

# Gas Quality Reports

LS400 - Oklahoma City to Blackwell  
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	1,024.4	1,006.6	0.581	1,343.57	-156.93	1.350	0.364	94.910	3.204	0.147	0.007	0.012	0.002	0.001	0.004
05/18/2019	1,024.7	1,006.9	0.582	1,343.02	-156.18	1.409	0.363	94.737	3.331	0.132	0.006	0.011	0.002	0.001	0.007
05/19/2019	1,025.2	1,007.3	0.583	1,342.71	-155.02	1.455	0.365	94.610	3.383	0.146	0.009	0.016	0.004	0.003	0.009
05/20/2019	1,025.0	1,007.1	0.583	1,342.31	-154.59	1.522	0.336	94.600	3.315	0.176	0.011	0.022	0.004	0.004	0.009
05/21/2019	1,025.6	1,007.8	0.583	1,342.80	-154.25	1.533	0.323	94.484	3.458	0.159	0.009	0.017	0.004	0.003	0.009
05/22/2019	1,025.6	1,007.8	0.583	1,342.93	-154.64	1.538	0.313	94.455	3.517	0.147	0.007	0.012	0.003	0.002	0.007
05/23/2019	1,026.8	1,008.9	0.584	1,343.46	-153.59	1.491	0.352	94.305	3.678	0.147	0.007	0.012	0.002	0.002	0.005
05/24/2019	1,029.0	1,011.1	0.585	1,345.18	-151.67	1.460	0.348	94.160	3.808	0.189	0.010	0.015	0.003	0.002	0.005
05/25/2019	1,028.9	1,011.0	0.585	1,344.93	-151.93	1.429	0.378	94.145	3.854	0.161	0.008	0.014	0.003	0.003	0.005
05/26/2019	1,032.5	1,014.6	0.588	1,346.39	-147.78	1.445	0.401	93.727	4.117	0.256	0.013	0.022	0.005	0.004	0.009
05/27/2019	1,032.8	1,014.8	0.588	1,347.21	-147.83	1.447	0.362	93.780	4.113	0.238	0.014	0.025	0.005	0.005	0.010
05/28/2019	1,029.0	1,011.1	0.585	1,345.44	-151.23	1.414	0.364	94.275	3.705	0.188	0.012	0.022	0.005	0.004	0.010
05/29/2019	1,027.5	1,009.6	0.585	1,343.63	-152.54	1.503	0.355	94.221	3.731	0.151	0.009	0.016	0.003	0.003	0.008
05/30/2019	1,027.8	1,009.9	0.585	1,343.95	-151.98	1.416	0.404	94.346	3.585	0.197	0.012	0.021	0.005	0.004	0.010
05/31/2019	1,027.3	1,009.5	0.584	1,344.36	-153.15	1.372	0.397	94.484	3.511	0.202	0.009	0.015	0.002	0.001	0.007
06/01/2019	1,025.8	1,007.9	0.582	1,344.17	-155.67	1.336	0.382	94.734	3.367	0.156	0.006	0.011	0.002	0.001	0.005
06/02/2019	1,028.0	1,010.2	0.585	1,344.31	-151.86	1.441	0.376	94.378	3.473	0.282	0.015	0.026	0.003	0.002	0.004
06/03/2019	1,025.6	1,007.8	0.582	1,344.19	-156.15	1.291	0.407	94.773	3.370	0.135	0.006	0.011	0.002	0.001	0.003
06/04/2019	1,027.7	1,009.8	0.583	1,345.45	-153.57	1.214	0.454	94.671	3.420	0.198	0.012	0.020	0.003	0.002	0.004
06/05/2019	1,025.2	1,007.4	0.583	1,343.08	-156.24	1.320	0.435	94.676	3.424	0.125	0.005	0.009	0.001	0.001	0.003
06/06/2019	1,025.9	1,008.0	0.582	1,344.80	-156.46	1.174	0.458	94.881	3.339	0.129	0.005	0.009	0	0	0.004
06/07/2019	1,024.5	1,006.6	0.581	1,344.13	-158.25	1.159	0.461	95.035	3.237	0.097	0.003	0.005	0	0	0.002
06/08/2019	1,024.8	1,007.0	0.584	1,341.61	-156.58	1.261	0.541	94.564	3.525	0.101	0.002	0.003	0	0	0.002
06/09/2019	1,025.2	1,007.4	0.583	1,342.24	-156.45	1.199	0.560	94.626	3.499	0.109	0.002	0.002	0	0	0.003
06/10/2019	1,023.0	1,005.2	0.582	1,341.33	-158.80	1.212	0.530	94.927	3.246	0.079	0.001	0.001	0	0	0.003
06/11/2019	1,024.2	1,006.4	0.583	1,341.95	-157.39	1.251	0.510	94.743	3.390	0.099	0.002	0.002	0	0	0.003
06/12/2019	1,027.0	1,009.1	0.585	1,342.86	-154.07	1.341	0.489	94.297	3.696	0.165	0.004	0.005	0	0	0.003
06/13/2019	1,027.4	1,009.5	0.585	1,343.43	-154.37	1.238	0.539	94.316	3.777	0.123	0.002	0.003	0	0	0.003
06/14/2019	1,025.3	1,007.5	0.584	1,341.35	-155.77	1.335	0.522	94.365	3.680	0.090	0.002	0.002	0	0	0.003
06/15/2019	1,025.7	1,007.8	0.584	1,342.42	-156.14	1.236	0.540	94.510	3.615	0.092	0.002	0.003	0	0	0.002
06/16/2019	1,023.2	1,005.4	0.583	1,339.79	-157.32	1.366	0.521	94.583	3.419	0.102	0.002	0.004	0	0	0.003
06/17/2019	1,023.6	1,005.7	0.584	1,339.95	-156.80	1.425	0.483	94.520	3.436	0.124	0.004	0.007	0	0	0.002
06/18/2019	1,023.1	1,005.3	0.581	1,341.85	-158.55	1.293	0.452	94.941	3.199	0.105	0.003	0.006	0	0	0.002
06/19/2019	1,025.7	1,007.9	0.583	1,343.39	-156.15	1.255	0.478	94.625	3.518	0.113	0.003	0.005	0	0	0.003
06/20/2019	1,025.9	1,008.0	0.581	1,345.67	-157.03	1.154	0.425	94.991	3.280	0.135	0.004	0.009	0	0	0.001
06/21/2019	1,024.1	1,006.3	0.580	1,345.22	-159.30	1.132	0.410	95.242	3.123	0.087	0.002	0.003	0	0	0.001
06/22/2019	1,025.9	1,008.1	0.581	1,345.62	-157.18	1.158	0.427	94.934	3.368	0.102	0.003	0.007	0	0	0.001
06/23/2019	1,021.9	1,004.1	0.579	1,342.74	-160.58	1.198	0.430	95.356	2.913	0.092	0.003	0.006	0	0	0.002
06/24/2019	1,022.2	1,004.4	0.579	1,343.52	-160.53	1.167	0.420	95.404	2.911	0.087	0.003	0.005	0	0	0.003
06/25/2019	1,021.7	1,004.0	0.578	1,343.93	-161.31	1.173	0.379	95.539	2.811	0.090	0.002	0.004	0	0	0.002
06/26/2019	1,028.4	1,010.5	0.582	1,347.48	-154.24	1.133	0.419	94.835	3.390	0.183	0.010	0.020	0.003	0.003	0.004
06/27/2019	1,028.8	1,010.9	0.583	1,347.32	-152.04	1.152	0.427	94.876	3.244	0.213	0.019	0.041	0.009	0.010	0.010
06/28/2019	1,025.9	1,008.0	0.580	1,347.10	-157.46	1.066	0.407	95.262	3.112	0.125	0.006	0.014	0.002	0.002	0.003

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06/29/2019	1,025.9	1,008.0	0.580	1,347.10	-157.46	1.066	0.407	95.262	3.112	0.125	0.006	0.014	0.002	0.002	0.003
06/30/2019	1,025.9	1,008.0	0.580	1,347.10	-157.46	1.066	0.407	95.262	3.112	0.125	0.006	0.014	0.002	0.002	0.003
07/01/2019	1,025.9	1,008.0	0.580	1,347.10	-157.46	1.066	0.407	95.262	3.112	0.125	0.006	0.014	0.002	0.002	0.003
07/02/2019	1,027.6	1,009.7	0.581	1,347.62	-154.60	1.078	0.422	95.134	3.126	0.168	0.015	0.033	0.008	0.008	0.008
07/03/2019	1,025.8	1,007.9	0.585	1,341.55	-155.17	1.406	0.479	94.257	3.745	0.099	0.003	0.007	0.001	0.001	0.001
07/04/2019	1,026.5	1,008.6	0.584	1,343.73	-155.89	1.254	0.483	94.474	3.700	0.086	0.001	0.002	0	0	0
07/05/2019	1,026.2	1,008.4	0.584	1,343.43	-155.92	1.291	0.468	94.456	3.696	0.085	0.001	0.002	0	0	0
07/06/2019	1,026.4	1,008.6	0.585	1,341.69	-154.61	1.437	0.471	94.102	3.883	0.101	0.002	0.004	0	0	0
07/07/2019	1,025.4	1,007.5	0.586	1,339.85	-154.67	1.559	0.458	94.001	3.869	0.103	0.003	0.005	0	0	0.001
07/08/2019	1,025.6	1,007.8	0.585	1,340.86	-155.09	1.494	0.453	94.114	3.834	0.100	0.002	0.002	0	0	0
07/09/2019	1,026.9	1,009.0	0.585	1,343.00	-154.69	1.379	0.452	94.240	3.810	0.112	0.002	0.004	0	0	0.001
07/10/2019	1,036.3	1,018.2	0.590	1,349.25	-145.49	1.288	0.465	93.483	4.436	0.265	0.014	0.032	0.005	0.006	0.006
07/11/2019	1,040.7	1,022.6	0.593	1,351.01	-61.18	1.322	0.485	93.069	4.628	0.351	0.028	0.068	0.016	0.018	0.014
07/12/2019	1,036.4	1,018.3	0.588	1,351.17	-146.61	1.229	0.404	93.696	4.363	0.264	0.012	0.022	0.003	0.004	0.003
07/13/2019	1,034.3	1,016.3	0.587	1,350.47	-149.41	1.168	0.419	93.932	4.268	0.204	0.004	0.005	0	0	0
07/14/2019	1,038.1	1,020.1	0.592	1,349.22	-144.86	1.337	0.495	92.885	5.049	0.222	0.005	0.006	0	0	0
07/15/2019	1,037.6	1,019.6	0.592	1,348.55	-144.94	1.412	0.465	92.861	5.018	0.232	0.005	0.007	0	0	0
07/16/2019	1,039.8	1,021.7	0.592	1,351.72	-144.19	1.233	0.479	92.972	5.056	0.244	0.006	0.009	0	0	0
07/17/2019	1,038.2	1,020.2	0.591	1,350.28	-145.36	1.243	0.502	93.062	4.971	0.212	0.004	0.005	0	0	0
07/18/2019	1,037.5	1,019.5	0.589	1,351.55	-146.80	1.099	0.506	93.467	4.718	0.202	0.004	0.005	0	0	0
07/19/2019	1,037.1	1,019.0	0.590	1,349.87	-146.22	1.274	0.468	93.229	4.797	0.221	0.005	0.006	0	0	0
07/20/2019	1,037.4	1,019.3	0.590	1,350.23	-146.12	1.268	0.461	93.219	4.825	0.216	0.005	0.006	0	0	0
07/21/2019	1,036.3	1,018.3	0.589	1,350.30	-147.20	1.238	0.445	93.447	4.654	0.203	0.005	0.007	0	0	0
07/22/2019	1,035.5	1,017.4	0.590	1,348.50	-147.25	1.362	0.433	93.293	4.704	0.197	0.004	0.006	0	0	0
07/23/2019	1,033.9	1,015.9	0.586	1,350.20	-149.94	1.161	0.426	93.925	4.328	0.153	0.003	0.004	0	0	0.001
07/24/2019	1,035.9	1,017.9	0.589	1,349.68	-147.39	1.246	0.461	93.438	4.648	0.198	0.004	0.005	0	0	0.001
07/25/2019	1,036.0	1,017.9	0.589	1,349.91	-147.35	1.267	0.435	93.461	4.611	0.216	0.004	0.005	0	0	0
07/26/2019	1,035.9	1,017.9	0.588	1,350.92	-147.88	1.172	0.442	93.674	4.485	0.217	0.004	0.005	0	0	0.001
07/27/2019	1,036.0	1,018.0	0.591	1,347.98	-146.16	1.385	0.464	93.162	4.724	0.245	0.008	0.010	0.001	0	0.001
07/28/2019	1,036.1	1,018.1	0.591	1,347.71	-146.03	1.417	0.460	93.064	4.808	0.237	0.006	0.008	0	0	0
07/29/2019	1,036.7	1,018.7	0.589	1,350.36	-146.66	1.230	0.459	93.428	4.629	0.237	0.007	0.010	0	0	0
07/30/2019	1,037.0	1,018.9	0.590	1,350.23	-146.44	1.242	0.465	93.331	4.733	0.216	0.005	0.007	0	0	0.001
07/31/2019	1,041.4	1,023.3	0.593	1,352.51	-142.38	1.239	0.481	92.854	5.076	0.329	0.009	0.012	0	0	0.001
08/01/2019	1,041.2	1,023.1	0.593	1,352.01	-142.07	1.294	0.466	92.808	5.075	0.321	0.012	0.020	0.001	0.001	0.002
08/02/2019	1,044.0	1,025.9	0.596	1,352.88	-139.88	1.285	0.513	92.349	5.499	0.318	0.013	0.019	0.002	0.001	0.002
08/03/2019	1,044.4	1,026.2	0.598	1,350.66	-138.81	1.436	0.546	91.829	5.862	0.303	0.009	0.012	0.001	0	0.002
08/04/2019	1,045.1	1,026.9	0.596	1,354.02	-139.75	1.296	0.476	92.193	5.734	0.285	0.007	0.008	0	0	0.001
08/05/2019	1,043.4	1,025.3	0.595	1,353.23	-141.05	1.285	0.476	92.405	5.560	0.262	0.006	0.007	0	0	0.001
08/06/2019	1,044.0	1,025.8	0.595	1,353.87	-140.71	1.290	0.454	92.394	5.570	0.278	0.006	0.007	0	0	0.001
08/07/2019	1,047.2	1,028.9	0.596	1,356.06	-138.20	1.267	0.449	92.114	5.824	0.314	0.009	0.015	0.002	0.002	0.003
08/08/2019	1,045.4	1,027.2	0.593	1,357.34	-140.09	1.192	0.374	92.737	5.318	0.338	0.013	0.021	0.003	0.002	0.002
08/09/2019	1,045.9	1,027.7	0.594	1,357.38	-140.07	1.133	0.425	92.654	5.433	0.329	0.010	0.013	0.001	0	0.002
08/10/2019	1,045.6	1,027.4	0.594	1,356.86	-140.37	1.138	0.443	92.574	5.535	0.295	0.006	0.008	0	0	0.001

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08/11/2019	1,047.8	1,029.6	0.596	1,357.77	-138.34	1.142	0.458	92.318	5.725	0.323	0.010	0.018	0.002	0.001	0.003
08/12/2019	1,046.7	1,028.4	0.595	1,357.01	-139.08	1.166	0.448	92.409	5.650	0.291	0.010	0.018	0.002	0.002	0.003
08/13/2019	1,054.0	1,035.6	0.600	1,361.00	-54.67	1.198	0.435	91.882	5.847	0.492	0.031	0.069	0.014	0.016	0.016
08/14/2019	1,045.6	1,027.4	0.595	1,356.09	-139.89	1.232	0.424	92.404	5.633	0.289	0.007	0.009	0	0	0.002
08/15/2019	1,043.5	1,025.4	0.592	1,355.71	-141.87	1.140	0.438	92.832	5.311	0.259	0.006	0.009	0.001	0.001	0.002

**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 = 66333