23T13:42:54	79.88	5661	0	0	18190	18404	0
7	Stop Pumping	2024-04-23T15:16:33	1.37	4306	0	0.04	397240	411314	320527
8	ISIP	2024-04-23T15:16:45	0	4412	0	0.04	397241	411314	320527
9	Shut In Well	2024-04-23T15:17:03	0	4215	0	0.04	397241	411314	320527

TREATMENT PLOT : Treatment Interval 11



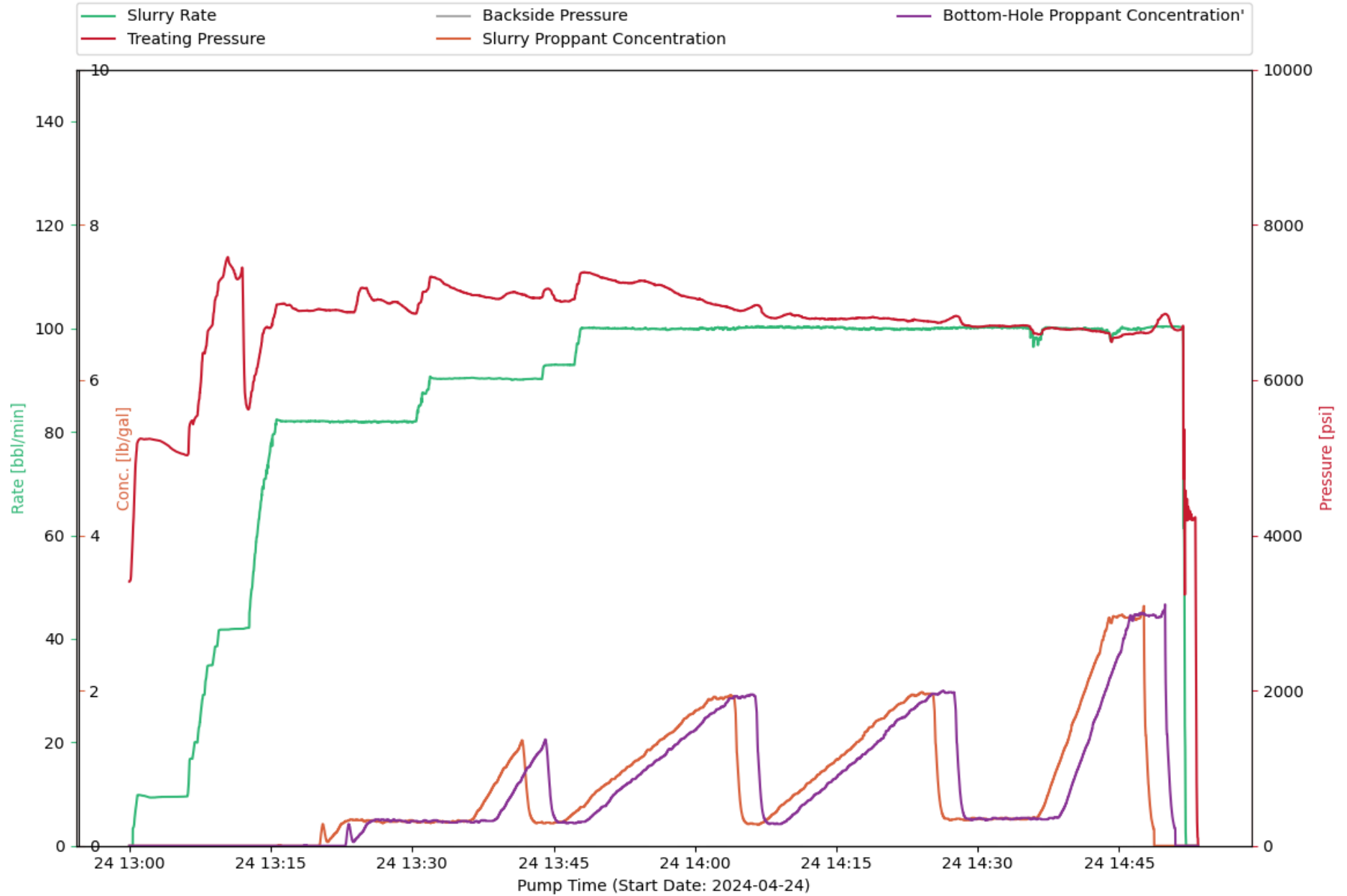
CHEMISTRY PLOT : Treatment Interval 11



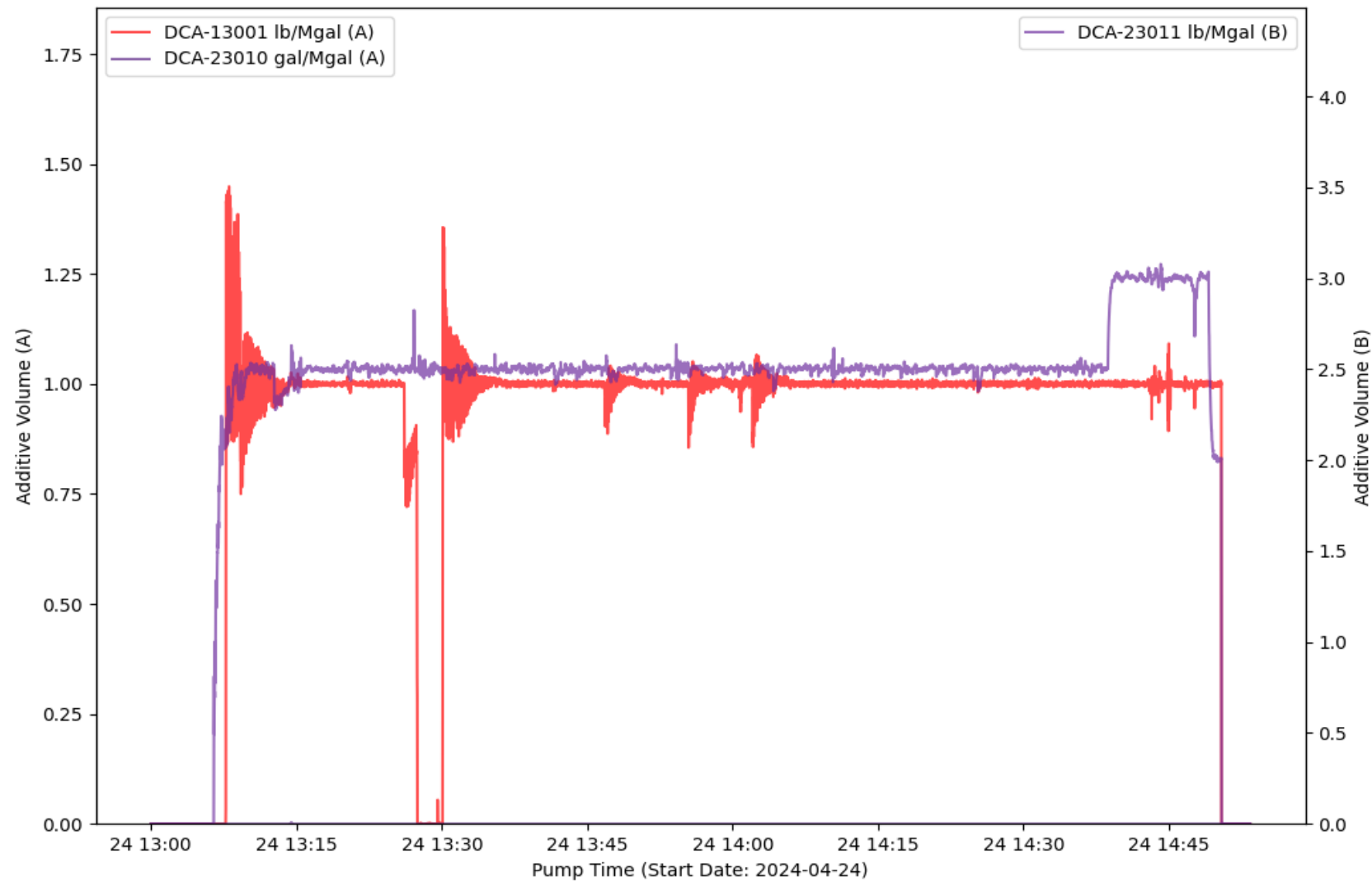
EVENT LOG : TREATMENT INTERVAL 11

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-23T22:56:48	0	3449	0	0.05	0	0	0
2	Start Pumping	2024-04-23T22:57:21	0.75	3429	0	0.05	0	2.98	0
3	Break Formation	2024-04-23T22:58:17	11.4	5275	0	0.05	170.42	278.24	0
4	Pump Acid	2024-04-23T22:58:53	11.19	4385	0	0.05	457.93	563.15	0
5	Spot Acid	2024-04-23T23:10:14	34.29	6954	0	0	11128	11112	0
6	Flush Acid	2024-04-23T23:11:24	39.55	5544	0	0	12944	12934	0
7	Stop Pumping	2024-04-24T00:52:06	1.2	4262	0	0	400360	414194	305086
8	ISIP	2024-04-24T00:52:09	0	4299	0	0	400363	414194	305086
9	Shut In Well	2024-04-24T00:53:05	0	4076	0	0	400368	414194	305086
10	Suspending Job	2024-04-24T00:53:46	0	0	0	0	400368	414194	305086

TREATMENT PLOT : Treatment Interval 12



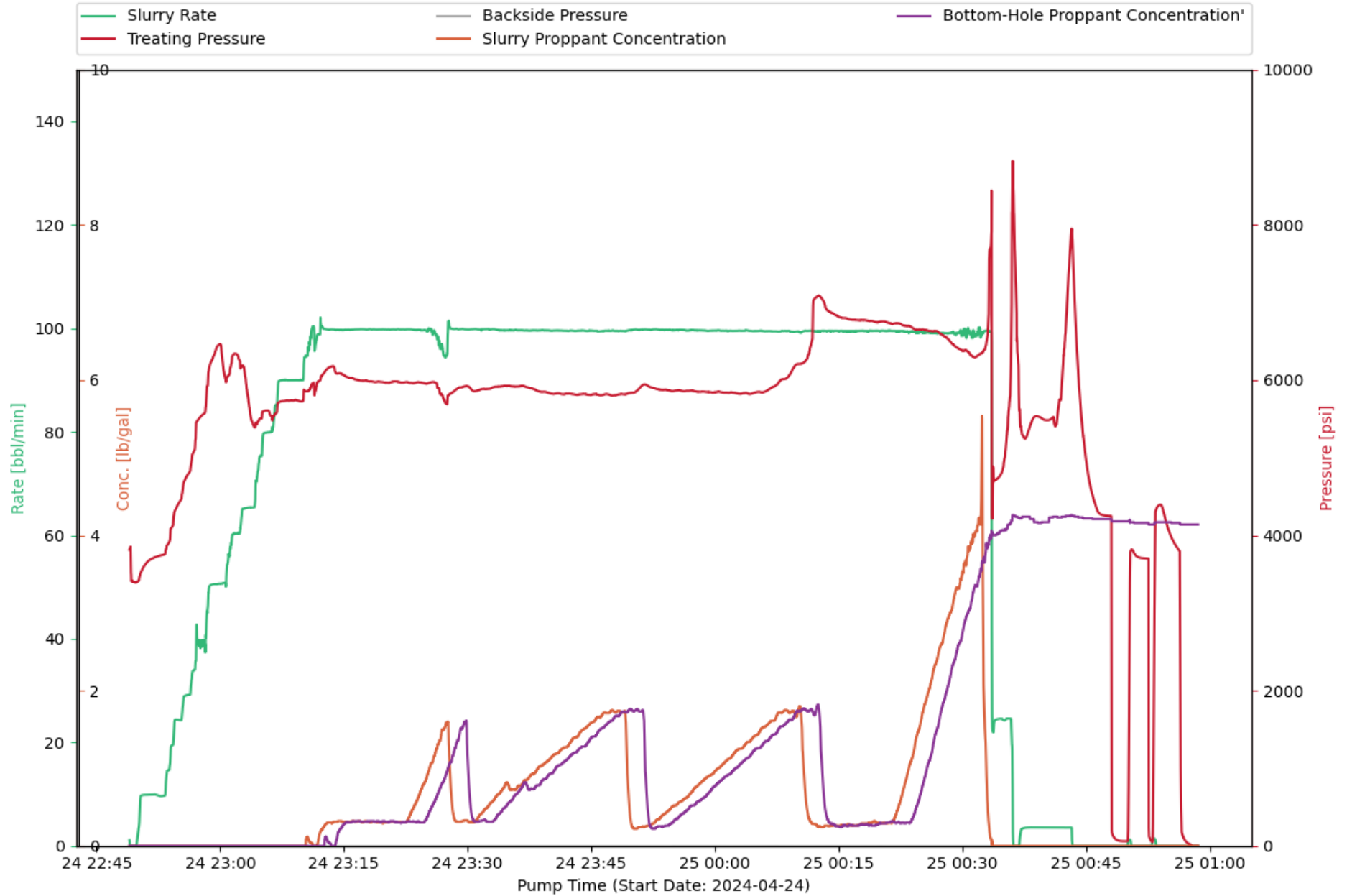
CHEMISTRY PLOT : Treatment Interval 12



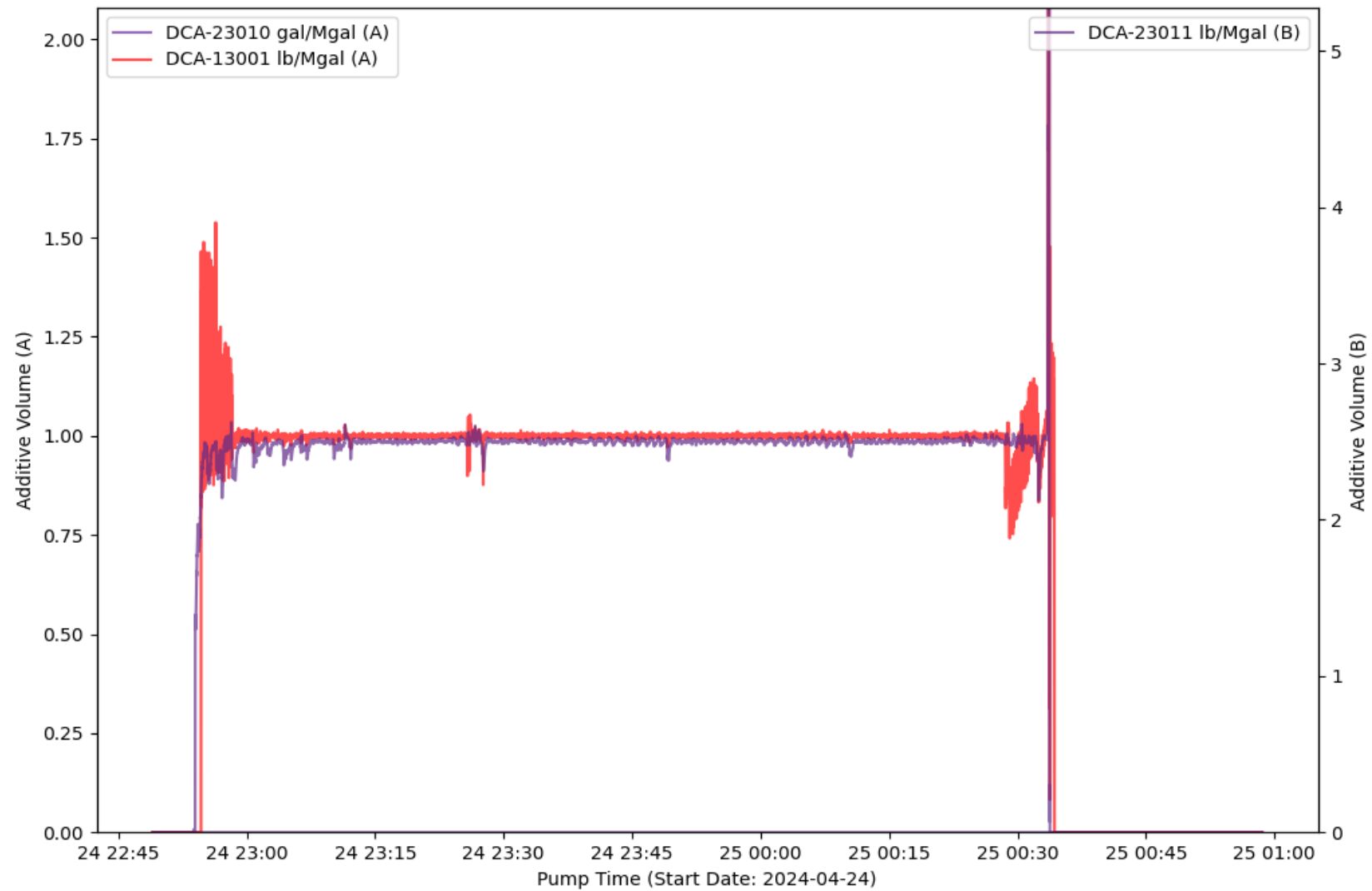
EVENT LOG : TREATMENT INTERVAL 12

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Start Pumping	2024-04-24T13:00:16	0	3712	0	0	0	0	0
2	Pump Acid	2024-04-24T13:01:37	9.65	5237	0	0	446.51	446.07	0
3	Pump Acid	2024-04-24T13:04:09	9.46	5155	0	0	1416	1446	0
4	Break Formation	2024-04-24T13:10:31	41.8	7540	0	0	7921	7931	0
5	Spot Acid	2024-04-24T13:11:54	41.92	7396	0	0	10312	10347	0
6	Flush Acid	2024-04-24T13:12:38	42.14	5624	0	0	11598	11647	0
7	Spot Acid	2024-04-24T13:13:14	54.2	5997	0	0	12821	12881	0
8	Flush Acid	2024-04-24T13:13:59	66.76	6436	0	0	14742	14817	0
9	Stop Pumping	2024-04-24T14:52:04	1.54	4465	0	0	391642	406333	329619
10	ISIP	2024-04-24T14:52:12	0	4467	0	0	391644	406334	329619
11	Shut In Well	2024-04-24T14:52:52	0	4200	0	0	391645	406334	329619
12	Suspending Job	2024-04-24T14:53:21	0	98.47	0	0	391645	406334	329619

TREATMENT PLOT : Treatment Interval 13



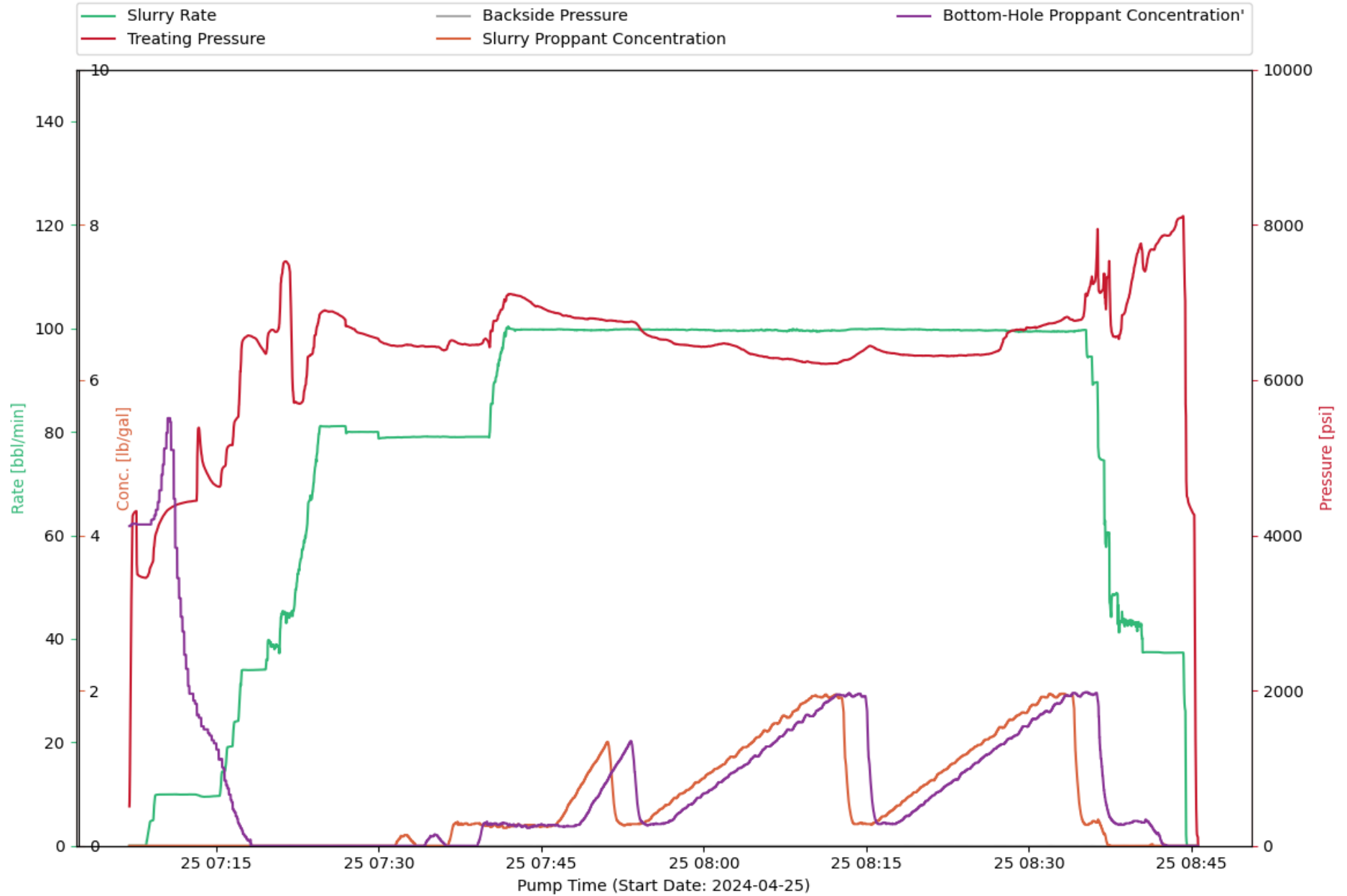
CHEMISTRY PLOT : Treatment Interval 13



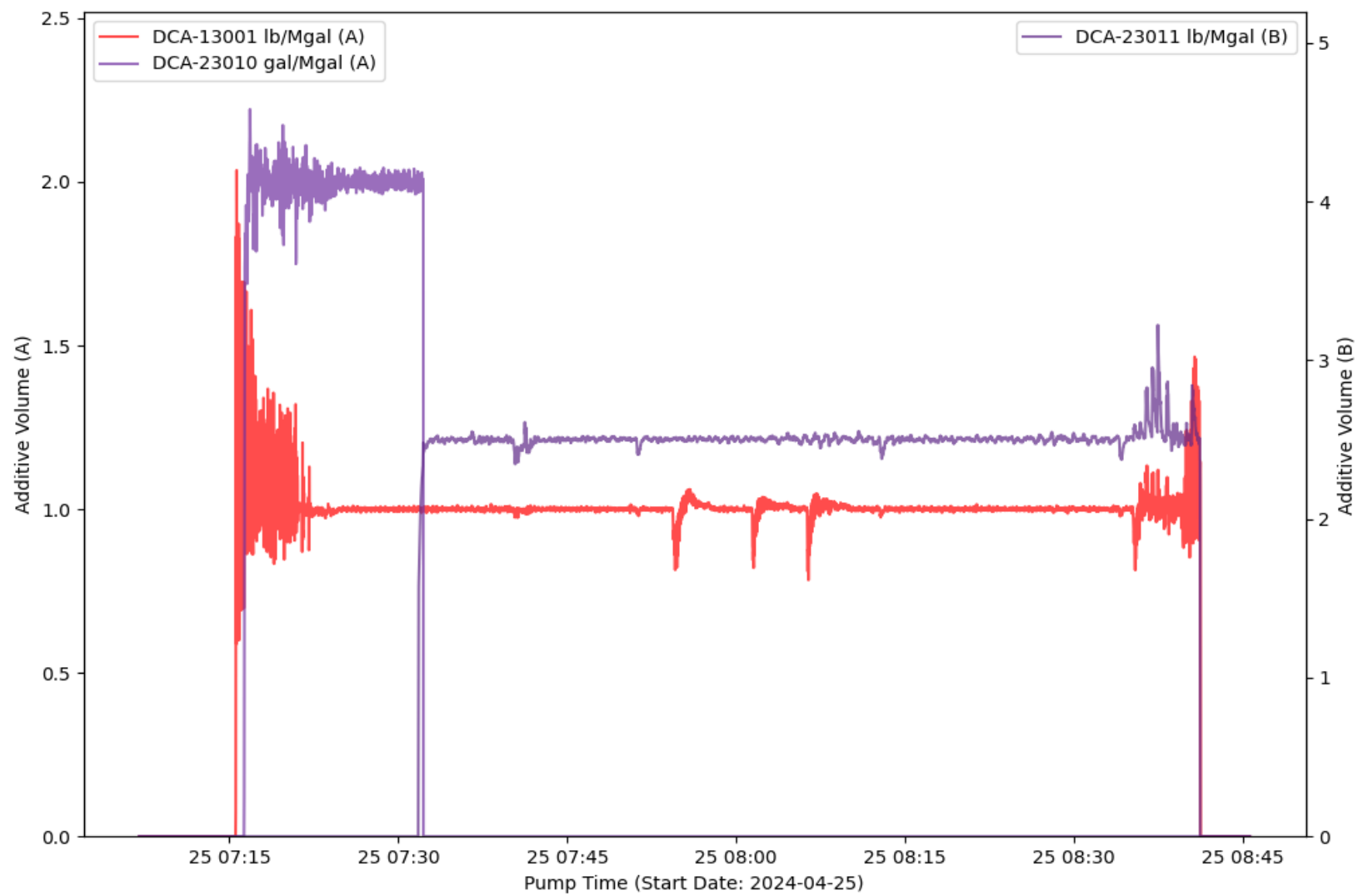
EVENT LOG : TREATMENT INTERVAL 13

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-24T22:49:30	0	3402	0	0	0	0	0
2	Start Pumping	2024-04-24T22:49:52	0.05	3395	0	0	0	0.04	0
3	Pump Acid	2024-04-24T22:51:05	9.87	3647	0	0	210.24	385.41	0
4	Spot Acid	2024-04-24T23:00:01	50.67	6462	0	0	10937	10811	0
5	Flush Acid	2024-04-24T23:00:42	50.07	5973	0	0	12398	12273	0
6	Break Formation	2024-04-24T23:01:58	60.35	6336	0	0	15476	15361	0
7	Stop Pumping	2024-04-25T00:43:16	1.67	7948	0	4.26	380083	394348	315699
8	ISIP	2024-04-25T00:43:30	0	7307	0	4.25	380097	394349	315699
9	Shut In Well	2024-04-25T00:47:58	0	4249	0	4.21	380100	394349	315699
10	Suspending Job	2024-04-25T00:58:33	0	0.01	0	4.14	380100	394391	315699

TREATMENT PLOT : Treatment Interval 14



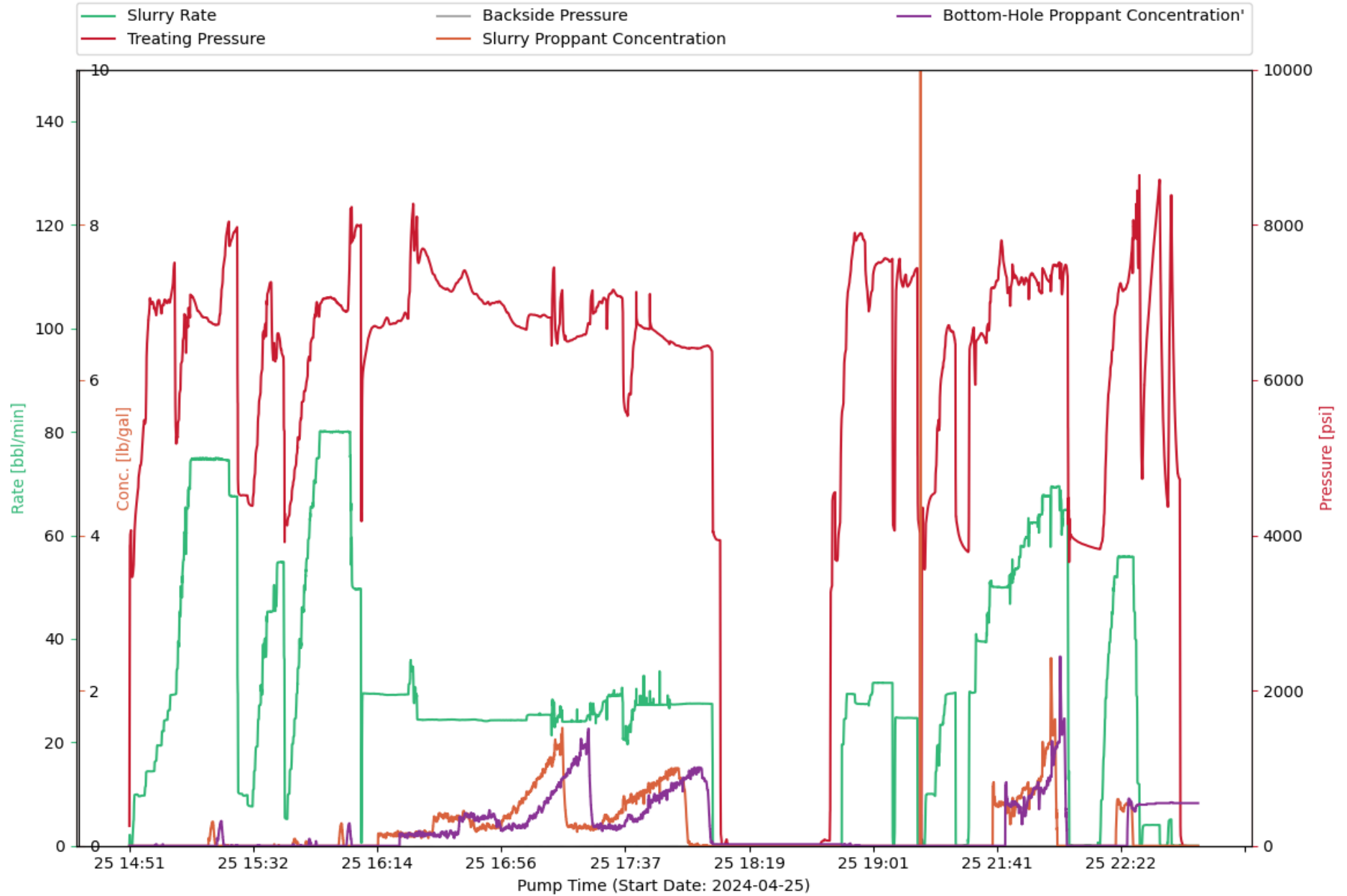
CHEMISTRY PLOT : Treatment Interval 14



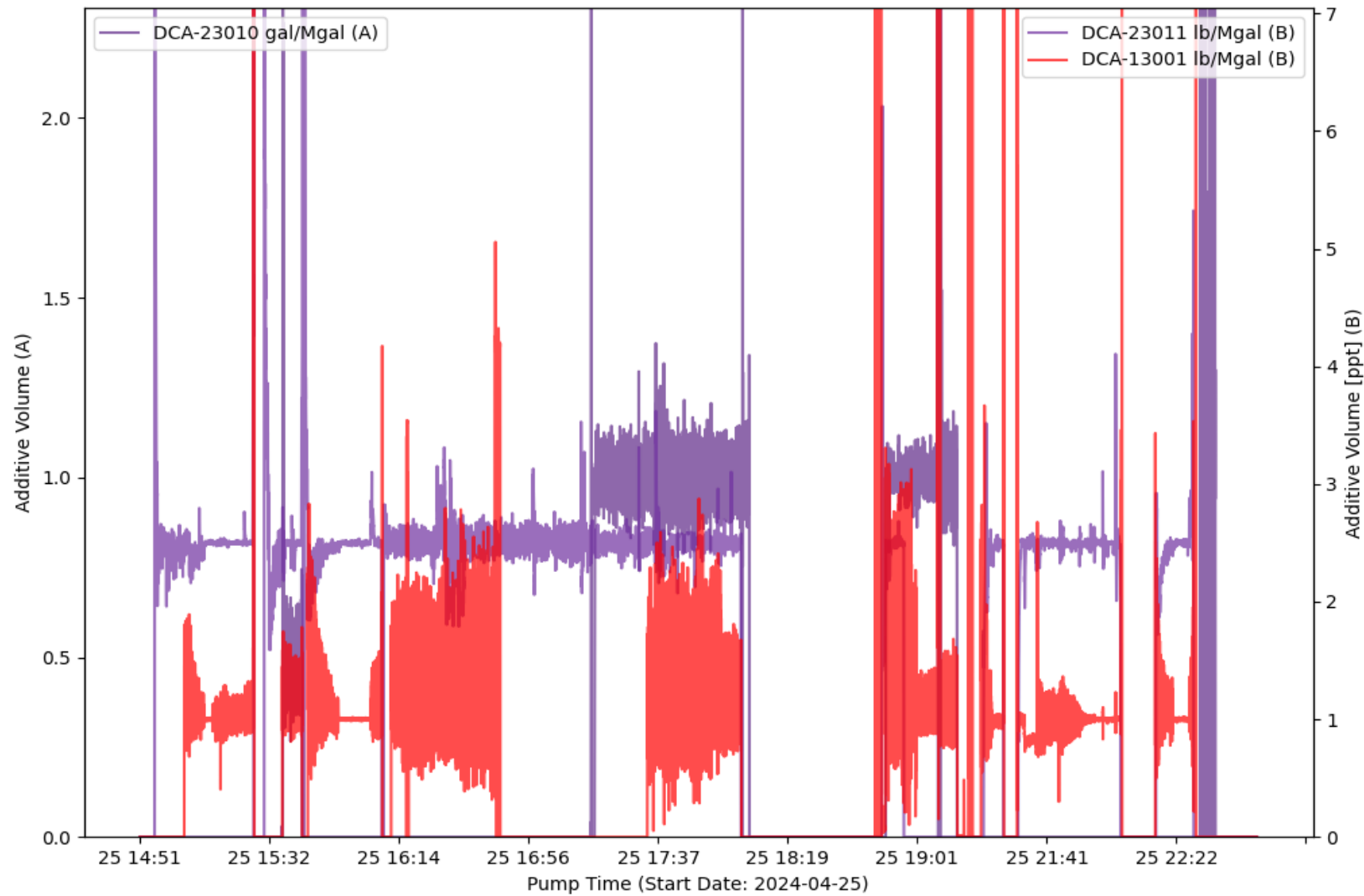
EVENT LOG : TREATMENT INTERVAL 14

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-25T07:07:44	0	3495	0	4.14	0	0	0
2	Start Pumping	2024-04-25T07:08:32	0.01	3452	0	4.14	0	0.04	0
3	Pump Acid	2024-04-25T07:12:39	9.94	4436	0	1.96	1492	1519	0
4	Break Formation	2024-04-25T07:13:32	9.61	5208	0	1.65	1843	1887	0
5	Spot Acid	2024-04-25T07:21:40	44.75	7493	0	0	11018	11066	0
6	Flush Acid	2024-04-25T07:22:21	49.56	5721	0	0	12328	12380	0
7	Stop Pumping	2024-04-25T08:44:31	1.14	4704	0	0	308919	319646	219074
8	ISIP	2024-04-25T08:44:35	0	4500	0	0	308919	319647	219074
9	Shut In Well	2024-04-25T08:44:41	0	4437	0	0	308919	319647	219074
10	Suspending Job	2024-04-25T08:45:35	0	109.94	0	0	308919	319647	219074

TREATMENT PLOT : Treatment Interval 15



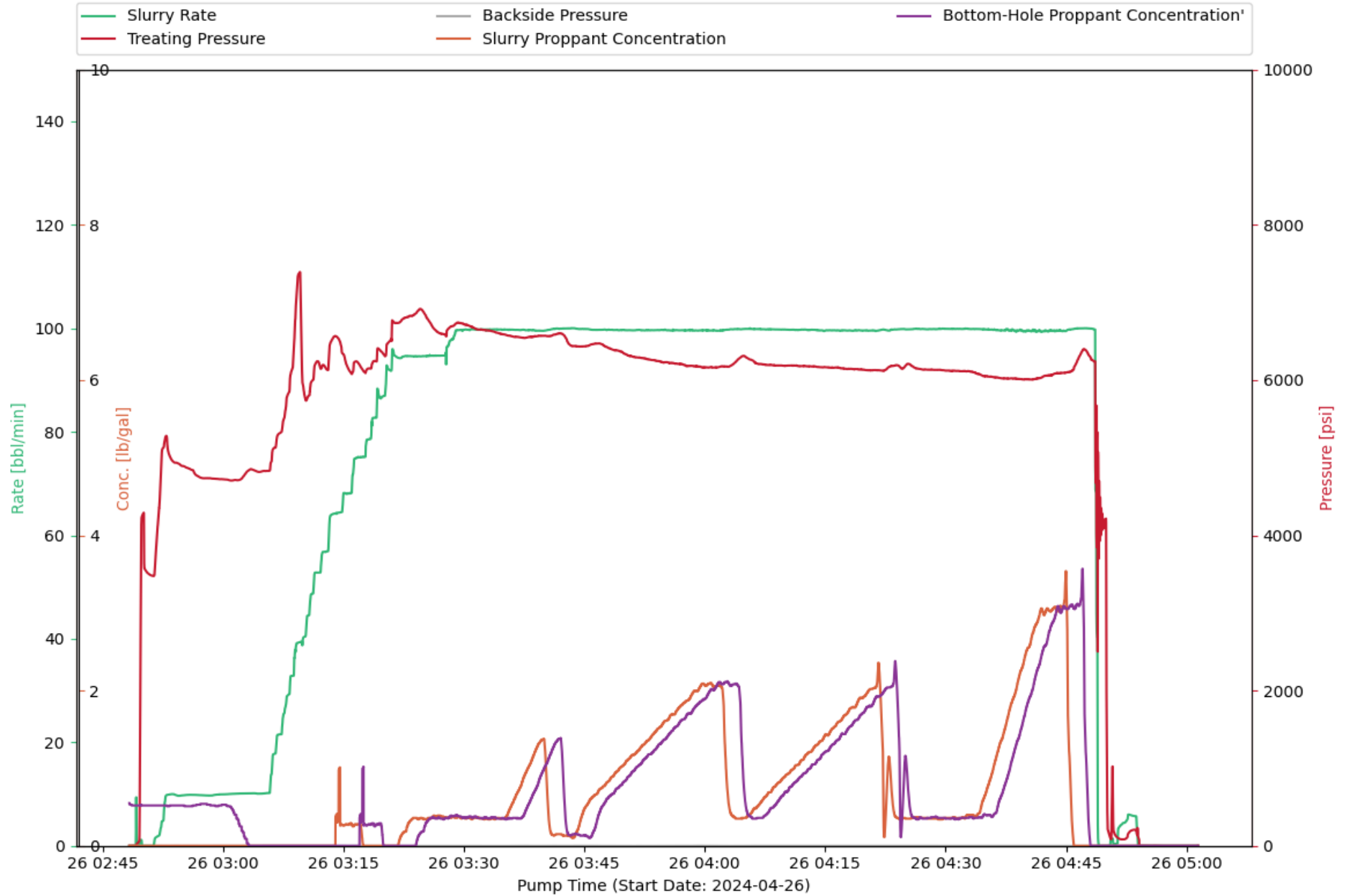
CHEMISTRY PLOT : Treatment Interval 15



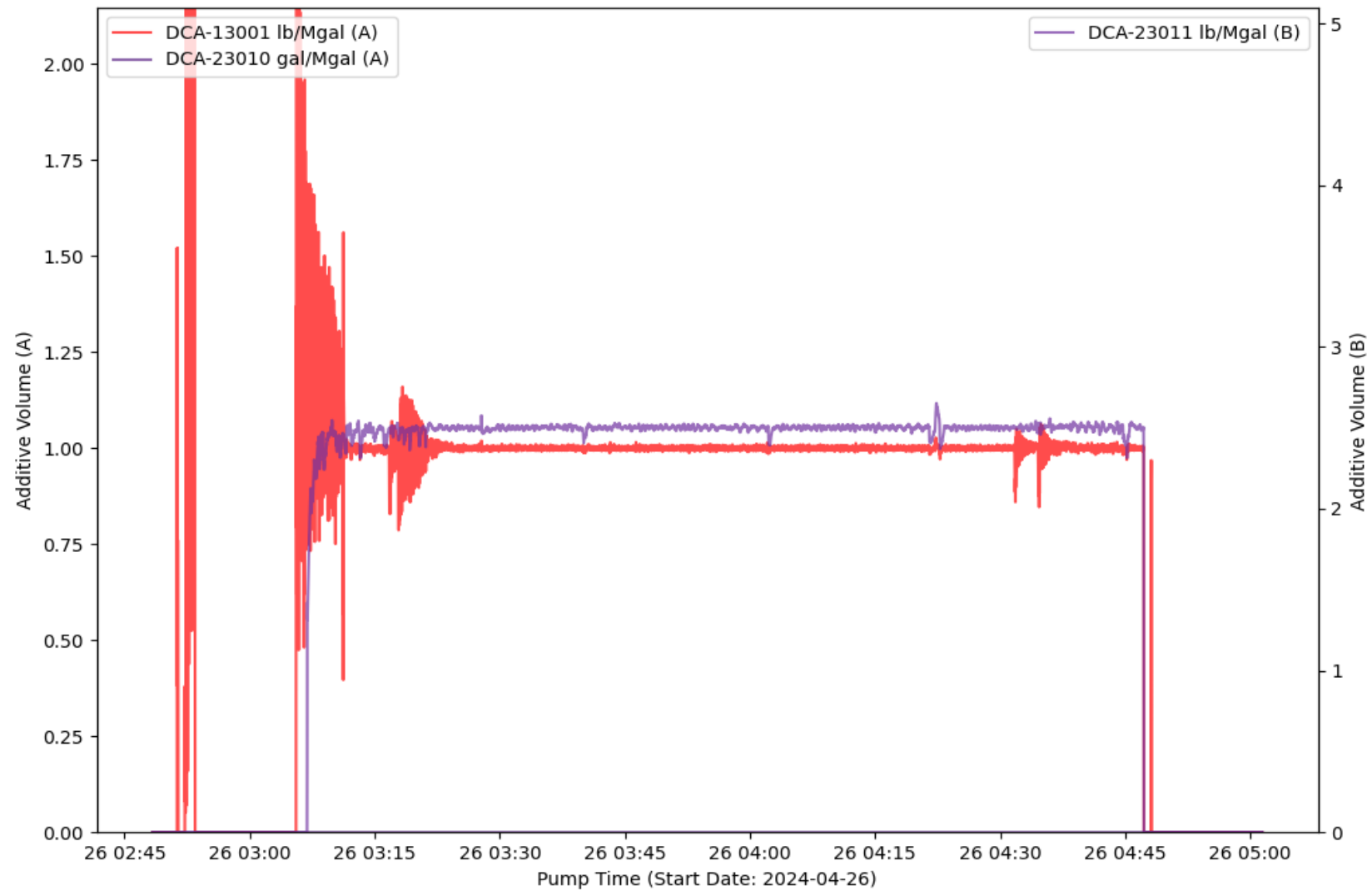
EVENT LOG : TREATMENT INTERVAL 15

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-25T14:51:52	0.05	3477	0	0	0	0.04	0
2	Start Pumping	2024-04-25T14:52:10	0.71	3471	0	0	0	2.28	0
3	Pump Acid	2024-04-25T14:53:27	9.92	4361	0	0	377.26	398.06	0
4	Break Formation	2024-04-25T14:59:07	14.41	6999	0	0	3121	3203	0
5	Spot Acid	2024-04-25T15:06:14	29.22	7486	0	0	9979	9963	0
6	Flush Acid	2024-04-25T15:06:56	29.87	5184	0	0	10844	10829	0
7	Pump Acid	2024-04-25T15:29:29	9.68	4518	0	0	70970	71235	1286
8	Spot Acid	2024-04-25T15:38:32	45.24	7255	0	0	79738	79960	1286
9	Flush Acid	2024-04-25T15:41:45	54.82	6509	0	0	86318	86581	1293
10	Spot Acid	2024-04-25T19:16:10	0	4720	0	0	309600	311464	53745
11	Shut In Well	2024-04-25T19:16:47	0.02	4066	0	0	309603	311464	53745
12	Resuming Job	2024-04-25T21:15:14	0	-9.09	0	0	357014	1743459	53745
13	Open Well	2024-04-25T21:16:20	0	3588	0	0	1700202	1743490	215665736
14	Start Pumping	2024-04-25T21:16:38	0	3561	0	0	1700202	1743490	215665736
15	Pump Acid	2024-04-25T21:19:03	10.05	4515	0	0	1701053	1744395	215665736
16	Break Formation	2024-04-25T21:21:17	19.47	5456	0	0	1702239	1745619	215665736
17	Spot Acid	2024-04-25T21:26:50	29.58	6517	0	0	1708475	1751841	215665736
18	Flush Acid	2024-04-25T21:33:34	29.65	6038	0	0	1711228	1754643	215665736
19	Stop Pumping	2024-04-25T22:39:36	4.1	8380	0	0.56	1805812	1853303	215712816
20	ISIP	2024-04-25T22:40:46	0	5610	0	0.55	1805828	1853308	215712816
21	Shut In Well	2024-04-25T22:41:50	0.01	4786	0	0.55	1805828	1853308	215712816

TREATMENT PLOT : Treatment Interval 16



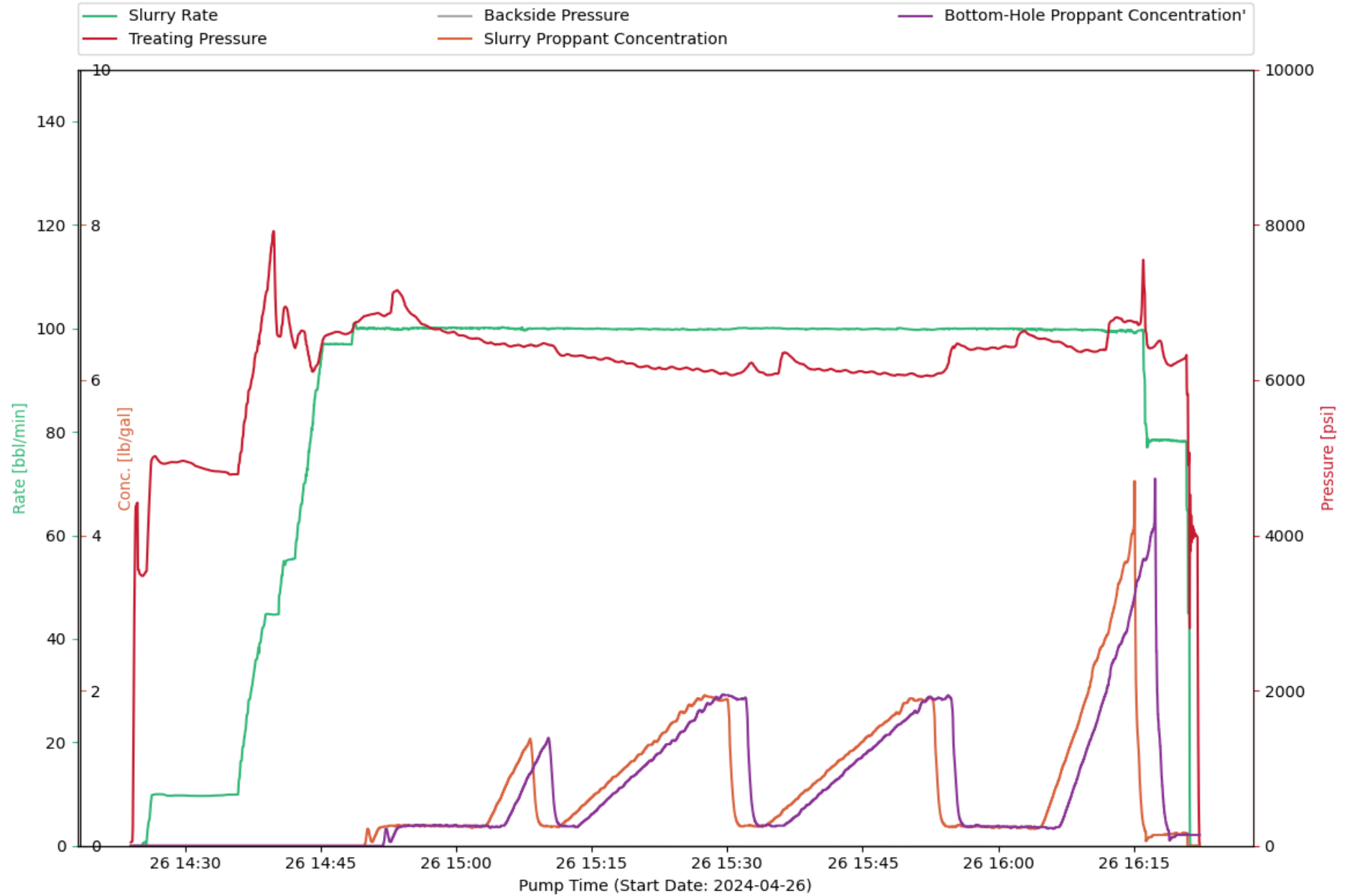
CHEMISTRY PLOT : Treatment Interval 16



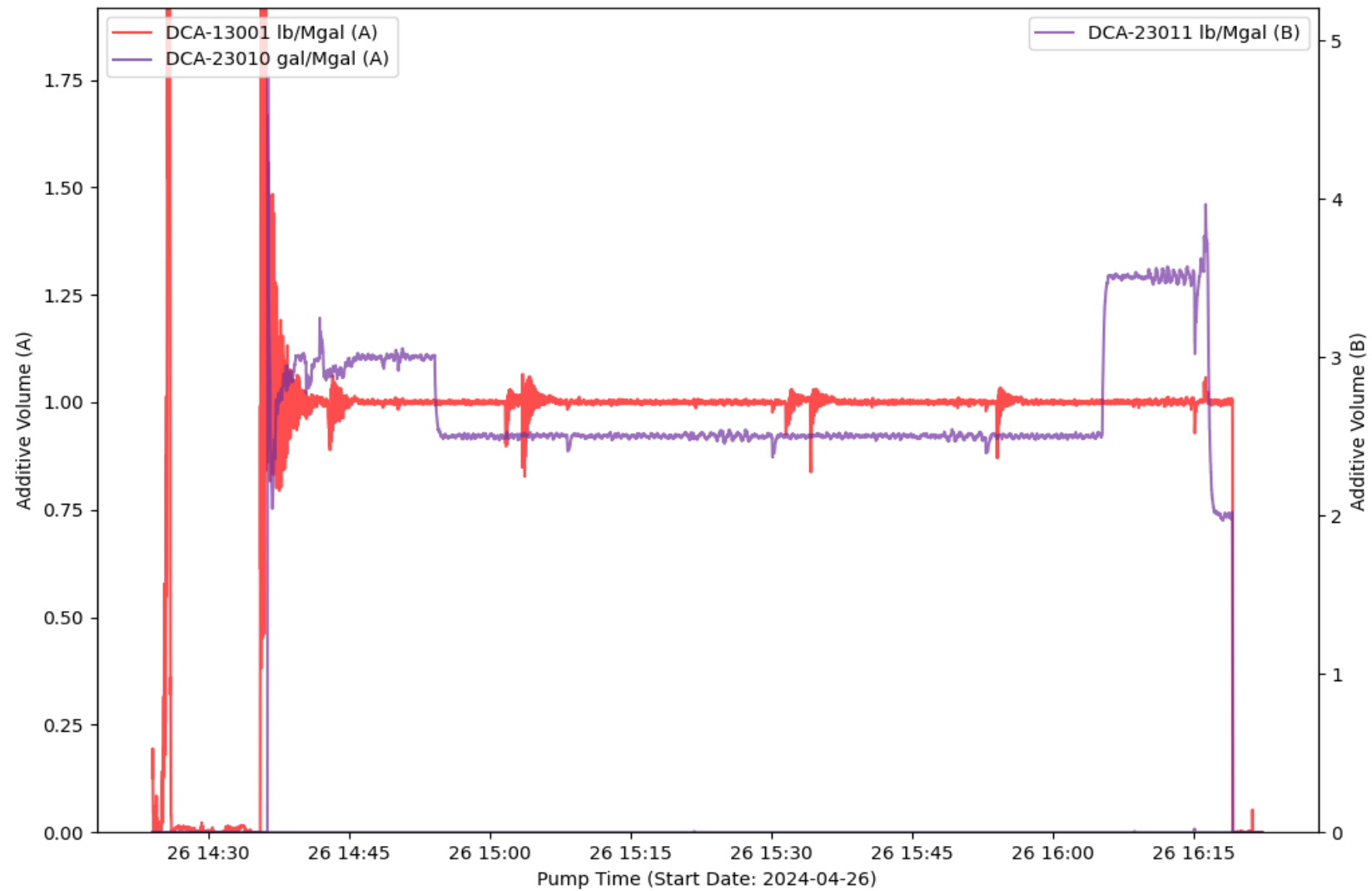
EVENT LOG : TREATMENT INTERVAL 16

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	End Avg Trt 15	2024-04-26T02:48:32	0	0	0	0.53	0	0	0
2	Start Avg Trt 16	2024-04-26T02:48:38	0	0	0	0.52	0	0	0
3	Open Well	2024-04-26T02:50:20	0	3552	0	0.52	0	40.44	0
4	Start Pumping	2024-04-26T02:51:15	0	3477	0	0.52	0.22	40.44	0
5	Break Formation	2024-04-26T02:52:51	9.44	5267	0	0.52	151.67	255.53	0
6	Pump Acid	2024-04-26T02:53:41	9.99	4962	0	0.52	513.57	603.23	0
7	Pump Acid	2024-04-26T03:03:31	10.14	4852	0	0	4517	4689	0
8	Spot Acid	2024-04-26T03:09:31	39.34	7379	0	0	9557	9786	0
9	Flush Acid	2024-04-26T03:10:19	40.71	5737	0	0	10889	11130	0
10	Spot Acid	2024-04-26T03:14:00	64.24	6567	0	0	19199	19574	0
11	Flush Acid	2024-04-26T03:15:52	68.14	6104	0.29	0	24261	24749	1777
12	Stop Pumping	2024-04-26T04:49:00	0.94	4756	0	0	389941	408365	339584
13	ISIP	2024-04-26T04:49:11	0	3925	0	0	389945	408366	339584
14	Shut In Well	2024-04-26T04:49:46	0	4164	0	0	389947	408366	339584
15	Suspending Job	2024-04-26T05:01:25	0	-8.59	0	0	389947	408899	339584

TREATMENT PLOT : Treatment Interval 17



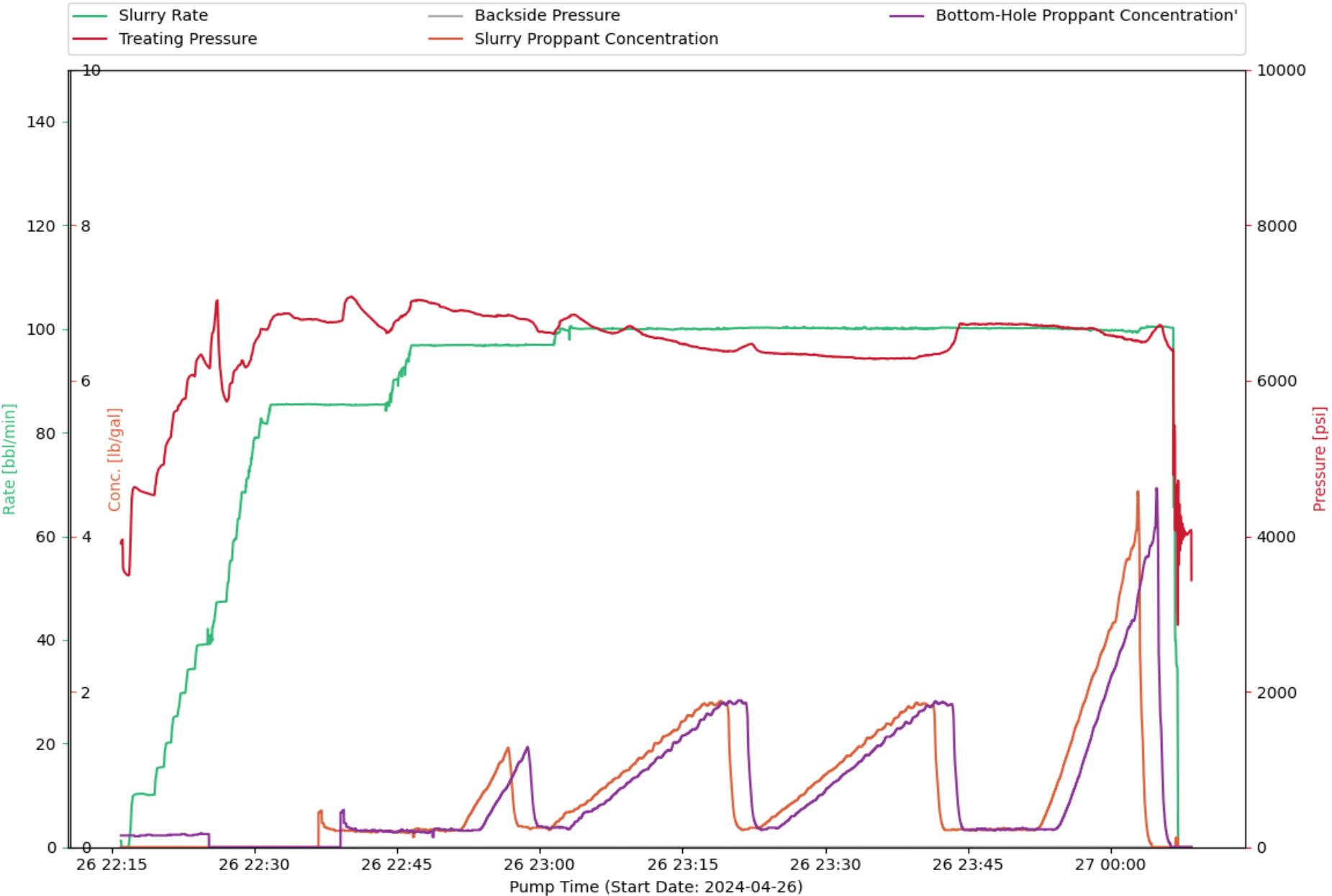
CHEMISTRY PLOT : Treatment Interval 17



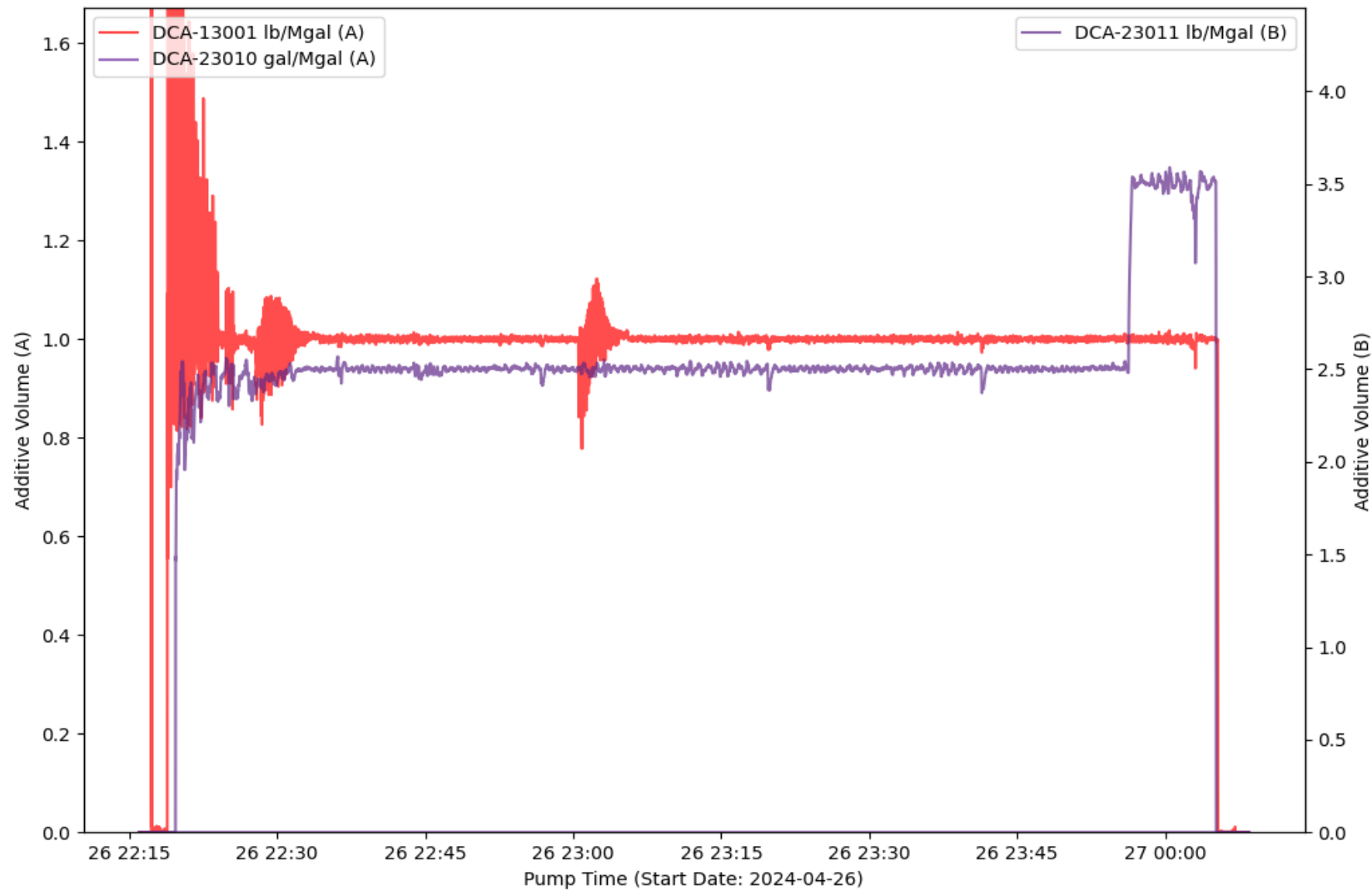
EVENT LOG : TREATMENT INTERVAL 17

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-26T14:24:52	0	3545	0	0	0	0	0
2	Start Pumping	2024-04-26T14:25:19	0.4	3478	0	0	6.52	0.59	0
3	Pump Acid	2024-04-26T14:28:52	9.74	4942	0	0	1219	1201	0
4	Pump Acid	2024-04-26T14:33:32	9.73	4825	0	0	3116	3094	0
5	Break Formation	2024-04-26T14:39:43	44.68	7884	0	0	9471	9413	0
6	Spot Acid	2024-04-26T14:39:50	44.67	7914	0	0	9692	9633	0
7	Flush Acid	2024-04-26T14:40:15	44.75	6574	0	0	10481	10419	0
8	Spot Acid	2024-04-26T14:41:19	55.18	6903	0	0	12789	12720	0
9	Flush Acid	2024-04-26T14:42:05	55.47	6436	0	0	14579	14510	0
10	Stop Pumping	2024-04-26T16:21:14	2.26	4527	0	0.14	407781	421886	317746
11	ISIP	2024-04-26T16:21:22	0	4257	0	0.14	407784	421886	317746
12	Shut In Well	2024-04-26T16:21:38	0	4083	0	0.14	407786	421886	317746
13	Suspending Job	2024-04-26T16:22:17	0	47.83	0	0.14	407787	421886	317746

TREATMENT PLOT : Treatment Interval 18



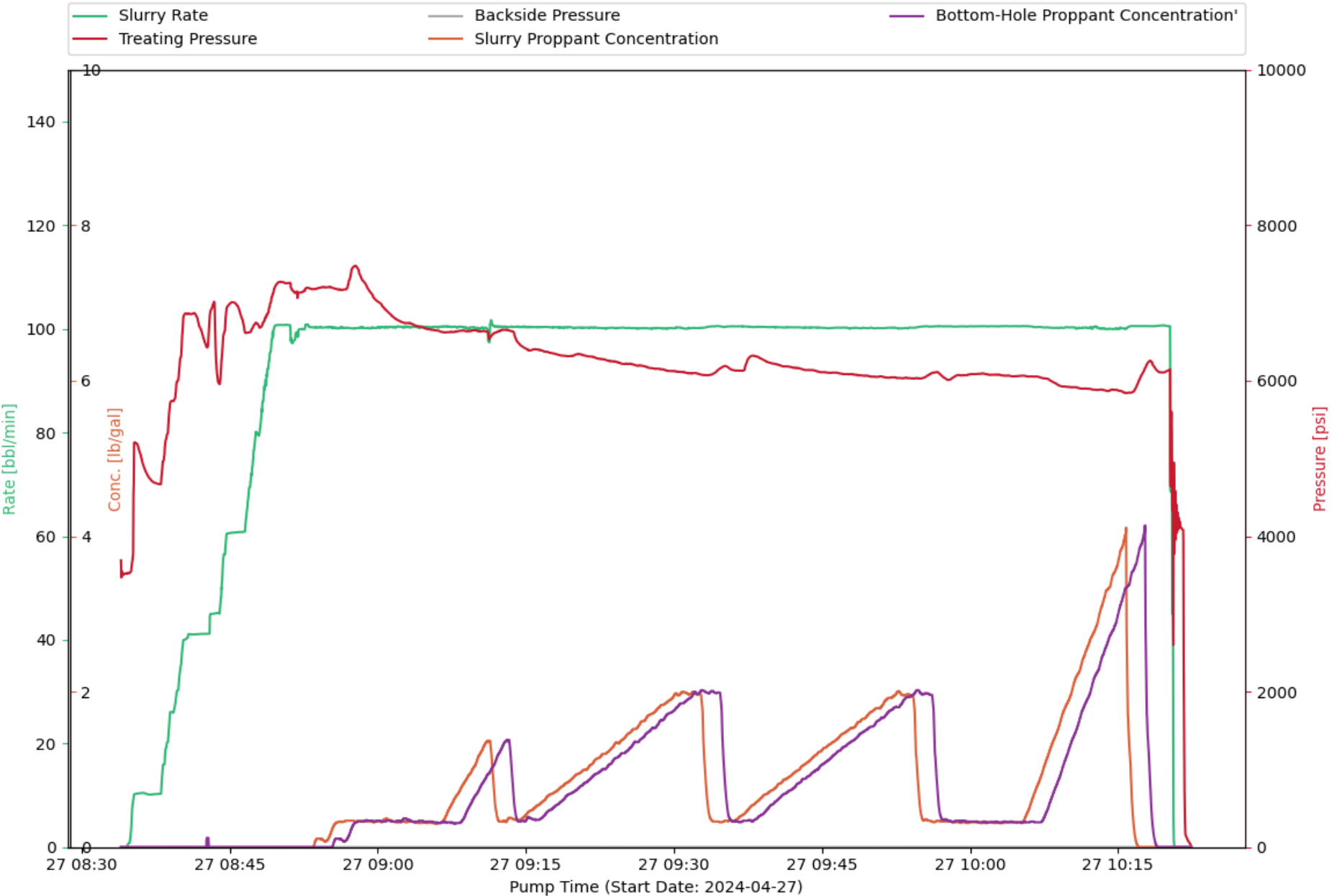
CHEMISTRY PLOT : Treatment Interval 18



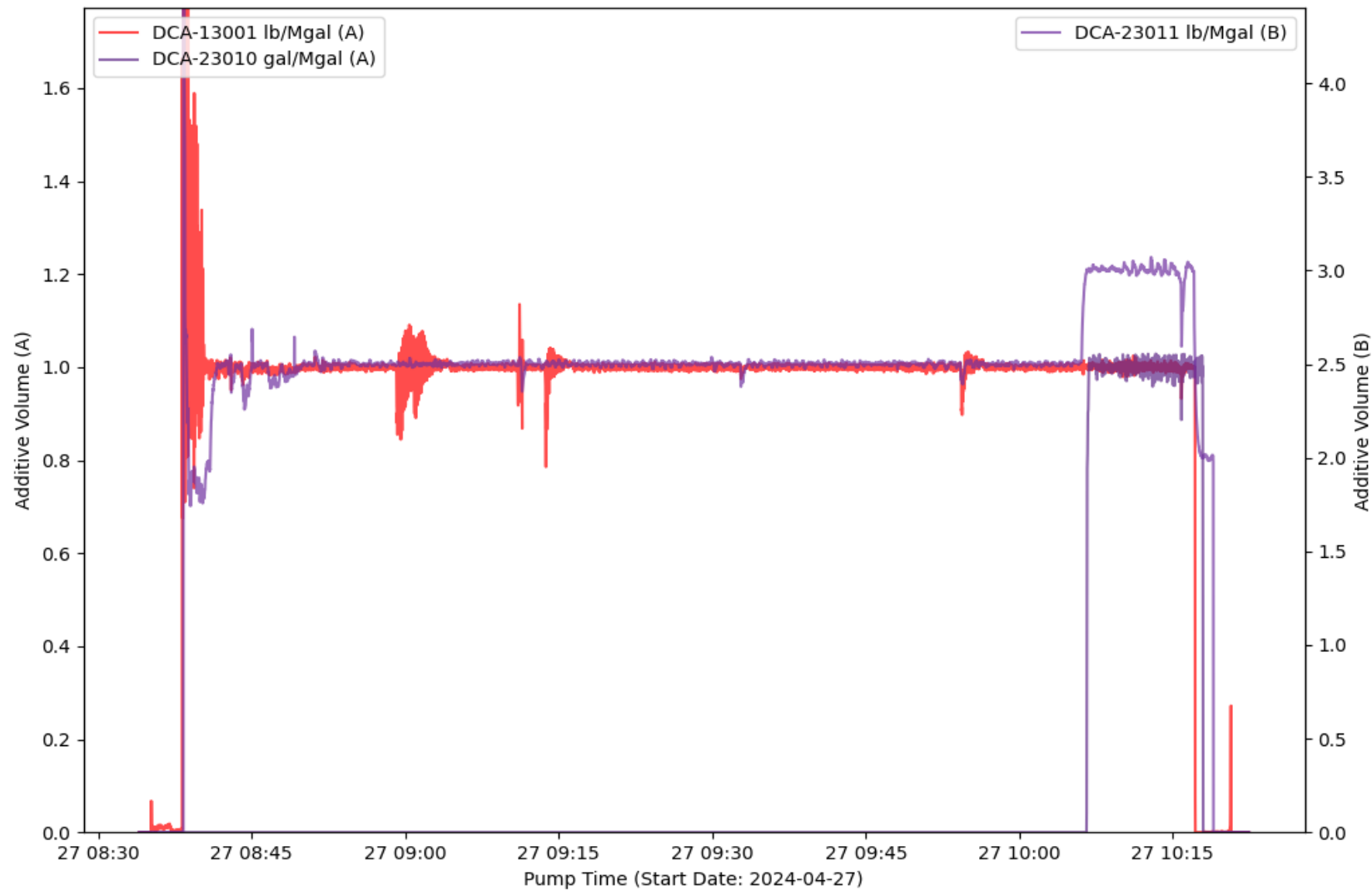
EVENT LOG : TREATMENT INTERVAL 18

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-26T22:16:22	0	3540	0	0.15	0	0	0
2	Start Pumping	2024-04-26T22:16:49	0.25	3498	0	0.15	0	0.2	0
3	Pump Acid	2024-04-26T22:17:49	10.27	4600	0	0.14	297.14	332.09	0
4	Break Formation	2024-04-26T22:24:39	39.08	6284	0	0.17	6924	6832	0
5	Spot Acid	2024-04-26T22:26:06	47.26	7034	0	0	9441	9363	0
6	Flush Acid	2024-04-26T22:27:05	47.6	5732	0	0	11394	11327	0
7	Stop Pumping	2024-04-27T00:07:03	7.96	2859	0.11	0	400512	414134	302961
8	ISIP	2024-04-27T00:07:06	0.01	4715	0	0	400541	414138	302961
9	Shut In Well	2024-04-27T00:08:20	0	4069	0	0	400546	414138	302961

TREATMENT PLOT : Treatment Interval 19



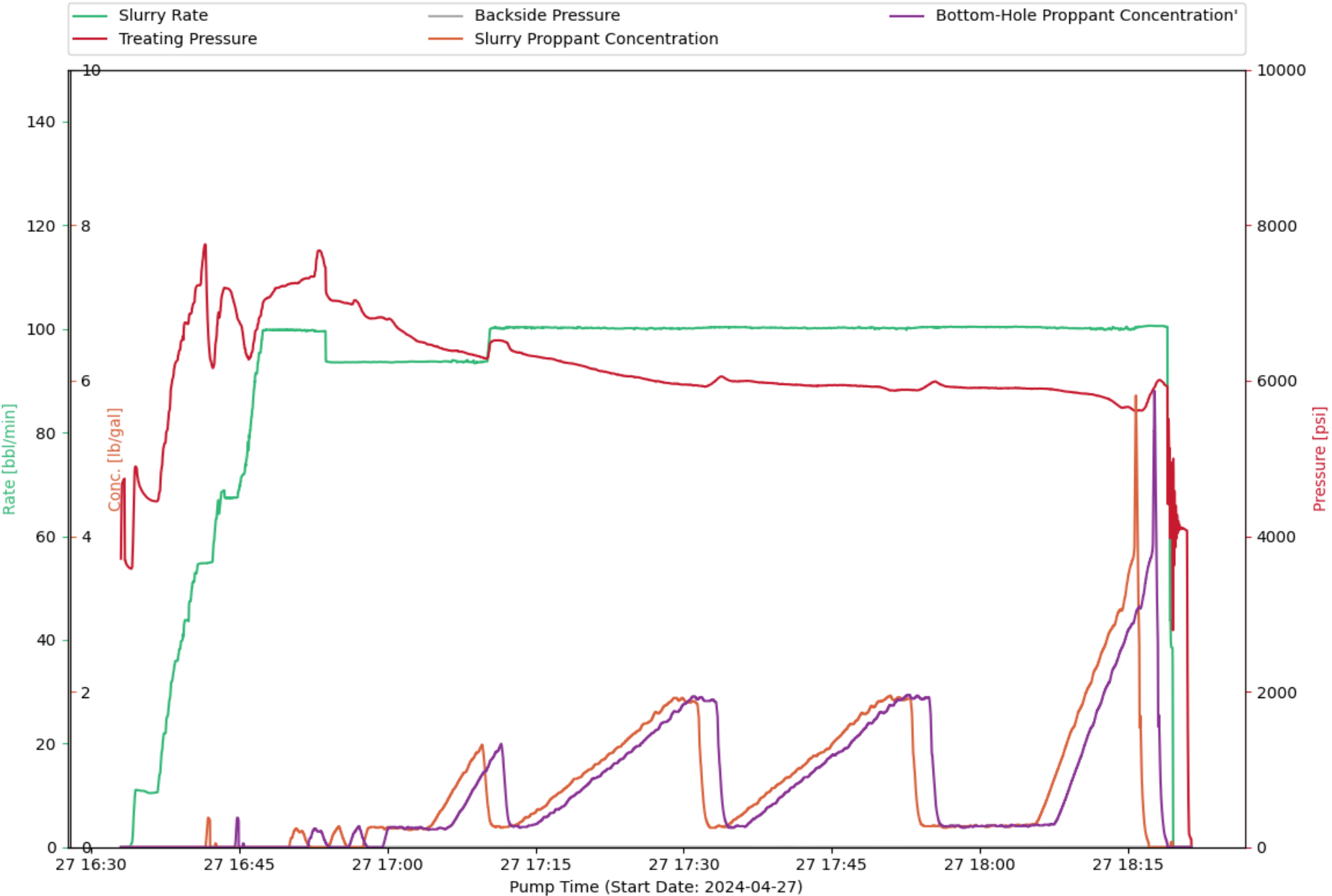
CHEMISTRY PLOT : Treatment Interval 19



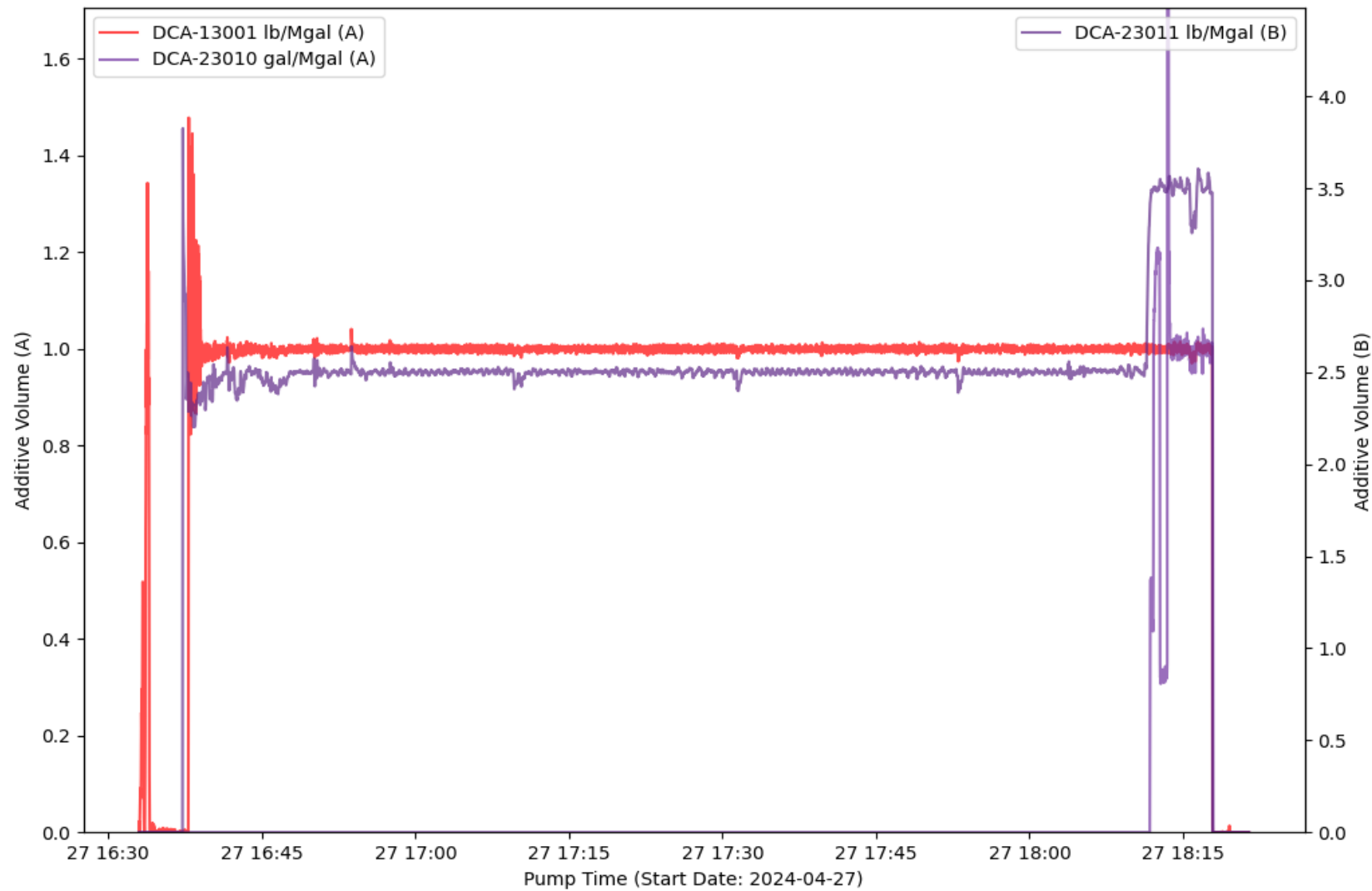
EVENT LOG : TREATMENT INTERVAL 19

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-27T08:34:06	0	3543	0	0	0	0	0
2	Start Pumping	2024-04-27T08:34:44	0.67	3523	0	0	0	2.26	0
3	Break Formation	2024-04-27T08:35:42	10.36	5168	0	0	255.85	281.38	0
4	Pump Acid	2024-04-27T08:36:11	10.47	4946	0	0	468.92	493.75	0
5	Spot Acid	2024-04-27T08:43:23	45.04	6997	0	0	9071	9073	0
6	Flush Acid	2024-04-27T08:44:00	45.22	5957	0	0	10232	10248	0
7	Stop Pumping	2024-04-27T10:20:39	1.38	4919	0	0	394541	409838	331168
8	ISIP	2024-04-27T10:20:54	0	4410	0	0	394545	409839	331168
9	Shut In Well	2024-04-27T10:21:10	0	4177	0	0	394546	409839	331168
10	Suspending Job	2024-04-27T10:22:25	0	0	0	0	394546	409839	331168

TREATMENT PLOT : Treatment Interval 20



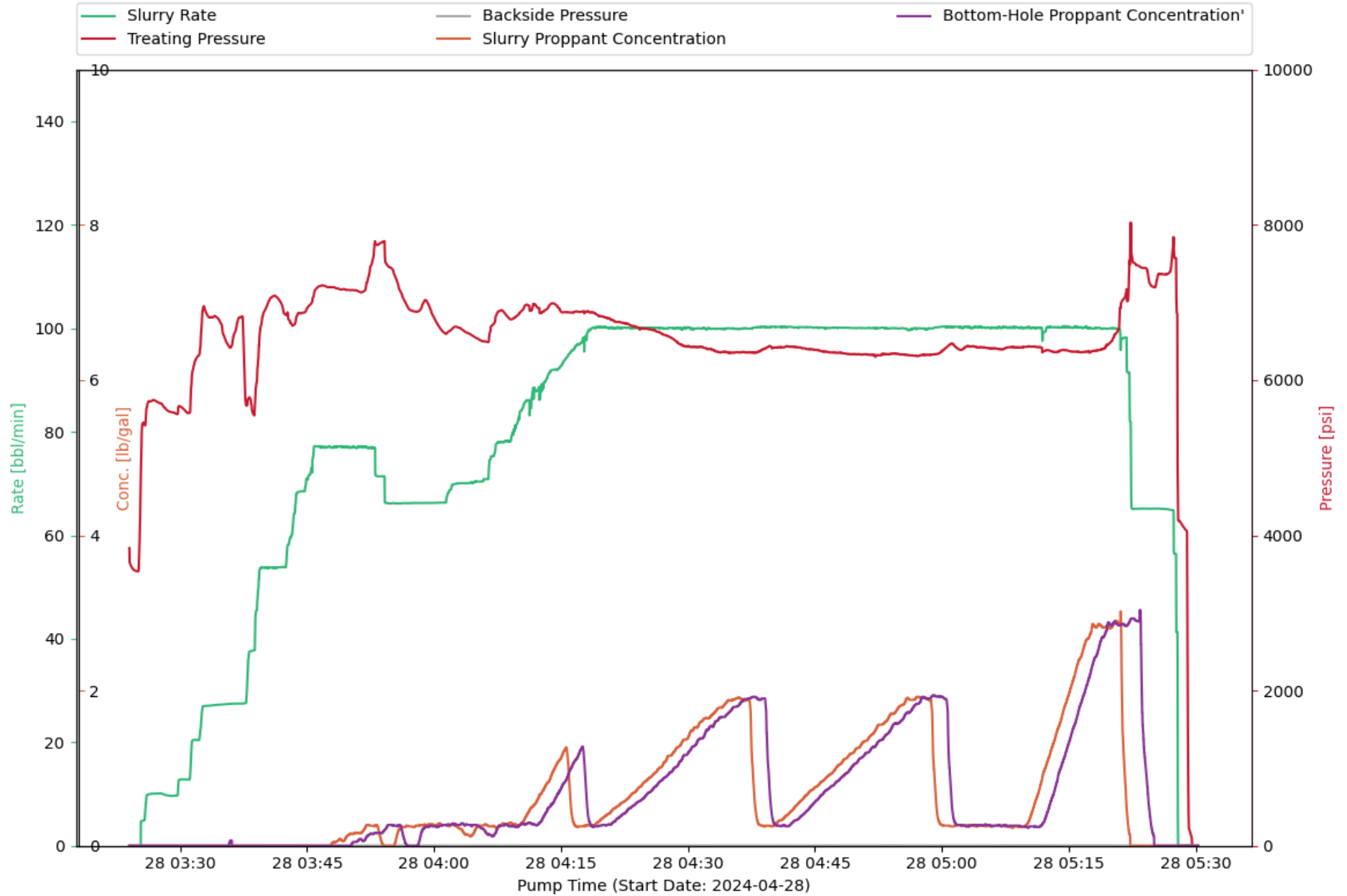
CHEMISTRY PLOT : Treatment Interval 20



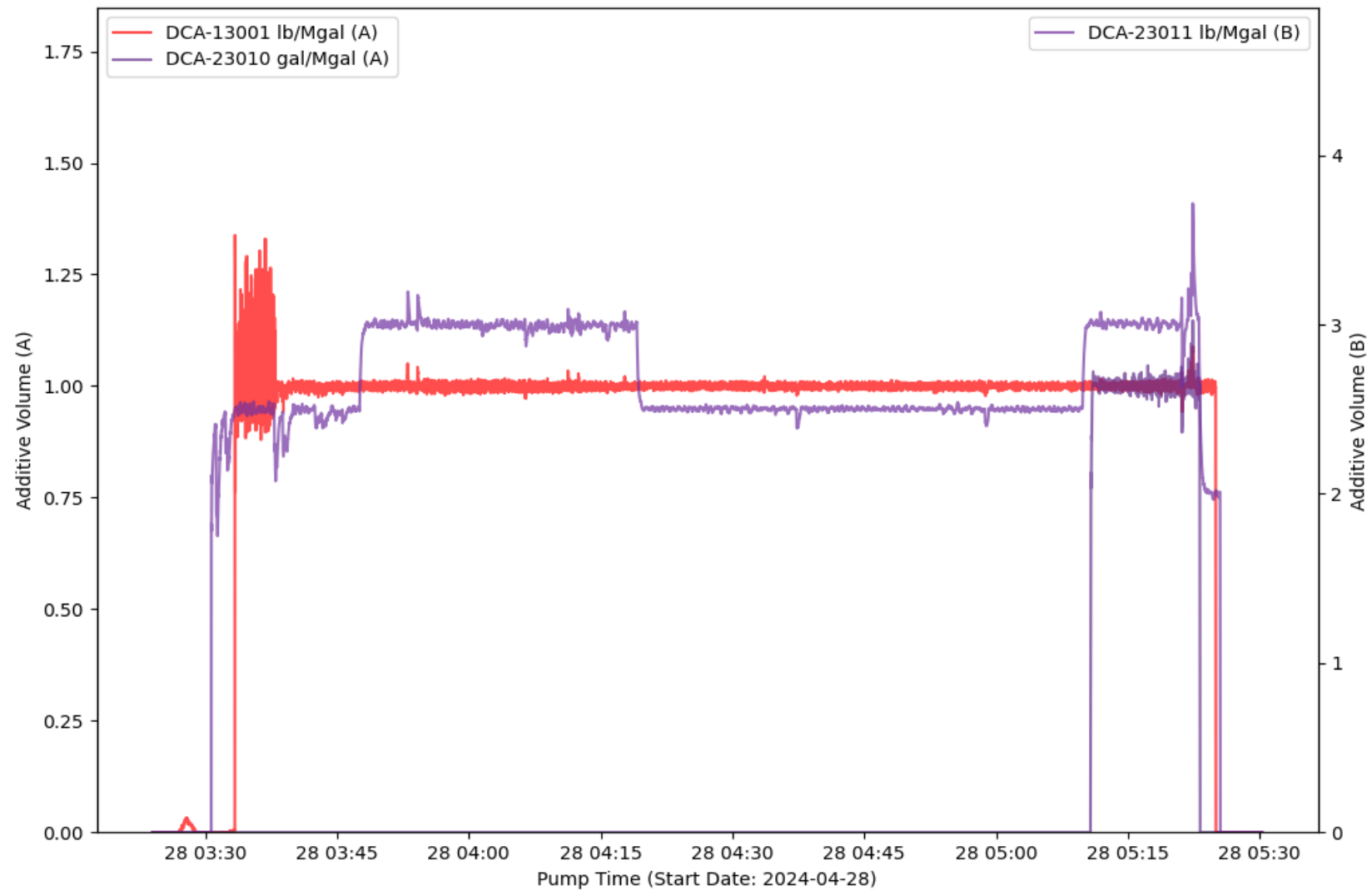
EVENT LOG : TREATMENT INTERVAL 20

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-27T16:33:30	0	3658	0	0	0.27	0	0
2	Start Pumping	2024-04-27T16:33:54	0	3590	0	0	5.26	0.41	0
3	Break Formation	2024-04-27T16:34:34	11.05	4880	0	0	241.75	142.37	0
4	Pump Acid	2024-04-27T16:35:12	10.86	4566	0	0	524.55	434.54	0
5	Spot Acid	2024-04-27T16:41:32	54.8	7754	0	0	9000	8916	0
6	Flush Acid	2024-04-27T16:42:10	54.97	6220	0	0	10467	10383	286.9
7	Stop Pumping	2024-04-27T18:19:34	7.48	2800	0	0	394483	408733	310099
8	ISIP	2024-04-27T18:19:36	0.1	4997	0	0	394499	408735	310099
9	Shut In Well	2024-04-27T18:20:51	0	4080	0	0	394506	408735	310099
10	Suspending Job	2024-04-27T18:21:25	0	98.6	0	0	394506	408735	310099

TREATMENT PLOT : Treatment Interval 21



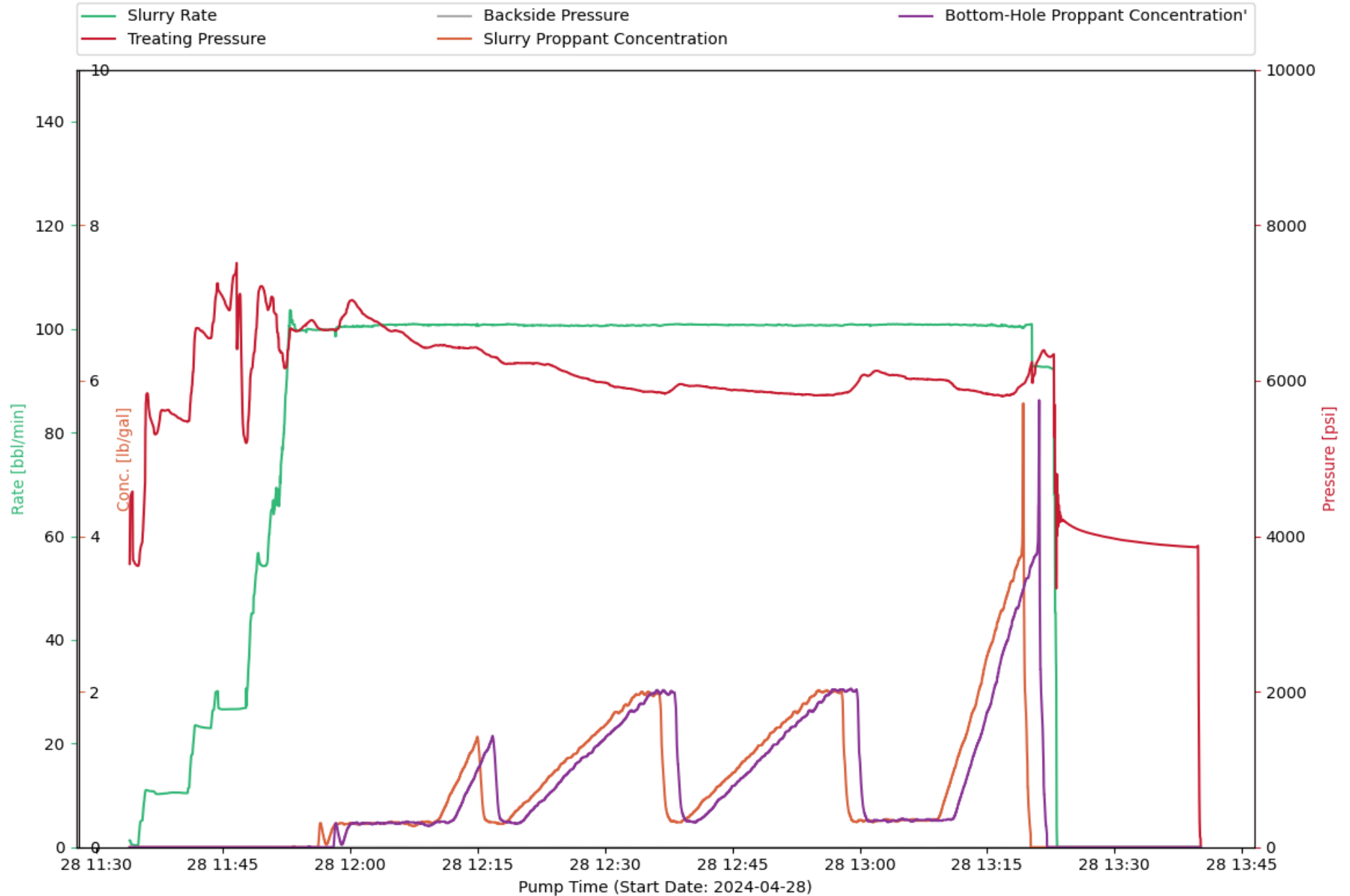
CHEMISTRY PLOT : Treatment Interval 21



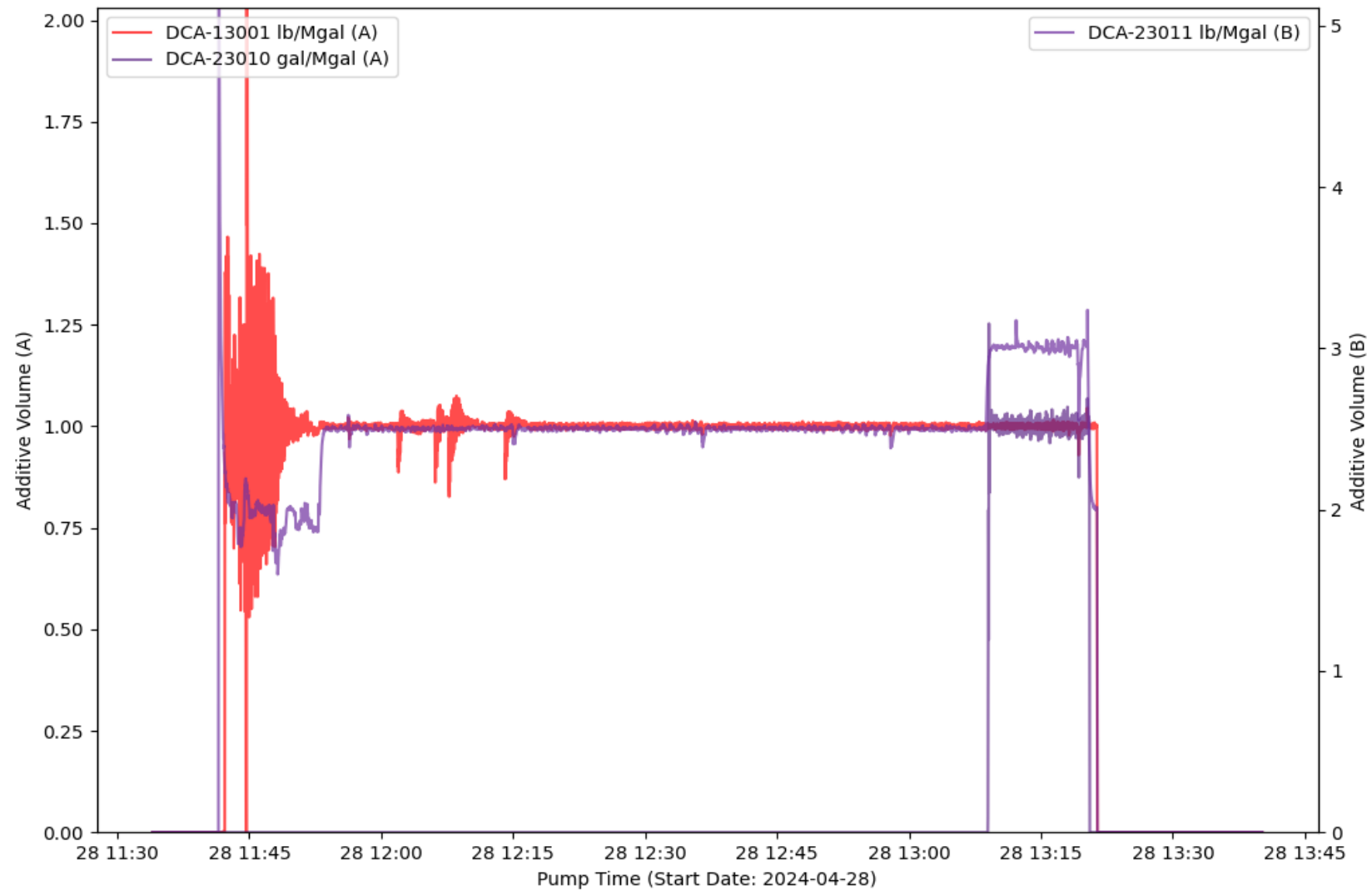
EVENT LOG : TREATMENT INTERVAL 21

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-28T03:24:24	0	3568	0	0	0	0	0
2	Start Pumping	2024-04-28T03:25:00	0	3535	0	0	0	0	0
3	Pump Acid	2024-04-28T03:27:59	10	5665	0	0	671.39	996.38	0
4	Break Formation	2024-04-28T03:32:56	27.03	6907	0	0	3829	4091	0
5	Spot Acid	2024-04-28T03:39:47	53.79	6841	0	0	13029	13246	0
6	Flush Acid	2024-04-28T03:41:25	53.75	7068	0	0	16708	16950	0
7	Stop Pumping	2024-04-28T05:27:55	2.15	4328	0	0	402990	417806	311481
8	ISIP	2024-04-28T05:28:04	0	4188	0	0	402997	417806	311481
9	Shut In Well	2024-04-28T05:28:07	0	4179	0	0	402997	417806	311481
10	Suspending Job	2024-04-28T05:30:16	0	-6.35	0	0	402999	417809	311481

TREATMENT PLOT : Treatment Interval 22



CHEMISTRY PLOT : Treatment Interval 22



EVENT LOG : TREATMENT INTERVAL 22

Event Number	Event Name	Event Time (YYYY-MM-DD hh-mm-ss)	Slurry Rate (bpm)	Pressure (psi)	Proppant Conc. (ppg)	Bottom Hole Proppant Conc. (ppg)	Cumulative Clean Volume (gal)	Cumulative Slurry Volume (gal)	Cumulative Proppant Weight (lbm)
1	Open Well	2024-04-28T11:34:24	0.45	3697	0	0	0.01	0.31	0
2	Start Pumping	2024-04-28T11:34:47	0.34	3628	0	0	0.33	6.56	0
3	Break Formation	2024-04-28T11:36:10	10.92	5787	0	0	332.71	365.9	0
4	Pump Acid	2024-04-28T11:36:59	10.49	5309	0	0	691.52	737.86	0
5	Pump Acid	2024-04-28T11:38:58	10.54	5574	0	0	1528	1597	0
6	Spot Acid	2024-04-28T11:46:31	26.62	7421	0	0	8150	8188	0
7	Flush Acid	2024-04-28T11:46:38	26.63	6408	0	0	8281	8319	0
8	Spot Acid	2024-04-28T11:46:59	26.68	7116	0	0	8682	8713	0
9	Flush Acid	2024-04-28T11:47:50	30.07	5225	0	0	9661	9686	0
10	Stop Pumping	2024-04-28T13:23:14	1.33	4312	0	0	387884	403278	338723
11	ISIP	2024-04-28T13:23:43	0	4229	0	0	387884	403278	338723
12	Shut In Well	2024-04-28T13:39:10	0	3860	0	0	387884	403278	338723
13	Suspending Job	2024-04-28T13:40:09	0	108.92	0	0	387884	403278	338723

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