

## Gas Quality Reports

LS235 - On Sugar Creek 16"

5/13/2020 - 8/13/2020

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%)
05/13/2020	1,050.9	1,032.6	0.603	1,352.81	-72.71	1.817	0.381	90.910	6.218	0.585	0.028	0.043	0.007	0.005	0.006
05/14/2020	1,051.0	1,032.7	0.603	1,352.95	-131.51	1.988	0.266	90.730	6.361	0.577	0.025	0.037	0.006	0.005	0.005
05/15/2020	1,046.8	1,028.6	0.602	1,349.52	-133.95	1.839	0.419	91.310	5.736	0.617	0.026	0.039	0.005	0.004	0.005
05/16/2020	1,055.4	1,037.1	0.607	1,354.72	-71.55	1.736	0.474	90.368	6.654	0.686	0.027	0.041	0.006	0.004	0.004
05/17/2020	1,054.8	1,036.4	0.606	1,354.98	-73.41	1.739	0.436	90.517	6.550	0.682	0.026	0.039	0.005	0.004	0.004
05/18/2020	1,052.6	1,034.3	0.605	1,353.86	-130.74	1.717	0.445	90.756	6.395	0.612	0.025	0.037	0.005	0.004	0.004
05/19/2020	1,055.5	1,037.1	0.606	1,355.78	-129.32	1.713	0.432	90.395	6.771	0.634	0.020	0.026	0.003	0.002	0.003
05/20/2020	1,051.2	1,032.9	0.605	1,351.80	-131.50	1.965	0.350	90.491	6.570	0.577	0.017	0.022	0.003	0.002	0.002
05/21/2020	1,048.0	1,029.7	0.601	1,351.41	-134.25	1.931	0.292	91.078	6.122	0.530	0.016	0.022	0.003	0.002	0.003
05/22/2020	1,045.5	1,027.3	0.597	1,353.45	-137.33	1.703	0.254	91.956	5.578	0.458	0.017	0.022	0.004	0.003	0.005
05/23/2020	1,048.4	1,030.2	0.598	1,355.88	-135.44	1.684	0.224	91.763	5.755	0.519	0.019	0.024	0.005	0.003	0.005
05/24/2020	1,048.6	1,030.4	0.599	1,355.29	-135.39	1.665	0.275	91.592	5.961	0.454	0.017	0.023	0.004	0.003	0.005
05/25/2020	1,050.1	1,031.8	0.600	1,355.68	-134.00	1.661	0.301	91.449	6.001	0.525	0.023	0.028	0.005	0.004	0.005
05/26/2020	1,051.0	1,032.7	0.602	1,354.60	-132.88	1.808	0.292	90.910	6.505	0.421	0.019	0.029	0.006	0.005	0.006
05/27/2020	1,052.2	1,033.8	0.603	1,355.29	-131.95	1.788	0.305	90.872	6.433	0.547	0.018	0.026	0.004	0.003	0.004
05/28/2020	1,049.5	1,031.3	0.599	1,355.63	-134.48	1.660	0.288	91.524	5.964	0.504	0.020	0.027	0.005	0.004	0.005
05/29/2020	1,048.5	1,030.2	0.599	1,354.18	-135.52	1.792	0.249	91.213	6.403	0.297	0.013	0.019	0.005	0.004	0.006
05/30/2020	1,048.3	1,030.0	0.600	1,353.62	-135.13	1.835	0.243	91.276	6.179	0.423	0.014	0.019	0.004	0.003	0.005
05/31/2020	1,050.1	1,031.8	0.601	1,354.96	-133.64	1.788	0.259	91.189	6.224	0.485	0.018	0.025	0.005	0.003	0.005
06/01/2020	1,052.6	1,034.3	0.604	1,354.00	-130.75	1.717	0.436	90.796	6.350	0.628	0.024	0.036	0.005	0.004	0.005
06/02/2020	1,050.7	1,032.4	0.602	1,354.26	-132.46	1.734	0.349	91.176	6.081	0.583	0.025	0.038	0.005	0.004	0.005
06/03/2020	1,042.9	1,024.7	0.598	1,348.60	-137.41	1.885	0.315	91.799	5.458	0.476	0.020	0.031	0.006	0.004	0.006
06/04/2020	1,040.5	1,022.4	0.594	1,349.55	-139.68	1.784	0.255	92.504	4.913	0.458	0.026	0.038	0.008	0.006	0.008
06/05/2020	1,043.9	1,025.7	0.597	1,350.95	-69.76	1.992	0.147	91.907	5.348	0.513	0.027	0.040	0.009	0.006	0.011
06/06/2020	1,038.7	1,020.6	0.596	1,345.48	-139.64	2.055	0.243	92.111	5.074	0.436	0.025	0.035	0.008	0.006	0.008
06/07/2020	1,037.0	1,019.0	0.595	1,344.30	-141.36	1.856	0.385	92.408	4.868	0.414	0.023	0.029	0.006	0.004	0.007
06/08/2020	1,035.4	1,017.4	0.595	1,341.92	-142.17	1.946	0.407	92.302	4.890	0.401	0.018	0.023	0.004	0.003	0.005
06/09/2020	1,032.4	1,014.4	0.592	1,341.62	-144.92	2.071	0.244	92.778	4.461	0.392	0.018	0.023	0.005	0.003	0.005
06/10/2020	1,033.1	1,015.1	0.593	1,341.30	-144.34	2.030	0.310	92.618	4.610	0.377	0.018	0.024	0.005	0.003	0.004
06/11/2020	1,033.2	1,015.2	0.591	1,343.53	-144.37	2.035	0.189	92.960	4.324	0.414	0.027	0.032	0.007	0.005	0.007
06/12/2020	1,032.6	1,014.7	0.592	1,341.92	-144.44	2.038	0.257	92.860	4.345	0.434	0.022	0.029	0.006	0.004	0.006
06/13/2020	1,032.0	1,014.0	0.591	1,342.60	-145.39	1.986	0.233	93.110	4.188	0.416	0.022	0.028	0.006	0.004	0.007
06/14/2020	1,040.8	1,022.7	0.597	1,347.63	-138.86	1.877	0.309	92.111	5.133	0.506	0.022	0.028	0.005	0.003	0.005
06/15/2020	1,039.8	1,021.7	0.597	1,346.02	-139.34	1.883	0.362	92.070	5.149	0.473	0.021	0.029	0.005	0.004	0.005
06/16/2020	1,040.9	1,022.8	0.598	1,346.60	-138.55	1.899	0.354	91.917	5.290	0.475	0.021	0.029	0.005	0.004	0.005
06/17/2020	1,043.3	1,025.2	0.599	1,348.49	-136.86	1.775	0.408	91.828	5.407	0.501	0.024	0.038	0.007	0.005	0.006
06/18/2020	1,046.7	1,028.5	0.600	1,351.78	-68.22	1.595	0.452	91.841	5.438	0.558	0.032	0.056	0.010	0.009	0.009
06/19/2020	1,054.2	1,035.8	0.601	1,359.32	-61.60	1.500	0.334	91.464	5.946	0.631	0.034	0.059	0.011	0.010	0.010
06/20/2020	1,025.7	1,007.8	0.607	1,316.94	-27.03	4.006	0.129	90.326	4.519	0.749	0.058	0.119	0.027	0.029	0.038
06/21/2020	1,040.9	1,022.8	0.598	1,346.57	-58.66	1.899	0.354	92.205	4.819	0.586	0.037	0.062	0.012	0.011	0.015
06/22/2020	1,037.2	1,019.2	0.593	1,346.37	-70.55	1.998	0.184	92.752	4.410	0.542	0.031	0.054	0.011	0.009	0.010
06/23/2020	1,042.6	1,024.5	0.598	1,348.20	-136.81	1.799	0.386	92.042	5.077	0.603	0.029	0.045	0.007	0.006	0.007
06/24/2020	1,036.4	1,018.3	0.595	1,343.99	-140.79	2.125	0.204	92.430	4.628	0.528	0.026	0.040	0.007	0.005	0.006

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06/25/2020	1,024.6	1,006.8	0.588	1,336.13	-150.31	2.205	0.209	93.512	3.698	0.313	0.018	0.027	0.006	0.005	0.007
06/26/2020	1,034.6	1,016.6	0.594	1,342.47	-142.54	1.883	0.391	92.709	4.470	0.471	0.024	0.035	0.006	0.005	0.006
06/27/2020	1,038.2	1,020.1	0.596	1,345.13	-140.05	1.849	0.380	92.428	4.725	0.537	0.025	0.039	0.006	0.005	0.006
06/28/2020	1,032.3	1,014.4	0.590	1,343.88	-145.11	2.013	0.157	93.253	4.022	0.482	0.023	0.033	0.006	0.004	0.007
06/29/2020	1,029.7	1,011.7	0.594	1,336.35	-144.70	2.451	0.197	92.435	4.393	0.465	0.019	0.029	0.004	0.003	0.004
06/30/2020	1,028.9	1,011.0	0.590	1,339.25	-146.60	2.284	0.122	93.121	3.941	0.471	0.021	0.028	0.005	0.003	0.005
07/01/2020	1,031.6	1,013.7	0.593	1,340.16	-144.00	2.327	0.130	92.699	4.262	0.511	0.023	0.034	0.005	0.004	0.005
07/02/2020	1,031.2	1,013.3	0.590	1,342.52	-145.55	2.184	0.084	93.153	4.031	0.482	0.021	0.031	0.005	0.004	0.005
07/03/2020	1,036.0	1,018.0	0.593	1,345.73	-141.71	2.070	0.134	92.801	4.329	0.586	0.027	0.038	0.005	0.004	0.005
07/04/2020	1,042.8	1,024.7	0.599	1,347.20	-135.88	2.060	0.275	91.743	5.132	0.700	0.031	0.045	0.005	0.004	0.004
07/05/2020	1,032.9	1,014.9	0.594	1,340.05	-142.51	2.289	0.203	92.489	4.402	0.541	0.025	0.038	0.005	0.004	0.004
07/06/2020	1,034.2	1,016.2	0.594	1,342.14	-142.45	2.094	0.256	92.614	4.471	0.489	0.024	0.036	0.006	0.005	0.006
07/07/2020	1,038.3	1,020.3	0.594	1,347.28	-140.45	1.918	0.222	92.615	4.626	0.537	0.026	0.038	0.007	0.005	0.007
07/08/2020	1,033.7	1,015.7	0.593	1,342.37	-142.97	2.155	0.188	92.686	4.406	0.494	0.022	0.034	0.006	0.004	0.005
07/09/2020	1,027.3	1,009.4	0.590	1,336.95	-147.67	2.348	0.157	93.002	4.035	0.405	0.017	0.026	0.004	0.003	0.003
07/10/2020	1,030.8	1,012.9	0.592	1,339.52	-145.22	2.206	0.220	92.779	4.300	0.434	0.019	0.029	0.005	0.004	0.004
07/11/2020	1,034.3	1,016.3	0.594	1,342.04	-142.54	2.145	0.232	92.503	4.567	0.493	0.020	0.029	0.005	0.003	0.004
07/12/2020	1,028.2	1,010.3	0.591	1,337.65	-146.58	2.415	0.101	92.919	4.075	0.426	0.019	0.030	0.006	0.005	0.005
07/13/2020	1,029.7	1,011.8	0.592	1,338.50	-145.44	2.412	0.106	92.734	4.227	0.462	0.019	0.029	0.004	0.004	0.004
07/14/2020	1,032.5	1,014.5	0.591	1,342.59	-144.27	2.106	0.172	93.019	4.106	0.526	0.023	0.034	0.006	0.004	0.005
07/15/2020	1,032.2	1,014.2	0.592	1,341.00	-143.57	2.239	0.162	92.779	4.215	0.534	0.023	0.034	0.005	0.004	0.005
07/16/2020	1,031.1	1,013.2	0.593	1,338.65	-144.07	2.352	0.182	92.554	4.351	0.497	0.021	0.030	0.005	0.003	0.005
07/17/2020	1,042.1	1,024.0	0.598	1,347.11	-74.84	2.015	0.287	91.840	5.155	0.614	0.027	0.042	0.007	0.006	0.007
07/18/2020	1,041.1	1,023.0	0.600	1,343.85	-77.17	2.227	0.294	91.503	5.221	0.672	0.026	0.041	0.006	0.005	0.005
07/19/2020	1,035.0	1,017.0	0.598	1,338.69	-139.97	2.438	0.247	91.782	4.901	0.565	0.021	0.034	0.005	0.004	0.004
07/20/2020	1,038.4	1,020.3	0.598	1,343.27	-138.22	2.292	0.197	91.901	4.892	0.630	0.027	0.044	0.006	0.005	0.006
07/21/2020	1,035.0	1,016.9	0.593	1,343.51	-141.84	2.197	0.138	92.616	4.399	0.577	0.024	0.035	0.005	0.004	0.005
07/22/2020	1,031.8	1,013.9	0.597	1,335.98	-141.96	2.677	0.139	91.799	4.819	0.509	0.019	0.030	0.004	0.003	0.002
07/23/2020	1,036.1	1,018.0	0.595	1,343.10	-140.83	2.193	0.200	92.321	4.645	0.577	0.022	0.030	0.005	0.003	0.004
07/24/2020	1,035.1	1,017.1	0.594	1,343.41	-141.89	2.104	0.210	92.625	4.436	0.556	0.023	0.031	0.006	0.004	0.006
07/25/2020	1,039.2	1,021.2	0.596	1,345.72	-138.58	2.063	0.241	92.228	4.730	0.654	0.028	0.040	0.006	0.004	0.005
07/26/2020	1,040.4	1,022.3	0.596	1,347.69	-138.46	1.924	0.261	92.340	4.755	0.636	0.028	0.040	0.006	0.004	0.005
07/27/2020	1,041.9	1,023.7	0.601	1,344.15	-136.28	1.975	0.470	91.500	5.364	0.620	0.024	0.036	0.005	0.004	0.004
07/28/2020	1,040.2	1,022.1	0.600	1,342.61	-136.44	2.260	0.312	91.525	5.125	0.694	0.028	0.043	0.005	0.004	0.004
07/29/2020	1,041.6	1,023.4	0.601	1,343.67	-135.89	2.188	0.346	91.370	5.381	0.632	0.026	0.042	0.006	0.005	0.005
07/30/2020	1,034.5	1,016.5	0.597	1,339.16	-140.48	2.354	0.262	92.026	4.707	0.573	0.025	0.039	0.006	0.005	0.004
07/31/2020	1,032.1	1,014.1	0.599	1,333.95	-140.70	2.501	0.374	91.757	4.704	0.590	0.025	0.037	0.005	0.004	0.004
08/01/2020	1,032.4	1,014.4	0.600	1,332.80	-139.76	2.567	0.405	91.550	4.745	0.658	0.026	0.039	0.004	0.003	0.003
08/02/2020	1,028.9	1,011.0	0.595	1,333.94	-143.37	2.668	0.162	92.273	4.223	0.600	0.026	0.038	0.004	0.003	0.003
08/03/2020	1,029.3	1,011.4	0.592	1,337.29	-144.79	2.442	0.139	92.767	4.024	0.550	0.027	0.038	0.006	0.004	0.004
08/04/2020	1,043.9	1,025.8	0.605	1,341.73	-132.91	2.842	0.102	90.032	6.353	0.616	0.019	0.029	0.003	0.002	0.003
08/05/2020	1,043.9	1,025.8	0.605	1,341.73	-132.91	2.842	0.102	90.032	6.353	0.616	0.019	0.029	0.003	0.002	0.003
08/06/2020	1,052.2	1,033.9	0.609	1,348.12	-128.38	2.683	0.117	89.367	7.073	0.706	0.019	0.028	0.003	0.002	0.002

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5/13/2020 - 8/13/2020

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%)
08/07/2020	1,043.8	1,025.7	0.601	1,346.83	-135.37	2.089	0.309	91.356	5.552	0.622	0.024	0.035	0.005	0.004	0.004
08/08/2020	1,043.8	1,025.7	0.601	1,346.83	-135.37	2.089	0.309	91.356	5.552	0.622	0.024	0.035	0.005	0.004	0.004
08/09/2020	1,053.1	1,034.7	0.607	1,351.84	-72.74	2.487	0.065	89.854	6.829	0.702	0.023	0.030	0.004	0.003	0.004
08/10/2020	1,049.6	1,031.3	0.605	1,349.02	-131.14	2.568	0.058	90.009	6.710	0.603	0.018	0.026	0.003	0.002	0.002
08/11/2020	1,049.3	1,031.0	0.602	1,351.91	-71.94	2.271	0.082	90.860	6.006	0.690	0.031	0.044	0.007	0.004	0.005

**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 = 68423