

## Gas Quality Reports

LS265 - Superior Nebraska

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	1,061.6	1,043.1	0.597	1,373.63	-55.21	0.994	0.116	92.517	5.284	0.954	0.042	0.063	0.011	0.007	0.013
05/18/2019	1,062.5	1,044.0	0.598	1,374.42	-54.59	0.966	0.117	92.473	5.353	0.946	0.044	0.069	0.011	0.008	0.013
05/19/2019	1,060.1	1,041.7	0.596	1,373.37	-57.22	0.942	0.119	92.715	5.246	0.846	0.041	0.062	0.011	0.007	0.013
05/20/2019	1,068.0	1,049.4	0.602	1,376.32	-48.53	0.978	0.175	91.750	5.874	1.051	0.052	0.082	0.013	0.009	0.014
05/21/2019	1,066.7	1,048.1	0.601	1,376.36	-52.92	0.996	0.121	91.819	5.998	0.928	0.043	0.063	0.011	0.007	0.014
05/22/2019	1,065.6	1,047.1	0.600	1,375.66	-51.93	1.007	0.119	92.011	5.729	0.988	0.045	0.069	0.011	0.007	0.014
05/23/2019	1,065.6	1,047.1	0.601	1,374.77	-49.49	1.032	0.151	91.978	5.627	1.051	0.052	0.074	0.013	0.008	0.015
05/24/2019	1,066.1	1,047.5	0.602	1,373.89	-46.52	1.069	0.187	91.766	5.765	1.039	0.052	0.080	0.014	0.010	0.017
05/25/2019	1,074.9	1,056.2	0.609	1,377.90	-40.92	1.059	0.244	90.824	6.377	1.298	0.060	0.097	0.015	0.011	0.016
05/26/2019	1,075.0	1,056.3	0.609	1,377.73	-40.33	1.032	0.276	90.744	6.508	1.236	0.061	0.099	0.016	0.012	0.017
05/27/2019	1,074.2	1,055.5	0.609	1,376.70	-37.51	1.085	0.273	90.828	6.296	1.296	0.065	0.107	0.018	0.013	0.019
05/28/2019	1,080.3	1,061.5	0.611	1,381.68	-37.52	1.000	0.241	90.382	6.774	1.392	0.062	0.103	0.016	0.012	0.018
05/29/2019	1,067.5	1,048.9	0.602	1,376.26	-48.89	0.969	0.168	91.789	5.903	1.015	0.047	0.072	0.013	0.009	0.015
05/30/2019	1,062.8	1,044.3	0.597	1,374.91	-55.91	0.936	0.121	92.384	5.566	0.868	0.039	0.056	0.010	0.007	0.014
05/31/2019	1,062.6	1,044.1	0.598	1,374.35	-55.49	0.963	0.126	92.355	5.548	0.879	0.041	0.057	0.011	0.007	0.014
06/01/2019	1,051.7	1,033.4	0.603	1,354.31	-31.05	1.856	0.294	91.801	4.720	1.077	0.078	0.101	0.025	0.015	0.032
06/02/2019	1,115.4	1,096.0	0.642	1,392.46	-12.34	1.782	0.218	85.746	9.070	2.851	0.102	0.170	0.021	0.014	0.027
06/03/2019	1,095.5	1,076.4	0.621	1,390.34	-31.53	1.162	0.123	88.946	7.511	2.029	0.070	0.122	0.013	0.009	0.015
06/04/2019	1,087.1	1,068.2	0.613	1,388.53	-38.27	0.937	0.115	90.183	6.925	1.592	0.095	0.121	0.012	0.007	0.013
06/05/2019	1,096.7	1,077.7	0.624	1,389.70	-28.04	1.355	0.170	88.363	7.740	2.121	0.078	0.130	0.016	0.010	0.017
06/06/2019	1,085.9	1,067.0	0.621	1,378.04	-26.32	1.584	0.232	88.941	7.067	1.909	0.082	0.129	0.020	0.013	0.023
06/07/2019	1,077.0	1,058.2	0.614	1,374.70	-31.06	1.436	0.236	90.043	6.489	1.556	0.073	0.112	0.019	0.012	0.024
06/08/2019	1,077.0	1,058.3	0.612	1,376.39	-34.11	1.304	0.231	90.247	6.510	1.482	0.069	0.108	0.017	0.012	0.021
06/09/2019	1,079.1	1,060.4	0.614	1,377.33	-29.67	1.217	0.302	90.086	6.652	1.486	0.075	0.120	0.021	0.015	0.025
06/10/2019	1,076.8	1,058.1	0.612	1,376.59	-29.65	1.191	0.289	90.377	6.504	1.394	0.071	0.113	0.020	0.014	0.027
06/11/2019	1,081.5	1,062.7	0.618	1,375.43	-23.51	1.220	0.479	89.499	7.005	1.483	0.088	0.149	0.027	0.021	0.030
06/12/2019	1,086.3	1,067.4	0.621	1,378.79	-20.10	1.092	0.527	89.166	7.354	1.514	0.094	0.169	0.028	0.024	0.033
06/13/2019	1,079.8	1,061.1	0.618	1,373.63	-23.78	1.322	0.460	89.507	6.918	1.490	0.086	0.141	0.026	0.020	0.030
06/14/2019	1,084.1	1,065.2	0.621	1,375.45	-22.28	1.367	0.462	88.904	7.413	1.555	0.084	0.139	0.025	0.020	0.031
06/15/2019	1,084.0	1,065.1	0.620	1,377.07	-25.01	1.292	0.419	89.147	7.299	1.557	0.081	0.135	0.023	0.018	0.028
06/16/2019	1,076.0	1,057.3	0.615	1,372.42	-28.27	1.318	0.410	89.941	6.687	1.373	0.077	0.125	0.023	0.017	0.027
06/17/2019	1,075.2	1,056.5	0.614	1,372.38	-28.68	1.309	0.394	90.077	6.592	1.358	0.077	0.125	0.023	0.017	0.027
06/18/2019	1,077.5	1,058.8	0.615	1,374.38	-28.86	1.247	0.395	89.966	6.726	1.392	0.079	0.130	0.023	0.017	0.026
06/19/2019	1,077.9	1,059.2	0.614	1,375.32	-28.50	1.201	0.387	90.047	6.697	1.389	0.080	0.134	0.022	0.017	0.026
06/20/2019	1,078.5	1,059.7	0.615	1,375.72	-27.60	1.184	0.392	90.004	6.753	1.386	0.079	0.134	0.022	0.018	0.027
06/21/2019	1,079.1	1,060.3	0.615	1,375.90	-27.74	1.184	0.403	89.917	6.813	1.400	0.080	0.136	0.023	0.018	0.027
06/22/2019	1,078.8	1,060.0	0.615	1,375.88	-28.24	1.179	0.396	89.970	6.783	1.390	0.080	0.135	0.023	0.018	0.026
06/23/2019	1,078.1	1,059.3	0.614	1,375.57	-28.90	1.221	0.364	90.041	6.686	1.413	0.079	0.131	0.022	0.017	0.026
06/24/2019	1,075.3	1,056.6	0.612	1,375.08	-32.29	1.183	0.331	90.400	6.534	1.304	0.072	0.118	0.020	0.015	0.024
06/25/2019	1,077.7	1,059.0	0.614	1,375.88	-30.08	1.165	0.373	90.124	6.721	1.350	0.076	0.128	0.021	0.017	0.025
06/26/2019	1,077.8	1,059.1	0.614	1,375.90	-29.41	1.169	0.373	90.109	6.724	1.357	0.076	0.128	0.022	0.017	0.026
06/27/2019	1,073.3	1,054.7	0.610	1,374.71	-35.76	1.173	0.297	90.656	6.402	1.245	0.067	0.108	0.018	0.014	0.022
06/28/2019	1,076.8	1,058.0	0.613	1,375.76	-32.14	1.169	0.347	90.243	6.657	1.329	0.073	0.122	0.020	0.016	0.023

## Gas Quality Reports

LS265 - Superior Nebraska

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%)
06/29/2019	1,082.2	1,063.4	0.616	1,378.91	-29.61	1.187	0.331	89.697	7.039	1.488	0.075	0.125	0.020	0.015	0.024
06/30/2019	1,098.6	1,079.4	0.627	1,387.72	-23.93	1.302	0.272	87.966	8.183	2.007	0.081	0.135	0.019	0.014	0.022
07/01/2019	1,086.6	1,067.7	0.620	1,379.82	-26.48	1.355	0.304	88.991	7.417	1.668	0.079	0.125	0.021	0.015	0.025
07/02/2019	1,088.8	1,069.8	0.620	1,382.25	-26.82	1.331	0.253	88.934	7.484	1.741	0.078	0.122	0.019	0.013	0.024
07/03/2019	1,093.6	1,074.6	0.619	1,390.30	-32.68	1.053	0.142	88.995	7.970	1.614	0.074	0.106	0.016	0.011	0.018
07/04/2019	1,097.1	1,078.0	0.623	1,390.17	-28.37	1.190	0.164	88.409	8.179	1.816	0.077	0.116	0.017	0.011	0.020
07/05/2019	1,099.4	1,080.2	0.623	1,392.70	-29.52	1.102	0.152	88.307	8.411	1.793	0.076	0.113	0.016	0.011	0.018
07/06/2019	1,096.1	1,077.0	0.619	1,392.88	-36.18	0.964	0.135	88.724	8.465	1.524	0.062	0.089	0.013	0.008	0.015
07/07/2019	1,094.9	1,075.9	0.619	1,391.93	-34.88	0.984	0.138	88.810	8.396	1.464	0.070	0.095	0.015	0.010	0.017
07/08/2019	1,092.7	1,073.7	0.617	1,390.54	-36.42	0.987	0.144	88.977	8.325	1.361	0.070	0.094	0.016	0.010	0.016
07/09/2019	1,080.2	1,061.4	0.613	1,379.53	-34.55	1.132	0.270	90.006	7.032	1.328	0.070	0.109	0.018	0.013	0.021
07/10/2019	1,074.6	1,055.9	0.611	1,374.89	-34.81	1.188	0.315	90.474	6.499	1.285	0.070	0.113	0.019	0.015	0.022
07/11/2019	1,076.1	1,057.4	0.612	1,375.44	-32.04	1.177	0.339	90.318	6.592	1.322	0.072	0.119	0.020	0.016	0.024
07/12/2019	1,076.2	1,057.5	0.612	1,375.67	-31.96	1.171	0.334	90.332	6.585	1.327	0.072	0.119	0.020	0.016	0.024
07/13/2019	1,075.5	1,056.8	0.611	1,375.58	-33.11	1.172	0.315	90.435	6.525	1.311	0.070	0.115	0.019	0.015	0.023
07/14/2019	1,075.8	1,057.1	0.611	1,375.85	-33.18	1.169	0.314	90.403	6.555	1.317	0.070	0.115	0.019	0.015	0.023
07/15/2019	1,091.7	1,072.7	0.619	1,388.01	-33.06	1.135	0.157	88.945	7.983	1.565	0.068	0.102	0.015	0.010	0.019
07/16/2019	1,115.8	1,096.4	0.636	1,398.94	-12.53	1.319	0.166	86.924	8.528	2.578	0.137	0.275	0.028	0.022	0.022
07/17/2019	1,136.9	1,117.2	0.651	1,408.84	1.22	1.453	0.171	85.238	8.940	3.462	0.205	0.436	0.039	0.032	0.025
07/18/2019	1,131.9	1,112.2	0.647	1,407.29	-1.44	1.353	0.169	85.823	8.740	3.204	0.195	0.422	0.038	0.031	0.024
07/19/2019	1,094.8	1,075.8	0.622	1,388.12	-31.48	1.136	0.246	88.369	8.445	1.582	0.067	0.108	0.017	0.012	0.019
07/20/2019	1,104.2	1,085.0	0.631	1,390.43	-20.72	1.351	0.264	87.391	8.479	2.222	0.089	0.146	0.020	0.014	0.023
07/21/2019	1,088.3	1,069.3	0.616	1,386.95	-38.61	1.080	0.145	89.240	8.028	1.330	0.055	0.082	0.013	0.009	0.017
07/22/2019	1,095.1	1,076.0	0.620	1,391.25	-36.13	1.063	0.128	88.664	8.410	1.550	0.058	0.091	0.012	0.008	0.015
07/23/2019	1,092.8	1,073.8	0.621	1,386.97	-31.20	1.191	0.210	88.577	8.227	1.578	0.066	0.102	0.016	0.011	0.020
07/24/2019	1,152.1	1,132.1	0.660	1,417.97	-4.86	1.468	0.120	83.066	11.005	3.977	0.112	0.211	0.015	0.010	0.016
07/25/2019	1,142.6	1,122.7	0.655	1,411.97	-8.12	1.521	0.130	83.806	10.541	3.655	0.106	0.197	0.016	0.011	0.017
07/26/2019	1,135.6	1,115.8	0.650	1,408.09	-11.12	1.523	0.132	84.397	10.231	3.400	0.098	0.175	0.016	0.010	0.017
07/27/2019	1,111.9	1,092.6	0.637	1,393.32	-15.96	1.586	0.188	86.498	8.751	2.661	0.098	0.163	0.019	0.013	0.024
07/28/2019	1,105.5	1,086.3	0.637	1,385.35	-12.70	1.874	0.246	86.621	8.249	2.659	0.108	0.173	0.025	0.016	0.030
07/29/2019	1,110.2	1,090.9	0.638	1,389.68	-12.55	1.754	0.228	86.513	8.295	2.856	0.107	0.182	0.023	0.015	0.027
07/30/2019	1,103.7	1,084.5	0.633	1,387.25	-17.37	1.667	0.218	87.108	8.235	2.466	0.095	0.151	0.021	0.014	0.026
07/31/2019	1,102.7	1,083.5	0.631	1,388.22	-20.32	1.569	0.198	87.295	8.345	2.315	0.087	0.135	0.019	0.012	0.024
08/01/2019	1,098.5	1,079.4	0.628	1,385.68	-22.31	1.575	0.204	87.567	8.311	2.073	0.084	0.130	0.020	0.012	0.025
08/02/2019	1,100.2	1,081.0	0.630	1,385.95	-20.08	1.615	0.216	87.487	8.111	2.269	0.094	0.150	0.021	0.014	0.024
08/03/2019	1,066.9	1,048.4	0.613	1,363.16	-23.60	1.844	0.293	90.180	6.069	1.332	0.086	0.118	0.026	0.016	0.036
08/04/2019	1,070.5	1,051.9	0.614	1,366.05	-23.34	1.790	0.280	89.926	6.324	1.402	0.084	0.118	0.025	0.016	0.036
08/05/2019	1,089.2	1,070.2	0.624	1,378.57	-20.78	1.684	0.238	88.366	7.489	1.930	0.089	0.135	0.023	0.015	0.030
08/06/2019	1,099.3	1,080.2	0.629	1,386.30	-21.05	1.547	0.214	87.616	8.174	2.166	0.087	0.138	0.020	0.013	0.025
08/07/2019	1,098.7	1,079.6	0.628	1,386.08	-21.39	1.532	0.216	87.716	8.101	2.154	0.086	0.137	0.020	0.013	0.025
08/08/2019	1,095.9	1,076.8	0.632	1,378.97	-15.73	1.907	0.282	87.390	7.706	2.391	0.101	0.153	0.025	0.016	0.030
08/09/2019	1,096.5	1,077.5	0.629	1,382.79	-18.95	1.669	0.243	87.721	7.848	2.221	0.091	0.142	0.022	0.014	0.028
08/10/2019	1,111.9	1,092.5	0.637	1,393.50	-16.22	1.555	0.195	86.581	8.671	2.680	0.098	0.164	0.020	0.013	0.023

## Gas Quality Reports

LS265 - Superior Nebraska

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	1,131.6	1,111.9	0.651	1,402.59	-7.74	1.741	0.175	84.652	9.462	3.581	0.121	0.212	0.022	0.015	0.020
08/12/2019	1,129.5	1,109.9	0.649	1,401.69	-7.64	1.709	0.182	84.872	9.376	3.475	0.119	0.208	0.022	0.015	0.023
08/13/2019	1,108.1	1,088.8	0.634	1,391.61	-18.57	1.529	0.201	86.939	8.499	2.523	0.095	0.158	0.020	0.013	0.022
08/14/2019	1,096.0	1,076.9	0.627	1,384.52	-22.26	1.530	0.221	88.007	7.859	2.101	0.087	0.138	0.020	0.013	0.025
08/15/2019	1,095.4	1,076.4	0.626	1,384.04	-22.34	1.541	0.223	88.031	7.840	2.083	0.086	0.137	0.020	0.013	0.025

**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 = 52911