

# Cement Post Job Report

**Client:** PDC Energy

**Well Name:** Hen 15N

**API #:** 05-123-51797

**Job Date:** September 16, 2023

**Job Type:** New Well - 5.5" Production String

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



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## TREATMENT REPORT

CLIENT	WELL	RIG	JOB TYPE	THREAD TYPE	WELLHEAD CONNECTION
<b>PDC Energy</b>	<b>Hen 15N</b>	<b>Patterson 272</b>	<b>Production</b>	<b>Buttress</b>	<b>5 1/2" Cement Head</b>

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
<b>15138</b>	<b>6814</b>	<b>90</b>	<b>1</b>	<b>225</b>	<b>200</b>

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

CASING/TUBING/DP DETAILS								
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)
<b>Surface</b>		<b>9.625</b>	<b>36</b>	<b>8.921</b>	<b>13.50</b>			<b>1705</b>
<b>Production</b>	<b>P-110</b>	<b>5.5</b>	<b>20</b>	<b>4.778</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>15124</b>
MAXIMUM CASING/TUBING/DP PSI			<b>9888</b>			MAXIMUM ANNULAR PSI		<b>8880</b>

Mud Type	OBM	Rotate Y,N	No	Circulation Data				Water Requirements (bbls)	
Mud ppg		Rate (rpm)		Circulate Time (hrs)				Spacers	<b>140</b>
Flow Temp		Torque Val.		Circulation Rate (bpm)				Stage 1 Lead	<b>112</b>
Vis. Sec/qt		Time (hr)		Full Circulation ? (Y,N,P)				Stage 1 Tail	<b>163</b>
PV (cP)		Pipe Reciprocation		Gas Present (Y,N)		<b>No</b>	Units	<b>0</b>	Stage 2 Lead
Yield Pt		Recip Y,N	<b>No</b>	Centralizers/Plugs				Stage 2 Tail	
10 sec gel		Stroke (ft)		Quantity & Type		<b>Customer Provided</b>		Displacement	<b>326</b>
10 min gel		Recip time		Top Plug/Type		<b>Customer Provided</b>		Wash up	<b>20</b>
30 min gel		Stuck ?		Bottom Plug/Type		<b>Customer Provided</b>		Total + 10% Safety	<b>837</b>

Preflush & Spacers		Stage 1 Lead - Class G		Stage 1 Tail - Class G		Stage 2 Lead		Stage 2 Tail		Displacement	
Spacer 1	<b>Spacer</b>	Density	<b>12.9</b>	Density	<b>13.7</b>	Density		Density		Fluid Type	<b>Water</b>
	<b>12</b>	Sacks	<b>1276</b>	Sacks	<b>1085</b>	Sacks		Sacks		Dens. ppg	<b>8.34</b>
Volume	<b>140</b>	Vol/bbbls	<b>256.8</b>	Vol/bbbls	<b>264.7</b>	Vol/bbbls	<b>0.0</b>	Vol/bbbls	<b>0.0</b>	Vol. bbl	<b>335</b>
Rate	<b>12</b>	Rate	<b>11</b>	Rate	<b>11</b>	Rate		Rate		Rate bpm	
Spacer 2		Yield	<b>1.13</b>	Yield	<b>1.37</b>	Yield		Yield		Clay Stay?	<b>No</b>
Density		Gal/Sk	<b>3.68</b>	Gal/Sk	<b>6.63</b>	Gal/Sk		Gal/Sk		Biocide ?	<b>Yes</b>
Volume		% Excess	<b>0</b>	% Excess	<b>0</b>	% Excess		% Excess		Slow @ bbl	<b>315</b>
Rate		TOL (ft)	<b>2330</b>	TOT (ft)	<b>8262</b>	TOL (ft)		TOT (ft)		Bump PSI	<b>3000</b>

Final Displacement (bbbls)	<b>335</b>
Bump Plug?	<b>Yes</b>
Final Bump Pressure (psi)	<b>3000</b>
Full Returns throughout job?	<b>Full</b>
Vol. away/Time when returns lost	
Vol. away when returns were regained	
Spacer to Surface?	<b>Yes</b>
Spacer volume returned (bbbls)	<b>20</b>
Cement to surface?	<b>No</b>
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)	<b>70</b>
Dens. ppg	<b>NA</b>	MFC 67 (gal) <b>168</b>
Sacks qty	<b>NA</b>	Defoamer (gal) <b>20</b>
Gal/sk	<b>NA</b>	Biocide (gal) <b>15</b>
Yield	<b>NA</b>	Corr. Inhib (gal) <b>0</b>
Lbs. of chloride used	<b>NA</b>	Fiber (lbs) <b>290</b>
Top out pipe used ?	<b>NA</b>	Chloride (lbs) <b>0</b>
Feet of top out pipe	<b>NA</b>	Retarder (lbs) <b>0</b>
Annulus holding?		Clay Stabilizer (gal) <b>0</b>
Sodium Silicate Used	Other	<b>0</b>



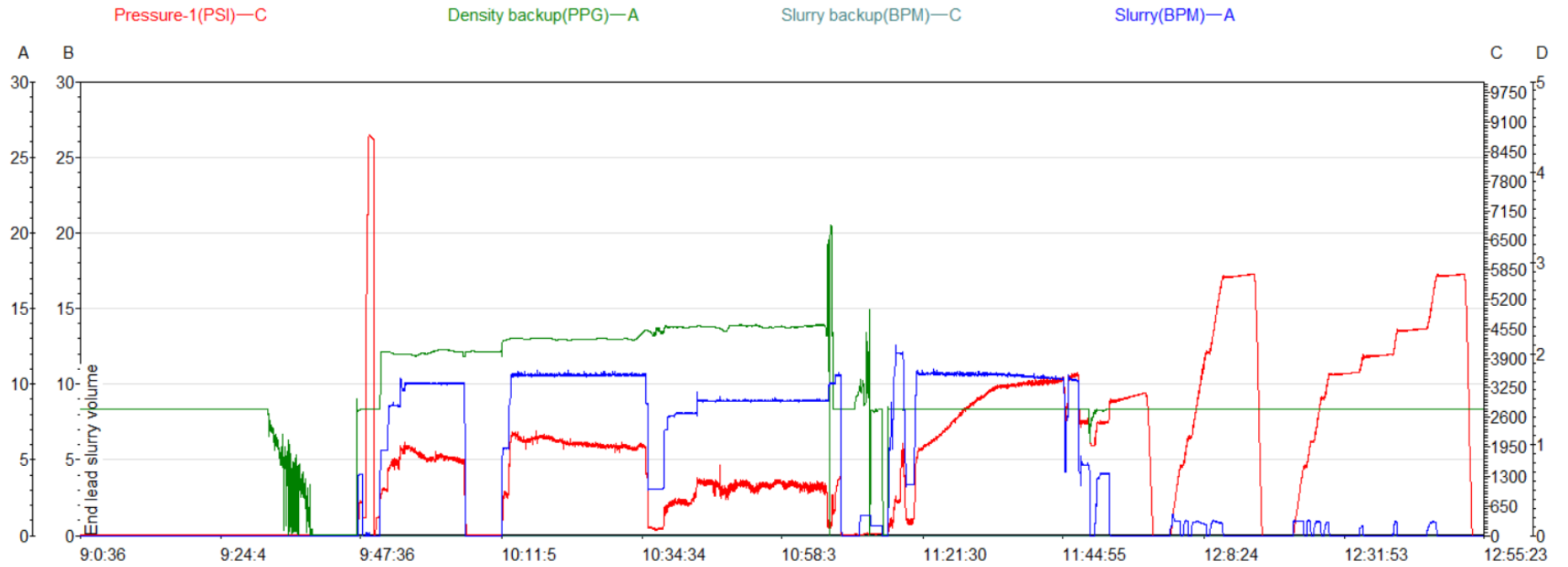
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## JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
<b>PDC Energy</b>	<b>Hen 15N</b>	<b>Patterson 272</b>	<b>Production</b>	<b>9/16/2023</b>	Temp / Hum / Air Press 62 Deg F / 50% / 25.21 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
9/16/2023	6:00:00 AM						Arrived on location with a location time of 06:00.
	7:45:00 AM						Spotted equipment and rigged up.
	9:15:00 AM						safety/pre job meeting.
	9:41:00 AM	8.34	4.0	3		390	loaded lines for pressure test.
	9:44:00 AM					8000	pressure tested.
	9:46:00 AM	12	8.5	140		1400	pumped spacer with fiber and surfactants.
	10:00:00 AM						shutdown dropped bottom plug.
	10:06:00 AM	12.9	10.5	257		2080	pumped 1276 sks,yield:1.13,GPS:3.68,Lead cement.
	10:30:00 AM	13.7	9.0	265		1100	pumped 1085 sks:yield:1.37,GPS:6.63, Tail cement.
	11:02:00 AM	8.34	10.0	15		900	pumped sugar water.
	11:03:00 AM						Washed up pumps and lines dropped top plug.
	11:12:00 AM	8.34	12.0	50		750	pumped water displacement.
	11:19:00 AM	8.34	10.6	50	50	2100	pumped water displacement.
	11:23:00 AM	8.34	10.7	50	100	2680	pumped water displacement.
	11:28:00 AM	8.34	10.6	50	150	3100	pumped water displacement.
	11:33:00 AM	8.34	10.5	50	200	3320	pumped water displacement.
	11:38:00 AM	8.34	10.4	50	250	3420	pumped water displacement.
	11:43:00 AM	8.34	9.5	15	300	2470	pumped water displacement.
	11:47:00 AM	8.34	4.0	20	315	2400	slowed rate to land plug.
	11:49:00 AM	8.34			335	2500	plug landed fcp was 2500 psi took to 3500 psi.
	11:54:00 AM						checked floats, held with 3.5 bbls back.
	11:58:00 AM	8.34					set packer.
	12:52:00 PM	8.34					rigged up to flush stack and flow line.
	1:10:00 AM						rigged down.

# Hen 15N Production Pump Chart – Pressure / Rate / Density



Chart



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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	43.94	Yes			15,043.7	80.33
9	3	Casing Joints	5 1/2	20.00	P-110	Yes	42.48	Yes			14,958.7	165.33
11	5	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			14,872.1	251.93
13	7	Casing Joints	5 1/2	20.00	P-110	Yes	42.45	Yes			14,787.1	336.87
15	9	Casing Joints	5 1/2	20.00	P-110	Yes	35.09	Yes			14,713.7	410.29
17		Marker Joint A	5 1/2	20.00	P-110	Yes	11.26	Yes			14,664.1	459.91
19	12	Casing Joints	5 1/2	20.00	P-110	Yes	39.96	Yes			14,580.3	543.66
21	14	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			14,499.0	625.01
23	16	Casing Joints	5 1/2	20.00	P-110	Yes	39.35	Yes			14,416.1	707.92
25	18	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			14,328.9	795.07
27	20	Casing Joints	5 1/2	20.00	P-110	Yes	42.67	Yes			14,248.6	875.42
29	22	Casing Joints	5 1/2	20.00	P-110	Yes	36.94	Yes			14,168.1	955.92
31	24	Casing Joints	5 1/2	20.00	P-110	Yes	40.95	Yes			14,084.3	1,039.75
33	26	Casing Joints	5 1/2	20.00	P-110	Yes	42.48	Yes			14,004.8	1,119.17
35	28	Casing Joints	5 1/2	20.00	P-110	Yes	37.59	Yes			13,923.2	1,200.85
37	30	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			13,835.3	1,288.66
39	32	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			13,749.0	1,375.05
41	34	Casing Joints	5 1/2	20.00	P-110	Yes	42.48	Yes			13,669.9	1,454.06
43	36	Casing Joints	5 1/2	20.00	P-110	Yes	39.74	Yes			13,587.0	1,536.98
45	38	Casing Joints	5 1/2	20.00	P-110	Yes	43.88	Yes			13,499.3	1,624.67
47	40	Casing Joints	5 1/2	20.00	P-110	Yes	39.21	Yes			13,419.5	1,704.55
49	42	Casing Joints	5 1/2	20.00	P-110	Yes	43.45	Yes			13,333.1	1,790.92
51	44	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			13,248.2	1,875.77
53	46	Casing Joints	5 1/2	20.00	P-110	Yes	43.45	Yes			13,162.1	1,961.92
55	48	Casing Joints	5 1/2	20.00	P-110	Yes	42.46	Yes			13,075.5	2,048.46
57	50	Casing Joints	5 1/2	20.00	P-110	Yes	41.95	Yes			12,991.1	2,132.88
59	52	Casing Joints	5 1/2	20.00	P-110	Yes	40.34	Yes			12,907.2	2,216.78
61	54	Casing Joints	5 1/2	20.00	P-110	Yes	41.00	Yes			12,823.6	2,300.43
63	56	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			12,739.1	2,384.92
65	58	Casing Joints	5 1/2	20.00	P-110	Yes	42.83	Yes			12,652.0	2,472.01
67	60	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			12,564.8	2,559.21



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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	43.66	Yes			12,478.5	2,645.54
71	64	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			12,390.5	2,733.50
73	66	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			12,302.1	2,821.89
75	68	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			12,213.9	2,910.14
77	70	Casing Joints	5 1/2	20.00	P-110	Yes	42.66	Yes			12,127.1	2,996.90
79	72	Casing Joints	5 1/2	20.00	P-110	Yes	42.02	Yes			12,040.8	3,083.20
81	74	Casing Joints	5 1/2	20.00	P-110	Yes	44.27	Yes			11,953.0	3,171.01
83	76	Casing Joints	5 1/2	20.00	P-110	Yes	44.28	Yes			11,865.1	3,258.95
85	78	Casing Joints	5 1/2	20.00	P-110	Yes	43.82	Yes			11,777.0	3,347.04
87	80	Casing Joints	5 1/2	20.00	P-110	Yes	43.08	Yes			11,690.1	3,433.90
89	82	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			11,602.2	3,521.76
91	84	Casing Joints	5 1/2	20.00	P-110	Yes	44.08	Yes			11,514.1	3,609.94
93	86	Casing Joints	5 1/2	20.00	P-110	Yes	44.29	Yes			11,425.7	3,698.33
95		Marker Joint B	5 1/2	20.00	P-110	Yes	10.82	Yes			11,370.6	3,753.44
97	89	Casing Joints	5 1/2	20.00	P-110	Yes	41.25	Yes			11,285.0	3,838.99
99	91	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			11,197.3	3,926.74
101	93	Casing Joints	5 1/2	20.00	P-110	Yes	43.94	Yes			11,109.2	4,014.78
103	95	Casing Joints	5 1/2	20.00	P-110	Yes	44.26	Yes			11,020.7	4,103.32
105	97	Casing Joints	5 1/2	20.00	P-110	Yes	44.29	Yes			10,932.2	4,191.85
107	99	Casing Joints	5 1/2	20.00	P-110	Yes	43.95	Yes			10,844.1	4,279.90
109	101	Casing Joints	5 1/2	20.00	P-110	Yes	43.53	Yes			10,757.7	4,366.28
111	103	Casing Joints	5 1/2	20.00	P-110	Yes	44.27	Yes			10,670.0	4,454.02
113	105	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			10,583.4	4,540.63
115	107	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			10,496.4	4,627.59
117	109	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			10,411.5	4,712.50
119	111	Casing Joints	5 1/2	20.00	P-110	Yes	44.29	Yes			10,323.1	4,800.87
121	113	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			10,235.0	4,888.99
123	115	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			10,147.9	4,976.09
125	117	Casing Joints	5 1/2	20.00	P-110	Yes	40.14	Yes			10,066.8	5,057.18
127	119	Casing Joints	5 1/2	20.00	P-110	Yes	44.94	Yes			9,977.7	5,146.27
129	121	Casing Joints	5 1/2	20.00	P-110	Yes	40.87	Yes			9,892.8	5,231.20



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00	Rig Release Date 9/16/2023 15:00	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	44.82	Yes			9,803.9	5,320.07
133	125	Casing Joints	5 1/2	20.00	P-110	Yes	41.55	Yes			9,718.3	5,405.75
135	127	Casing Joints	5 1/2	20.00	P-110	Yes	39.67	Yes			9,635.7	5,488.27
137	129	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			9,547.0	5,577.04
139	131	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			9,458.7	5,665.35
141	133	Casing Joints	5 1/2	20.00	P-110	Yes	44.21	Yes			9,370.2	5,753.78
143	135	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			9,282.2	5,841.83
145	137	Casing Joints	5 1/2	20.00	P-110	Yes	42.46	Yes			9,195.5	5,928.52
147	139	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			9,107.9	6,016.12
149	141	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			9,020.9	6,103.09
151	143	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			8,935.7	6,188.33
153	145	Casing Joints	5 1/2	20.00	P-110	Yes	40.28	Yes			8,852.5	6,271.48
155	147	Casing Joints	5 1/2	20.00	P-110	Yes	42.00	Yes			8,767.6	6,356.44
157	149	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			8,679.3	6,444.69
159	151	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			8,591.2	6,532.78
161	153	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			8,503.0	6,621.03
163	155	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			8,416.9	6,707.15
165	157	Casing Joints	5 1/2	20.00	P-110	Yes	43.81	Yes			8,329.3	6,794.74
167	159	Casing Joints	5 1/2	20.00	P-110	Yes	44.23	Yes			8,240.9	6,883.11
169	161	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			8,153.5	6,970.53
171	163	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			8,065.2	7,058.77
173	165	Casing Joints	5 1/2	20.00	P-110	Yes	43.77	Yes			7,977.7	7,146.33
175	167	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			7,889.3	7,234.67
177	169	Casing Joints	5 1/2	20.00	P-110	Yes	44.07	Yes			7,801.0	7,322.97
179	171	Casing Joints	5 1/2	20.00	P-110	Yes	43.45	Yes			7,713.5	7,410.55
181		Marker Joint C	5 1/2	20.00	P-110	Yes	10.57	Yes			7,658.7	7,465.34
182	173	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			7,614.6	7,509.38
183	174	Casing Joints	5 1/2	20.00	P-110	Yes	43.78	Yes			7,570.8	7,553.16
184	175	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			7,526.7	7,597.29
185	176	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			7,482.7	7,641.31
186	177	Casing Joints	5 1/2	20.00	P-110	Yes	43.57	Yes			7,439.1	7,684.88



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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)
187	178	Casing Joints	5 1/2	20.00	P-110	Yes	42.78	Yes			7,396.3	7,727.66
188	179	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			7,353.5	7,770.47
189	180	Casing Joints	5 1/2	20.00	P-110	Yes	42.49	Yes			7,311.0	7,812.96
190	181	Casing Joints	5 1/2	20.00	P-110	Yes	42.11	Yes			7,268.9	7,855.07
191	182	Casing Joints	5 1/2	20.00	P-110	Yes	44.14	Yes			7,224.8	7,899.21
192	183	Casing Joints	5 1/2	20.00	P-110	Yes	41.26	Yes			7,183.5	7,940.47
193	184	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			7,140.0	7,984.02
194	185	Casing Joints	5 1/2	20.00	P-110	Yes	42.68	Yes			7,097.3	8,026.70
195	186	Casing Joints	5 1/2	20.00	P-110	Yes	42.78	Yes			7,054.5	8,069.48
196	187	Casing Joints	5 1/2	20.00	P-110	Yes	43.27	Yes			7,011.3	8,112.75
197	188	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			6,967.6	8,156.38
198	189	Casing Joints	5 1/2	20.00	P-110	Yes	42.51	Yes			6,925.1	8,198.89
199	190	Casing Joints	5 1/2	20.00	P-110	Yes	43.37	Yes			6,881.7	8,242.26
200	191	Casing Joints	5 1/2	20.00	P-110	Yes	44.23	Yes			6,837.5	8,286.49
201	192	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			6,793.4	8,330.61
202	193	Casing Joints	5 1/2	20.00	P-110	Yes	44.21	Yes			6,749.2	8,374.82
203	194	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			6,705.1	8,418.94
204	195	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			6,661.0	8,463.04
205	196	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			6,616.7	8,507.28
206	197	Casing Joints	5 1/2	20.00	P-110	Yes	43.25	Yes			6,573.5	8,550.53
207	198	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			6,529.4	8,594.65
208	199	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			6,485.1	8,638.87
209	200	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			6,440.8	8,683.21
210	201	Casing Joints	5 1/2	20.00	P-110	Yes	41.95	Yes			6,398.8	8,725.16
211	202	Casing Joints	5 1/2	20.00	P-110	Yes	44.55	Yes			6,354.3	8,769.71
212		Marker Joint E	5 1/2	20.00	P-110	Yes	11.31	Yes			6,343.0	8,781.02
213	203	Casing Joints	5 1/2	20.00	P-110	Yes	43.41	Yes			6,299.6	8,824.43
214	204	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			6,255.1	8,868.87
215	205	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			6,211.0	8,913.00
216	206	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			6,166.8	8,957.24
217	207	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			6,122.6	9,001.36



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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)
218	208	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			6,078.6	9,045.40
219	209	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			6,034.4	9,089.65
220	210	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			5,990.3	9,133.75
221	211	Casing Joints	5 1/2	20.00	P-110	Yes	43.79	Yes			5,946.5	9,177.54
222	212	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			5,902.2	9,221.78
223	213	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			5,858.4	9,265.61
224	214	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			5,814.3	9,309.66
225	215	Casing Joints	5 1/2	20.00	P-110	Yes	42.48	Yes			5,771.9	9,352.14
226	216	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			5,728.0	9,395.99
227	217	Casing Joints	5 1/2	20.00	P-110	Yes	43.30	Yes			5,684.7	9,439.29
228	218	Casing Joints	5 1/2	20.00	P-110	Yes	42.69	Yes			5,642.0	9,481.98
229	219	Casing Joints	5 1/2	20.00	P-110	Yes	43.78	Yes			5,598.2	9,525.76
230	220	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			5,554.2	9,569.81
231	221	Casing Joints	5 1/2	20.00	P-110	Yes	43.91	Yes			5,510.3	9,613.72
232	222	Casing Joints	5 1/2	20.00	P-110	Yes	44.21	Yes			5,466.1	9,657.93
233	223	Casing Joints	5 1/2	20.00	P-110	Yes	43.30	Yes			5,422.8	9,701.23
234	224	Casing Joints	5 1/2	20.00	P-110	Yes	43.49	Yes			5,379.3	9,744.72
235	225	Casing Joints	5 1/2	20.00	P-110	Yes	43.19	Yes			5,336.1	9,787.91
236	226	Casing Joints	5 1/2	20.00	P-110	Yes	43.10	Yes			5,293.0	9,831.01
237	227	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			5,248.8	9,875.23
238	228	Casing Joints	5 1/2	20.00	P-110	Yes	42.37	Yes			5,206.4	9,917.60
239	229	Casing Joints	5 1/2	20.00	P-110	Yes	42.79	Yes			5,163.6	9,960.39
240	230	Casing Joints	5 1/2	20.00	P-110	Yes	42.05	Yes			5,121.6	10,002.44
241	231	Casing Joints	5 1/2	20.00	P-110	Yes	43.39	Yes			5,078.2	10,045.83
242	232	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			5,034.1	10,089.87
243	233	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			4,990.3	10,133.67
244	234	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			4,947.5	10,176.47
245	235	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			4,903.4	10,220.60
246	236	Casing Joints	5 1/2	20.00	P-110	Yes	44.06	Yes			4,859.3	10,264.66
247	237	Casing Joints	5 1/2	20.00	P-110	Yes	44.19	Yes			4,815.2	10,308.85
248	238	Casing Joints	5 1/2	20.00	P-110	Yes	41.72	Yes			4,773.4	10,350.57



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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)
249	239	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			4,729.2	10,394.82
250	240	Casing Joints	5 1/2	20.00	P-110	Yes	43.33	Yes			4,685.9	10,438.15
251	241	Casing Joints	5 1/2	20.00	P-110	Yes	40.69	Yes			4,645.2	10,478.84
252	242	Casing Joints	5 1/2	20.00	P-110	Yes	43.31	Yes			4,601.9	10,522.15
253	243	Casing Joints	5 1/2	20.00	P-110	Yes	41.89	Yes			4,560.0	10,564.04
254	244	Casing Joints	5 1/2	20.00	P-110	Yes	44.56	Yes			4,515.4	10,608.60
255	245	Casing Joints	5 1/2	20.00	P-110	Yes	42.00	Yes			4,473.4	10,650.60
256	246	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			4,430.0	10,694.04
257	247	Casing Joints	5 1/2	20.00	P-110	Yes	41.99	Yes			4,388.0	10,736.03
258	248	Casing Joints	5 1/2	20.00	P-110	Yes	44.07	Yes			4,343.9	10,780.10
259	249	Casing Joints	5 1/2	20.00	P-110	Yes	43.36	Yes			4,300.5	10,823.46
260	250	Casing Joints	5 1/2	20.00	P-110	Yes	42.04	Yes			4,258.5	10,865.50
261	251	Casing Joints	5 1/2	20.00	P-110	Yes	43.64	Yes			4,214.9	10,909.14
262	252	Casing Joints	5 1/2	20.00	P-110	Yes	43.64	Yes			4,171.2	10,952.78
263	253	Casing Joints	5 1/2	20.00	P-110	Yes	41.54	Yes			4,129.7	10,994.32
264	254	Casing Joints	5 1/2	20.00	P-110	Yes	42.18	Yes			4,087.5	11,036.50
265	255	Casing Joints	5 1/2	20.00	P-110	Yes	44.06	Yes			4,043.4	11,080.56
266	256	Casing Joints	5 1/2	20.00	P-110	Yes	43.40	Yes			4,000.0	11,123.96
267	257	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			3,956.4	11,167.61
268	258	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			3,912.3	11,211.74
269	259	Casing Joints	5 1/2	20.00	P-110	Yes	43.68	Yes			3,868.6	11,255.42
270	260	Casing Joints	5 1/2	20.00	P-110	Yes	44.30	Yes			3,824.3	11,299.72
271	261	Casing Joints	5 1/2	20.00	P-110	Yes	44.95	Yes			3,779.3	11,344.67
272	262	Casing Joints	5 1/2	20.00	P-110	Yes	42.49	Yes			3,736.8	11,387.16
273	263	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			3,692.7	11,431.26
274	264	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			3,650.0	11,474.01
275	265	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			3,605.8	11,518.25
276	266	Casing Joints	5 1/2	20.00	P-110	Yes	41.84	Yes			3,563.9	11,560.09
277	267	Casing Joints	5 1/2	20.00	P-110	Yes	43.62	Yes			3,520.3	11,603.71
278	268	Casing Joints	5 1/2	20.00	P-110	Yes	43.62	Yes			3,476.7	11,647.33
279	269	Casing Joints	5 1/2	20.00	P-110	Yes	44.55	Yes			3,432.1	11,691.88



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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)
280	270	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			3,387.9	11,736.13
281	271	Casing Joints	5 1/2	20.00	P-110	Yes	44.85	Yes			3,343.0	11,780.98
283	272	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			3,284.5	11,839.50
284	273	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			3,241.0	11,883.00
285	274	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			3,197.0	11,927.05
286	275	Casing Joints	5 1/2	20.00	P-110	Yes	43.54	Yes			3,153.4	11,970.59
287	276	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			3,109.4	12,014.59
288	277	Casing Joints	5 1/2	20.00	P-110	Yes	42.79	Yes			3,066.6	12,057.38
289	278	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			3,022.6	12,101.40
290	279	Casing Joints	5 1/2	20.00	P-110	Yes	41.83	Yes			2,980.8	12,143.23
291	280	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			2,936.7	12,187.26
292	281	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			2,893.7	12,230.31
293	282	Casing Joints	5 1/2	20.00	P-110	Yes	43.54	Yes			2,850.2	12,273.85
294	283	Casing Joints	5 1/2	20.00	P-110	Yes	37.89	Yes			2,812.3	12,311.74
295	284	Casing Joints	5 1/2	20.00	P-110	Yes	41.15	Yes			2,771.1	12,352.89
296	285	Casing Joints	5 1/2	20.00	P-110	Yes	42.50	Yes			2,728.6	12,395.39
297	286	Casing Joints	5 1/2	20.00	P-110	Yes	43.88	Yes			2,684.7	12,439.27
298	287	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			2,640.6	12,483.37
299	288	Casing Joints	5 1/2	20.00	P-110	Yes	40.62	Yes			2,600.0	12,523.99
300	289	Casing Joints	5 1/2	20.00	P-110	Yes	41.60	Yes			2,558.4	12,565.59
301	290	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			2,514.7	12,609.34
302	291	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			2,471.0	12,652.99
303	292	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			2,427.0	12,697.01
304	293	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			2,383.4	12,740.59
305	294	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			2,339.3	12,784.69
306	295	Casing Joints	5 1/2	20.00	P-110	Yes	44.16	Yes			2,295.2	12,828.85
307	296	Casing Joints	5 1/2	20.00	P-110	Yes	43.46	Yes			2,251.7	12,872.31
308	297	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			2,207.5	12,916.55
309	298	Casing Joints	5 1/2	20.00	P-110	Yes	44.30	Yes			2,163.2	12,960.85
310	299	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			2,119.7	13,004.29
311	300	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			2,075.5	13,048.46



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00		Rig Release Date 9/16/2023 15:00		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)
312	301	Casing Joints	5 1/2	20.00	P-110	Yes	44.27	Yes			2,031.3	13,092.73
313	302	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			1,987.2	13,136.84
314	303	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			1,943.0	13,180.96
315	304	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			1,898.9	13,225.06
316	305	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			1,855.8	13,268.21
317	306	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			1,811.7	13,312.31
318	307	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			1,767.6	13,356.41
319	308	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			1,723.4	13,400.59
320	309	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			1,679.6	13,444.44
321	310	Casing Joints	5 1/2	20.00	P-110	Yes	44.08	Yes			1,635.5	13,488.52
322	311	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			1,591.3	13,532.69
323	312	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			1,547.1	13,576.93
324	313	Casing Joints	5 1/2	20.00	P-110	Yes	44.28	Yes			1,502.8	13,621.21
325	314	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			1,458.9	13,665.07
326	315	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			1,414.8	13,709.17
327	316	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			1,370.6	13,753.42
328	317	Casing Joints	5 1/2	20.00	P-110	Yes	43.72	Yes			1,326.9	13,797.14
329	318	Casing Joints	5 1/2	20.00	P-110	Yes	44.16	Yes			1,282.7	13,841.30
330	319	Casing Joints	5 1/2	20.00	P-110	Yes	44.29	Yes			1,238.4	13,885.59
331	320	Casing Joints	5 1/2	20.00	P-110	Yes	44.28	Yes			1,194.1	13,929.87
332	321	Casing Joints	5 1/2	20.00	P-110	Yes	43.81	Yes			1,150.3	13,973.68
333	322	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			1,106.0	14,017.99
334	323	Casing Joints	5 1/2	20.00	P-110	Yes	39.68	Yes			1,066.3	14,057.67
335	324	Casing Joints	5 1/2	20.00	P-110	Yes	43.40	Yes			1,022.9	14,101.07
336	325	Casing Joints	5 1/2	20.00	P-110	Yes	44.06	Yes			978.9	14,145.13
337	326	Casing Joints	5 1/2	20.00	P-110	Yes	43.53	Yes			935.3	14,188.66
338	327	Casing Joints	5 1/2	20.00	P-110	Yes	43.26	Yes			892.1	14,231.92
339	328	Casing Joints	5 1/2	20.00	P-110	Yes	39.24	Yes			852.8	14,271.16
340	329	Casing Joints	5 1/2	20.00	P-110	Yes	44.23	Yes			808.6	14,315.39
341	330	Casing Joints	5 1/2	20.00	P-110	Yes	42.59	Yes			766.0	14,357.98
342	331	Casing Joints	5 1/2	20.00	P-110	Yes	40.30	Yes			725.7	14,398.28



# Centralizer Depths

Well Name: Hen 15N

Production, Set Depth: 15,124.0ftKB

API 0512351797000		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 9/13/2023 22:00	Rig Release Date 9/16/2023 15:00	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)
343	332	Casing Joints	5 1/2	20.00	P-110	Yes	44.07	Yes			681.7	14,442.35
344	333	Casing Joints	5 1/2	20.00	P-110	Yes	44.28	Yes			637.4	14,486.63
345	334	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			593.1	14,530.94
346	335	Casing Joints	5 1/2	20.00	P-110	Yes	45.29	Yes			547.8	14,576.23
347	336	Casing Joints	5 1/2	20.00	P-110	Yes	42.62	Yes			505.2	14,618.85