

Gas Quality Reports

LS335 Blackwell to Shidler

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	1,019.6	1,001.8	0.584	1,334.53	-157.15	1.889	0.344	94.397	3.153	0.179	0.009	0.018	0.004	0.003	0.005
05/14/2020	1,022.1	1,004.3	0.585	1,336.36	-154.78	1.889	0.324	94.159	3.380	0.200	0.012	0.023	0.005	0.004	0.006
05/15/2020	1,017.9	1,000.2	0.584	1,331.53	-157.22	2.087	0.325	94.207	3.157	0.180	0.010	0.020	0.004	0.004	0.005
05/16/2020	1,016.9	999.2	0.583	1,332.06	-158.90	2.010	0.315	94.523	2.938	0.176	0.009	0.018	0.004	0.003	0.005
05/17/2020	1,020.0	1,002.2	0.585	1,334.01	-156.02	1.991	0.318	94.201	3.240	0.207	0.010	0.019	0.004	0.004	0.005
05/18/2020	1,022.1	1,004.3	0.585	1,335.88	-154.59	1.878	0.357	94.127	3.359	0.237	0.011	0.020	0.004	0.003	0.005
05/19/2020	1,016.8	999.1	0.582	1,332.75	-159.83	1.898	0.348	94.684	2.886	0.155	0.007	0.013	0.003	0.003	0.005
05/20/2020	1,020.4	1,002.6	0.584	1,335.77	-156.74	1.779	0.376	94.494	3.117	0.192	0.010	0.020	0.004	0.004	0.006
05/21/2020	1,017.6	999.9	0.585	1,330.05	-156.51	2.094	0.392	94.130	3.112	0.219	0.012	0.024	0.005	0.005	0.007
05/22/2020	1,017.9	1,000.2	0.586	1,329.79	-156.06	2.111	0.402	94.051	3.155	0.229	0.012	0.024	0.005	0.005	0.007
05/23/2020	1,018.0	1,000.3	0.586	1,330.00	-156.35	2.068	0.425	94.048	3.183	0.237	0.009	0.018	0.003	0.003	0.005
05/24/2020	1,017.5	999.8	0.586	1,329.69	-157.16	2.085	0.413	94.070	3.180	0.222	0.008	0.015	0.002	0.002	0.003
05/25/2020	1,016.3	998.6	0.584	1,329.44	-158.62	2.074	0.396	94.258	3.050	0.195	0.007	0.013	0.002	0.002	0.003
05/26/2020	1,015.4	997.8	0.583	1,329.57	-159.90	2.046	0.379	94.455	2.912	0.185	0.007	0.012	0.001	0.001	0.003
05/27/2020	1,013.1	995.5	0.583	1,327.30	-161.59	2.106	0.391	94.567	2.748	0.163	0.006	0.012	0.002	0.001	0.003
05/28/2020	1,014.4	996.7	0.583	1,328.02	-160.09	2.102	0.394	94.448	2.841	0.183	0.008	0.016	0.003	0.003	0.004
05/29/2020	1,013.0	995.4	0.585	1,324.85	-159.75	2.317	0.382	94.170	2.903	0.191	0.009	0.017	0.003	0.003	0.004
05/30/2020	1,024.2	1,006.4	0.587	1,336.56	-60.91	1.893	0.375	94.172	3.048	0.353	0.032	0.076	0.016	0.018	0.016
05/31/2020	1,013.1	995.5	0.580	1,330.16	-163.31	1.929	0.351	95.064	2.490	0.137	0.007	0.014	0.002	0.002	0.004
06/01/2020	1,016.6	998.9	0.581	1,333.20	-160.34	1.851	0.349	94.816	2.797	0.157	0.007	0.014	0.003	0.003	0.004
06/02/2020	1,025.2	1,007.3	0.587	1,337.94	-152.33	1.801	0.393	93.762	3.802	0.214	0.007	0.013	0.002	0.002	0.004
06/03/2020	1,028.0	1,010.2	0.588	1,340.81	-149.20	1.697	0.395	93.814	3.742	0.267	0.018	0.040	0.008	0.009	0.009
06/04/2020	1,022.2	1,004.4	0.584	1,337.07	-155.92	1.744	0.385	94.241	3.449	0.157	0.005	0.011	0.002	0.002	0.004
06/05/2020	1,025.5	1,007.6	0.589	1,336.74	-151.36	1.904	0.401	93.473	3.969	0.226	0.007	0.014	0.002	0.002	0.003
06/06/2020	1,026.5	1,008.7	0.589	1,337.58	-149.94	1.895	0.394	93.455	3.949	0.262	0.011	0.020	0.004	0.004	0.007
06/07/2020	1,026.5	1,008.7	0.590	1,336.55	-149.54	1.958	0.409	93.282	4.036	0.269	0.011	0.022	0.004	0.004	0.005
06/08/2020	1,024.3	1,006.4	0.588	1,335.93	-152.02	1.902	0.408	93.649	3.775	0.228	0.009	0.017	0.003	0.003	0.005
06/09/2020	1,023.4	1,005.6	0.585	1,337.74	-154.37	1.756	0.380	94.134	3.489	0.204	0.009	0.017	0.003	0.003	0.005
06/10/2020	1,023.5	1,005.7	0.585	1,338.38	-154.87	1.732	0.363	94.171	3.530	0.176	0.007	0.013	0.002	0.002	0.004
06/11/2020	1,023.9	1,006.0	0.586	1,337.45	-154.21	1.782	0.392	93.933	3.692	0.181	0.006	0.010	0.001	0.001	0.003
06/12/2020	1,024.6	1,006.8	0.587	1,337.60	-152.92	1.797	0.399	93.807	3.774	0.198	0.007	0.014	0.001	0.001	0.003
06/13/2020	1,026.1	1,008.3	0.588	1,338.20	-151.24	1.765	0.434	93.651	3.893	0.223	0.008	0.015	0.003	0.002	0.006
06/14/2020	1,023.3	1,005.5	0.586	1,336.65	-154.37	1.815	0.396	93.915	3.674	0.178	0.005	0.010	0.001	0.001	0.004
06/15/2020	1,022.1	1,004.3	0.585	1,336.85	-155.77	1.788	0.366	94.202	3.453	0.162	0.007	0.013	0.002	0.002	0.003
06/16/2020	1,024.7	1,006.9	0.587	1,337.64	-152.41	1.832	0.374	93.826	3.713	0.215	0.009	0.020	0.003	0.003	0.004
06/17/2020	1,028.1	1,010.2	0.589	1,339.64	-149.27	1.940	0.301	93.357	4.103	0.255	0.010	0.023	0.004	0.004	0.004
06/18/2020	1,028.3	1,010.4	0.588	1,340.90	-149.73	1.792	0.338	93.591	3.955	0.282	0.011	0.021	0.002	0.003	0.003
06/19/2020	1,023.0	1,005.2	0.585	1,337.59	-154.48	1.827	0.327	94.159	3.453	0.188	0.010	0.021	0.005	0.005	0.005
06/20/2020	1,020.9	1,003.1	0.583	1,337.08	-157.46	1.726	0.355	94.514	3.239	0.137	0.006	0.013	0.003	0.003	0.004
06/21/2020	1,022.0	1,004.2	0.584	1,337.92	-156.45	1.716	0.352	94.411	3.343	0.148	0.007	0.014	0.003	0.003	0.004
06/22/2020	1,023.6	1,005.8	0.584	1,338.87	-154.83	1.740	0.333	94.240	3.468	0.184	0.009	0.017	0.003	0.003	0.004
06/23/2020	1,022.8	1,005.0	0.585	1,337.21	-155.21	1.866	0.318	94.007	3.635	0.156	0.004	0.010	0	0.001	0.002
06/24/2020	1,021.8	1,004.0	0.584	1,336.74	-156.51	1.855	0.318	94.125	3.566	0.124	0.003	0.007	0	0	0.001

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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%)
06/25/2020	1,020.6	1,002.8	0.583	1,336.13	-157.83	1.820	0.335	94.312	3.412	0.110	0.003	0.007	0	0	0.001
06/26/2020	1,020.7	1,002.9	0.584	1,335.91	-157.45	1.858	0.327	94.231	3.456	0.117	0.003	0.007	0	0	0.001
06/27/2020	1,022.6	1,004.9	0.584	1,338.61	-156.12	1.663	0.369	94.412	3.378	0.146	0.007	0.014	0.003	0.003	0.005
06/28/2020	1,021.9	1,004.1	0.582	1,339.30	-158.02	1.532	0.395	94.691	3.248	0.116	0.004	0.008	0.001	0.001	0.003
06/29/2020	1,023.2	1,005.4	0.584	1,338.46	-155.75	1.672	0.390	94.240	3.527	0.156	0.004	0.008	0.001	0.001	0.002
06/30/2020	1,022.3	1,004.5	0.584	1,337.99	-156.76	1.674	0.384	94.344	3.450	0.133	0.004	0.008	0.001	0	0.002
07/01/2020	1,020.4	1,002.7	0.584	1,334.74	-156.30	1.894	0.357	94.225	3.323	0.163	0.009	0.018	0.004	0.003	0.005
07/02/2020	1,018.4	1,000.7	0.582	1,334.72	-159.03	1.830	0.337	94.639	3.026	0.138	0.007	0.014	0.003	0.003	0.004
07/03/2020	1,017.4	999.6	0.582	1,333.53	-159.60	1.883	0.332	94.667	2.952	0.133	0.007	0.015	0.003	0.003	0.005
07/04/2020	1,016.8	999.1	0.581	1,333.64	-160.58	1.836	0.341	94.804	2.869	0.123	0.006	0.013	0.002	0.002	0.004
07/05/2020	1,018.8	1,001.1	0.583	1,334.75	-157.70	1.847	0.335	94.657	2.930	0.176	0.012	0.024	0.006	0.005	0.009
07/06/2020	1,019.6	1,001.9	0.583	1,334.84	-156.98	1.854	0.351	94.497	3.044	0.209	0.011	0.021	0.004	0.003	0.006
07/07/2020	1,019.2	1,001.5	0.583	1,335.04	-158.17	1.821	0.350	94.563	3.056	0.183	0.007	0.013	0.002	0.001	0.004
07/08/2020	1,022.3	1,004.5	0.584	1,337.78	-155.57	1.749	0.345	94.417	3.221	0.228	0.011	0.020	0.003	0.003	0.004
07/09/2020	1,026.4	1,008.5	0.587	1,340.15	-150.66	1.711	0.369	94.088	3.430	0.327	0.019	0.036	0.006	0.006	0.007
07/10/2020	1,019.6	1,001.9	0.586	1,331.83	-155.51	2.049	0.387	93.972	3.315	0.241	0.010	0.019	0.002	0.002	0.004
07/11/2020	1,020.6	1,002.8	0.585	1,334.78	-156.08	1.858	0.382	94.283	3.216	0.225	0.009	0.017	0.003	0.002	0.004
07/12/2020	1,021.2	1,003.4	0.584	1,336.04	-156.48	1.813	0.364	94.277	3.336	0.188	0.006	0.011	0.001	0.001	0.003
07/13/2020	1,023.6	1,005.8	0.586	1,337.59	-154.05	1.789	0.372	94.062	3.511	0.234	0.009	0.015	0.002	0.001	0.004
07/14/2020	1,020.8	1,003.0	0.582	1,337.97	-158.20	1.622	0.371	94.752	3.057	0.176	0.006	0.010	0.001	0.001	0.003
07/15/2020	1,022.6	1,004.8	0.583	1,339.35	-156.53	1.587	0.376	94.637	3.157	0.216	0.008	0.014	0.001	0.001	0.003
07/16/2020	1,020.8	1,003.0	0.586	1,333.55	-155.27	1.973	0.381	93.978	3.412	0.225	0.008	0.015	0.002	0.002	0.003
07/17/2020	1,020.4	1,002.6	0.585	1,334.50	-156.29	1.875	0.380	94.269	3.212	0.235	0.008	0.015	0.002	0.001	0.003
07/18/2020	1,020.5	1,002.8	0.586	1,333.55	-155.97	1.900	0.420	94.062	3.373	0.225	0.006	0.011	0.001	0	0.002
07/19/2020	1,021.0	1,003.3	0.585	1,334.78	-155.79	1.852	0.402	94.176	3.303	0.244	0.007	0.012	0.001	0.001	0.002
07/20/2020	1,020.4	1,002.7	0.587	1,331.30	-154.61	2.092	0.413	93.695	3.502	0.278	0.007	0.011	0	0	0.001
07/21/2020	1,019.7	1,002.0	0.585	1,332.69	-156.15	1.946	0.411	94.122	3.259	0.231	0.008	0.017	0.002	0.002	0.003
07/22/2020	1,015.3	997.7	0.588	1,323.90	-156.82	2.488	0.396	93.391	3.513	0.195	0.005	0.009	0	0	0.001
07/23/2020	1,005.7	988.2	0.595	1,304.25	-157.24	3.594	0.449	91.935	3.825	0.182	0.005	0.008	0	0	0.001
07/24/2020	1,015.9	998.2	0.591	1,320.92	-152.66	2.806	0.369	92.831	3.653	0.283	0.015	0.028	0.005	0.004	0.006
07/25/2020	1,022.8	1,005.0	0.588	1,333.34	-151.29	2.112	0.363	93.591	3.574	0.297	0.016	0.029	0.006	0.005	0.008
07/26/2020	1,021.0	1,003.3	0.588	1,331.58	-152.65	2.142	0.385	93.684	3.422	0.315	0.014	0.025	0.004	0.003	0.005
07/27/2020	1,021.4	1,003.7	0.590	1,329.67	-150.73	2.310	0.392	93.302	3.564	0.369	0.018	0.032	0.005	0.004	0.006
07/28/2020	1,024.4	1,006.6	0.587	1,337.03	-151.27	1.878	0.367	93.987	3.327	0.376	0.019	0.033	0.005	0.004	0.005
07/29/2020	1,023.4	1,005.6	0.588	1,334.17	-151.15	2.027	0.393	93.688	3.465	0.371	0.016	0.028	0.004	0.003	0.005
07/30/2020	1,024.3	1,006.5	0.586	1,337.68	-152.63	1.785	0.390	94.016	3.490	0.275	0.012	0.021	0.003	0.003	0.004
07/31/2020	1,024.7	1,006.9	0.585	1,340.00	-153.23	1.618	0.386	94.390	3.270	0.283	0.014	0.026	0.004	0.003	0.005
08/01/2020	1,020.2	1,002.4	0.586	1,332.33	-155.09	1.987	0.417	93.990	3.319	0.243	0.012	0.023	0.003	0.003	0.004
08/02/2020	1,019.5	1,001.8	0.584	1,334.10	-157.35	1.836	0.402	94.369	3.182	0.182	0.008	0.015	0.002	0.002	0.004
08/03/2020	1,018.7	1,001.0	0.587	1,329.32	-155.78	2.207	0.393	93.611	3.588	0.180	0.006	0.012	0.001	0.001	0.002
08/04/2020	1,013.6	995.9	0.589	1,320.20	-156.97	2.661	0.430	93.118	3.610	0.160	0.006	0.011	0.001	0.001	0.002
08/05/2020	1,010.7	993.1	0.589	1,316.98	-158.84	2.740	0.464	93.203	3.435	0.140	0.005	0.009	0.001	0.001	0.002
08/06/2020	1,014.1	996.5	0.585	1,326.39	-160.02	2.248	0.380	94.078	3.151	0.127	0.004	0.008	0.001	0.001	0.002

TSP Name: Southern Star Central Gas Pipeline, Inc.

CSI048

TSP: 007906233

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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%)
08/07/2020	1,019.0	1,001.3	0.583	1,334.01	-157.58	1.913	0.339	94.404	3.149	0.156	0.009	0.018	0.004	0.003	0.005
08/08/2020	1,020.0	1,002.3	0.584	1,335.30	-157.24	1.871	0.330	94.359	3.262	0.147	0.007	0.014	0.003	0.003	0.004
08/09/2020	1,020.3	1,002.6	0.583	1,336.21	-157.56	1.819	0.324	94.434	3.254	0.142	0.006	0.012	0.002	0.002	0.003
08/10/2020	1,021.5	1,003.7	0.583	1,338.13	-157.28	1.697	0.336	94.545	3.255	0.139	0.006	0.013	0.002	0.002	0.004
08/11/2020	1,017.3	999.6	0.588	1,326.24	-155.79	2.349	0.423	93.397	3.626	0.184	0.006	0.011	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 = 66332