

Gas Quality Reports

LS495 - Grabham to Welda at Grabham
5/17/2019 - 8/17/2019

Gas Day	Gross Heating Value (HHV) (Btu/scf)	Net Heating Value (LHV) (Btu/scf)	Specific Gravity	Wobbe Index	Hydrocarbon Dewpoint (HCDP) (deg F)	N2 (mol%)	CO2 (mol%)	Methane (mol%)	Ethane (mol%)	Propane (mol%)	Isobutane (mol%)	N-Butane (mol%)	Isopentane (mol%)	N-Pentane (mol%)	C6 Plus (mol%)
05/17/2019	1,022.4	1,004.6	0.587	1,333.93	-154.63	1.912	0.453	93.625	3.859	0.133	0.005	0.009	0.002	0.002	0
05/18/2019	1,022.6	1,004.8	0.588	1,333.92	-154.31	1.919	0.456	93.593	3.869	0.145	0.005	0.009	0.002	0.002	0.001
05/19/2019	1,022.4	1,004.6	0.588	1,333.40	-153.52	1.957	0.452	93.587	3.818	0.153	0.008	0.015	0.004	0.004	0.003
05/20/2019	1,022.8	1,005.0	0.588	1,333.67	-153.62	1.956	0.453	93.462	3.985	0.127	0.004	0.009	0.002	0.002	0.001
05/21/2019	1,024.9	1,007.1	0.588	1,336.98	-152.91	1.805	0.438	93.587	4.017	0.135	0.005	0.009	0.002	0.002	0.001
05/22/2019	1,023.6	1,005.8	0.588	1,334.90	-153.05	1.930	0.429	93.498	3.982	0.137	0.006	0.011	0.003	0.003	0.002
05/23/2019	1,023.2	1,005.4	0.588	1,333.84	-153.35	1.960	0.452	93.404	4.036	0.133	0.004	0.008	0.002	0.002	0
05/24/2019	1,024.2	1,006.3	0.589	1,334.64	-152.55	1.946	0.449	93.334	4.109	0.145	0.005	0.008	0.002	0.002	0
05/25/2019	1,025.6	1,007.7	0.588	1,337.04	-152.30	1.809	0.452	93.451	4.135	0.137	0.004	0.008	0.002	0.002	0.001
05/26/2019	1,026.0	1,008.2	0.590	1,335.65	-150.73	1.907	0.477	93.165	4.258	0.166	0.006	0.012	0.003	0.003	0.003
05/27/2019	1,026.8	1,008.9	0.591	1,335.97	-149.66	1.956	0.453	93.061	4.297	0.199	0.009	0.016	0.003	0.003	0.003
05/28/2019	1,026.5	1,008.7	0.590	1,336.49	-150.41	1.897	0.454	93.193	4.256	0.168	0.008	0.014	0.004	0.003	0.003
05/29/2019	1,024.0	1,006.2	0.588	1,335.48	-152.88	1.970	0.382	93.458	4.035	0.134	0.005	0.009	0.002	0.002	0.002
05/30/2019	1,022.9	1,005.1	0.588	1,334.35	-153.58	2.007	0.383	93.523	3.928	0.138	0.006	0.010	0.002	0.002	0.002
05/31/2019	1,018.7	1,001.0	0.587	1,329.98	-156.48	2.139	0.403	93.710	3.582	0.147	0.005	0.009	0.002	0.002	0.001
06/01/2019	1,020.0	1,002.2	0.586	1,332.74	-156.71	1.993	0.388	93.893	3.580	0.132	0.004	0.007	0.001	0.001	0
06/02/2019	1,018.1	1,000.3	0.585	1,331.04	-157.61	2.060	0.375	94.086	3.275	0.178	0.008	0.014	0.002	0.002	0
06/03/2019	1,017.4	999.7	0.586	1,329.48	-157.26	2.118	0.401	94.034	3.199	0.214	0.010	0.018	0.003	0.002	0.001
06/04/2019	995.4	978.1	0.583	1,304.19	-173.04	2.714	0.684	94.887	1.490	0.162	0.015	0.028	0.006	0.006	0.008
06/05/2019	1,015.8	998.1	0.584	1,329.67	-159.93	1.993	0.423	94.380	3.050	0.130	0.006	0.011	0.003	0.003	0.002
06/06/2019	993.0	975.8	0.582	1,301.82	-176.83	2.725	0.730	95.036	1.309	0.137	0.014	0.027	0.007	0.006	0.008
06/07/2019	987.3	970.1	0.577	1,299.78	-199.97	2.411	0.858	96.191	0.390	0.085	0.014	0.026	0.007	0.007	0.012
06/08/2019	1,003.5	986.0	0.581	1,316.79	-170.27	2.139	0.634	95.150	1.949	0.093	0.007	0.013	0.003	0.003	0.006
06/09/2019	991.2	973.9	0.578	1,303.37	-199.97	2.400	0.797	95.808	0.852	0.091	0.012	0.022	0.006	0.005	0.007
06/10/2019	980.1	963.0	0.580	1,286.87	-199.97	3.065	0.904	95.575	0.259	0.112	0.018	0.035	0.009	0.009	0.015
06/11/2019	985.9	968.8	0.577	1,297.79	-199.97	2.492	0.870	96.153	0.330	0.088	0.014	0.026	0.007	0.007	0.013
06/12/2019	995.1	977.8	0.580	1,306.68	-177.89	2.402	0.744	95.435	1.245	0.127	0.011	0.020	0.005	0.005	0.007
06/13/2019	982.5	965.4	0.579	1,291.46	-199.97	2.816	0.894	95.833	0.277	0.102	0.016	0.031	0.009	0.008	0.015
06/14/2019	990.4	973.2	0.579	1,301.71	-199.97	2.453	0.828	95.742	0.830	0.088	0.012	0.023	0.006	0.006	0.012
06/15/2019	1,009.2	991.6	0.586	1,318.51	-162.14	2.320	0.606	94.075	2.846	0.120	0.007	0.014	0.003	0.003	0.006
06/16/2019	980.8	963.7	0.580	1,287.61	-199.97	3.060	0.890	95.511	0.347	0.113	0.017	0.033	0.009	0.008	0.012
06/17/2019	1,013.5	995.9	0.584	1,326.46	-161.19	2.009	0.514	94.438	2.888	0.124	0.006	0.011	0.003	0.002	0.004
06/18/2019	1,019.7	1,002.0	0.585	1,333.12	-157.51	1.870	0.440	94.082	3.468	0.128	0.003	0.007	0.001	0.001	0
06/19/2019	1,021.4	1,003.7	0.584	1,336.06	-157.15	1.691	0.453	94.238	3.484	0.121	0.004	0.007	0.001	0.001	0
06/20/2019	1,022.4	1,004.6	0.584	1,337.97	-157.06	1.612	0.431	94.345	3.482	0.119	0.004	0.007	0.001	0.001	0
06/21/2019	1,021.9	1,004.1	0.583	1,338.80	-158.14	1.546	0.414	94.600	3.312	0.119	0.003	0.006	0	0	0
06/22/2019	1,023.6	1,005.8	0.583	1,341.21	-157.52	1.413	0.426	94.635	3.411	0.107	0.003	0.005	0	0	0
06/23/2019	1,022.2	1,004.4	0.583	1,338.34	-157.54	1.567	0.435	94.462	3.411	0.115	0.003	0.006	0.001	0.001	0
06/24/2019	1,018.5	1,000.8	0.583	1,333.47	-159.20	1.819	0.416	94.400	3.244	0.107	0.004	0.007	0.001	0.001	0
06/25/2019	1,017.4	999.7	0.583	1,332.44	-159.93	1.900	0.385	94.410	3.189	0.107	0.003	0.005	0	0.001	0
06/26/2019	1,020.7	1,002.9	0.585	1,334.19	-156.64	1.898	0.393	94.023	3.530	0.139	0.005	0.009	0.001	0.001	0
06/27/2019	1,024.1	1,006.3	0.589	1,334.08	-150.66	2.007	0.435	93.462	3.790	0.230	0.017	0.036	0.008	0.008	0.006
06/28/2019	1,021.4	1,003.6	0.586	1,334.72	-155.70	1.874	0.402	94.017	3.522	0.155	0.007	0.014	0.003	0.003	0.002

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06/29/2019	1,023.5	1,005.7	0.586	1,337.16	-153.43	1.765	0.407	94.084	3.508	0.175	0.013	0.028	0.007	0.007	0.006
06/30/2019	1,022.6	1,004.8	0.585	1,337.21	-155.09	1.710	0.413	94.283	3.379	0.161	0.011	0.025	0.006	0.006	0.005
07/01/2019	1,023.8	1,006.0	0.585	1,338.43	-153.11	1.694	0.396	94.304	3.328	0.197	0.017	0.038	0.009	0.010	0.008
07/02/2019	1,025.1	1,007.3	0.588	1,336.91	-151.69	1.797	0.453	93.661	3.869	0.167	0.011	0.025	0.006	0.007	0.005
07/03/2019	1,027.6	1,009.7	0.588	1,339.75	-150.96	1.618	0.494	93.605	4.104	0.140	0.008	0.017	0.004	0.005	0.005
07/04/2019	1,026.4	1,008.6	0.587	1,339.86	-153.39	1.540	0.503	93.795	4.056	0.100	0.002	0.004	0	0	0
07/05/2019	1,027.2	1,009.3	0.588	1,339.50	-152.31	1.565	0.530	93.587	4.195	0.115	0.003	0.005	0	0	0
07/06/2019	1,026.4	1,008.5	0.587	1,340.18	-153.47	1.522	0.497	93.864	4.001	0.107	0.003	0.005	0.001	0.001	0
07/07/2019	1,026.3	1,008.4	0.586	1,340.59	-154.05	1.495	0.487	93.991	3.896	0.116	0.004	0.007	0.002	0.002	0
07/08/2019	1,025.6	1,007.8	0.587	1,338.66	-153.45	1.667	0.459	93.709	4.052	0.104	0.002	0.004	0.001	0.001	0
07/09/2019	1,023.3	1,005.5	0.586	1,336.39	-155.31	1.698	0.489	93.889	3.801	0.111	0.003	0.006	0.001	0.001	0
07/10/2019	1,032.0	1,014.0	0.591	1,342.24	-147.85	1.616	0.499	93.005	4.683	0.177	0.006	0.011	0.002	0.002	0.001
07/11/2019	1,045.2	1,027.0	0.601	1,348.07	-54.26	1.741	0.513	91.615	5.490	0.464	0.036	0.088	0.018	0.020	0.015
07/12/2019	1,041.0	1,022.9	0.597	1,347.10	-61.68	1.680	0.474	92.203	5.139	0.373	0.026	0.062	0.014	0.016	0.014
07/13/2019	1,033.3	1,015.3	0.592	1,343.33	-146.96	1.672	0.443	92.832	4.846	0.196	0.004	0.006	0	0	0
07/14/2019	1,036.5	1,018.5	0.596	1,342.99	-143.29	1.742	0.519	92.104	5.395	0.227	0.005	0.008	0	0	0
07/15/2019	1,036.2	1,018.2	0.595	1,343.06	-143.47	1.750	0.500	92.199	5.287	0.248	0.006	0.010	0.001	0	0
07/16/2019	1,038.6	1,020.5	0.596	1,345.35	-142.20	1.655	0.511	92.104	5.451	0.261	0.007	0.010	0.001	0	0
07/17/2019	1,036.3	1,018.3	0.595	1,343.28	-143.99	1.690	0.530	92.214	5.342	0.212	0.005	0.007	0	0	0
07/18/2019	1,036.4	1,018.4	0.594	1,345.02	-144.63	1.581	0.509	92.510	5.166	0.223	0.005	0.007	0	0	0
07/19/2019	1,035.1	1,017.1	0.594	1,343.24	-145.13	1.675	0.504	92.459	5.139	0.211	0.005	0.006	0	0	0
07/20/2019	1,036.6	1,018.5	0.594	1,344.89	-144.30	1.620	0.497	92.442	5.194	0.234	0.005	0.008	0	0	0
07/21/2019	1,036.2	1,018.2	0.592	1,346.39	-145.46	1.511	0.474	92.772	5.018	0.213	0.005	0.007	0	0	0
07/22/2019	1,035.8	1,017.8	0.594	1,343.70	-144.41	1.711	0.476	92.391	5.174	0.229	0.006	0.010	0.001	0.001	0
07/23/2019	1,034.1	1,016.1	0.595	1,340.43	-144.87	1.876	0.493	92.138	5.289	0.193	0.004	0.006	0	0	0
07/24/2019	1,033.8	1,015.8	0.595	1,340.21	-145.02	1.850	0.513	92.199	5.224	0.200	0.004	0.007	0.001	0.001	0
07/25/2019	1,022.4	1,004.7	0.592	1,329.08	-151.59	2.104	0.595	92.900	4.205	0.172	0.006	0.011	0.002	0.002	0.002
07/26/2019	1,029.5	1,011.6	0.591	1,339.19	-148.89	1.692	0.535	93.113	4.415	0.227	0.006	0.008	0.001	0.001	0.001
07/27/2019	1,013.3	995.6	0.586	1,323.52	-159.94	2.018	0.661	94.166	2.955	0.166	0.009	0.015	0.003	0.003	0.005
07/28/2019	1,034.8	1,016.8	0.592	1,344.96	-146.10	1.544	0.486	92.884	4.833	0.238	0.006	0.009	0	0	0
07/29/2019	1,037.2	1,019.1	0.595	1,344.09	-142.96	1.716	0.495	92.180	5.333	0.258	0.007	0.010	0.001	0	0
07/30/2019	1,037.4	1,019.4	0.597	1,343.18	-142.20	1.777	0.514	91.973	5.449	0.265	0.007	0.012	0.001	0.001	0
07/31/2019	1,041.5	1,023.4	0.595	1,350.00	-141.19	1.419	0.505	92.342	5.396	0.316	0.008	0.012	0.001	0.001	0
08/01/2019	1,040.7	1,022.6	0.594	1,350.06	-141.89	1.412	0.479	92.544	5.216	0.321	0.010	0.015	0.001	0.001	0
08/02/2019	1,044.2	1,026.0	0.600	1,347.57	-137.35	1.698	0.538	91.332	6.059	0.331	0.014	0.023	0.003	0.002	0
08/03/2019	1,044.4	1,026.3	0.601	1,347.11	-137.22	1.703	0.569	91.155	6.243	0.306	0.009	0.013	0.002	0.001	0.001
08/04/2019	1,042.4	1,024.3	0.600	1,345.42	-138.37	1.809	0.529	91.241	6.100	0.302	0.008	0.011	0	0	0
08/05/2019	1,043.6	1,025.5	0.602	1,345.51	-137.45	1.887	0.511	90.909	6.408	0.273	0.005	0.007	0	0	0
08/06/2019	1,043.9	1,025.7	0.602	1,345.80	-137.32	1.894	0.498	90.899	6.417	0.279	0.005	0.007	0	0	0
08/07/2019	1,045.3	1,027.1	0.603	1,345.63	-135.79	1.953	0.516	90.559	6.653	0.304	0.006	0.009	0.001	0.001	0
08/08/2019	1,043.8	1,025.6	0.601	1,346.39	-137.02	1.888	0.467	91.088	6.197	0.324	0.011	0.018	0.003	0.003	0.002
08/09/2019	1,043.2	1,025.0	0.600	1,347.09	-138.12	1.801	0.466	91.342	6.049	0.316	0.009	0.013	0.002	0.002	0
08/10/2019	1,043.2	1,025.0	0.600	1,347.09	-138.12	1.801	0.466	91.342	6.049	0.316	0.009	0.013	0.002	0.002	0

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5/17/2019 - 8/17/2019

Gas Day	Gross Heating Value (HHV) (Btu/scf)	Net Heating Value (LHV) (Btu/scf)	Specific Gravity	Wobbe Index	Hydrocarbon Dewpoint (HCDP) (deg F)	N2 (mol%)	CO2 (mol%)	Methane (mol%)	Ethane (mol%)	Propane (mol%)	Isobutane (mol%)	N-Butane (mol%)	Isopentane (mol%)	N-Pentane (mol%)	C6 Plus (mol%)
08/11/2019	1,043.2	1,025.0	0.600	1,347.09	-138.12	1.801	0.466	91.342	6.049	0.316	0.009	0.013	0.002	0.002	0
08/12/2019	1,043.2	1,025.0	0.600	1,347.09	-138.12	1.801	0.466	91.342	6.049	0.316	0.009	0.013	0.002	0.002	0
08/13/2019	1,043.2	1,025.0	0.600	1,347.09	-138.12	1.801	0.466	91.342	6.049	0.316	0.009	0.013	0.002	0.002	0
08/14/2019	1,043.2	1,025.0	0.600	1,347.09	-138.12	1.801	0.466	91.342	6.049	0.316	0.009	0.013	0.002	0.002	0
08/15/2019	1,041.6	1,023.5	0.599	1,345.57	-139.39	1.800	0.501	91.383	6.042	0.262	0.005	0.006	0	0	0

NOTES:**Wobbe Index:** Interchangeability constant calculated using the Gross (or Higher) Heating Value (HHV) divided by the square root of the Specific Gravity**Hydrocarbon Dewpoint (HCDP):** Theoretically determined value using the Redlich-Kwong equation of state (EOS)

Selection: Business Unit ID = 70; Analysis_Key = 52312