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August 2022

EXECUTIVE SUMMARY

- U.S. petroleum demand remained solid above 20.0 million barrels per day (mb/d) as fuel prices receded along with those of crude oil and indicators of industrial production and consumer sentiment reinforced demand in August 2022.
- As domestic refining sustained historically strong throughput levels, record-high natural gas liquids (NGL) production (6.0 mb/d) offset a small decrease in U.S. crude oil production.
- U.S. petroleum exports (10.1 mb/d) and net exports (1.8 mb/d) rose to the highest for any month on record since 1947.
- Crude oil inventories (combined commercial and strategic petroleum reserves) fell to their lowest level since 2003.

New records. API's primary data for August showed record-high levels of natural gas liquids production (6.0 mb/d) as well as gross and net exports of U.S. petroleum of 10.1 mb/d and 1.8 mb/d, respectively.

Solid demand and refining. Domestic petroleum demand remained solid above 20 mb/d and over the first eight months of 2022 was up by 2.9% y/y. U.S. refining activity exceeded 16.0 mb/d for a sixth straight month, and its capacity utilization rate was over 92% for a fourth straight month.

Historically low crude oil inventories. A combination of solid demand and refining activity, flat production, and record-high exports resulted in the lowest combined U.S. commercial and government-controlled (Strategic Petroleum Reserve, SPR) crude oil inventories since 2003.

API's Distillate Economic Indicator™ suggested continued growth of U.S. industrial production and broader economic activity (please see the following [chart](#) for details).

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 - Motor gasoline demand (8.8 mb/d) appeared to slow with high prices.
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 - Jet fuel demand (1.6 mb/d) rose with increased air passenger and cargo activities.
 - Marine shipping buoyed residual fuel oil demand.
 - Other oils at their second highest for August on record since 1965.

Prices & Macroeconomy

- Gasoline prices fell along with crude oil prices.
- Leading indicators showed industrial growth and improved consumer sentiment.

Supply

- Record-high NGL production (6.0 mb/d), offset by lower crude oil production (11.9 mb/d).

International trade

- Highest U.S. petroleum exports (10.1 mb/d) and net exports (1.8 mb/d) on record since 1947.

Industry operations

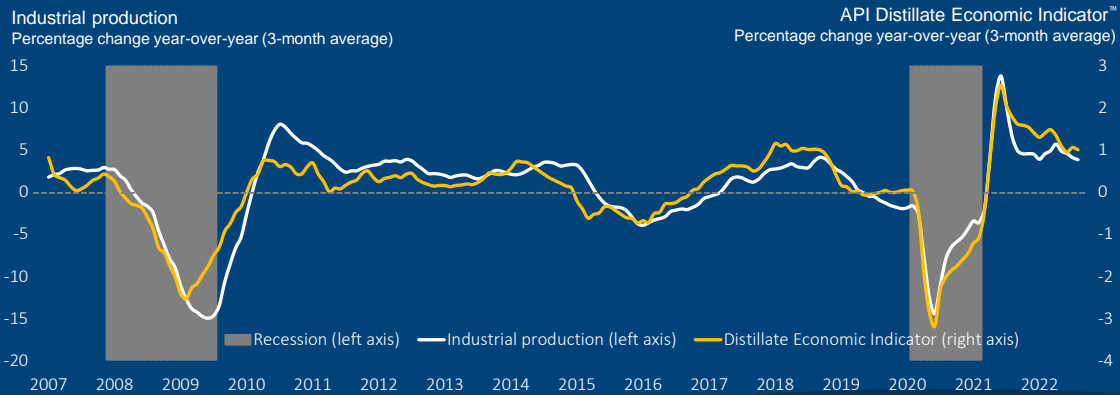
- Refining throughput and capacity utilization rates remained strong in August.

Inventories

- Lowest crude oil inventories – combined commercial & SPR – since 2003.

API's Distillate Economic Indicator™ - August 2022

▶ The Distillate Economic Indicator™ value of +0.9 for August 2022 and three-month average of +1.0 showed continued growth of U.S. industrial production and broader economic activity



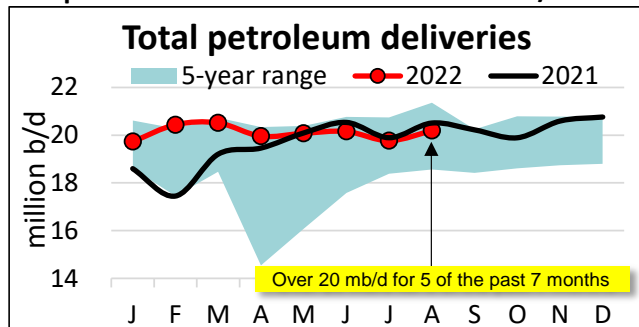
sources: API Monthly Statistical Report; EIA; CME Group; Moody's, Federal Reserve Board; API Team calculations



Details by section

Demand

U.S. petroleum demand solid at over 20 mb/d



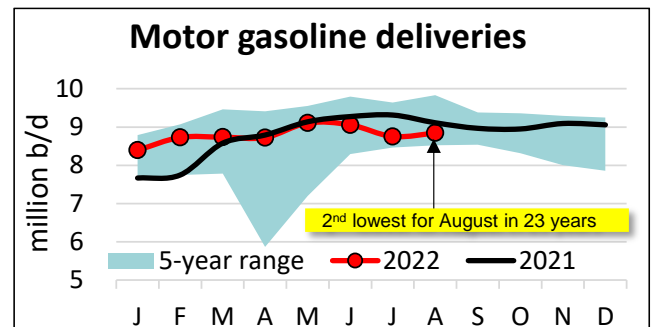
U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.2 mb/d in August. With the summer driving season, this reflected a seasonal increase of 2.2% from July but was down by 1.8% y/y compared with August 2021. Year-to-date through the first eight months of 2022, U.S. petroleum demand averaged 2.9% y/y higher than that of the same period one year ago.

Gasoline

Motor gasoline demand (8.8 mb/d) appeared to slow with high prices

Consumer gasoline demand, measured by motor gasoline deliveries, was 8.8 mb/d in August. This reflected an increase of 1.1% from July but was 3.7% lower compared with August 2021 – and the

second lowest demand for the month of August in 23 years, which suggests that historically high gasoline prices impacted consumer driving behavior.

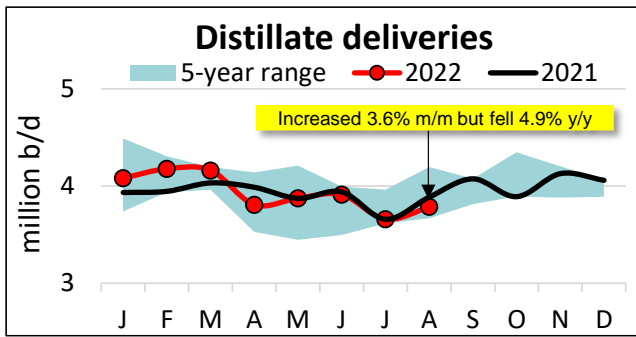


Deliveries of reformulated-type gasoline (consumed primarily in urban areas) fell by 2.5% y/y to 3.0 mb/d, while those of conventional gasoline (consumed mainly in rural areas) decreased by 4.3% y/y to 5.8 mb/d.

Distillate Fuel Oil

Distillate demand (3.8 mb/d) slowed with freight trucking

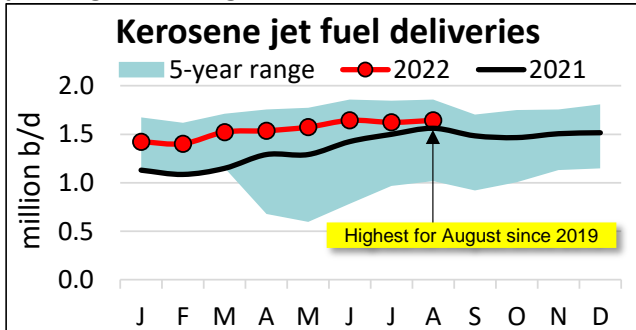
Distillate deliveries of 3.8 mb/d increased by 3.6% m/m from July and but were down by 4.9% y/y compared with August 2021. The monthly increase was less than the 4.4% average monthly increase seen over the past decade between July and August.



DAT iQ industry trendlines showed that the quantity of spot loads available for transport in August fell by 4.7% m/m from July, and the number of spot trucks available for hire rose by 15.0% m/m, which together indicated a slower freight market in August.

Kerosene Jet Fuel

Jet fuel demand (1.6 mb/d) rose with increased air passenger and cargo activities



Kerosene-type jet fuel deliveries of 1.6 mb/d in August rose by 1.3% m/m from July and 5.2% y/y versus August 2021 to their highest for the month since 2019.

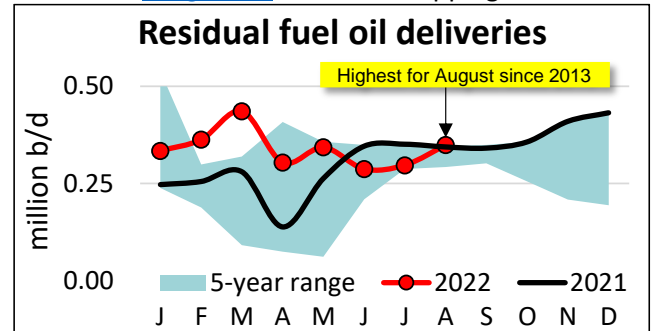
High-frequency data from Flightradar24 and TSA showed that the total numbers of flights and air passengers increased by 14.2% y/y and 18.7% y/y, respectively. The International Air Transport Association (IATA) also reported passenger demand remained strong this summer and that air cargo neared its pre-COVID levels. Accordingly, some of the slowing seen in freight trucking could have reflected a substitution for freight by air.

Residual Fuel Oil

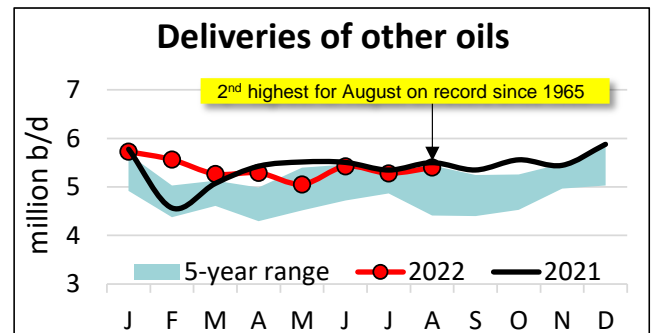
Marine shipping buoyed residual fuel oil demand

Deliveries of residual fuel oil, which is used as a marine bunker fuel and internationally in electric power production, space heating, and industrial applications, were 0.35 mb/d in August, which reflected increases of 17.5% m/m from July and of

1.5% y/y versus August 2021. The increases appeared to reflect a continuation of supply chain issues and congestion in marine shipping.



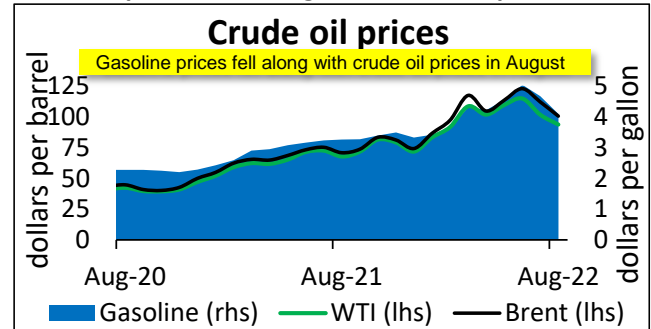
Other Oils – Naphtha, Gasoil, Propane & Propylene
Second highest for August on record since 1965



Deliveries of refinery and petrochemical liquid feedstocks – that is, naphtha, gasoil, and propane/propylene (“other oils”) – were 5.4 mb/d in August, the second highest reading for the month of August on record since 1965. This reflected an increase of 2.3% m/m but a decrease of 0.8% y/y versus August 2021 – and continued strong demand for films, packaging, and medical plastics.

Prices

Gasoline prices fell along with crude oil prices



In August, West Texas Intermediate (WTI) crude oil prices decreased by 7.8% m/m to \$93.67 per barrel. By contrast, Brent crude oil spot prices decreased

by 10.3% m/m to \$100.45 per barrel, which implied a Brent-WTI crude oil price differential of \$6.78 per barrel in August.

Crude oil remained the top input cost in making gasoline per [EIA](#). The U.S. average conventional gasoline price was \$4.09 per gallon in August, down by 12.4% m/m from July but still up by 12.1% y/y compared with August 2021 per [EIA](#).

Macroeconomy

Leading indicators showed industrial growth and improved consumer sentiment

API's Distillate Economic Indicator™, which is based primarily on diesel/distillate supply, demand, and inventories, had a reading of +0.9 in August and also a three-month average of +1.0, suggesting that U.S. industrial production and broader economic activity have continued to grow.

The Institute for Supply Management's manufacturing Purchasing Managers Index ([PMI](#)) had a reading of 52.8 in August, unchanged from July. Index values above 50.0 suggest an expansion in the overall economy, and the manufacturing PMI exceeded that threshold for a 27th straight month. Within the index, there were monthly increases in the index's measures of new orders, employment, and backlog of orders. And there were monthly decreases in the index's measures of production, supplier deliveries, inventories, customers' inventories, prices, new export orders, and imports. Ten manufacturing industries surveyed reported growth in August. Seven industries reported contractions in August compared with July: Wood Products; Apparel, Leather & Allied Products; Furniture & Related Products; Paper Products; Chemical Products; Fabricated Metal Products; and Electrical Equipment, Appliances & Components.

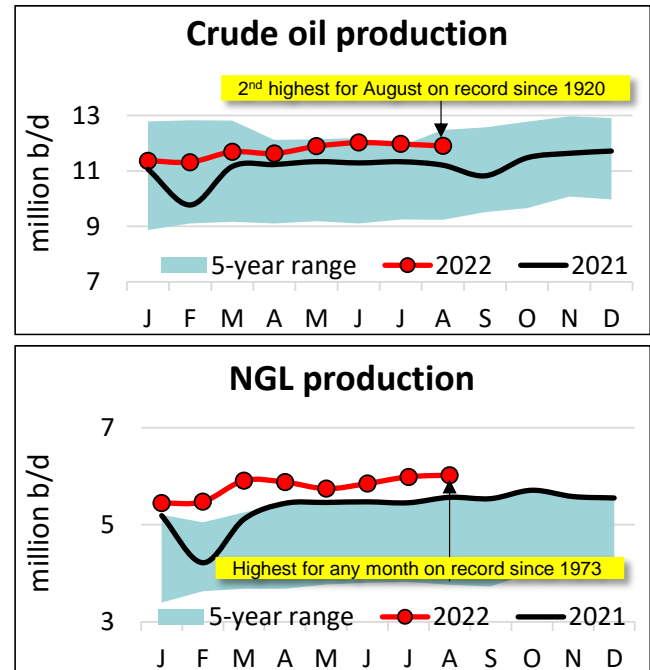
The [University of Michigan's consumer sentiment index](#) rose to 59.5 in early September from readings of 58.2 in August and 51.5 in July. With decreased energy prices, the survey's reported median year-ahead inflation rates declined to 4.6% y/y, the lowest reading since last September.

According to the [Bureau of Labor Statistics \(BLS\)](#), the unemployment rate rose by 0.2% m/m to 3.7%

in August. Non-farm payrolls increased by a preliminary estimate of 315,000 m/m, suggesting the labor market has remained tight.

Supply

Record-high NGL production (6.0 mb/d), offset by lower crude oil production (11.9 mb/d)



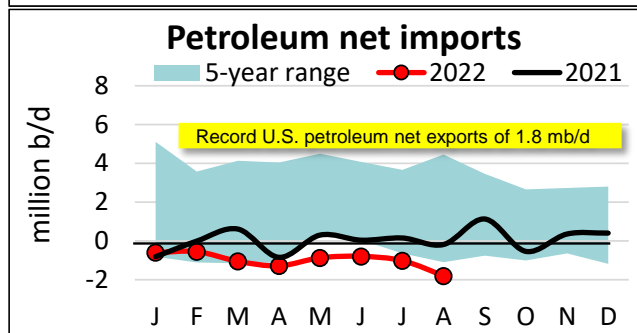
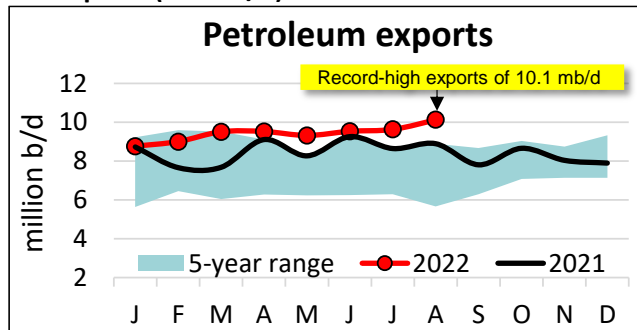
U.S. crude oil production of 11.9 mb/d in August decreased by 0.3% m/m from July but was up by 5.6% y/y compared with August 2021. This reflected the second highest production for the month of August on record since 1973, but remained 1.0 mb/d below the highest U.S. crude oil production, which reached 13.0 mb/d in November 2019.

[Baker Hughes](#) reported 601 active oil-directed rigs in August, a 0.2% m/m (1 rig) decrease from July but remained 20.7% lower than the 758 rigs that ran in August 2019.

Natural gas-directed drilling of 160 rigs in August rose from July by five rigs. The extraction of natural gas liquids (NGLs) depends to the relative values of ethane, propane, and butane, which historically have tended to correspond with those of crude oil. NGL production increased by 0.6% m/m to 6.0 mb/d, its highest level on record since 1973.

International trade

Highest U.S. petroleum exports (10.1 mb/d) and net exports (1.8 mb/d) on record since 1947

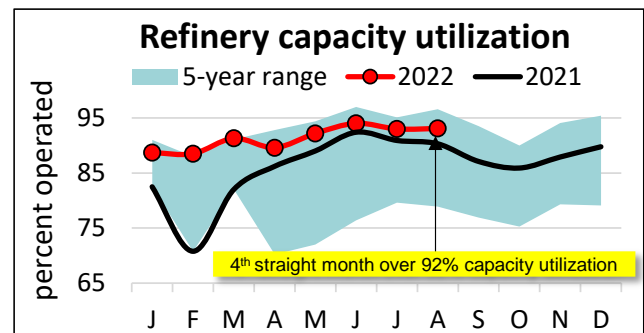
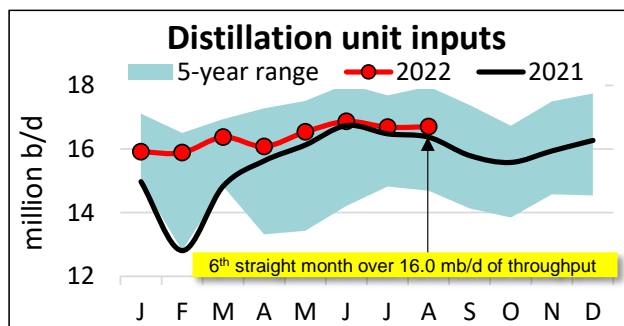


U.S. petroleum exports – crude oil and refined products – of 10.1 mb/d in August were the highest on record for any month since 1947. Combined with a 3.3% m/m (0.3 mb/d) decrease in petroleum imports, the U.S. was a petroleum net exporter of 1.8 mb/d in August, also the highest monthly petroleum net exports on record since 1947.

Industry operations

Refining throughput and capacity utilization rates remained strong in August

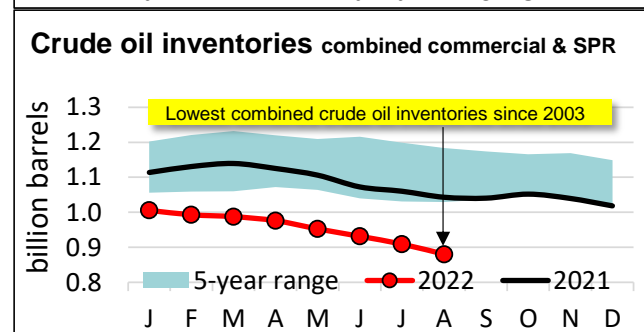
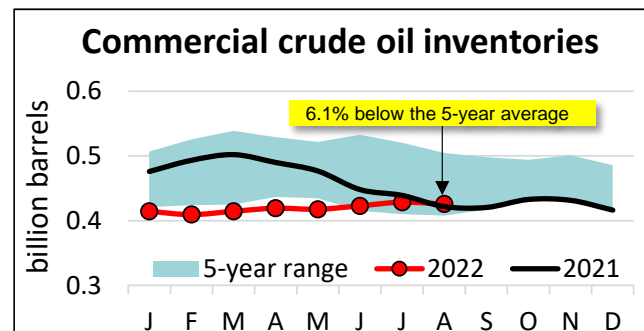
In August, U.S. refinery throughput, measured by gross inputs into crude distillation units, was 16.7 mb/d and implied a capacity utilization rate of 93.1%.



The throughput increased by 0.1% m/m and remained over 16.0 mb/d for a sixth straight month. The capacity utilization rate rose by 0.1 percentage point from July and was over 92% for a fourth straight month.

Inventories

Lowest crude oil inventories – combined commercial & SPR – since 2003



U.S. commercial crude oil inventories fell by 0.7% m/m from July but were up by 0.9% y/y versus August 2021 to 425.4 million barrels. Crude oil in the U.S. Strategic Petroleum Reserve (SPR), however, fell by 4.8% m/m to its lowest level since 1984. Consequently, the combined commercial and SPR crude oil inventories of 879 million barrels were at their lowest level since 2003.

ESTIMATED UNITED STATES PETROLEUM BALANCE¹
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	August			Year-to-Date		
	2022 ²	2021	% Change	2022 ³	2021	% Change
Disposition:						
Total motor gasoline.....	8,846	9,182	(3.7)	8,753	8,741	0.1
Finished reformulated.....	3,016	3,092	(2.5)	2,820	2,772	1.7
Finished conventional.....	5,830	6,091	(4.3)	5,933	5,969	(0.6)
Kerosene-jet.....	1,645	1,563	5.2	1,556	1,308	19.0
Distillate fuel oil.....	3,788	3,984	(4.9)	3,940	3,941	(0.0)
≤ 500 ppm sulfur.....	3,776	3,979	(5.1)	3,921	3,930	(0.2)
≤ 15 ppm sulfur.....	3,769	3,654	3.1	3,914	3,888	0.7
> 500 ppm sulfur.....	12	5	140.0	19	11	72.7
Residual fuel oil.....	349	344	1.5	339	279	21.5
All other oils (including crude losses)	5,402	5,445	(0.8)	5,374	5,184	3.7
Reclassified ⁴	165	54	na	214	162	na
Total domestic product supplied.....	20,195	20,573	(1.8)	20,176	19,615	2.9
Exports.....	10,132	8,867	14.3	9,475	8,439	12.3
Total disposition.....	30,327	29,439	3.0	29,651	28,054	5.7
Supply:						
Domestic liquids production						
Crude oil (including condensate).....	11,905	11,277	5.6	11,662	11,140	4.7
Natural gas liquids.....	6,019	5,596	7.6	5,829	5,286	20.0
Other supply ⁵	1,185	1,116	6.2	1,208	1,119	8.0
Total domestic supply.....	19,109	17,989	6.2	18,699	17,545	6.6
Imports:						
Crude oil (excluding SPR imports).....	6,196	6,236	(0.6)	6,303	6,014	4.8
From Canada.....	3,607	3,673	(1.8)	3,778	3,710	1.8
All other.....	2,589	2,563	1.0	2,525	2,304	9.6
Products.....	2,129	2,478	(14.1)	2,096	2,436	(14.0)
Total motor gasoline (incl. blend.comp).....	728	893	(18.5)	666	873	(23.7)
All other.....	1,401	1,585	(11.6)	1,430	1,563	(8.5)
Total imports.....	8,325	8,714	(4.5)	8,399	8,450	(0.6)
Total supply.....	27,434	26,703	2.7	27,098	25,995	4.2
Stock change, all oils.....	(2,893)	(2,736)	na	(2,553)	(2,059)	na
Refinery Operations:						
Input to crude distillation units.....	16,707	16,381	2.0	16,433	15,526	5.8
Gasoline production.....	9,788	9,866	(0.8)	9,519	9,445	0.8
Kerosene-jet production.....	1,684	1,435	17.4	1,620	1,264	28.1
Distillate fuel production.....	5,103	4,742	7.6	4,938	4,606	7.2
Residual fuel production.....	259	231	12.1	238	212	12.3
Operable capacity.....	17,944	18,130	(1.0)	17,943	18,128	(1.0)
Refinery utilization ⁶	93.1%	90.4%	na	91.6%	85.6%	na
Crude oil runs.....	16,289	15,726	3.6	15,935	15,005	6.2

1. Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2. Based on API estimated data converted to a monthly basis.

3. Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments).

4. An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders.

5. Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol.

6. Represents "Input to crude oil distillation units" as a percent of "Operable capacity".

R: Revised. na: Not available.

ESTIMATED UNITED STATES PETROLEUM BALANCE¹

(Daily average in thousands of 42 gallon barrels)

	August 2022	July 2022	August 2021	% Change From	
				Month Ago	Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks).....	425.4	428.4	421.5	(0.7)	0.9
Unfinished oils.....	85.4	86.0	85.1	(0.7)	0.4
Total motor gasoline.....	215.1	223.9	225.6	(3.9)	(4.6)
Finished reformulated.....	0.0	0.0	0.0	0.2	61.1
Finished conventional.....	18.3	17.9	18.2	2.2	0.8
Blending components.....	196.8	206.0	207.4	(4.5)	(5.1)
Kerosene-jet.....	39.3	40.9	42.5	(3.9)	(7.5)
Distillate fuel oil.....	112.5	111.6	137.6	0.8	(18.3)
≤ 500 ppm sulfur.....	104.9	104.5	129.1	0.4	(18.8)
≤ 15 ppm sulfur.....	102.1	101.5	126.0	0.5	(19.0)
> 500 ppm sulfur.....	7.6	7.1	8.5	7.0	(10.6)
Residual fuel oil.....	27.9	29.2	29.8	(4.5)	(6.4)
All other oils.....	278.7	261.4 R	308.1	6.6	(9.5)
Total all oils.....	1,184.3	1,181.4 R	1,250.2	0.2	(5.3)