

## Gas Quality Reports

LS130 - Kansas Hugoton at Hesston

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	1,098.0	1,078.9	0.635	1,377.88	-23.93	1.236	0.852	86.986	8.627	1.905	0.115	0.217	0.026	0.024	0.012
05/18/2019	1,101.2	1,082.0	0.637	1,379.88	-24.41	1.101	0.930	86.698	8.946	1.954	0.112	0.201	0.024	0.022	0.011
05/19/2019	1,079.0	1,060.2	0.638	1,350.58	-24.94	2.680	0.858	85.880	8.487	1.714	0.106	0.207	0.028	0.027	0.014
05/20/2019	1,067.6	1,049.0	0.642	1,331.97	-10.11	3.979	0.710	84.988	8.131	1.686	0.125	0.257	0.043	0.045	0.036
05/21/2019	1,066.4	1,047.8	0.622	1,352.32	-44.16	2.372	0.542	87.969	7.846	1.053	0.061	0.113	0.017	0.016	0.010
05/22/2019	1,053.0	1,034.6	0.615	1,342.85	-59.84	2.975	0.245	88.572	7.257	0.826	0.037	0.065	0.009	0.009	0.005
05/23/2019	1,053.1	1,034.8	0.616	1,341.73	-52.93	3.254	0.130	88.282	7.314	0.867	0.041	0.078	0.012	0.012	0.009
05/24/2019	1,060.2	1,041.7	0.620	1,346.75	-41.26	2.950	0.275	88.063	7.460	1.024	0.060	0.118	0.018	0.018	0.014
05/25/2019	1,068.5	1,049.9	0.623	1,353.49	-36.98	2.517	0.449	87.853	7.682	1.231	0.075	0.140	0.020	0.019	0.014
05/26/2019	1,072.6	1,053.9	0.624	1,357.37	-37.15	2.226	0.552	87.811	7.873	1.265	0.077	0.146	0.020	0.019	0.012
05/27/2019	1,069.1	1,050.5	0.623	1,354.95	-41.47	2.302	0.527	87.982	7.762	1.188	0.067	0.128	0.017	0.016	0.010
05/28/2019	1,064.6	1,046.1	0.620	1,352.56	-47.88	2.405	0.449	88.318	7.540	1.089	0.058	0.107	0.013	0.012	0.007
05/29/2019	1,065.0	1,046.5	0.620	1,352.12	-45.42	2.472	0.442	88.228	7.495	1.145	0.062	0.117	0.015	0.014	0.008
05/30/2019	1,070.5	1,051.8	0.623	1,356.66	-45.27	2.202	0.540	88.076	7.656	1.301	0.070	0.124	0.014	0.012	0.005
05/31/2019	1,066.1	1,047.6	0.621	1,353.27	-48.80	2.342	0.499	88.249	7.524	1.189	0.060	0.110	0.012	0.011	0.005
06/01/2019	1,060.2	1,041.8	0.618	1,348.93	-54.38	2.526	0.433	88.530	7.294	1.058	0.050	0.087	0.010	0.009	0.005
06/02/2019	1,060.1	1,041.6	0.618	1,348.45	-53.55	2.520	0.458	88.575	7.163	1.117	0.052	0.092	0.010	0.008	0.004
06/03/2019	1,061.2	1,042.7	0.618	1,349.94	-54.19	2.608	0.352	88.500	7.221	1.156	0.051	0.091	0.009	0.008	0.004
06/04/2019	1,057.7	1,039.3	0.615	1,348.30	-57.37	2.787	0.212	88.744	7.051	1.052	0.050	0.084	0.009	0.007	0.003
06/05/2019	1,051.0	1,032.7	0.612	1,343.95	-68.36	3.070	0.055	88.972	6.985	0.826	0.031	0.049	0.005	0.004	0.002
06/06/2019	1,050.4	1,032.1	0.611	1,343.85	-68.50	3.023	0.073	89.111	6.884	0.814	0.031	0.051	0.005	0.004	0.003
06/07/2019	1,035.2	1,017.2	0.608	1,327.94	-135.67	3.655	0.060	89.132	6.688	0.444	0.006	0.010	0.002	0.002	0.002
06/08/2019	1,035.2	1,017.2	0.608	1,327.88	-135.72	3.658	0.061	89.115	6.710	0.439	0.005	0.008	0.001	0.001	0.002
06/09/2019	1,035.3	1,017.3	0.608	1,327.96	-135.69	3.655	0.060	89.108	6.720	0.438	0.005	0.008	0.002	0.002	0.002
06/10/2019	1,035.4	1,017.4	0.608	1,327.76	-135.32	3.675	0.063	89.065	6.716	0.457	0.006	0.010	0.002	0.002	0.003
06/11/2019	1,034.2	1,016.2	0.606	1,328.27	-136.25	3.491	0.112	89.676	6.142	0.528	0.015	0.027	0.004	0.003	0.002
06/12/2019	1,051.8	1,033.5	0.612	1,343.98	-62.77	2.768	0.279	89.207	6.695	0.928	0.040	0.066	0.007	0.006	0.003
06/13/2019	1,060.5	1,042.1	0.619	1,348.29	-51.77	2.579	0.443	88.481	7.169	1.141	0.059	0.102	0.011	0.010	0.004
06/14/2019	1,060.3	1,041.8	0.617	1,350.00	-54.61	2.471	0.410	88.723	7.160	1.071	0.051	0.089	0.010	0.009	0.004
06/15/2019	1,064.5	1,046.0	0.619	1,353.13	-48.79	2.439	0.391	88.366	7.512	1.126	0.051	0.087	0.011	0.010	0.008
06/16/2019	1,067.0	1,048.5	0.620	1,355.15	-49.97	2.272	0.469	88.302	7.603	1.180	0.056	0.093	0.011	0.010	0.005
06/17/2019	1,065.1	1,046.6	0.619	1,354.11	-51.22	2.313	0.438	88.476	7.466	1.140	0.053	0.088	0.011	0.010	0.005
06/18/2019	1,060.5	1,042.1	0.616	1,351.68	-57.11	2.543	0.276	88.726	7.296	1.027	0.042	0.070	0.008	0.007	0.004
06/19/2019	1,057.5	1,039.1	0.613	1,350.22	-61.12	2.650	0.190	88.937	7.183	0.924	0.037	0.062	0.007	0.006	0.004
06/20/2019	1,067.8	1,049.2	0.619	1,357.16	-52.57	2.347	0.329	88.289	7.717	1.168	0.049	0.080	0.009	0.007	0.004
06/21/2019	1,064.6	1,046.0	0.619	1,353.30	-51.04	2.411	0.401	88.383	7.519	1.121	0.051	0.088	0.011	0.010	0.006
06/22/2019	1,063.4	1,044.9	0.618	1,352.80	-51.02	2.427	0.381	88.621	7.217	1.183	0.054	0.092	0.011	0.010	0.005
06/23/2019	1,056.9	1,038.5	0.616	1,347.08	-53.15	2.604	0.377	88.982	6.775	1.083	0.056	0.096	0.012	0.010	0.005
06/24/2019	1,056.0	1,037.6	0.614	1,348.00	-60.26	2.470	0.384	89.205	6.806	1.005	0.043	0.070	0.008	0.006	0.003
06/25/2019	1,062.2	1,043.7	0.617	1,351.98	-56.52	2.359	0.435	88.664	7.286	1.120	0.047	0.073	0.008	0.006	0.003
06/26/2019	1,053.8	1,035.5	0.612	1,347.06	-68.61	2.853	0.116	88.952	7.162	0.832	0.029	0.045	0.005	0.004	0.002
06/27/2019	1,048.3	1,030.1	0.609	1,343.04	-70.68	2.972	0.085	89.392	6.706	0.763	0.027	0.043	0.005	0.004	0.003
06/28/2019	1,053.3	1,035.0	0.613	1,345.53	-65.26	2.805	0.217	88.966	7.051	0.860	0.033	0.053	0.007	0.005	0.003

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06/29/2019	1,058.5	1,040.1	0.616	1,348.24	-60.15	2.580	0.381	88.572	7.368	0.984	0.039	0.060	0.007	0.005	0.003
06/30/2019	1,057.2	1,038.8	0.616	1,347.09	-61.87	2.589	0.396	88.642	7.320	0.943	0.038	0.058	0.006	0.005	0.003
07/01/2019	1,057.9	1,039.5	0.616	1,348.24	-61.35	2.564	0.371	88.674	7.330	0.948	0.039	0.059	0.006	0.005	0.003
07/02/2019	1,056.0	1,037.6	0.613	1,348.30	-60.72	2.892	0.091	88.824	7.142	0.921	0.043	0.070	0.008	0.006	0.004
07/03/2019	1,050.9	1,032.6	0.611	1,343.98	-67.04	3.043	0.068	89.006	6.986	0.797	0.032	0.052	0.006	0.005	0.003
07/04/2019	1,047.7	1,029.4	0.610	1,341.31	-70.42	3.091	0.083	89.188	6.821	0.727	0.030	0.048	0.006	0.005	0.003
07/05/2019	1,051.0	1,032.7	0.612	1,343.29	-67.50	2.898	0.206	89.056	6.899	0.838	0.036	0.055	0.006	0.004	0.002
07/06/2019	1,050.6	1,032.4	0.612	1,342.75	-69.33	2.929	0.205	88.985	6.969	0.824	0.032	0.047	0.004	0.003	0.002
07/07/2019	1,052.7	1,034.4	0.612	1,345.12	-68.88	2.803	0.221	88.971	7.098	0.817	0.032	0.047	0.005	0.004	0.002
07/08/2019	1,053.4	1,035.0	0.613	1,345.05	-65.44	2.848	0.218	88.847	7.145	0.832	0.037	0.058	0.007	0.006	0.003
07/09/2019	1,053.0	1,034.7	0.613	1,345.02	-66.89	2.796	0.241	88.918	7.128	0.818	0.034	0.051	0.006	0.005	0.003
07/10/2019	1,061.2	1,042.7	0.617	1,351.15	-57.37	2.437	0.398	88.619	7.376	1.028	0.049	0.075	0.008	0.007	0.003
07/11/2019	1,055.3	1,036.9	0.614	1,347.22	-63.21	2.754	0.219	88.842	7.211	0.867	0.036	0.056	0.007	0.005	0.003
07/12/2019	1,050.8	1,032.5	0.610	1,345.25	-71.14	2.894	0.093	89.183	7.032	0.720	0.026	0.040	0.005	0.004	0.003
07/13/2019	1,056.4	1,038.0	0.612	1,350.82	-65.54	2.561	0.179	89.170	7.183	0.800	0.035	0.055	0.007	0.006	0.004
07/14/2019	1,059.6	1,041.2	0.614	1,351.71	-57.84	2.376	0.354	88.970	7.239	0.922	0.045	0.072	0.009	0.008	0.005
07/15/2019	1,058.6	1,040.2	0.614	1,351.38	-60.59	2.445	0.297	88.944	7.355	0.839	0.037	0.063	0.008	0.007	0.005
07/16/2019	1,061.4	1,043.0	0.615	1,353.94	-59.41	2.377	0.288	88.806	7.527	0.878	0.040	0.065	0.008	0.007	0.004
07/17/2019	1,056.4	1,038.0	0.611	1,351.17	-66.21	2.649	0.101	89.145	7.200	0.802	0.034	0.054	0.007	0.005	0.003
07/18/2019	1,057.7	1,039.3	0.613	1,351.39	-63.49	2.609	0.158	88.990	7.272	0.867	0.035	0.054	0.006	0.005	0.003
07/19/2019	1,054.7	1,036.3	0.612	1,347.92	-67.16	2.625	0.245	89.061	7.173	0.808	0.030	0.045	0.005	0.004	0.003
07/20/2019	1,063.8	1,045.3	0.615	1,357.00	-52.21	2.486	0.119	88.689	7.700	0.852	0.041	0.078	0.013	0.013	0.009
07/21/2019	1,060.0	1,041.6	0.614	1,352.92	-60.53	2.446	0.255	88.928	7.337	0.917	0.039	0.062	0.007	0.006	0.004
07/22/2019	1,060.6	1,042.2	0.614	1,353.33	-59.95	2.511	0.207	88.840	7.380	0.938	0.041	0.066	0.008	0.006	0.004
07/23/2019	1,058.2	1,039.8	0.612	1,352.74	-65.71	2.599	0.106	89.017	7.358	0.822	0.032	0.052	0.006	0.005	0.003
07/24/2019	1,061.3	1,042.8	0.616	1,352.48	-57.72	2.387	0.357	88.778	7.354	0.986	0.046	0.073	0.008	0.007	0.004
07/25/2019	1,062.3	1,043.8	0.614	1,355.57	-59.56	2.492	0.147	88.840	7.428	0.971	0.041	0.064	0.007	0.006	0.004
07/26/2019	1,064.9	1,046.4	0.615	1,357.92	-55.48	2.441	0.133	88.722	7.558	1.007	0.045	0.072	0.009	0.008	0.006
07/27/2019	1,062.8	1,044.3	0.614	1,356.71	-57.64	2.462	0.121	88.881	7.477	0.929	0.041	0.067	0.009	0.008	0.005
07/28/2019	1,062.3	1,043.8	0.613	1,356.38	-60.29	2.468	0.118	88.881	7.515	0.905	0.036	0.058	0.008	0.006	0.004
07/29/2019	1,062.2	1,043.7	0.614	1,355.53	-56.68	2.521	0.128	88.850	7.397	0.968	0.042	0.070	0.009	0.008	0.006
07/30/2019	1,065.0	1,046.5	0.616	1,357.40	-53.49	2.312	0.250	88.803	7.439	1.041	0.049	0.081	0.010	0.009	0.006
07/31/2019	1,070.4	1,051.8	0.621	1,358.81	-46.56	2.158	0.447	88.239	7.760	1.204	0.060	0.101	0.013	0.011	0.007
08/01/2019	1,056.1	1,037.7	0.613	1,348.56	-60.93	2.817	0.128	88.809	7.281	0.850	0.035	0.060	0.008	0.007	0.005
08/02/2019	1,050.4	1,032.1	0.612	1,343.14	-66.79	3.097	0.064	88.907	7.085	0.747	0.030	0.052	0.007	0.006	0.004
08/03/2019	1,046.5	1,028.3	0.610	1,340.08	-71.78	3.166	0.065	89.093	6.969	0.628	0.023	0.041	0.006	0.005	0.004
08/04/2019	1,053.6	1,035.2	0.612	1,347.09	-66.12	2.933	0.054	88.905	7.251	0.766	0.028	0.047	0.006	0.006	0.005
08/05/2019	1,056.1	1,037.8	0.612	1,349.55	-61.94	2.849	0.053	88.833	7.348	0.818	0.029	0.050	0.007	0.007	0.005
08/06/2019	1,055.4	1,037.1	0.612	1,348.75	-62.10	2.882	0.054	88.842	7.310	0.813	0.029	0.050	0.007	0.007	0.006
08/07/2019	1,052.2	1,033.9	0.611	1,345.79	-65.41	2.953	0.070	89.005	7.109	0.772	0.027	0.046	0.007	0.006	0.005
08/08/2019	1,052.7	1,034.3	0.612	1,346.06	-65.73	2.951	0.070	88.963	7.136	0.790	0.027	0.046	0.006	0.006	0.005
08/09/2019	1,054.7	1,036.3	0.612	1,348.38	-61.40	2.861	0.064	88.991	7.159	0.814	0.032	0.057	0.008	0.007	0.006
08/10/2019	1,055.1	1,036.8	0.612	1,348.59	-61.56	2.868	0.062	88.935	7.194	0.836	0.032	0.054	0.007	0.007	0.006

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08/11/2019	1,070.3	1,051.6	0.618	1,361.10	-47.80	2.556	0.050	88.221	7.797	1.206	0.052	0.089	0.011	0.010	0.008
08/12/2019	1,062.6	1,044.2	0.615	1,354.67	-52.86	2.728	0.054	88.569	7.480	1.025	0.043	0.074	0.010	0.009	0.007
08/13/2019	1,057.5	1,039.1	0.614	1,349.80	-56.47	2.876	0.064	88.807	7.148	0.961	0.043	0.077	0.010	0.009	0.006
08/14/2019	1,062.5	1,044.0	0.615	1,355.25	-52.75	2.681	0.046	88.768	7.303	1.037	0.050	0.087	0.012	0.010	0.006
08/15/2019	1,058.1	1,039.7	0.612	1,352.20	-56.90	2.731	0.045	89.078	7.074	0.922	0.045	0.078	0.011	0.009	0.006

**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 = 52783