



Source Rock Analysis

TOC, Kerogen Quality and Thermal Maturity Testing

Rock Eval 6
Version 4.09

Agave oil & Gas LLC

Haas 1-29

Niobrara, Fort Hays, Greenhorn

150996G

1/27/2016

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Source Rock Analysis Data Page

Well Name	Formation	Location	Sample ID	Depth ft.	Sample Wt. mg	TOC wt%	S1 mg HC/g	S2 mg HC/g	S3 CO ₂ mg CO ₂ /g	S3 CO mg CO/g	Tmax ° C	HI S ₂ x100/TOC	OI S ₃ x100/TOC
Haas 1-29	Not provided	Elbert Co., CO	24	6512.08	60.6	4.95	1.54	27.2	0.12	0.15	431	549.49	2.42
Haas 1-29	Not provided	Elbert Co., CO	25	6517.98	60.8	4.86	1.74	26.52	0.14	0.4	430	545.68	2.88
Haas 1-29	Not provided	Elbert Co., CO	23	7077.97	60.8	1.73	1.46	8.61	0.24	0.02	432	497.69	13.87
Haas 1-29	Not provided	Elbert Co., CO	22	7090	60	2.46	1.67	13.66	0.29	1.5	433	555.28	11.79
Haas 1-29	Not provided	Elbert Co., CO	21	7095.5	60.8	7.28	2.99	41.86	0.2	0.15	433	575.00	2.75
Haas 1-29	Not provided	Elbert Co., CO	20	7111.99	60.8	0.47	0.17	1.63	0.27	0.3	436	346.81	57.45
Haas 1-29	Not provided	Elbert Co., CO	19	7116.57	60.7	4.72	3.31	26.74	0.24	0.08	434	566.53	5.08
Haas 1-29	Not provided	Elbert Co., CO	18	7123	60.4	2.9	3.66	14.3	0.23	0.7	435	493.10	7.93
Haas 1-29	Not provided	Elbert Co., CO	17	7127.03	60.3	0.31	0.05	1.2	0.13	0.08	432	387.10	41.94
Haas 1-29	Not provided	Elbert Co., CO	16	7134.95	60.4	6.06	2.99	34.08	0.24	0.6	434	562.38	3.96
Haas 1-29	Not provided	Elbert Co., CO	15	7155.93	60	0.22	0.01	0.05	0.24	0.02	431	22.73	109.09
Haas 1-29	Not provided	Elbert Co., CO	14	7231.03	60.3	0.07	0.00	0.00	0.18	0.2	444	0.00	257.14
Haas 1-29	Not provided	Elbert Co., CO	13	7242.54	60.4	0.08	0.00	0.00	0.17	0.04	438	0.00	212.50
Haas 1-29	Not provided	Elbert Co., CO	12	7247.98	60.1	0.03	0.01	0.02	0.23	0.2	437	66.67	766.67
Haas 1-29	Not provided	Elbert Co., CO	11	7266.05	60.6	0.61	0.09	1.31	0.07	0.01	439	214.75	11.48
Haas 1-29	Not provided	Elbert Co., CO	10	7272.44	60.5	2.65	0.93	11.28	0.16	0.4	438	425.66	6.04
Haas 1-29	Not provided	Elbert Co., CO	9	7345.54	60.5	3.06	1.07	14.78	0.19	0.02	437	483.01	6.21
Haas 1-29	Not provided	Elbert Co., CO	8	7385.48	60.5	1.95	1.09	8.84	0.19	0.7	438	453.33	9.74
Haas 1-29	Not provided	Elbert Co., CO	7	7391.03	60.7	0.14	0.03	0.25	0.15	0.01	442	178.57	107.14
Haas 1-29	Not provided	Elbert Co., CO	6	7479.52	60.3	3.9	1.92	18.98	0.12	0.4	440	486.67	3.08
Haas 1-29	Not provided	Elbert Co., CO	5	7527.55	60.5	4.47	2.22	19.31	0.17	0.02	440	431.99	3.80
Haas 1-29	Not provided	Elbert Co., CO	4	7533.58	60.2	4.21	1.77	17.09	0.16	0.3	440	405.94	3.80
Haas 1-29	Not provided	Elbert Co., CO	3	7547.08	60.1	3.6	1.59	15.82	0.15	0.12	440	439.44	4.17
Haas 1-29	Not provided	Elbert Co., CO	1	7622.07	60.7	0.29	0.04	0.23	0.06	0.2	440	79.31	20.69
Haas 1-29	Not provided	Elbert Co., CO	2	7667.04	60	0.76	0.15	1.25	0.03	0.02	442	164.47	3.95

*Unreliable maturity and HI due to poor S₂ yields



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Well Name	PI S1/(S1+S2)	OSI S1x100/TOC	Oil in Rock bbl oil/ac-ft	Oil From Kerogen bbl oil/ac-ft	Gas From Kerogen mcf/ac-ft	VRo-Eq (%) Calculated	Remarks Comments
Haas 1-29	0.05	31.11	33.71	595.41	3572.45	0.60	
Haas 1-29	0.06	35.80	38.09	580.52	3483.14	0.58	
Haas 1-29	0.14	84.39	31.96	188.47	1130.84	0.62	
Haas 1-29	0.11	67.89	36.56	299.02	1794.10	0.63	
Haas 1-29	0.07	41.07	65.45	916.32	5497.89	0.63	
Haas 1-29	0.09	36.17	3.72	35.68	214.08	0.69	
Haas 1-29	0.11	70.13	72.46	585.34	3512.03	0.65	
Haas 1-29	0.20	126.21	80.12	313.03	1878.16	0.67	
Haas 1-29	0.04	16.13	1.09	26.27	157.61	0.62	
Haas 1-29	0.08	49.34	65.45	746.01	4476.07	0.65	
Haas 1-29	0.17	4.55	0.22	1.09	6.57		*unreliable maturity
Haas 1-29	0.00	0.00	0.00	0.00	0.00		*No S2 detected
Haas 1-29	0.00	0.00	0.00	0.00	0.00		*No S2 detected
Haas 1-29	0.33	33.33	0.22	0.44	2.63		*unreliable maturity
Haas 1-29	0.06	14.75	1.97	28.68	172.06	0.74	
Haas 1-29	0.08	35.09	20.36	246.92	1481.52	0.72	
Haas 1-29	0.07	34.97	23.42	323.53	1941.21	0.71	
Haas 1-29	0.11	55.90	23.86	193.51	1161.05	0.72	
Haas 1-29	0.11	21.43	0.66	5.47	32.84	0.80	**Low temperature S2 shoulder
Haas 1-29	0.09	49.23	42.03	415.47	2492.83	0.76	
Haas 1-29	0.10	49.66	48.60	422.70	2536.18	0.76	
Haas 1-29	0.09	42.04	38.75	374.10	2244.60	0.76	
Haas 1-29	0.09	44.17	34.81	346.30	2077.80	0.76	
Haas 1-29	0.15	13.79	0.88	5.03	30.21	0.76	
Haas 1-29	0.11	19.74	3.28	27.36	164.18	0.80	

*Unreliable maturity and HI due to poor S2 yields