

Cement Post Job Report

Client: PDC Energy

Well Name: Hen 16N

API #: 05-123-51793

Job Date: September 19, 2023

Job Type: New Well - 5.5" Production String

Cement Company & Contact: EXERO Well Integrity -
Cheve Meyer 720-239-3819



ROCK SOLID
WELL INTEGRITY
SOLUTIONS

TREATMENT REPORT

CLIENT	WELL	RIG	JOB TYPE	THREAD TYPE	WELLHEAD CONNECTION
PDC Energy	Hen 16N	Patterson 272	Production	Buttress	5 1/2" Cement Head

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
14994	6870	90	1	225	200

PACKER/RETAINER/CIBP/DV TOOL DEPTHS	TOOL TYPE	TOP OF PERFS (FT)	BOTTOM OF PERFS (FT)	NUMBER OF HOLES
3324	PACKER			

CASING/TUBING/DP DETAILS									
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)	
Surface		9.625	36	8.921	13.50			1715	
Production	P-110	5.5	20	4.778	20	0	0	14985	
MAXIMUM CASING/TUBING/DP PSI			9888			MAXIMUM ANNULAR PSI			8880

Mud Type	OBM	Rotate Y,N	No	Circulation Data				Water Requirements (bbls)	
Mud ppg	10.6	Rate (rpm)		Circulate Time (hrs)		2		Spacers	140
Flow Temp	149	Torque Val.		Circulation Rate (bpm)		10		Stage 1 Lead	112
Vis. Sec/qt	50	Time (hr)		Full Circulation ? (Y,N,P)		Yes		Stage 1 Tail	168
PV (cP)	13	Pipe Reciprocation		Gas Present (Y,N)		No	Units	Stage 2 Lead	
Yield Pt	8	Recip Y,N	No	Centralizers/Plugs				Stage 2 Tail	
10 sec gel	5	Stroke (ft)		Quantity & Type		Customer Provided		Displacement	332
10 min gel	11	Recip time		Top Plug/Type		Customer Provided		Wash up	20
30 min gel	14	Stuck ?		Bottom Plug/Type		Customer Provided		Total + 10% Safety	849

Preflush & Spacers		Stage 1 Lead - Class G		Stage 1 Tail - Class G		Stage 2 Lead		Stage 2 Tail		Displacement	
Spacer 1	Spacer	Density	12.9	Density	13.7	Density		Density		Fluid Type	Water
		Sacks	1276	Sacks	1064	Sacks		Sacks		Dens. ppg	8.34
		Vol/bbbls	256.8	Vol/bbbls	259.6	Vol/bbbls	0.0	Vol/bbbls	0.0	Vol. bbl	332
		Rate	8.5	Rate	8.5	Rate		Rate		Rate bpm	10.5
Spacer 2		Yield	1.13	Yield	1.37	Yield		Yield		Clay Stay?	No
		Gal/Sk	3.68	Gal/Sk	6.63	Gal/Sk		Gal/Sk		Biocide ?	Yes
		% Excess	0	% Excess	0	% Excess		% Excess		Slow @ bbl	312
		TOL (ft)	1947	TOT (ft)	8247	TOL (ft)		TOT (ft)		Bump PSI	3850

Final Displacement (bbbls)	332
Bump Plug?	Yes
Final Bump Pressure (psi)	3850
Full Returns throughout job?	Full
Vol. away/Time when returns lost	
Vol. away when returns were regained	
Spacer to Surface?	Yes
Spacer volume returned (bbbls)	48
Cement to surface?	No
Cement volume to surface stage 1	
Cement volume to surface stage 2	

Surface Top Out Details-Pumped		Job Summary Additional Chems Used	
Cement Type		MFC 47 (gal)	70
Dens. ppg	NA	MFC 67 (gal)	168
Sacks qty	NA	Defoamer (gal)	20
Gal/sk	NA	Biocide (gal)	15
Yield	NA	Corr. Inhib (gal)	0
Lbs. of chloride used	NA	Fiber (lbs)	290
Top out pipe used ?	NA	Chloride (lbs)	0
Feet of top out pipe	NA	Retarder (lbs)	0
Annulus holding?		Clay Stabilizer (gal)	0
Sodium Silicate Used		Other	0



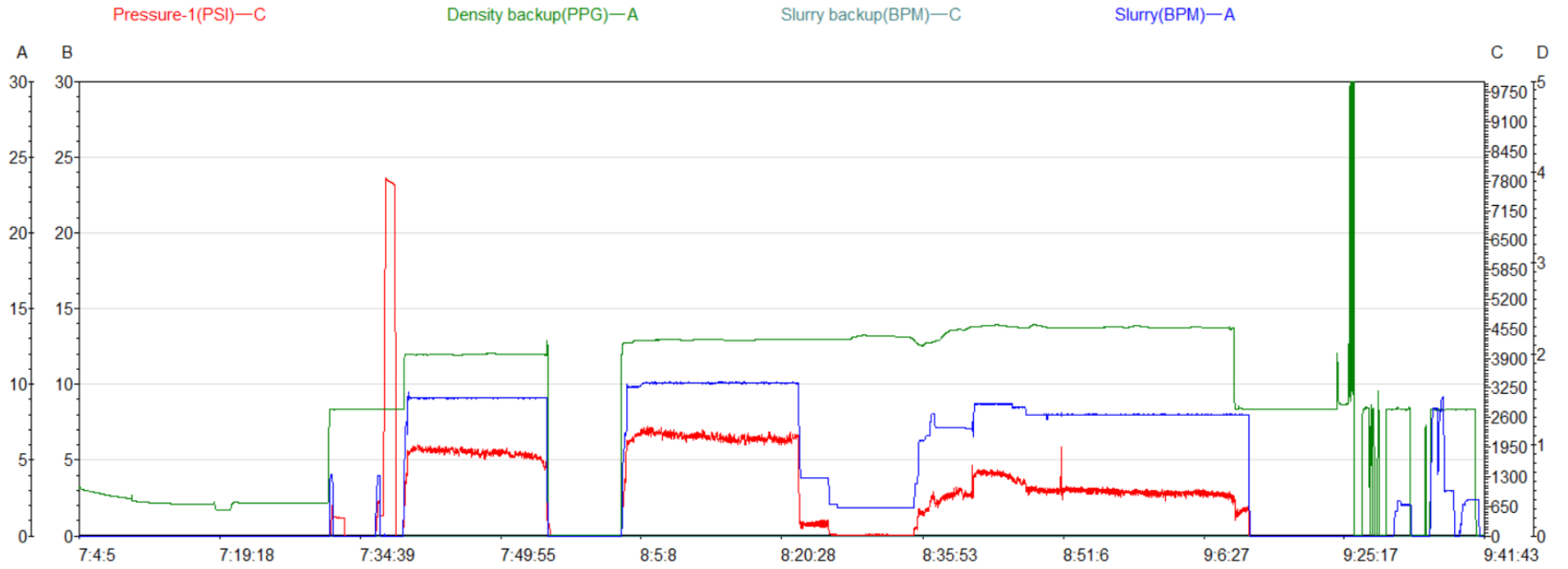
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JOB LOG

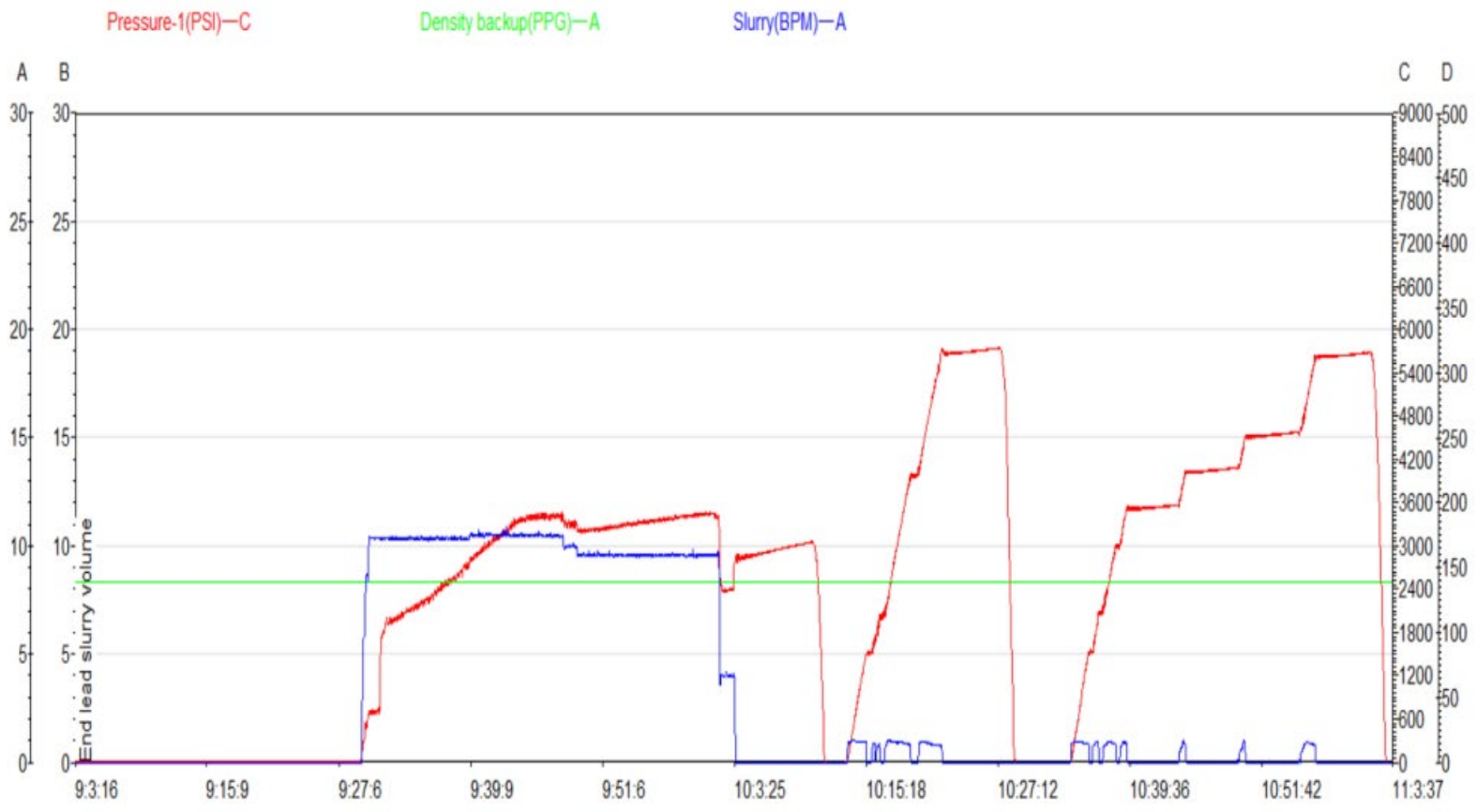
CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
PDC Energy	Hen 16N	Patterson 272	Production	9/19/2023	Temp / Hum / Air Press 60 Deg F / 55% / 24.94 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
9/18/2023	11:00:00 PM						Arrived on location with a loc time of 00:00.
9/19/2023	5:20:00 AM						Spotted in equipment.
	7:15:00 AM						Safety meeting.
	7:34:00 AM	8.34	6.0	3		800	loaded lines for pressure test.
	7:40:00 AM					8000	pressure tested.
	7:42:00 AM	12	9.0	140		2000	pumped spacer with surfactants and fiber.
	7:58:00 AM						shutdown and dropped bottom plug.
	8:05:00 AM	12.9	10.0	257		2000	pumped 1276 sks,yield:1.13,GPS:3.68, Lead cement.
	8:41:00 AM	13.7	8.5	260		1400	Pumped 1064 sks,yield:1.37,GPS:6.63,Tail cement.
	9:13:00 AM	8.34	8.0	15		500	Pumped sugar water.
	9:15:00 AM						Washed pumps and lines and dropped top plug.
	9:24:00 AM	8.34	10.5	50		1700	Pumped water displacement with biocide.
	9:30:00 AM	8.34	10.4	50	50	2200	Pumped water displacement with biocide.
	9:35:00 AM	8.34	10.4	50	100	2800	Pumped water displacement with biocide.
	9:41:00 AM	8.34	10.4	50	150	3370	Pumped water displacement with biocide.
	9:46:00 AM	8.34	9.5	50	200	3340	Pumped water displacement with biocide.
	9:51:00 AM	8.34	9.5	50	250	3320	Pumped water displacement with biocide.
	9:56:00 AM	8.34	9.5	12	300	3320	Pumped water displacement with biocide.
	9:57:00 AM	8.34	4.0	20	312	2360	Slowed rate to land plug.
	9:59:00 AM	8.34			332		Plug landed fcp 2350 psi was took to 2850psi.
	10:06:00 AM						Checked floats, held with 3.5 bbls back.
	10:08:00 AM	8.34					Set packer per tool hand.
	11:05:00 AM	8.34					Flushed stack and flow line.
	11:15:00 AM						Rigged down.

Hen 16N Production Pump Chart – Pressure / Rate / Density



Chart



Chart



Centralizer Depths

Well Name: Hen 16N

Production, Set Depth: 14,985.0ftKB

API 05123517930000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 9/16/2023 22:30		Rig Release Date 9/19/2023 14:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
7	1	Casing Joints	5 1/2	20.00	P-110	Yes	38.83	Yes			14,911.3	73.70
9	3	Casing Joints	5 1/2	20.00	P-110	Yes	40.41	Yes			14,825.8	159.25
11	5	Casing Joints	5 1/2	20.00	P-110	Yes	44.97	Yes			14,735.8	249.21
13	7	Casing Joints	5 1/2	20.00	P-110	Yes	45.12	Yes			14,645.9	339.08
15	9	Casing Joints	5 1/2	20.00	P-110	Yes	39.75	Yes			14,561.4	423.61
17		Marker Joint F	5 1/2	20.00	P-110	Yes	21.38	Yes			14,498.5	486.49
19	12	Casing Joints	5 1/2	20.00	P-110	Yes	35.41	Yes			14,418.7	566.31
21	14	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			14,338.4	646.56
23	16	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			14,248.7	736.33
25	18	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			14,158.9	826.09
27	20	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			14,069.1	915.95
29	22	Casing Joints	5 1/2	20.00	P-110	Yes	36.27	Yes			13,987.7	997.34
31	24	Casing Joints	5 1/2	20.00	P-110	Yes	45.11	Yes			13,898.4	1,086.63
33	26	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			13,816.0	1,168.98
35	28	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			13,725.8	1,259.23
37	30	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			13,636.4	1,348.60
39	32	Casing Joints	5 1/2	20.00	P-110	Yes	38.15	Yes			13,555.8	1,429.22
41	34	Casing Joints	5 1/2	20.00	P-110	Yes	38.82	Yes			13,472.6	1,512.44
43	36	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			13,383.1	1,601.95
45	38	Casing Joints	5 1/2	20.00	P-110	Yes	38.40	Yes			13,300.5	1,684.47
47	40	Casing Joints	5 1/2	20.00	P-110	Yes	44.87	Yes			13,213.2	1,771.82
49	42	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			13,124.0	1,861.02
51	44	Casing Joints	5 1/2	20.00	P-110	Yes	45.08	Yes			13,034.5	1,950.50
53	46	Casing Joints	5 1/2	20.00	P-110	Yes	38.89	Yes			12,951.2	2,033.79
55	48	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			12,865.4	2,119.61
57	50	Casing Joints	5 1/2	20.00	P-110	Yes	44.38	Yes			12,776.4	2,208.62
59	52	Casing Joints	5 1/2	20.00	P-110	Yes	36.54	Yes			12,699.3	2,285.69
61	54	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			12,609.3	2,375.68
63	56	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			12,520.0	2,465.01
65	58	Casing Joints	5 1/2	20.00	P-110	Yes	44.39	Yes			12,432.2	2,552.77
67	60	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			12,342.7	2,642.33



Centralizer Depths

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Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 9/16/2023 22:30		Rig Release Date 9/19/2023 14:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
69	62	Casing Joints	5 1/2	20.00	P-110	Yes	37.90	Yes			12,263.0	2,721.98
71	64	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			12,175.2	2,809.81
73	66	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			12,085.7	2,899.32
75	68	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			11,999.2	2,985.84
77	70	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			11,912.9	3,072.13
79	72	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			11,824.8	3,160.19
81	74	Casing Joints	5 1/2	20.00	P-110	Yes	45.12	Yes			11,734.7	3,250.30
83	76	Casing Joints	5 1/2	20.00	P-110	Yes	43.48	Yes			11,647.1	3,337.90
85	78	Casing Joints	5 1/2	20.00	P-110	Yes	43.27	Yes			11,559.7	3,425.28
87	80	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			11,472.7	3,512.31
89	82	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			11,383.5	3,601.51
91		Marker Joint G	5 1/2	20.00	P-110	Yes	19.49	Yes			11,319.2	3,665.78
93	85	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			11,230.6	3,754.43
95	87	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			11,141.0	3,843.96
97	89	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			11,051.1	3,933.94
99	91	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			10,961.8	4,023.17
101	93	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			10,872.3	4,112.75
103	95	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			10,783.1	4,201.86
105	97	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			10,693.4	4,291.61
107	99	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			10,603.6	4,381.39
109	101	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			10,513.7	4,471.31
111	103	Casing Joints	5 1/2	20.00	P-110	Yes	41.52	Yes			10,427.2	4,557.83
113	105	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			10,337.6	4,647.42
115	107	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			10,247.7	4,737.34
117	109	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			10,158.5	4,826.53
119	111	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			10,072.1	4,912.94
121	113	Casing Joints	5 1/2	20.00	P-110	Yes	41.43	Yes			9,985.5	4,999.46
123	115	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			9,897.0	5,088.05
125	117	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			9,810.5	5,174.54
127	119	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			9,721.1	5,263.93
129	121	Casing Joints	5 1/2	20.00	P-110	Yes	38.70	Yes			9,641.8	5,343.20



Centralizer Depths

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Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 9/16/2023 22:30		Rig Release Date 9/19/2023 14:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
131	123	Casing Joints	5 1/2	20.00	P-110	Yes	39.79	Yes			9,557.2	5,427.76
133	125	Casing Joints	5 1/2	20.00	P-110	Yes	42.78	Yes			9,469.5	5,515.51
135	127	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			9,379.2	5,605.76
137	129	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			9,289.9	5,695.12
139	131	Casing Joints	5 1/2	20.00	P-110	Yes	42.08	Yes			9,204.8	5,780.24
141	133	Casing Joints	5 1/2	20.00	P-110	Yes	40.30	Yes			9,119.7	5,865.32
143	135	Casing Joints	5 1/2	20.00	P-110	Yes	37.83	Yes			9,037.0	5,948.00
145	137	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			8,948.5	6,036.47
147	139	Casing Joints	5 1/2	20.00	P-110	Yes	38.09	Yes			8,872.5	6,112.47
149	141	Casing Joints	5 1/2	20.00	P-110	Yes	37.77	Yes			8,789.8	6,195.24
151	143	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			8,707.2	6,277.84
153	145	Casing Joints	5 1/2	20.00	P-110	Yes	39.16	Yes			8,623.4	6,361.57
155	147	Casing Joints	5 1/2	20.00	P-110	Yes	44.42	Yes			8,539.8	6,445.17
157	149	Casing Joints	5 1/2	20.00	P-110	Yes	40.07	Yes			8,455.4	6,529.59
159	151	Casing Joints	5 1/2	20.00	P-110	Yes	41.56	Yes			8,371.0	6,614.05
161	153	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			8,282.0	6,703.02
163	155	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			8,193.7	6,791.34
165	157	Casing Joints	5 1/2	20.00	P-110	Yes	40.83	Yes			8,107.9	6,877.11
167	159	Casing Joints	5 1/2	20.00	P-110	Yes	39.08	Yes			8,026.1	6,958.89
169	161	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			7,938.1	7,046.91
171	163	Casing Joints	5 1/2	20.00	P-110	Yes	44.47	Yes			7,849.8	7,135.21
173	165	Casing Joints	5 1/2	20.00	P-110	Yes	39.19	Yes			7,771.4	7,213.60
175	167	Casing Joints	5 1/2	20.00	P-110	Yes	45.05	Yes			7,681.2	7,303.76
177		Marker Joint A	5 1/2	20.00	P-110	Yes	10.69	Yes			7,625.8	7,359.22
178	169	Casing Joints	5 1/2	20.00	P-110	Yes	40.48	Yes			7,585.3	7,399.70
179	170	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			7,542.3	7,442.72
180	171	Casing Joints	5 1/2	20.00	P-110	Yes	40.55	Yes			7,501.7	7,483.27
181	172	Casing Joints	5 1/2	20.00	P-110	Yes	42.53	Yes			7,459.2	7,525.80
182	173	Casing Joints	5 1/2	20.00	P-110	Yes	39.07	Yes			7,420.1	7,564.87
183	174	Casing Joints	5 1/2	20.00	P-110	Yes	42.93	Yes			7,377.2	7,607.80
184	175	Casing Joints	5 1/2	20.00	P-110	Yes	43.87	Yes			7,333.3	7,651.67



Centralizer Depths

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Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
185	176	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			7,288.4	7,696.65
186	177	Casing Joints	5 1/2	20.00	P-110	Yes	38.08	Yes			7,250.3	7,734.73
187	178	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			7,205.9	7,779.13
188	179	Casing Joints	5 1/2	20.00	P-110	Yes	39.34	Yes			7,166.5	7,818.47
189	180	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			7,121.4	7,863.62
190	181	Casing Joints	5 1/2	20.00	P-110	Yes	40.01	Yes			7,081.4	7,903.63
191	182	Casing Joints	5 1/2	20.00	P-110	Yes	44.81	Yes			7,036.6	7,948.44
192	183	Casing Joints	5 1/2	20.00	P-110	Yes	39.48	Yes			6,997.1	7,987.92
193	184	Casing Joints	5 1/2	20.00	P-110	Yes	38.15	Yes			6,958.9	8,026.07
194	185	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			6,914.5	8,070.48
195	186	Casing Joints	5 1/2	20.00	P-110	Yes	43.42	Yes			6,871.1	8,113.90
196	187	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			6,826.0	8,159.03
197	188	Casing Joints	5 1/2	20.00	P-110	Yes	39.95	Yes			6,786.0	8,198.98
198	189	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			6,743.2	8,241.83
199	190	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			6,698.4	8,286.62
200	191	Casing Joints	5 1/2	20.00	P-110	Yes	44.74	Yes			6,653.6	8,331.36
201	192	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			6,609.2	8,375.77
202	193	Casing Joints	5 1/2	20.00	P-110	Yes	41.50	Yes			6,567.7	8,417.27
203	194	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			6,522.9	8,462.07
204	195	Casing Joints	5 1/2	20.00	P-110	Yes	40.99	Yes			6,481.9	8,503.06
205	196	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			6,437.2	8,547.84
206	197	Casing Joints	5 1/2	20.00	P-110	Yes	44.42	Yes			6,392.7	8,592.26
207		Marker Joint B	5 1/2	20.00	P-110	Yes	11.25	Yes			6,381.5	8,603.51
208	198	Casing Joints	5 1/2	20.00	P-110	Yes	39.71	Yes			6,341.8	8,643.22
209	199	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			6,298.1	8,686.87
210	200	Casing Joints	5 1/2	20.00	P-110	Yes	39.37	Yes			6,258.8	8,726.24
211	201	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			6,214.4	8,770.60
212	202	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			6,169.6	8,815.38
213	203	Casing Joints	5 1/2	20.00	P-110	Yes	42.74	Yes			6,126.9	8,858.12
214	204	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			6,081.7	8,903.27
215	205	Casing Joints	5 1/2	20.00	P-110	Yes	44.75	Yes			6,037.0	8,948.02



Centralizer Depths

Well Name: Hen 16N

Production, Set Depth: 14,985.0ftKB

API 05123517930000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00	Original KB Elevation (ft) 4,807.50	KB-Ground Distance (ft) 28.50	Spud Date 9/16/2023 22:30	Rig Release Date 9/19/2023 14:00	On Production Date	Abandon Date					

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
216	206	Casing Joints	5 1/2	20.00	P-110	Yes	44.54	Yes			5,992.4	8,992.56
217	207	Casing Joints	5 1/2	20.00	P-110	Yes	43.36	Yes			5,949.1	9,035.92
218	208	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			5,904.3	9,080.71
219	209	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			5,859.1	9,125.86
220	210	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			5,814.4	9,170.65
221	211	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			5,770.1	9,214.90
222	212	Casing Joints	5 1/2	20.00	P-110	Yes	37.61	Yes			5,732.5	9,252.51
223	213	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			5,688.1	9,296.91
224	214	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			5,643.8	9,341.22
225	215	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			5,599.0	9,386.01
226	216	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			5,554.2	9,430.81
227	217	Casing Joints	5 1/2	20.00	P-110	Yes	39.95	Yes			5,514.2	9,470.76
228	218	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			5,469.3	9,515.75
229	219	Casing Joints	5 1/2	20.00	P-110	Yes	39.72	Yes			5,429.5	9,555.47
230	220	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			5,384.8	9,600.25
231	221	Casing Joints	5 1/2	20.00	P-110	Yes	44.76	Yes			5,340.0	9,645.01
232	222	Casing Joints	5 1/2	20.00	P-110	Yes	44.96	Yes			5,295.0	9,689.97
233	223	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			5,249.9	9,735.10
234	224	Casing Joints	5 1/2	20.00	P-110	Yes	40.05	Yes			5,209.9	9,775.15
235	225	Casing Joints	5 1/2	20.00	P-110	Yes	44.97	Yes			5,164.9	9,820.12
236	226	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			5,119.9	9,865.12
237	227	Casing Joints	5 1/2	20.00	P-110	Yes	39.30	Yes			5,080.6	9,904.42
238	228	Casing Joints	5 1/2	20.00	P-110	Yes	40.02	Yes			5,040.6	9,944.44
239	229	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			4,995.6	9,989.42
240	230	Casing Joints	5 1/2	20.00	P-110	Yes	38.98	Yes			4,956.6	10,028.40
241	231	Casing Joints	5 1/2	20.00	P-110	Yes	44.95	Yes			4,911.7	10,073.35
242	232	Casing Joints	5 1/2	20.00	P-110	Yes	45.10	Yes			4,866.6	10,118.45
243	233	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			4,823.0	10,162.01
244	234	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			4,778.2	10,206.80
245	235	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			4,733.8	10,251.21
246	236	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			4,689.0	10,295.98



Centralizer Depths

Well Name: Hen 16N

Production, Set Depth: 14,985.0ftKB

API 05123517930000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 9/16/2023 22:30		Rig Release Date 9/19/2023 14:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
247	237	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			4,644.7	10,340.33
248	238	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			4,599.9	10,385.10
249	239	Casing Joints	5 1/2	20.00	P-110	Yes	43.10	Yes			4,556.8	10,428.20
250	240	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			4,511.8	10,473.19
251	241	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			4,467.4	10,517.59
252	242	Casing Joints	5 1/2	20.00	P-110	Yes	42.62	Yes			4,424.8	10,560.21
253	243	Casing Joints	5 1/2	20.00	P-110	Yes	43.43	Yes			4,381.4	10,603.64
254	244	Casing Joints	5 1/2	20.00	P-110	Yes	45.12	Yes			4,336.2	10,648.76
255	245	Casing Joints	5 1/2	20.00	P-110	Yes	41.10	Yes			4,295.1	10,689.86
256	246	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			4,250.3	10,734.66
257	247	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			4,206.3	10,778.68
258	248	Casing Joints	5 1/2	20.00	P-110	Yes	42.73	Yes			4,163.6	10,821.41
259	249	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			4,119.5	10,865.54
260	250	Casing Joints	5 1/2	20.00	P-110	Yes	44.47	Yes			4,075.0	10,910.01
261	251	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			4,032.0	10,953.03
262	252	Casing Joints	5 1/2	20.00	P-110	Yes	41.53	Yes			3,990.4	10,994.56
263	253	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			3,945.5	11,039.54
264	254	Casing Joints	5 1/2	20.00	P-110	Yes	43.31	Yes			3,902.2	11,082.85
265	255	Casing Joints	5 1/2	20.00	P-110	Yes	45.14	Yes			3,857.0	11,127.99
266	256	Casing Joints	5 1/2	20.00	P-110	Yes	40.68	Yes			3,816.3	11,168.67
267	257	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			3,771.6	11,213.45
268	258	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			3,727.5	11,257.50
269	259	Casing Joints	5 1/2	20.00	P-110	Yes	44.81	Yes			3,682.7	11,302.31
270	260	Casing Joints	5 1/2	20.00	P-110	Yes	41.99	Yes			3,640.7	11,344.30
271	261	Casing Joints	5 1/2	20.00	P-110	Yes	45.12	Yes			3,595.6	11,389.42
272	262	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			3,550.6	11,434.42
273	263	Casing Joints	5 1/2	20.00	P-110	Yes	44.30	Yes			3,506.3	11,478.72
274	264	Casing Joints	5 1/2	20.00	P-110	Yes	43.57	Yes			3,462.7	11,522.29
275	265	Casing Joints	5 1/2	20.00	P-110	Yes	41.95	Yes			3,420.8	11,564.24
276	266	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			3,376.0	11,609.03
277	267	Casing Joints	5 1/2	20.00	P-110	Yes	44.49	Yes			3,331.5	11,653.52



Centralizer Depths

Well Name: Hen 16N

Production, Set Depth: 14,985.0ftKB

API 05123517930000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 9/16/2023 22:30		Rig Release Date 9/19/2023 14:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
279	268	Casing Joints	5 1/2	20.00	P-110	Yes	45.14	Yes			3,271.7	11,713.26
280	269	Casing Joints	5 1/2	20.00	P-110	Yes	44.21	Yes			3,227.5	11,757.47
281	270	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			3,182.6	11,802.45
282	271	Casing Joints	5 1/2	20.00	P-110	Yes	44.76	Yes			3,137.8	11,847.21
283	272	Casing Joints	5 1/2	20.00	P-110	Yes	40.29	Yes			3,097.5	11,887.50
284	273	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			3,052.7	11,932.28
285	274	Casing Joints	5 1/2	20.00	P-110	Yes	44.28	Yes			3,008.4	11,976.56
286	275	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			2,963.7	12,021.34
287	276	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			2,919.2	12,065.77
288	277	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			2,874.2	12,110.76
289	278	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			2,829.3	12,155.74
290	279	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			2,784.5	12,200.51
291	280	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			2,739.7	12,245.29
292	281	Casing Joints	5 1/2	20.00	P-110	Yes	45.17	Yes			2,694.5	12,290.46
293	282	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			2,649.4	12,335.59
294	344	Casing Joints	5 1/2	20.00	P-110	Yes	44.57	Yes			2,604.8	12,380.16
295	341	Casing Joints	5 1/2	20.00	P-110	Yes	44.93	Yes			2,559.9	12,425.09
296	285	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			2,515.5	12,469.49
297	286	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			2,470.5	12,514.47
298	287	Casing Joints	5 1/2	20.00	P-110	Yes	43.70	Yes			2,426.8	12,558.17
299	288	Casing Joints	5 1/2	20.00	P-110	Yes	44.95	Yes			2,381.9	12,603.12
300	289	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			2,337.5	12,647.53
301	290	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			2,292.5	12,692.51
302	291	Casing Joints	5 1/2	20.00	P-110	Yes	37.27	Yes			2,255.2	12,729.78
303	292	Casing Joints	5 1/2	20.00	P-110	Yes	42.12	Yes			2,213.1	12,771.90
304	293	Casing Joints	5 1/2	20.00	P-110	Yes	43.46	Yes			2,169.6	12,815.36
305	294	Casing Joints	5 1/2	20.00	P-110	Yes	38.07	Yes			2,131.6	12,853.43
306	295	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			2,086.9	12,898.15
307	296	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			2,042.1	12,942.92
308	297	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			1,997.3	12,987.71
309	298	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			1,952.5	13,032.51



Centralizer Depths

Well Name: Hen 16N

Production, Set Depth: 14,985.0ftKB

API 05123517930000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00	Original KB Elevation (ft) 4,807.50	KB-Ground Distance (ft) 28.50	Spud Date 9/16/2023 22:30	Rig Release Date 9/19/2023 14:00	On Production Date	Abandon Date					

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
310	299	Casing Joints	5 1/2	20.00	P-110	Yes	45.20	Yes			1,907.3	13,077.71
311	300	Casing Joints	5 1/2	20.00	P-110	Yes	41.51	Yes			1,865.8	13,119.22
312	301	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			1,820.8	13,164.20
313	302	Casing Joints	5 1/2	20.00	P-110	Yes	44.83	Yes			1,776.0	13,209.03
314	303	Casing Joints	5 1/2	20.00	P-110	Yes	45.01	Yes			1,731.0	13,254.04
315	304	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			1,686.0	13,299.04
316	305	Casing Joints	5 1/2	20.00	P-110	Yes	45.13	Yes			1,640.8	13,344.17
317	306	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			1,595.9	13,389.15
318	307	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			1,551.4	13,433.60
319	308	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			1,507.8	13,477.23
320	309	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			1,462.8	13,522.23
321	310	Casing Joints	5 1/2	20.00	P-110	Yes	45.12	Yes			1,417.7	13,567.35
322	311	Casing Joints	5 1/2	20.00	P-110	Yes	42.87	Yes			1,374.8	13,610.22
323	312	Casing Joints	5 1/2	20.00	P-110	Yes	43.71	Yes			1,331.1	13,653.93
324	313	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			1,286.9	13,698.08
325	314	Casing Joints	5 1/2	20.00	P-110	Yes	38.11	Yes			1,248.8	13,736.19
326	315	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			1,203.8	13,781.18
327	316	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			1,159.5	13,825.51
328	317	Casing Joints	5 1/2	20.00	P-110	Yes	44.65	Yes			1,114.8	13,870.16
329	318	Casing Joints	5 1/2	20.00	P-110	Yes	38.16	Yes			1,076.7	13,908.32
330	319	Casing Joints	5 1/2	20.00	P-110	Yes	44.78	Yes			1,031.9	13,953.10
331	320	Casing Joints	5 1/2	20.00	P-110	Yes	40.24	Yes			991.7	13,993.34
332	321	Casing Joints	5 1/2	20.00	P-110	Yes	40.02	Yes			951.6	14,033.36
333	322	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			906.9	14,078.09
334	323	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			861.9	14,123.09
335	324	Casing Joints	5 1/2	20.00	P-110	Yes	44.39	Yes			817.5	14,167.48
336	325	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			772.5	14,212.47
337	326	Casing Joints	5 1/2	20.00	P-110	Yes	43.10	Yes			729.4	14,255.57
338	327	Casing Joints	5 1/2	20.00	P-110	Yes	43.37	Yes			686.1	14,298.94
339	328	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			642.5	14,342.54
340	329	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			598.1	14,386.95



Centralizer Depths

Well Name: Hen 16N

Production, Set Depth: 14,985.0ftKB

API 05123517930000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00	Original KB Elevation (ft) 4,807.50	KB-Ground Distance (ft) 28.50	Spud Date 9/16/2023 22:30	Rig Release Date 9/19/2023 14:00	On Production Date	Abandon Date					

Casing Run Tally												
Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jw/ry	Connections	Top (ftKB)	Cum Len (ft)
341	330	Casing Joints	5 1/2	20.00	P-110	Yes	44.42	Yes			553.6	14,431.37
342	331	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			509.2	14,475.78