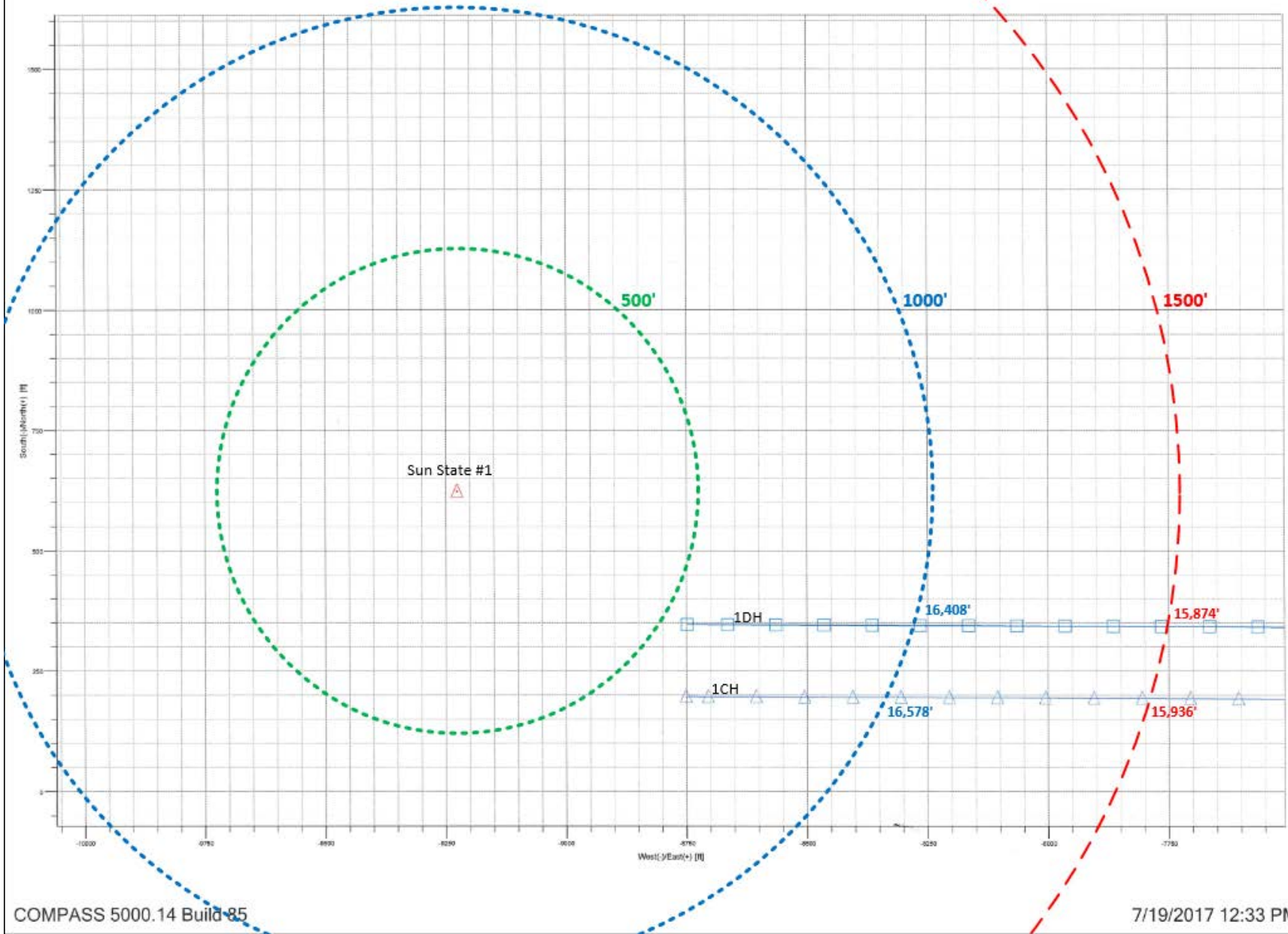


Plan: State Bierstadt 4-65 35-34 1CH (State Bierstadt 4-65 35-34 1CH/State Bierstadt 4-65 35-34 1CH)



Clearance Report
STATE BIERSTADT 4-65 35-34 1DH (REV-A.0) PWP
Closest Approach
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Burlington Resources	Slot	SLOT#02 STATE BIERSTADT 4-65 35-34 1DH (1250'FNL & 650'FEL, SEC.35)
Area	COLORADO	Well	STATE BIERSTADT 4-65 35-34 1DH
Field	ARAPAHOE COUNTY (NAD83/TN)	Wellbore	STATE BIERSTADT 4-65 35-34 1DH PWB
Facility	SEC.35-T04S-R65W		

CLEARANCE DATA - Offset Wellbore: SUN-STATE #1 AWB Offset Wellpath: SUN-STATE #1 AWP													
Facility: SEC.34-T04S-R65W		Slot: SLOT#01 EX SUN-STATE #1 (660'FNL & 660'FWL, SEC.34)		Well: SUN-STATE #1		Threshold Value=1.50		† ± interpolated/extrapolated station					
Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]		C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
14624.00†	8084.54	228.41	-6538.54	7859.24	8084.54	663.82	-9225.65	86.32		2722.16	393.39	10.39	PASS
14724.00†	8085.55	228.81	-6638.53	7860.25	8085.55	663.82	-9225.65	86.46		2623.44	394.70	9.98	PASS
14824.00†	8086.57	229.21	-6738.53	7861.27	8086.57	663.82	-9225.65	86.59		2524.82	396.15	9.57	PASS
14924.00†	8087.59	229.61	-6838.52	7862.29	8087.59	663.82	-9225.65	86.73		2426.30	397.76	9.16	PASS
15024.00†	8088.60	230.01	-6938.51	7863.30	8088.60	663.82	-9225.65	86.87		2327.92	399.55	8.75	PASS
15124.00†	8089.62	230.41	-7038.51	7864.32	8089.62	663.82	-9225.65	87.00		2229.68	401.54	8.34	PASS
15224.00†	8090.63	230.81	-7138.50	7865.33	8090.63	663.82	-9225.65	87.14		2131.60	403.76	7.93	PASS
15324.00†	8091.65	231.21	-7238.50	7866.35	8091.65	663.82	-9225.65	87.28		2033.70	406.27	7.52	PASS
15424.00†	8092.66	231.61	-7338.49	7867.36	8092.66	663.82	-9225.65	87.41		1936.03	409.09	7.11	PASS
15524.00†	8093.68	232.01	-7438.48	7868.38	8093.68	663.82	-9225.65	87.55		1838.60	412.28	6.70	PASS
15624.00†	8094.69	232.41	-7538.48	7869.39	8094.69	663.82	-9225.65	87.69		1741.46	415.92	6.29	PASS
15724.00†	8095.71	232.81	-7638.47	7870.41	8095.71	663.82	-9225.65	87.82		1644.66	420.08	5.88	PASS
15824.00†	8096.73	233.21	-7738.47	7871.43	8096.73	663.82	-9225.65	87.96		1548.27	424.85	5.47	PASS
15924.00†	8097.74	233.61	-7838.46	7872.44	8097.74	663.82	-9225.65	88.10		1452.37	430.36	5.07	PASS
16024.00†	8098.76	234.01	-7938.45	7873.46	8098.76	663.82	-9225.65	88.23		1357.06	436.77	4.66	PASS
16124.00†	8099.77	234.41	-8038.45	7874.47	8099.77	663.82	-9225.65	88.37		1262.48	444.26	4.27	PASS
16224.00†	8100.79	234.81	-8138.44	7875.49	8100.79	663.82	-9225.65	88.51		1168.79	453.06	3.87	PASS
16324.00†	8101.80	235.21	-8238.44	7876.50	8101.80	663.82	-9225.65	88.65		1076.25	463.48	3.49	PASS
16424.00†	8102.82	235.61	-8338.43	7877.52	8102.82	663.82	-9225.65	88.78		985.15	475.90	3.11	PASS
16524.00†	8103.83	236.01	-8438.42	7878.53	8103.83	663.82	-9225.65	88.92		895.96	490.80	2.74	PASS
16624.00†	8104.85	236.41	-8538.42	7879.55	8104.85	663.82	-9225.65	89.06		809.30	508.75	2.39	PASS
16724.00†	8105.87	236.81	-8638.41	7880.57	8105.87	663.82	-9225.65	89.19		726.08	530.39	2.05	PASS
16824.00†	8106.88	237.21	-8738.41	7881.58	8106.88	663.82	-9225.65	89.33		647.61	556.35	1.75	PASS
16835.69†	8107.00	237.26	-8750.09	7881.70	8107.00	663.82	-9225.65	89.35		638.84	559.68	1.71	PASS
16835.70	8107.00	237.26	-8750.10	7881.70	8107.00	663.82	-9225.65	89.35		638.83	559.09	1.71	PASS

REFERENCE WELLPATH IDENTIFICATION			
Operator	Burlington Resources	Slot	SLOT#01 STATE BIERSTADT 4-65 35-34 1CH (1251'FNL & 610'FEL, SEC.35)
Area	COLORADO	Well	STATE BIERSTADT 4-65 35-34 1CH
Field	ARAPAHOE COUNTY (NAD83/TN)	Wellbore	STATE BIERSTADT 4-65 35-34 1CH PWB
Facility	SEC.35-T04S-R65W		

CLEARANCE DATA - Offset Wellbore: SUN-STATE #1 AWP Offset Wellpath: SUN-STATE #1 AWP												
Facility: SEC.34-T04S-R65W Slot: SLOT#01 EX SUN-STATE #1 (660'FNL & 660'FWL SEC.34) Well: SUN-STATE #1 Threshold Value=1.50 † = interpolated/extrapolated station												
Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
14624.00†	8005.90	-101.35	-6659.84	7780.60	8005.90	663.83	-9265.54	88.13	2715.72	414.32	9.84	PASS
14724.00†	8006.84	-100.95	-6759.83	7781.54	8006.84	663.83	-9265.54	88.20	2619.82	417.39	9.43	PASS
14824.00†	8007.79	-100.56	-6859.83	7782.48	8007.79	663.83	-9265.54	88.27	2524.23	420.74	9.01	PASS
14924.00†	8008.73	-100.17	-6959.82	7783.43	8008.73	663.83	-9265.54	88.35	2428.99	424.40	8.60	PASS
15024.00†	8009.68	-99.78	-7059.82	7784.38	8009.68	663.83	-9265.54	88.42	2334.16	428.39	8.18	PASS
15124.00†	8010.62	-99.39	-7159.81	7785.32	8010.62	663.83	-9265.54	88.49	2239.77	432.77	7.77	PASS
15224.00†	8011.56	-99.00	-7259.81	7786.26	8011.56	663.83	-9265.54	88.56	2145.89	437.58	7.36	PASS
15324.00†	8012.51	-98.61	-7359.80	7787.21	8012.51	663.83	-9265.54	88.63	2052.59	442.86	6.96	PASS
15424.00†	8013.45	-98.22	-7459.80	7788.15	8013.45	663.83	-9265.54	88.70	1959.95	448.68	6.56	PASS
15524.00†	8014.40	-97.83	-7559.79	7789.10	8014.40	663.83	-9265.54	88.78	1868.07	455.11	6.16	PASS
15624.00†	8015.34	-97.43	-7659.79	7790.04	8015.34	663.83	-9265.54	88.85	1777.06	462.23	5.77	PASS
15724.00†	8016.29	-97.04	-7759.78	7790.99	8016.29	663.83	-9265.54	88.92	1687.08	470.12	5.39	PASS
15824.00†	8017.23	-96.65	-7859.78	7791.93	8017.23	663.83	-9265.54	88.99	1598.28	478.88	5.01	PASS
15924.00†	8018.18	-96.26	-7959.77	7792.88	8018.18	663.83	-9265.54	89.06	1510.88	488.62	4.64	PASS
16024.00†	8019.12	-95.87	-8059.77	7793.82	8019.12	663.83	-9265.54	89.13	1425.14	499.46	4.28	PASS
16124.00†	8020.07	-95.48	-8159.76	7794.77	8020.07	663.83	-9265.54	89.21	1341.38	511.53	3.94	PASS
16224.00†	8021.01	-95.09	-8259.76	7795.71	8021.01	663.83	-9265.54	89.28	1259.98	524.96	3.60	PASS
16324.00†	8021.96	-94.70	-8359.75	7796.66	8021.96	663.83	-9265.54	89.35	1181.45	539.84	3.28	PASS
16424.00†	8022.90	-94.31	-8459.75	7797.60	8022.90	663.83	-9265.54	89.42	1106.38	556.24	2.99	PASS
16524.00†	8023.85	-93.92	-8559.74	7798.55	8023.85	663.83	-9265.54	89.49	1035.53	574.14	2.71	PASS
16624.00†	8024.79	-93.52	-8659.74	7799.49	8024.79	663.83	-9265.54	89.56	969.84	593.37	2.45	PASS
16724.00†	8025.74	-93.13	-8759.73	7800.44	8025.74	663.83	-9265.54	89.64	910.41	613.53	2.23	PASS
16751.86	8026.00	-93.02	-8787.59	7800.70	8026.00	663.83	-9265.54	89.66	895.14	619.22	2.17	PASS

POSITIONAL UNCERTAINTY - Offset Wellbore: SUN-STATE #1 AWP Offset Wellpath: SUN-STATE #1 AWP				
Slot Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	3.000ft
Facility Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	3.000ft

Maximum Stage Size (Original Scope / 100%)

Stage Example (Base Plan)			Flush
Plug	16,630'		351 bbls
Cluster 1	16,610'	8 holes	350 bbls
Cluster 2	16,575'	8 holes	350 bbls
Cluster 3	16,540'	6 holes	349 bbls
Cluster 4	16,505'	6 holes	348 bbls
Cluster 5	16,470'	6 holes	348 bbls

Design	
Anticipated F.G.	1 psi/ft
Overall Pad %	17.9 %

Treating Pressure	
Test Pressure	9,800 psi
Pop-Off	9,310 psi
Pump Trips	9,110 psi
Max Pressure	9,110 psi

Stage	Fluid	Prop	PPA	BPM	Gallons			Barrels		Lbs			Mins		Comments
			Prop Con	Rate	Clean	Dirty	Cum Dirty	Dirty	Cum Dirty	Stage Prop	100 mesh	40/70	Stage Time	Cum Time	
Acid	15% HCl	NA	0.00	15	2000	2000.0	2000.0	47.6	47.6	0	0	0	3.2	3.2	100%
Pre Pad	FR	NA	0.00	75	16000	16000.0	18000.0	381.0	428.6	0	0	0	5.1	8.3	100%
Pad	FR	100 mesh	0.25	75	3500	3539.6	21539.6	84.3	512.8	875	875	0	1.1	9.4	100%
Prop 1	FR	NA	0.00	75	16000	16000.0	37539.6	381.0	893.8	0	875	0	5.1	14.5	100%
PAD	FR	100 mesh	0.25	75	16000	16181.0	53720.6	385.3	1279.1	4000	4875	0	5.1	19.6	100%
Prop 1	FR	100 mesh	0.50	75	16000	16362.0	70082.6	389.6	1668.6	8000	12875	0	5.2	24.8	100%
Prop 1	FR	100 mesh	0.75	75	14000	14475.1	84557.7	344.6	2013.3	10500	23375	0	4.6	29.4	100%
Prop 2	FR	40/70 white	0.50	75	12000	12271.5	96829.2	292.2	2305.5	6000	23375	6000	3.9	33.3	100%
Prop 2	FR	40/70 white	0.75	75	12000	12407.3	109236.5	295.4	2600.9	9000	23375	15000	3.9	37.2	100%
Prop 2	FR	40/70 white	1.00	75	12000	12543.0	121779.5	298.6	2899.5	12000	23375	27000	4.0	41.2	100%
Prop 2	FR	40/70 white	1.25	75	17000	17961.6	139741.0	427.7	3327.2	21250	23375	48250	5.7	46.9	100%
Prop 2	FR	40/70 white	1.50	75	16500	17619.9	157361.0	419.5	3746.7	24750	23375	73000	5.6	52.5	100%
Prop 2	FR	40/70 white	1.75	75	21000	22662.9	180023.9	539.6	4286.3	36750	23375	109750	7.2	59.7	100%
Prop 2	FR	40/70 white	2.00	75	21000	22900.5	202924.4	545.3	4831.5	42000	23375	151750	7.3	67.0	100%
Prop 3	FR	40/70 CRC	2.00	75	0	0.0	202924.4	0.0	4831.5	0	23375	151750	0.0	67.0	100%
Flush	linear	NA	0.00	75	0	0.0	202924.4	0.0	4831.5	0	23375	151750	0.0	67.0	100%
Flush	FR	NA	0.00	75	14596	14595.7	217520.1	347.5	5179.1	0	23375	151750	4.6	71.6	100%

Stage Requirements - Fluid				
FR	193,000	gallons	4,595	bbls
Total Clean	193,000	gallons	4,595	bbls

Stage Requirements - Proppant				
100 mesh	23,375	lbs	234	sks
40/70	151,750	lbs	1,518	sks
Total Prop	175,125	lbs	1,751	sks

Maximum Stage Size in 1,500' – 1,000' Center-to-center radius (80% of original scope and 10 BPM rate reduction)

Stage Example (1000'-1500' C-C)			Flush
Plug	16,630'		351 bbls
Cluster 1	16,610'	8 holes	350 bbls
Cluster 2	16,575'	8 holes	350 bbls
Cluster 3	16,540'	6 holes	349 bbls
Cluster 4	16,505'	6 holes	348 bbls
Cluster 5	16,470'	6 holes	348 bbls

Design	
Anticipated F.G.	1 psi/ft
Overall Pad %	18.1 %

Treating Pressure	
Test Pressure	9,800 psi
Pop-Off	9,310 psi
Pump Trips	9,110 psi
Max Pressure	9,110 psi

Stage	Fluid	Prop	PPA	BPM	Gallons			Barrels		Lbs			Mins		Comments
			Prop Con	Rate	Clean	Dirty	Cum Dirty	Dirty	Cum Dirty	Stage Prop	100 mesh	40/70	Stage Time	Cum Time	
Acid	15% HCl	NA	0.00	15	2000	2000.0	2000.0	47.6	47.6	0	0	0	3.2	3.2	80%
Pre Pad	FR	NA	0.00	65	12800	12800.0	14800.0	304.8	352.4	0	0	0	4.7	7.9	80%
Pad	FR	100 mesh	0.25	65	2800	2831.7	17631.7	67.4	419.8	700	700	0	1.0	8.9	80%
Prop 1	FR	NA	0.00	65	12800	12800.0	30431.7	304.8	724.6	0	700	0	4.7	13.6	80%
PAD	FR	100 mesh	0.25	65	12800	12944.8	43376.5	308.2	1032.8	3200	3900	0	4.7	18.3	80%
Prop 1	FR	100 mesh	0.50	65	12800	13089.6	56466.1	311.7	1344.4	6400	10300	0	4.8	23.1	80%
Prop 1	FR	100 mesh	0.75	65	11200	11580.1	68046.2	275.7	1620.1	8400	18700	0	4.2	27.4	80%
Prop 2	FR	40/70 white	0.50	65	9600	9817.2	77863.4	233.7	1853.9	4800	18700	4800	3.6	31.0	80%
Prop 2	FR	40/70 white	0.75	65	9600	9925.8	87789.2	236.3	2090.2	7200	18700	12000	3.6	34.6	80%
Prop 2	FR	40/70 white	1.00	65	9600	10034.4	97823.6	238.9	2329.1	9600	18700	21600	3.7	38.3	80%
Prop 2	FR	40/70 white	1.25	65	13600	14369.3	112192.8	342.1	2671.3	17000	18700	38600	5.3	43.5	80%
Prop 2	FR	40/70 white	1.50	65	13200	14096.0	126288.8	335.6	3006.9	19800	18700	58400	5.2	48.7	80%
Prop 2	FR	40/70 white	1.75	65	16800	18130.4	144419.1	431.7	3438.6	29400	18700	87800	6.6	55.3	80%
Prop 2	FR	40/70 white	2.00	65	16800	18320.4	162739.5	436.2	3874.8	33600	18700	121400	6.7	62.1	80%
Flush	FR	NA	0.00	65	11677	11676.6	174416.1	278.0	4152.8	0	18700	121400	4.3	66.3	80%

Stage Requirements - Fluid				
FR	154,400	gallons	3,676	bbls
Total Clean	154,400	gallons	3,676	bbls

Stage Requirements - Proppant				
100 mesh	18,700	lbs	187	sks
40/70	121,400	lbs	1,214	sks
Total Prop	140,100	lbs	1,401	sks

Maximum Stage Size in 1,000' – 500' Center-to-center radius (60% of original scope and 20 BPM rate reduction)

Stage Example (500'-100' C-C)			Flush
Plug	16,630'		351 bbls
Cluster 1	16,610'	8 holes	350 bbls
Cluster 2	16,575'	8 holes	350 bbls
Cluster 3	16,540'	6 holes	349 bbls
Cluster 4	16,505'	6 holes	348 bbls
Cluster 5	16,470'	6 holes	348 bbls

Design	
Anticipated F.G.	1 psi/ft
Overall Pad %	18.4 %

Treating Pressure	
Test Pressure	9,800 psi
Pop-Off	9,310 psi
Pump Trips	9,110 psi
Max Pressure	9,110 psi

Stage	Fluid	Prop	PPA	BPM	Gallons			Barrels		Lbs			Mins		Comments
			Prop Con	Rate	Clean	Dirty	Cum Dirty	Dirty	Cum Dirty	Stage Prop	100 mesh	40/70	Stage Time	Cum Time	
Acid	15% HCl	NA	0.00	15	2000	2000.0	2000.0	47.6	47.6	0	0	0	3.2	3.2	60%
Pre Pad	FR	NA	0.00	55	9600	9600.0	11600.0	228.6	276.2	0	0	0	4.2	7.3	60%
Pad	FR	100 mesh	0.25	55	2100	2123.8	13723.8	50.6	326.8	525	525	0	0.9	8.2	60%
Prop 1	FR	NA	0.00	55	9600	9600.0	23323.8	228.6	555.3	0	525	0	4.2	12.4	60%
PAD	FR	100 mesh	0.25	55	9600	9708.6	33032.4	231.2	786.5	2400	2925	0	4.2	16.6	60%
Prop 1	FR	100 mesh	0.50	55	9600	9817.2	42849.6	233.7	1020.2	4800	7725	0	4.2	20.9	60%
Prop 1	FR	100 mesh	0.75	55	8400	8685.1	51534.6	206.8	1227.0	6300	14025	0	3.8	24.6	60%
Prop 2	FR	40/70 white	0.50	55	7200	7362.9	58897.5	175.3	1402.3	3600	14025	3600	3.2	27.8	60%
Prop 2	FR	40/70 white	0.75	55	7200	7444.4	66341.9	177.2	1579.6	5400	14025	9000	3.2	31.0	60%
Prop 2	FR	40/70 white	1.00	55	7200	7525.8	73867.7	179.2	1758.8	7200	14025	16200	3.3	34.3	60%
Prop 2	FR	40/70 white	1.25	55	10200	10776.9	84644.6	256.6	2015.3	12750	14025	28950	4.7	39.0	60%
Prop 2	FR	40/70 white	1.50	55	9900	10572.0	95216.6	251.7	2267.1	14850	14025	43800	4.6	43.5	60%
Prop 2	FR	40/70 white	1.75	55	12600	13597.8	108814.3	323.8	2590.8	22050	14025	65850	5.9	49.4	60%
Prop 2	FR	40/70 white	2.00	55	12600	13740.3	122554.6	327.2	2918.0	25200	14025	91050	5.9	55.4	60%
Flush	FR	NA	0.00	55	8757	8757.4	131312.1	208.5	3126.5	0	14025	91050	3.8	59.2	60%

Stage Requirements - Fluid				
FR	115,800	gallons	2,757	bbls
Total Clean	115,800	gallons	2,757	bbls

Stage Requirements - Proppant				
100 mesh	14,025	lbs	140	sk
40/70	91,050	lbs	911	sk
Total Prop	105,075	lbs	1,051	sk