

Gas Quality Reports

LS190 - KC 26" at Ottawa X-Over

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	1,065.8	1,065.8	0.612	1,361.87	-44.53	1.572	0.509	90.158	6.325	1.205	0.068	0.122	0.017	0.014	0.011
05/18/2019	1,088.7	1,088.7	0.624	1,377.74	-33.22	1.121	0.642	88.524	7.740	1.659	0.094	0.170	0.021	0.018	0.010
05/19/2019	1,091.5	1,091.5	0.629	1,375.82	-31.28	1.197	0.790	87.714	8.265	1.710	0.097	0.176	0.022	0.020	0.009
05/20/2019	1,063.9	1,063.9	0.637	1,332.95	-23.24	3.858	0.602	85.795	7.633	1.672	0.115	0.235	0.037	0.037	0.016
05/21/2019	1,074.0	1,074.0	0.625	1,358.97	-32.32	2.056	0.621	87.861	7.949	1.229	0.076	0.145	0.024	0.023	0.018
05/22/2019	1,061.1	1,061.1	0.615	1,353.41	-52.22	2.243	0.395	89.056	7.210	0.931	0.048	0.085	0.013	0.011	0.008
05/23/2019	1,054.8	1,054.8	0.610	1,350.24	-60.63	2.516	0.191	89.506	6.836	0.838	0.034	0.057	0.008	0.006	0.007
05/24/2019	1,053.6	1,053.6	0.610	1,349.35	-57.54	2.519	0.199	89.718	6.578	0.843	0.041	0.073	0.011	0.010	0.008
05/25/2019	1,065.2	1,065.2	0.618	1,355.30	-41.75	2.415	0.304	88.684	7.242	1.123	0.064	0.120	0.019	0.017	0.012
05/26/2019	1,070.9	1,070.9	0.620	1,359.64	-40.74	2.061	0.479	88.474	7.513	1.229	0.070	0.129	0.018	0.016	0.011
05/27/2019	1,073.4	1,073.4	0.622	1,360.56	-38.73	2.040	0.520	88.175	7.741	1.263	0.073	0.139	0.020	0.018	0.011
05/28/2019	1,067.2	1,067.2	0.619	1,356.78	-46.08	2.144	0.464	88.629	7.425	1.132	0.060	0.111	0.015	0.013	0.009
05/29/2019	1,066.8	1,066.8	0.618	1,356.78	-47.55	2.181	0.430	88.643	7.419	1.127	0.058	0.109	0.014	0.013	0.007
05/30/2019	1,068.4	1,068.4	0.622	1,355.09	-44.96	2.298	0.500	88.137	7.622	1.223	0.066	0.120	0.015	0.014	0.007
05/31/2019	1,065.7	1,065.7	0.619	1,354.91	-49.86	2.141	0.526	88.670	7.305	1.163	0.061	0.107	0.012	0.010	0.005
06/01/2019	1,064.2	1,064.2	0.616	1,356.25	-51.87	2.128	0.410	89.067	7.115	1.107	0.053	0.094	0.011	0.009	0.006
06/02/2019	1,061.2	1,061.2	0.618	1,350.47	-53.17	2.409	0.455	88.657	7.228	1.088	0.051	0.088	0.010	0.008	0.005
06/03/2019	1,066.7	1,066.7	0.621	1,354.12	-46.55	2.419	0.420	88.300	7.335	1.337	0.059	0.103	0.012	0.009	0.007
06/04/2019	1,067.1	1,067.1	0.620	1,355.60	-49.73	2.514	0.285	88.270	7.452	1.309	0.053	0.094	0.009	0.008	0.005
06/05/2019	1,069.0	1,069.0	0.614	1,363.85	-46.86	2.034	0.197	89.409	6.875	1.269	0.073	0.107	0.016	0.011	0.007
06/06/2019	1,078.0	1,078.0	0.616	1,374.04	-37.04	1.596	0.201	89.615	6.762	1.592	0.077	0.112	0.018	0.012	0.014
06/07/2019	1,064.7	1,064.7	0.610	1,363.70	-47.99	1.922	0.145	90.189	6.369	1.215	0.052	0.077	0.011	0.008	0.012
06/08/2019	1,056.4	1,056.4	0.606	1,356.63	-54.60	2.066	0.180	90.588	6.036	0.997	0.042	0.063	0.010	0.007	0.011
06/09/2019	1,057.7	1,057.7	0.607	1,357.82	-54.46	2.035	0.175	90.527	6.109	1.012	0.044	0.070	0.010	0.007	0.011
06/10/2019	1,063.3	1,063.3	0.610	1,361.42	-48.30	1.896	0.245	90.092	6.512	1.087	0.051	0.081	0.014	0.010	0.012
06/11/2019	1,056.5	1,056.5	0.611	1,351.10	-44.47	2.433	0.249	89.565	6.678	0.916	0.043	0.074	0.014	0.011	0.019
06/12/2019	1,047.5	1,047.5	0.609	1,341.83	-61.47	2.845	0.209	89.620	6.420	0.792	0.034	0.058	0.008	0.007	0.008
06/13/2019	1,055.3	1,055.3	0.615	1,345.81	-57.30	2.628	0.380	89.010	6.808	1.025	0.048	0.081	0.009	0.008	0.005
06/14/2019	1,062.5	1,062.5	0.620	1,349.82	-49.82	2.479	0.487	88.399	7.275	1.160	0.061	0.111	0.013	0.011	0.005
06/15/2019	1,066.1	1,066.1	0.618	1,356.52	-46.41	2.228	0.388	88.801	7.164	1.236	0.055	0.095	0.013	0.011	0.009
06/16/2019	1,072.9	1,072.9	0.621	1,361.00	-43.84	2.095	0.444	88.169	7.798	1.305	0.058	0.099	0.013	0.011	0.009
06/17/2019	1,066.8	1,066.8	0.618	1,357.02	-45.54	2.043	0.506	88.884	7.151	1.212	0.062	0.107	0.015	0.012	0.009
06/18/2019	1,060.9	1,060.9	0.615	1,352.88	-50.15	2.100	0.510	89.336	6.773	1.112	0.051	0.087	0.012	0.010	0.009
06/19/2019	1,059.3	1,059.3	0.612	1,353.67	-51.23	2.238	0.325	89.547	6.705	1.025	0.048	0.080	0.012	0.010	0.010
06/20/2019	1,044.8	1,044.8	0.603	1,345.44	-61.93	2.099	0.411	91.223	5.377	0.772	0.036	0.056	0.009	0.007	0.010
06/21/2019	1,072.4	1,072.4	0.620	1,362.27	-47.02	2.159	0.314	88.337	7.708	1.318	0.052	0.086	0.010	0.008	0.007
06/22/2019	1,068.8	1,068.8	0.619	1,358.99	-46.77	2.192	0.360	88.629	7.357	1.283	0.055	0.093	0.012	0.010	0.008
06/23/2019	1,065.4	1,065.4	0.616	1,357.81	-47.76	2.188	0.320	89.132	6.952	1.217	0.058	0.099	0.014	0.011	0.008
06/24/2019	1,059.6	1,059.6	0.610	1,356.18	-57.06	2.034	0.326	89.930	6.548	1.021	0.045	0.073	0.009	0.007	0.007
06/25/2019	1,027.5	1,027.5	0.594	1,333.37	-145.52	2.062	0.548	92.903	3.907	0.497	0.024	0.040	0.006	0.005	0.009
06/26/2019	1,066.2	1,066.2	0.614	1,360.56	-52.84	1.973	0.334	89.249	7.228	1.076	0.046	0.071	0.009	0.007	0.008
06/27/2019	1,057.7	1,057.7	0.611	1,353.28	-60.04	2.520	0.109	89.348	7.042	0.871	0.035	0.055	0.008	0.006	0.007
06/28/2019	1,044.7	1,044.7	0.604	1,343.67	-66.20	2.434	0.285	90.701	5.721	0.762	0.029	0.048	0.007	0.005	0.008

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06/29/2019	1,053.2	1,053.2	0.609	1,349.42	-57.51	2.257	0.355	90.005	6.388	0.870	0.039	0.061	0.009	0.007	0.010
06/30/2019	1,061.4	1,061.4	0.614	1,354.87	-54.56	2.177	0.366	89.322	6.915	1.087	0.043	0.069	0.008	0.006	0.007
07/01/2019	1,040.7	1,040.7	0.601	1,342.69	-72.66	2.065	0.453	91.550	5.206	0.630	0.029	0.046	0.007	0.006	0.007
07/02/2019	1,046.6	1,046.6	0.603	1,347.80	-65.23	2.038	0.377	91.191	5.519	0.764	0.033	0.055	0.008	0.007	0.008
07/03/2019	1,070.2	1,070.2	0.616	1,364.08	-50.75	2.236	0.091	88.762	7.625	1.137	0.049	0.076	0.010	0.007	0.008
07/04/2019	1,067.7	1,067.7	0.614	1,362.80	-52.78	2.219	0.094	88.992	7.529	1.027	0.046	0.068	0.010	0.007	0.008
07/05/2019	1,063.8	1,063.8	0.613	1,358.58	-56.12	2.316	0.141	89.094	7.345	0.974	0.044	0.064	0.009	0.006	0.007
07/06/2019	1,048.4	1,048.4	0.605	1,347.41	-64.91	2.220	0.337	90.627	5.937	0.767	0.036	0.054	0.008	0.006	0.008
07/07/2019	1,057.8	1,057.8	0.610	1,354.93	-58.48	2.124	0.283	89.923	6.625	0.923	0.042	0.059	0.008	0.006	0.008
07/08/2019	1,066.1	1,066.1	0.613	1,361.54	-54.86	2.075	0.210	89.221	7.370	0.986	0.047	0.067	0.010	0.007	0.007
07/09/2019	1,062.7	1,062.7	0.613	1,357.27	-56.46	2.283	0.203	89.134	7.309	0.934	0.045	0.067	0.010	0.007	0.007
07/10/2019	1,045.2	1,045.2	0.603	1,346.47	-66.69	1.986	0.441	91.313	5.413	0.734	0.037	0.053	0.008	0.006	0.008
07/11/2019	1,059.1	1,059.1	0.609	1,357.14	-57.76	1.896	0.348	90.114	6.632	0.878	0.043	0.063	0.009	0.007	0.008
07/12/2019	1,061.7	1,061.7	0.611	1,358.63	-53.60	2.079	0.228	89.726	6.876	0.945	0.046	0.071	0.011	0.009	0.009
07/13/2019	1,058.8	1,058.8	0.610	1,356.05	-56.87	2.213	0.191	89.773	6.824	0.869	0.039	0.063	0.010	0.008	0.009
07/14/2019	1,061.8	1,061.8	0.613	1,356.04	-56.09	2.253	0.263	89.209	7.190	0.942	0.045	0.073	0.010	0.008	0.007
07/15/2019	1,057.9	1,057.9	0.611	1,353.45	-52.12	2.064	0.404	89.991	6.347	1.013	0.053	0.098	0.012	0.010	0.009
07/16/2019	1,063.0	1,063.0	0.612	1,359.22	-48.51	1.899	0.355	89.917	6.570	1.039	0.059	0.126	0.014	0.012	0.009
07/17/2019	1,065.5	1,065.5	0.613	1,360.84	-51.54	2.005	0.275	89.423	7.103	1.014	0.052	0.100	0.011	0.009	0.008
07/18/2019	1,030.3	1,030.3	0.596	1,335.02	-144.32	2.056	0.550	92.407	4.533	0.393	0.017	0.029	0.005	0.004	0.007
07/19/2019	1,044.9	1,044.9	0.602	1,346.93	-134.48	1.931	0.443	91.269	5.681	0.600	0.024	0.037	0.005	0.004	0.007
07/20/2019	1,064.6	1,064.6	0.614	1,358.82	-52.64	2.182	0.244	89.096	7.364	0.971	0.043	0.073	0.011	0.009	0.008
07/21/2019	1,032.9	1,032.9	0.596	1,338.07	-142.82	1.974	0.518	92.320	4.754	0.366	0.017	0.030	0.006	0.005	0.009
07/22/2019	1,023.8	1,023.8	0.589	1,333.76	-152.34	1.752	0.613	93.522	3.906	0.180	0.007	0.011	0.002	0.002	0.006
07/23/2019	1,030.2	1,030.2	0.593	1,337.90	-146.23	1.816	0.546	92.907	4.347	0.328	0.016	0.026	0.004	0.004	0.007
07/24/2019	1,039.1	1,039.1	0.600	1,341.46	-137.68	2.134	0.427	91.473	5.398	0.496	0.021	0.033	0.005	0.004	0.008
07/25/2019	1,069.8	1,069.8	0.618	1,360.57	-49.16	2.132	0.344	88.540	7.634	1.190	0.052	0.083	0.010	0.008	0.007
07/26/2019	1,069.8	1,069.8	0.616	1,363.12	-50.45	2.119	0.209	88.804	7.598	1.116	0.050	0.078	0.010	0.008	0.008
07/27/2019	1,065.1	1,065.1	0.614	1,358.98	-50.12	2.302	0.169	89.040	7.275	1.057	0.049	0.076	0.012	0.009	0.010
07/28/2019	1,064.5	1,064.5	0.613	1,360.09	-54.36	2.128	0.204	89.324	7.217	0.994	0.042	0.067	0.010	0.008	0.008
07/29/2019	1,005.4	1,005.4	0.584	1,315.99	-166.50	2.172	0.718	94.697	2.240	0.129	0.010	0.017	0.004	0.004	0.009
07/30/2019	1,044.5	1,044.5	0.602	1,346.15	-69.90	2.060	0.388	91.236	5.563	0.664	0.027	0.044	0.006	0.005	0.008
07/31/2019	1,031.7	1,031.7	0.595	1,337.08	-144.11	1.956	0.547	92.417	4.661	0.363	0.015	0.026	0.004	0.003	0.007
08/01/2019	1,036.8	1,036.8	0.599	1,340.13	-139.35	1.916	0.569	91.989	4.931	0.514	0.023	0.040	0.006	0.005	0.008
08/02/2019	1,029.6	1,029.6	0.591	1,339.72	-148.27	1.625	0.555	93.294	4.223	0.265	0.010	0.016	0.002	0.002	0.007
08/03/2019	1,032.7	1,032.7	0.596	1,337.39	-143.27	1.976	0.552	92.153	4.962	0.306	0.013	0.024	0.004	0.003	0.007
08/04/2019	1,032.7	1,032.7	0.597	1,337.11	-143.61	1.912	0.609	92.103	5.073	0.265	0.010	0.016	0.003	0.003	0.007
08/05/2019	1,031.5	1,031.5	0.596	1,336.42	-144.90	1.938	0.592	92.195	5.002	0.242	0.008	0.012	0.002	0.002	0.006
08/06/2019	1,033.5	1,033.5	0.597	1,337.45	-143.28	1.974	0.575	91.868	5.329	0.228	0.006	0.009	0.002	0.002	0.006
08/07/2019	1,034.5	1,034.5	0.597	1,338.62	-142.40	2.000	0.523	91.890	5.258	0.293	0.009	0.014	0.003	0.002	0.006
08/08/2019	1,039.7	1,039.7	0.601	1,340.70	-137.45	2.166	0.467	91.118	5.773	0.424	0.014	0.023	0.004	0.003	0.007
08/09/2019	1,029.3	1,029.3	0.596	1,333.53	-145.42	2.078	0.587	92.234	4.801	0.256	0.011	0.019	0.004	0.004	0.008
08/10/2019	1,030.5	1,030.5	0.594	1,336.67	-145.75	1.922	0.553	92.513	4.702	0.269	0.011	0.017	0.003	0.003	0.007

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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	1,036.0	1,036.0	0.599	1,339.04	-140.44	2.041	0.521	91.739	5.255	0.394	0.014	0.022	0.003	0.003	0.008
08/12/2019	1,032.8	1,032.8	0.597	1,336.91	-143.48	1.962	0.588	92.018	5.141	0.256	0.008	0.014	0.003	0.003	0.007
08/13/2019	1,042.9	1,042.9	0.601	1,345.59	-136.96	1.878	0.488	91.261	5.954	0.375	0.012	0.020	0.003	0.003	0.007
08/14/2019	1,042.7	1,042.7	0.601	1,344.93	-72.64	1.915	0.494	91.327	5.768	0.398	0.022	0.048	0.009	0.011	0.008
08/15/2019	1,039.1	1,039.1	0.599	1,342.28	-70.42	1.934	0.513	91.704	5.341	0.425	0.020	0.036	0.007	0.008	0.012

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 = 48161