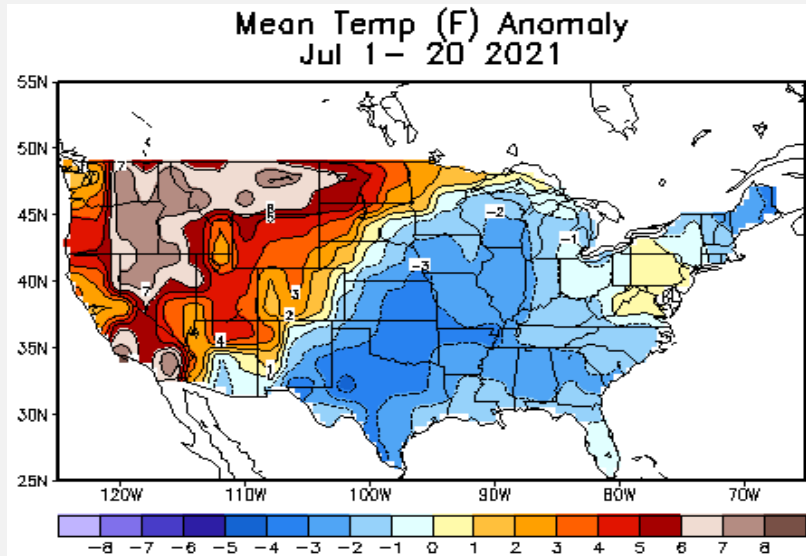
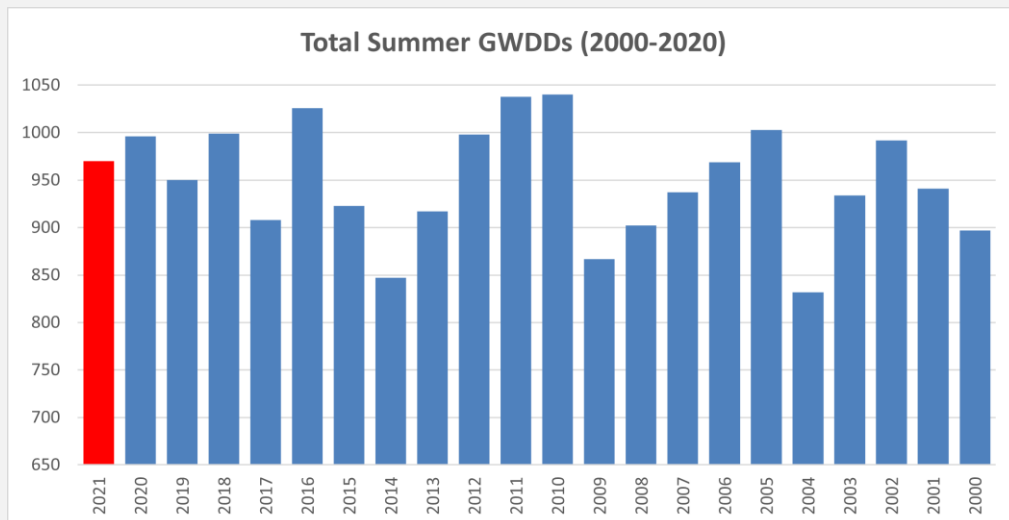


This weekend's commentary comes from Brian Lovern at [Bespoke Weather](#). Each month Brian Lovern will provide us with the latest medium-term outlook.

After one of the hottest Junes in our recorded history, the month of July has come in cooler vs expectations, well under the 5 and 10-year normal, thanks to below normal temperatures dominating the eastern half of the nation into the South, while heat has been mostly confined to the West.

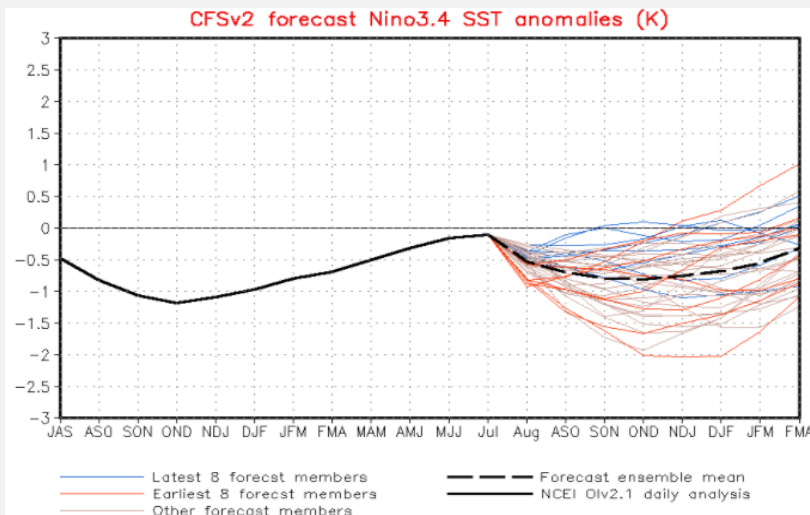


The cooler July has pushed out total summer (June to August) GWDD projection down to 970, under last year's levels, and well under the hottest summers of 2010, 2011, and 2016.

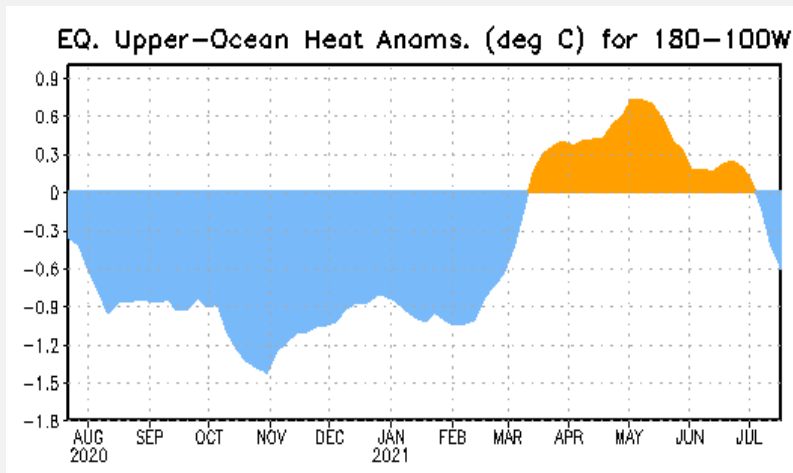


That said, we do see some heat returning to the forecast, as next week looks to be the hottest of the summer, which includes the hottest weather we have seen in the South as well, thanks to some Atlantic blocking showing up (a hotter signal in the South in summer), at least on a transient basis. Highs in cities such as Dallas are expected to reach the 100 to 105 level on multiple days. We do not see this level of heat as something that “locks in”, as of right now, with our assumption for August being close to the 5 and 10-year normal. This automatically “bakes in” some heat, however, given how much hotter those normals are when compared to the longer term, 30-year normal.

Looking farther down the road, we still see hints in the climate modeling of the return of a La Niña base state heading into Fall and Winter.



Upper oceanic heat content is on the decline, lending some support to the La Niña idea moving forward.



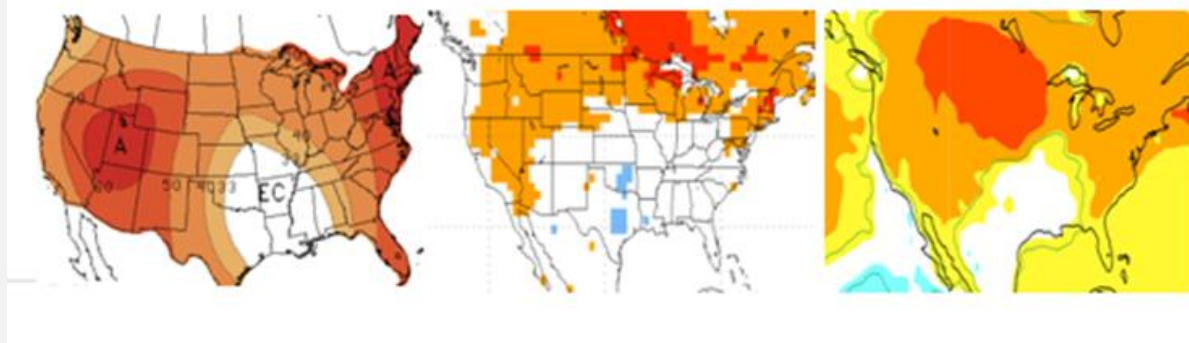
This could be a key shift in the global base state, as La Niña often leads to warmer Fall conditions in the U.S. Given how important weather will be to the natural gas market in the coming months, we will be tracking this closely, as a warm October-November period would not be kind to natural gas bulls. But, this is a long way out yet. Most projections show a similar regime for the next three months as we have seen for much of summer-to-date, with a ring of heat from the West, across the north, and along the East Coast. Should Atlantic blocking turn out to be more than just transient, that would shift the outlook hotter in the South vs what is shown here, and cooler in the Northeast.

3-Month Weather Outlooks (August - October)

CPC

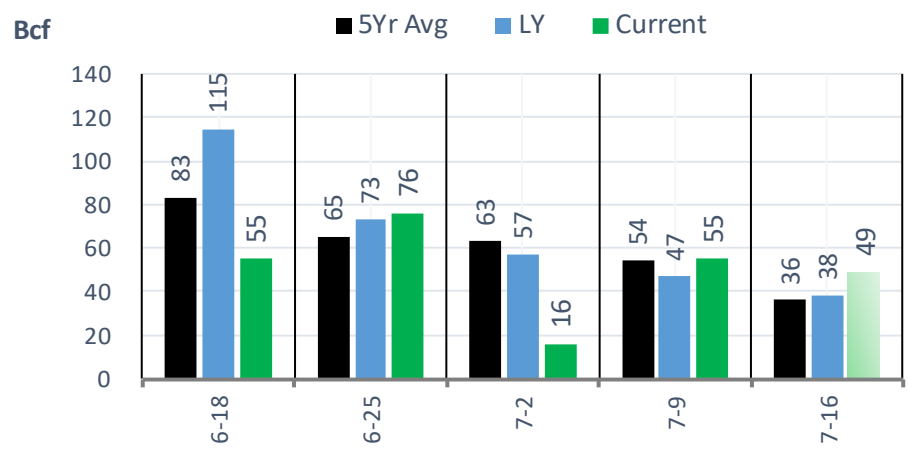
CFS

ECMWF

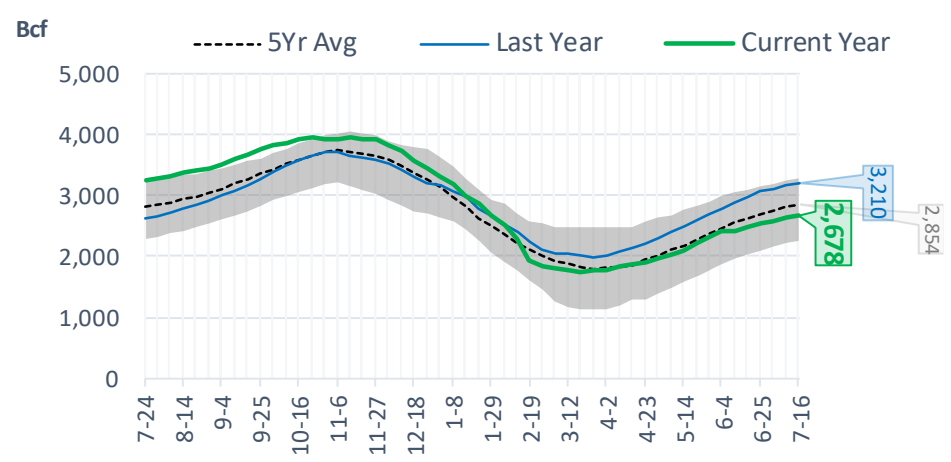


EIA Storage Report

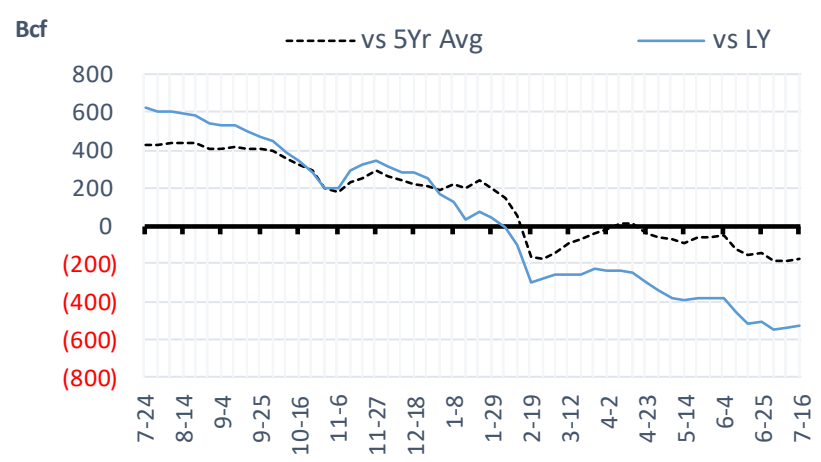
Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels



Total Lower 48 LY Surplus/Deficit

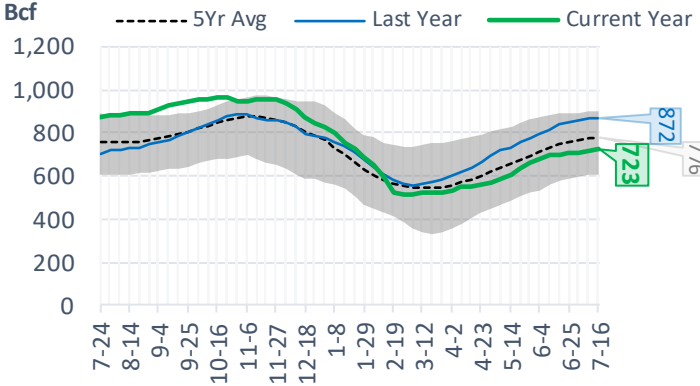


The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.

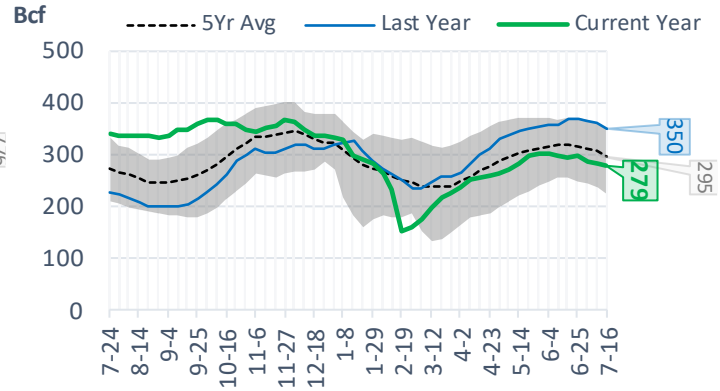
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 16-Jul	Week - 1 9-Jul	Week - 2 2-Jul	Week - 3 25-Jun	Week - 4 18-Jun	Week - 5 11-Jun
Total Lower 48 Storage Level	2678	2629	2574	2558	2482	2427
Weekly Change	+49	+55	+16	+76	+55	+16
vs LY	-532	-543	-551	-510	-513	-453
vs 5Yr Avg	-176	-189	-190	-143	-154	-126
S. Central Salt Storage Level	279	283	286	296	295	299
Weekly Change	-4	-3	-10	+1	-4	-3
vs LY	-71	-77	-79	-73	-75	-59
vs 5Yr Avg	-16	-22	-24	-19	-24	-18
S. Central NonSalt Storage Level	723	712	705	709	697	696
Weekly Change	+11	+7	-4	+12	+1	+15
vs LY	-149	-156	-156	-143	-139	-116
vs 5Yr Avg	-53	-61	-60	-46	-47	-33
Midwest Storage Level	683	662	638	623	595	570
Weekly Change	+21	+24	+15	+28	+25	+23
vs LY	-113	-115	-120	-114	-117	-114
vs 5Yr Avg	-14	-16	-18	-8	-12	-11
East Storage Level	562	543	521	513	488	461
Weekly Change	+19	+22	+8	+25	+27	+16
vs LY	-128	-127	-133	-123	-126	-122
vs 5Yr Avg	-56	-55	-57	-42	-42	-42
Mountain Storage Level	183	180	177	173	169	165
Weekly Change	+3	+3	+4	+4	+4	+5
vs LY	-6	-5	-2	+1	+5	+10
vs 5Yr Avg	+5	+5	+7	+9	+10	+12
Pacific Storage Level	247	250	246	244	239	236
Weekly Change	-3	+4	+2	+5	+3	-40
vs LY	-64	-62	-63	-59	-59	-53
vs 5Yr Avg	-43	-40	-40	-37	-38	-34

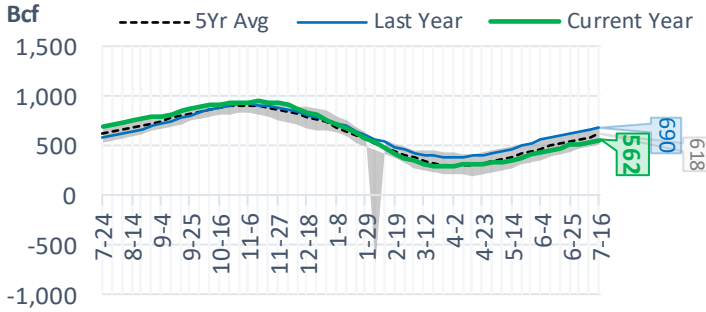
NonSalt Storage Levels



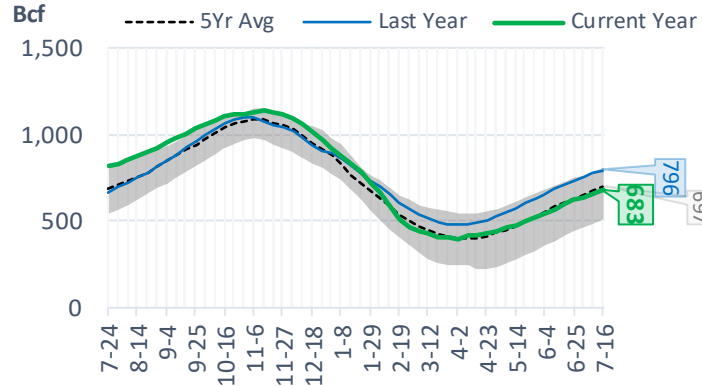
Salt Storage Levels



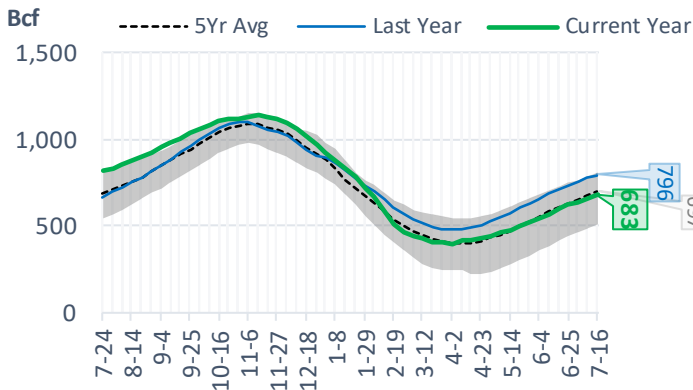
East Storage Levels



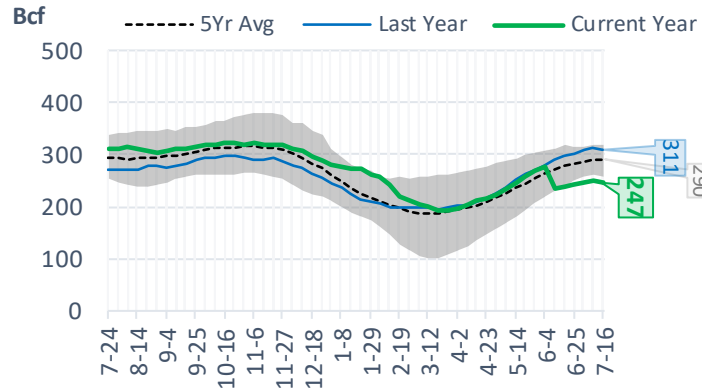
Midwest Storage Levels



Midwest Storage Levels



Pacific Storage Levels



EIA Storage Week Balances

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	vs. 4W
Lower 48 Dry Production	92.3	93.2	92.2	91.8	92.3	92.1	▼ -0.2	▼ -0.3
Canadian Imports	5.1	4.7	5.2	5.1	5.2	4.9	▼ -0.3	▼ -0.1
L48 Power	34.8	34.4	39.7	37.1	38.7	39.7	▲ 1.0	▲ 2.2
L48 Residential & Commercial	8.3	8.4	8.3	8.0	8.3	8.3	▲ 0.0	▲ 0.0
L48 Industrial	22.4	20.0	21.5	19.6	19.8	19.6	▼ -0.2	▼ -0.6
L48 Lease and Plant Fuel	5.1	5.2	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.1	2.1	2.4	2.1	2.2	2.3	▲ 0.0	▲ 0.1
L48 Regional Gas Consumption	72.7	70.1	77.0	72.0	74.1	74.9	▲ 0.9	▲ 1.7
Net LNG Exports	9.6	10.3	11.2	11.0	10.8	10.5	▼ -0.3	▼ -0.3
Total Mexican Exports	7.5	7.6	7.2	7.1	7.1	7.0	▼ -0.1	▼ -0.2
Implied Daily Storage Activity	7.6	10.0	2.0	6.8	5.5	4.6	-0.9	
EIA Reported Daily Storage Activity	7.9	10.9	2.3	7.9	7.0			
Daily Model Error	-0.2	-0.9	-0.3	-1.1	-1.5			

Monthly Balances

	2Yr Ago Jul-19	LY Jul-20	Mar-21	Apr-21	May-21	Jun-21	MTD Jul-21	MoM	vs. LY
Lower 48 Dry Production	91.9	89.1	91.5	92.3	92.2	92.8	91.6	▼ -1.1	▲ 2.6
Canadian Imports	5.0	4.4	4.8	4.7	4.5	4.9	5.1	▲ 0.2	▲ 0.7
L48 Power	40.8	43.7	24.3	25.0	27.1	35.3	38.5	▲ 3.2	▼ -5.2
L48 Residential & Commercial	8.0	7.9	29.3	19.7	13.4	8.4	8.2	▼ -0.2	▲ 0.2
L48 Industrial	21.6	20.4	19.3	21.2	19.2	21.0	19.7	▼ -1.3	▼ -0.7
L48 Lease and Plant Fuel	5.0	4.9	5.0	5.1	5.1	5.1	5.1	▼ -0.1	▲ 0.1
L48 Pipeline Distribution	2.3	2.4	2.5	2.3	2.1	2.2	2.2	▲ 0.1	▼ -0.2
L48 Regional Gas Consumption	77.8	79.4	80.6	73.3	66.7	72.0	73.6	▲ 1.6	▼ -5.7
Net LNG Exports	6.0	3.3	11.1	11.5	10.8	10.2	10.8	▲ 0.6	▲ 7.5
Total Mexican Exports	5.3	5.9	6.5	6.7	6.8	7.4	7.1	▼ -0.3	▲ 1.2
Implied Daily Storage Activity	7.8	5.0	-2.0	5.5	12.4	8.0	5.2		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

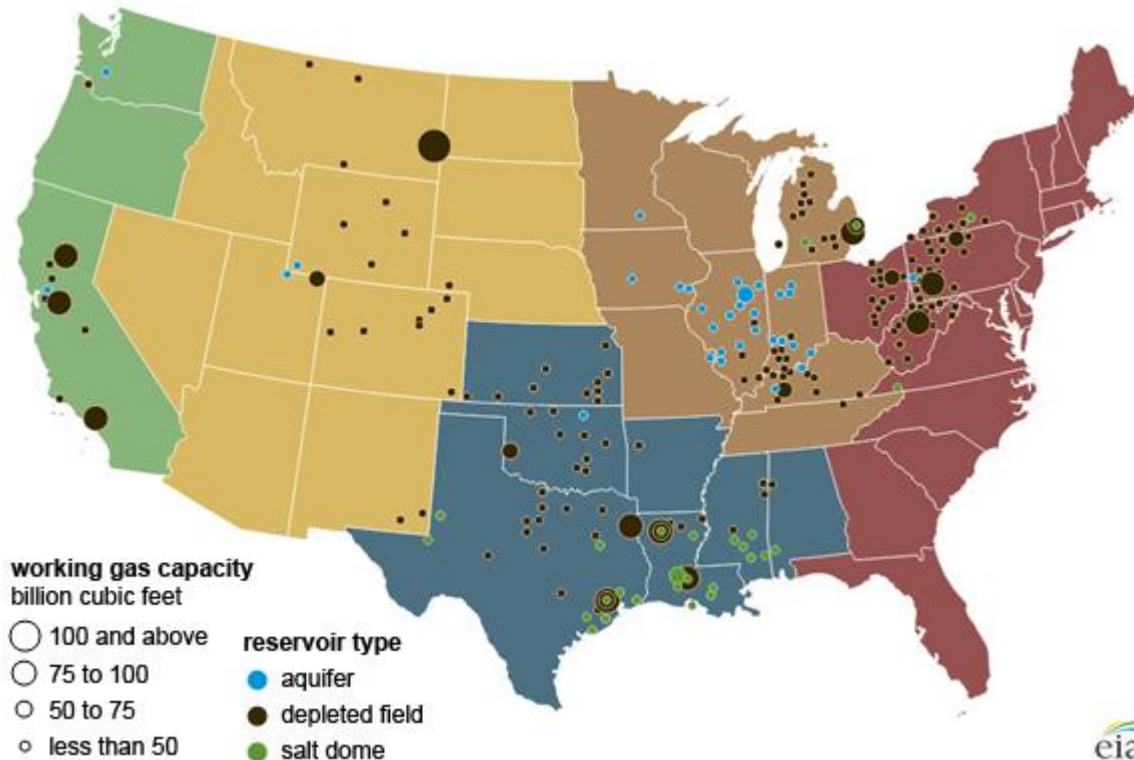
Regional S/D Models Storage Projection

Week Ending 23-Jul

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	4.3	1.3	5.6	39
East	1.6	1.4	2.9	21
Midwest	3.3	-0.4	2.9	20
Mountain	4.3	-4.1	0.2	2
South Central	-4.8	4.5	-0.3	-2
Pacific	-0.1	-0.1	-0.2	-1

*Adjustment Factor is calculated based on historical regional deltas

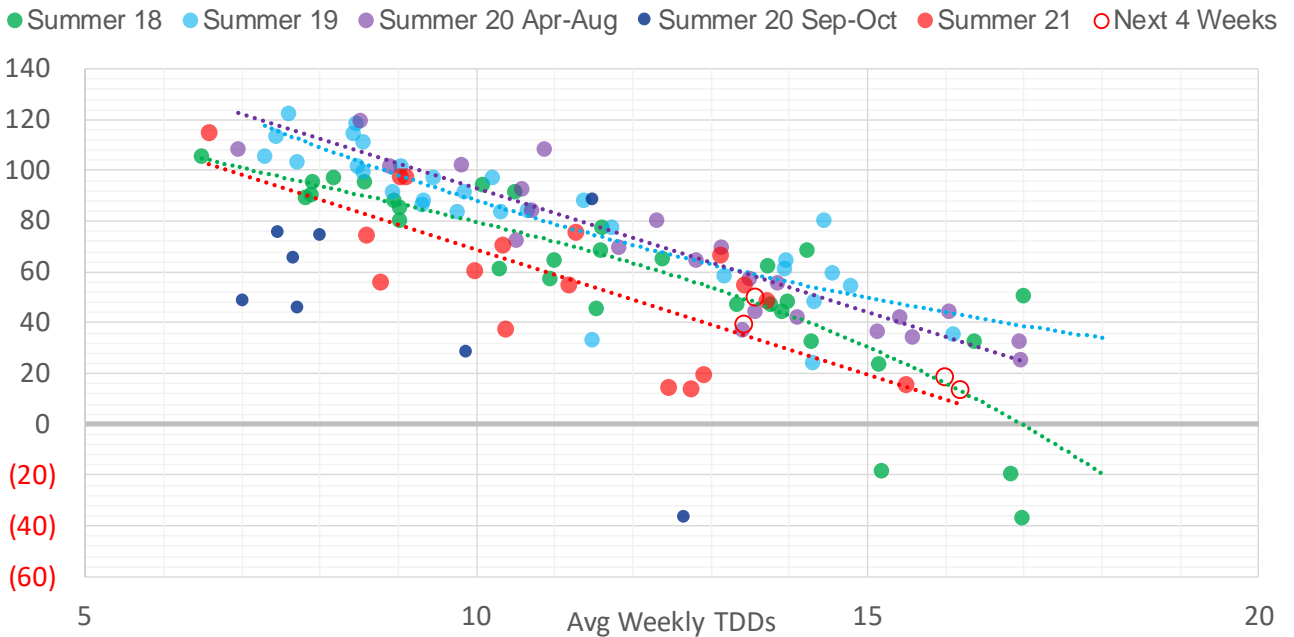
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

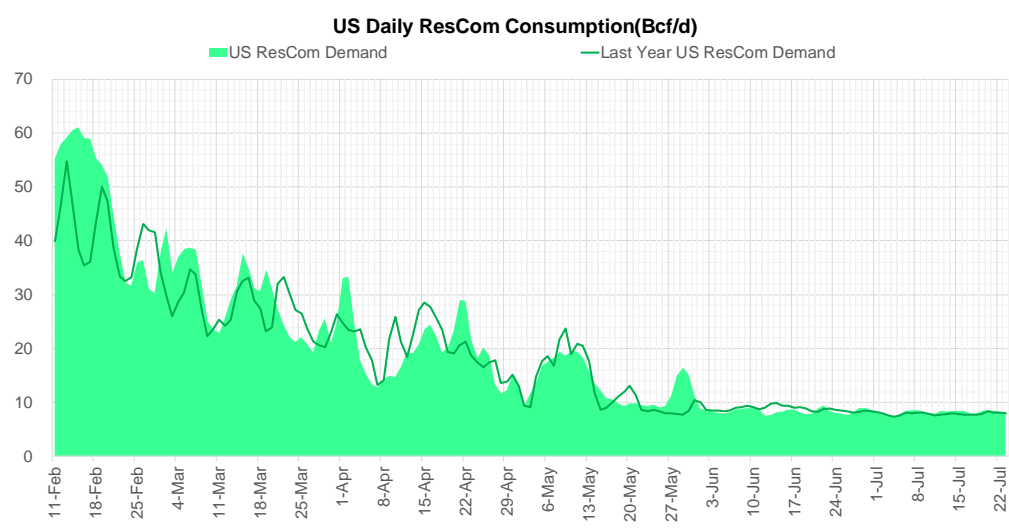
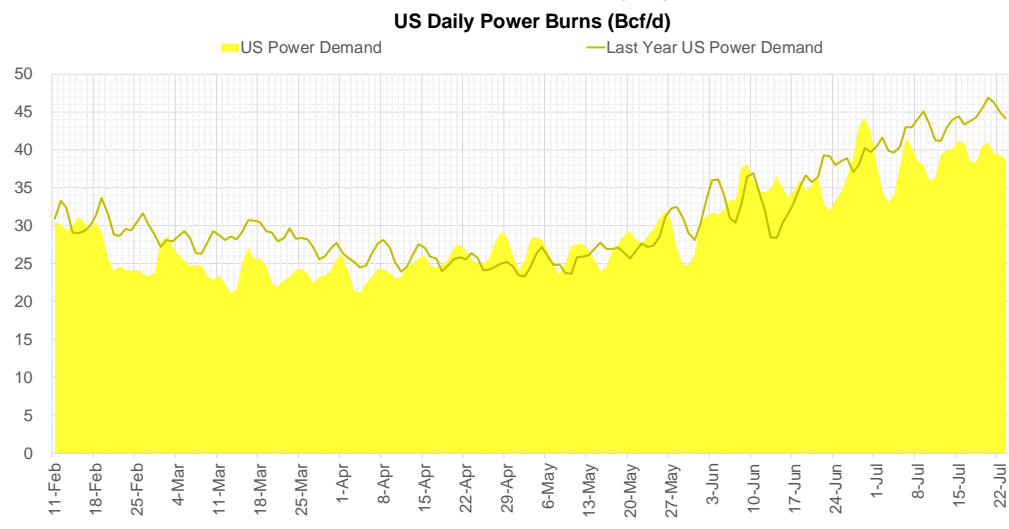
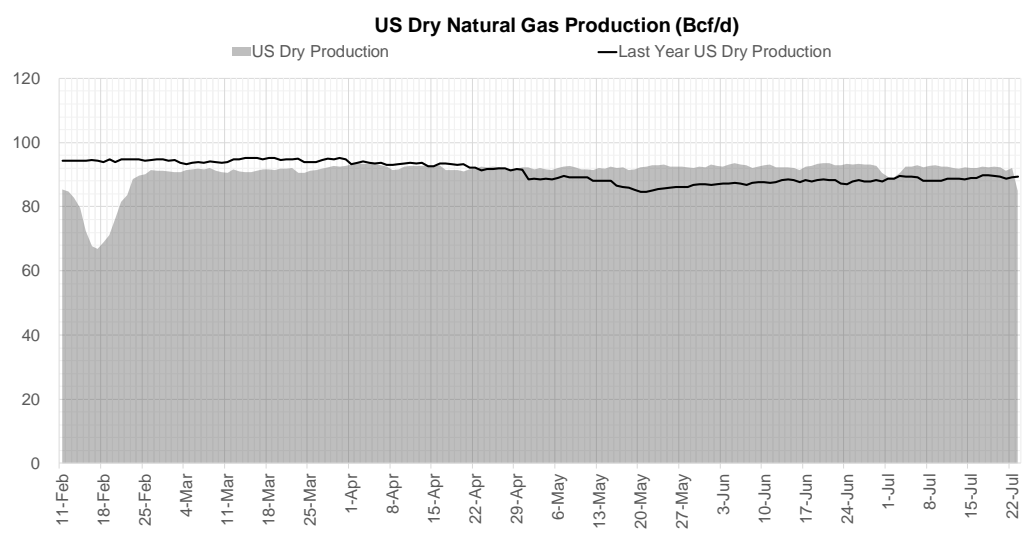
Next report and beyond		
Week Ending	Temp	Week Storage Projection
30-Jul	16.2	13
06-Aug	16.0	18
13-Aug	13.6	50

Weather Storage Model - Next 4 Week Forecast



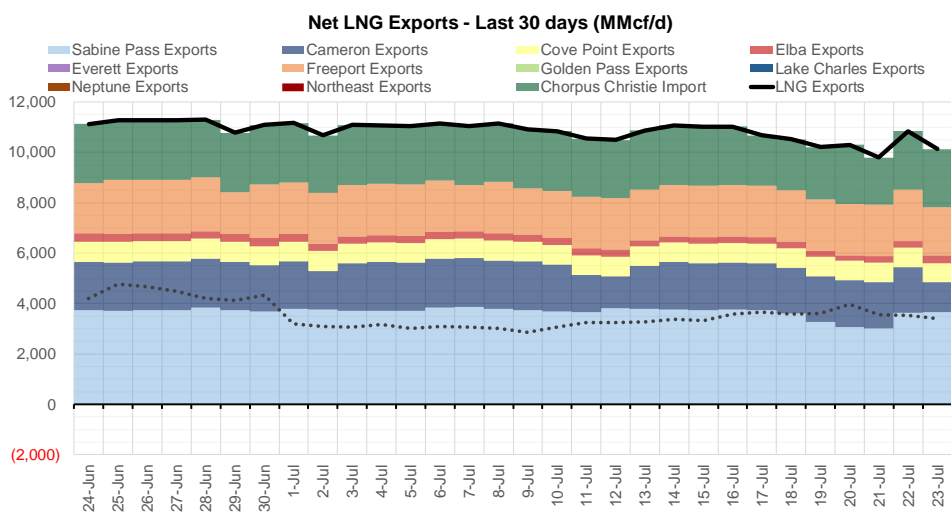
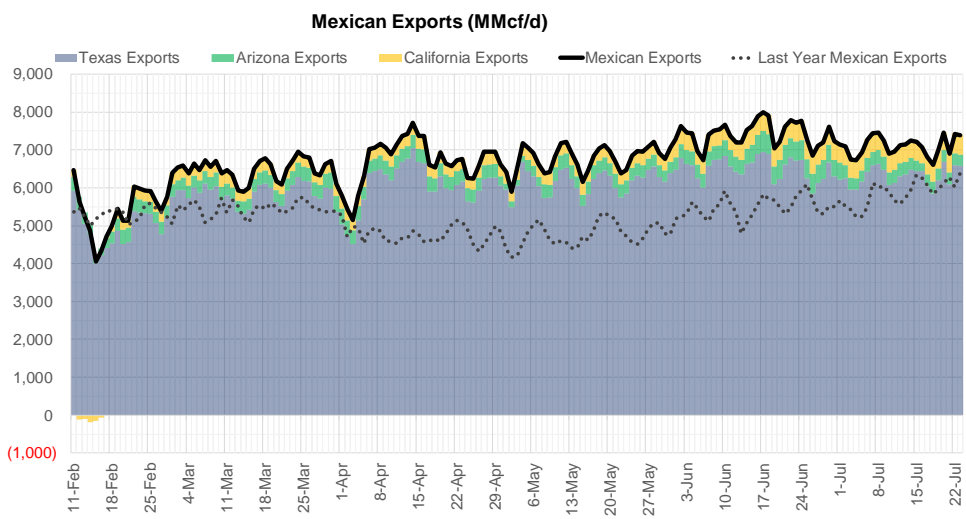
Note: this is not our official end of season forecast. This chart signifies where storage levels end with 10-year normal weather and current market tightness relative to last year

Supply – Demand Trends



Source: Bloomberg

The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.



Source: Bloomberg

The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.

Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

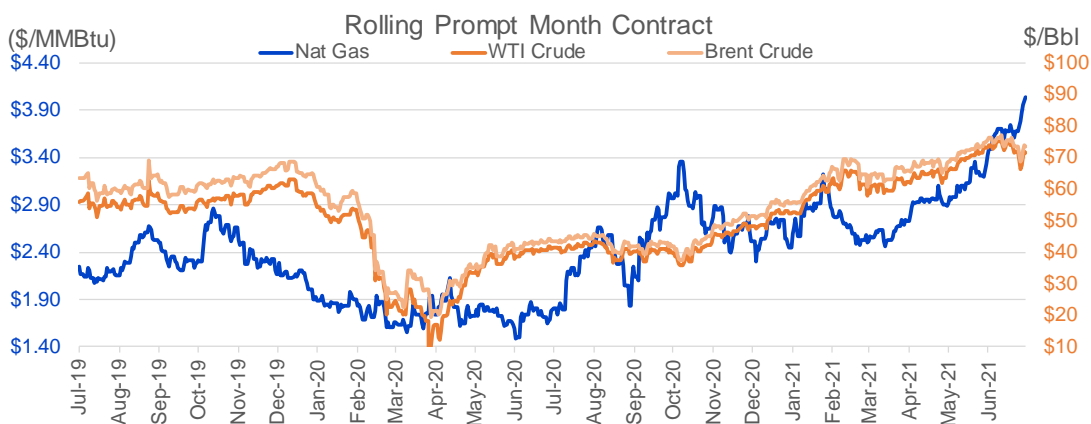
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
8	2021	C	4.00	10396	10	2021	C	4.00	42799
8	2021	C	4.25	7669	8	2021	C	4.00	42327
10	2021	C	5.00	7543	8	2021	C	3.50	40176
8	2021	P	3.80	4476	10	2021	C	5.00	35848
9	2021	C	4.75	4099	10	2021	C	3.50	33944
8	2021	C	4.10	3892	9	2021	C	4.00	33433
10	2021	C	4.50	3564	10	2021	P	2.50	31988
9	2021	P	3.50	3429	8	2021	P	2.50	29350
8	2021	C	4.50	3136	10	2021	C	3.25	28363
10	2021	C	4.00	3115	8	2021	P	3.00	27648
9	2021	C	5.00	2923	10	2021	P	2.75	27037
9	2021	C	3.90	2880	10	2021	C	4.50	26804
11	2021	P	3.00	2806	10	2021	P	2.00	26294
8	2021	P	3.70	2731	8	2021	P	3.25	24786
9	2021	C	5.25	2594	8	2021	C	3.75	24774
8	2021	P	3.85	2336	9	2021	P	2.50	23377
10	2021	P	3.50	2188	9	2021	C	3.50	23099
8	2021	P	3.90	2184	8	2021	C	3.25	23035
10	2021	C	4.25	2105	11	2021	C	4.00	22457
10	2021	P	3.25	2054	10	2021	P	3.00	22396
9	2021	P	3.75	1987	8	2021	P	3.50	22328
9	2021	C	4.00	1901	12	2021	C	4.00	21606
9	2021	C	4.50	1821	9	2021	P	3.00	21212
11	2021	P	3.25	1702	9	2021	P	2.00	20427
8	2021	P	3.75	1617	10	2021	P	2.25	19750
4	2022	C	4.50	1600	8	2021	P	2.00	19668
9	2021	P	3.40	1581	4	2022	C	3.00	19610
1	2022	P	2.75	1500	8	2021	P	2.90	19603
8	2021	P	3.60	1328	8	2021	C	4.50	19551
10	2021	C	4.60	1301	8	2021	P	2.25	19478
8	2021	C	4.05	1281	9	2021	C	3.25	18993
4	2022	C	5.00	1200	10	2021	C	3.00	18501
9	2021	C	4.60	1157	8	2021	P	2.75	18483
8	2021	C	3.70	1136	10	2021	P	3.50	17831
9	2021	P	3.25	1135	8	2021	P	3.40	17506
3	2022	C	4.00	1131	11	2021	P	3.00	17373
1	2022	P	3.00	1107	3	2022	C	5.00	16909
10	2021	C	5.50	1027	10	2021	C	3.75	16827
8	2021	C	3.60	1003	10	2021	C	6.00	16040
9	2021	C	4.10	1003	9	2021	P	2.75	15821
3	2022	P	2.25	1000	8	2021	C	3.00	15758
4	2022	C	3.40	1000	8	2021	C	4.25	15739
4	2022	P	2.25	1000	9	2021	C	4.50	15585
5	2022	C	3.30	1000	8	2021	C	3.30	15340
10	2022	P	3.00	1000	11	2021	C	3.75	15340
8	2021	C	4.20	958	9	2021	C	4.25	15145
8	2021	P	3.65	940	1	2022	C	4.00	14698
9	2021	P	3.00	908	9	2021	C	5.00	14572
11	2021	P	3.75	800	3	2022	C	3.00	14448
					1	2022	C	5	14136

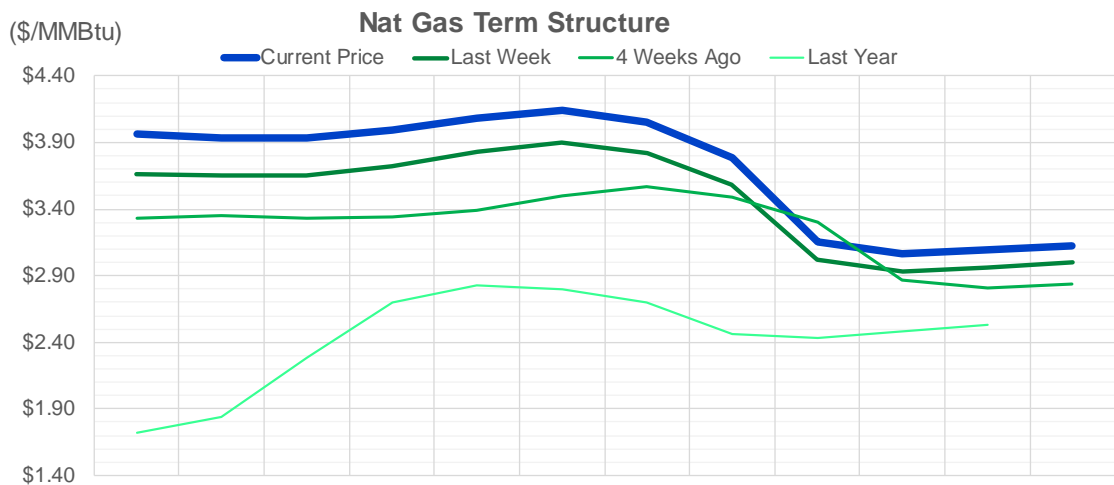
Source: CME, Nasdaq, ICE

Nat Gas Futures Open Interest CME, ICE and Nasdaq Combined

CME Henry Hub Futures (10,000 MMBtu)				ICE Henry Hub Futures Contract Equivalent (10,000 MM			
	Current	Prior	Daily Change		Current	Prior	Daily Change
AUG 21	41008	57278	-16270	AUG 21	86658	84310	2348
SEP 21	333920	324441	9479	SEP 21	90109	89490	619
OCT 21	161908	160142	1766	OCT 21	103359	102687	672
NOV 21	110403	108924	1479	NOV 21	70199	72511	-2312
DEC 21	71293	71009	284	DEC 21	71861	71350	511
JAN 22	118159	117978	181	JAN 22	77843	77853	-10
FEB 22	48964	48231	733	FEB 22	67548	67403	146
MAR 22	99659	98567	1092	MAR 22	67752	68111	-359
APR 22	101005	99306	1699	APR 22	64341	65145	-805
MAY 22	87241	87367	-126	MAY 22	66328	67282	-953
JUN 22	28052	27561	491	JUN 22	54776	55552	-776
JUL 22	22686	22211	475	JUL 22	54038	54686	-648
AUG 22	23892	23835	57	AUG 22	55448	56018	-571
SEP 22	23777	23949	-172	SEP 22	55040	55592	-552
OCT 22	60387	61074	-687	OCT 22	58574	59013	-440
NOV 22	24926	25090	-164	NOV 22	47935	47917	18
DEC 22	20926	20649	277	DEC 22	50120	50495	-375
JAN 23	15716	15449	267	JAN 23	29788	29580	208
FEB 23	5473	5448	25	FEB 23	25752	25591	161
MAR 23	7026	7887	-861	MAR 23	27934	28418	-485
APR 23	9278	9465	-187	APR 23	22070	22016	54
MAY 23	5680	5928	-248	MAY 23	23334	23408	-74
JUN 23	2355	2344	11	JUN 23	21655	21534	122
JUL 23	2598	2633	-35	JUL 23	21949	21617	333
AUG 23	1779	1782	-3	AUG 23	21814	21653	161
SEP 23	2015	2065	-50	SEP 23	21342	21213	130
OCT 23	2646	2584	62	OCT 23	22761	22531	230
NOV 23	1113	1109	4	NOV 23	22225	20201	2024
DEC 23	1742	1750	-8	DEC 23	21635	21565	70
JAN 24	993	993	0	JAN 24	12794	12665	129

Source: CME, ICE






	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22
Current Price	\$3.959	\$3.938	\$3.935	\$3.990	\$4.084	\$4.141	\$4.053	\$3.781	\$3.157	\$3.064	\$3.092	\$3.126
Last Week	\$3.660	\$3.648	\$3.655	\$3.721	\$3.829	\$3.899	\$3.821	\$3.580	\$3.024	\$2.935	\$2.965	\$3.001
vs. Last Week	\$0.299	\$0.290	\$0.280	\$0.269	\$0.255	\$0.242	\$0.232	\$0.201	\$0.133	\$0.129	\$0.127	\$0.125
4 Weeks Ago	\$3.333	\$3.352	\$3.333	\$3.343	\$3.394	\$3.495	\$3.565	\$3.488	\$3.297	\$2.869	\$2.804	\$2.833
vs. 4 Weeks Ago	\$0.626	\$0.586	\$0.602	\$0.647	\$0.690	\$0.646	\$0.488	\$0.293	-\$0.140	\$0.195	\$0.288	\$0.293
Last Year	\$1.681	\$1.718	\$1.838	\$2.288	\$2.694	\$2.826	\$2.797	\$2.703	\$2.464	\$2.434	\$2.477	\$2.528
vs. Last Year	\$2.278	\$2.220	\$2.097	\$1.702	\$1.390	\$1.315	\$1.256	\$1.078	\$0.693	\$0.630	\$0.615	\$0.598

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.359	▲ 0.366	▲ 0.355	▲ 0.342
NatGas Oct21/Nov21	\$/MMBtu	0.057	▼ -0.013	▲ 0.010	▲ 0.007
NatGas Oct21/Jan22	\$/MMBtu	0.205	▼ -0.046	▼ -0.011	▼ -0.073
NatGas Apr22/Oct22	\$/MMBtu	-0.019	▼ -0.018	▼ -0.034	▼ -0.085
WTI Crude	\$/Bbl	71.91	▲ 0.260	▼ -1.390	▲ 30.840
Brent Crude	\$/Bbl	73.79	▲ 0.320	▼ -1.770	▲ 30.480
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	213.26	▲ 2.000	▼ -2.970	▲ 87.850
Propane, Mt. Bel	cents/Gallon	1.09	▼ -0.010	▲ 0.124	▲ 0.595
Ethane, Mt. Bel	cents/Gallon	0.31	▲ 0.007	▲ 0.037	▲ 0.096
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.000
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg

Baker Hughes Rig Counts

Rotary Rig Count						
7/23/2021						
Baker Hughes 						
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago	
Oil	387	7	380	206	181	
Gas	104	0	104	36	68	
Miscellaneous	0	0	0	-2	2	
Directional	33	1	32	11	22	
Horizontal	439	5	434	224	215	
Vertical	19	1	18	5	14	
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago	
Oil	93	-1	94	83	10	
Gas	55	0	55	23	32	
Miscellaneous	1	0	1	1	0	
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago	
Ardmore Woodford	2	1	1	1	1	
Arkoma Woodford	1	0	1	1	0	
Cana Woodford	16	0	16	11	5	
DJ-Niobrara	11	0	11	7	4	
Eagle Ford	32	0	32	20	12	
Granite Wash	2	1	1	1	1	
Haynesville	48	-1	49	16	32	
Marcellus	28	0	28	3	25	
Permian	242	4	238	116	126	
Utica	10	0	10	4	6	
Williston	18	0	18	8	10	