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EXECUTIVE SUMMARY

In September, API's primary data on U.S. petroleum markets suggested that crude oil supply and exports rose, while demand eased by less than it historically has at the end of the summer driving season. Consequently, with continued recovery through the 2020 COVID-19 recession, deliveries of motor gasoline and diesel/distillate fuel oil were down by single-digit percentages from their respective September 2019 levels. However, motor fuels consumption in urban areas appears to have been impacted relatively more than in rural areas. Separately, supply chains were disrupted by Gulf Coast hurricanes that hampered refining activity and reinforced inventory accumulation. Despite these challenges, U.S. petroleum exports exceeded imports for the month.

SEPTEMBER HIGHLIGHTS

- **U.S. petroleum demand – 17.9 million barrels per day (mb/d) – narrowed the gap vs. 2019 levels.**
- **U.S. crude oil production rebounded to 11.1 mb/d.**
- **Refinery throughput (14.1 mb/d, 75.5 % capacity utilization) slipped with hurricane disruptions.**
- **The U.S. sustained petroleum net exports.**
- **Total inventories reached a record high.**

Economic indicators broadly improved from historically weak levels, including API's D-E-I.™ (distillate/diesel economic indicator), the University of Michigan's consumer sentiment index, Institute of Supply Management's Purchasing Managers Index, and U.S. employment metrics. Please see the following [chart](#) for details.

CONTENTS ([Click hyperlinks to advance to any section](#))

[Demand](#)

- **U.S. petroleum demand gap versus 2019 narrowed in September.**
 - Motor gasoline was down by 7.0% y/y in September.
 - Distillate/diesel demand was the most solid among major refined products.
 - Jet fuel deliveries declined marginally in September and remained historically weak.
 - Record low residual fuel oil consumption for September.
 - Refining and petrochemical demand for naphtha and gasoil declined for a fourth consecutive month.

[Prices & Macroeconomy](#)

- **Crude oil prices remained weak in September.**
- **Leading economic indicators improved.**

[Supply](#)

- **U.S. crude oil production rose to 11.1 mb/d while NGLs set a record for September.**

[International trade](#)

- **U.S. a petroleum net exporter for the third consecutive month.**

[Industry operations](#)

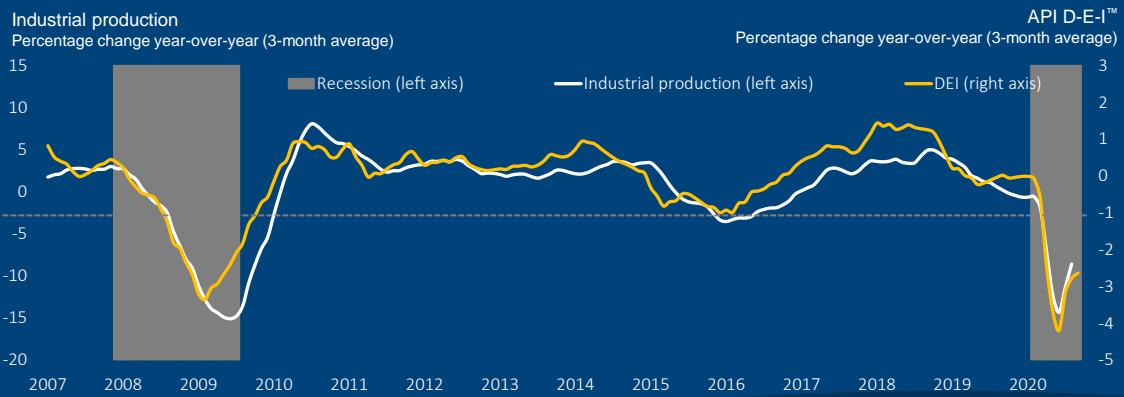
- **Decreased refinery activity continued to navigate Gulf Coast hurricane season shut-ins.**

[Inventories](#)

- **Total petroleum inventories reached a record high.**

API's economic indicator: The API D-E-I™ - September 2020

The D-E-I™ value of -2.7 for August 2020 and three-month average of -2.7 – slight improvements from August – suggested increased monthly industrial production



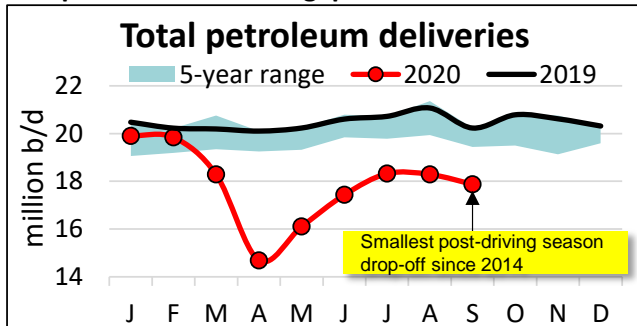
sources: API Monthly Statistical Report; EIA; CME Group; Moody's, Federal Reserve Board; API Team calculations



Details by section

Demand

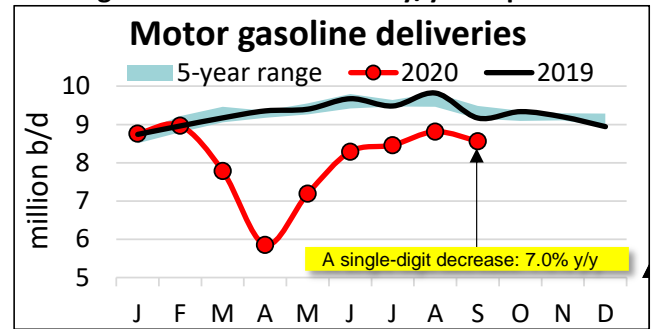
U.S. petroleum demand gap versus 2019 narrowed



U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 17.9 mb/d in September, which marked the end of the 2020 summer driving season with a decrease of 2.3% m/m. Over the past five years, petroleum demand in September averaged 3.7% less than that of August, and the 2.3% in September was the smallest drop-off for the month since 2014. With less seasonality, the year-on-year difference in September total petroleum deliveries narrowed to 11.7% y/y (2.4 mb/d) in September from 13.6% y/y (2.9 mb/d) in August.

Gasoline

Motor gasoline was down 7.0% y/y in September



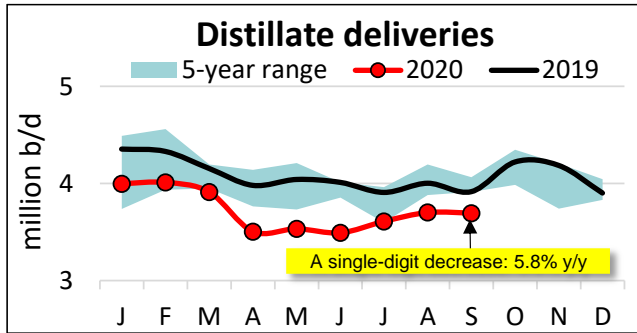
Consumer gasoline demand, measured by motor gasoline deliveries, was 8.6 mb/d in September. This was a seasonal decrease of 2.9% (0.2 mb/d) from August and 7.0% (0.6 mb/d) below the level in September 2019.

Regional gasoline consumption diverged. The deliveries of conventional gasoline that is consumed mainly in rural areas was virtually flat from August. By contrast, the deliveries of reformulated-type gasoline that is consumed primarily in urban areas decreased by 7.1% m/m in September. As such, reformulated gasoline was down 10.0% y/y, almost twice as much as conventional gasoline, suggesting urban areas remain the most impacted by the economic effects of the 2020 COVID-19 recession.

Distillate Fuel Oil

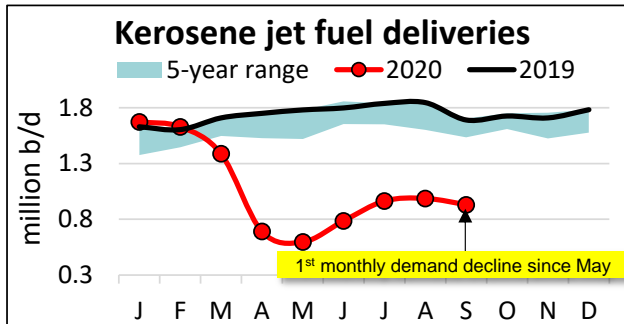
Distillate/diesel demand was the most solid among major refined products

In September, distillate deliveries of 3.7 mb/d were virtually unchanged from August but down by 5.8% y/y (0.2 mb/d) – the lowest year-on-year decrease among major refined products. This was consistent with [DAT iQ industry trendlines](#) showing increased spot trucking loads.



Kerosene Jet Fuel

Jet fuel deliveries declined marginally in September and remained historically weak

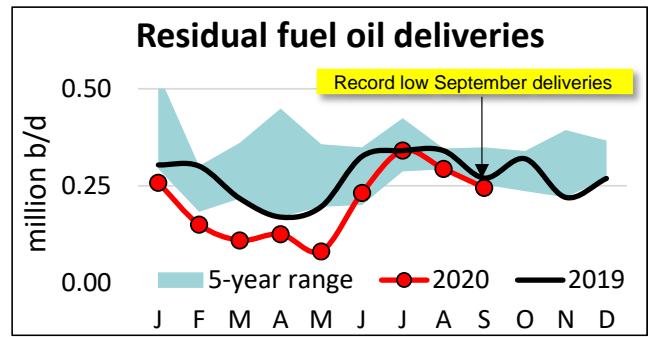


'K-Jet' deliveries of 0.9 mb/d decreased in September by 5.8% m/m and 45.4% compared with September 2019 – by far the deepest impact due to the COVID-19 pandemic. The decrease in jet fuel deliveries was consistent with weak reported flight activity and passenger demand per [Flightradar24](#) and [TSA](#), plus the end of summer travel season.

Residual Fuel Oil

Record low residual fuel oil consumption for September

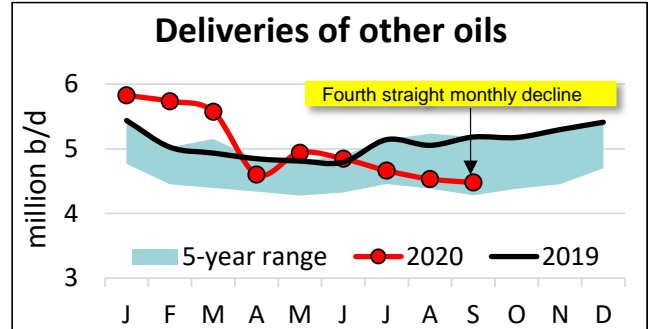
Deliveries of residual fuel oil, which is used in electric power production, space heating, industrial applications and as a marine bunker fuel, were 0.2 mb/d in September.



This marked decreases of 16.7% m/m and 19.7% y/y, respectively, consistent with weak industrial demand and marine fuel consumption due to [IMO 2020](#). Consequently, residual fuel oil in demand marked its lowest for the month of September on record since 1936.

Naphtha & Gasoil "Other Oils"

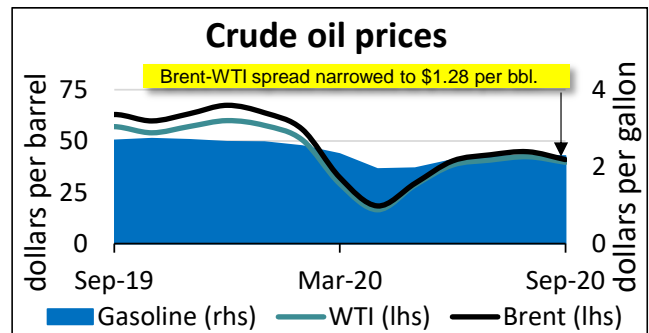
Refining and petrochemical demand for naphtha and gasoil declined for a fourth consecutive month



Deliveries of liquid feedstocks, such as naphtha and gasoil ("other oils") used in refining and petrochemical manufacturing, were 4.5 mb/d in September. This was a 1.2% m/m decrease, apparently due to Gulf Coast petrochemical activity having slowed with the hurricane season. While these deliveries were down 10.8% y/y, they rose to 25.1% of total U.S. petroleum demand.

Prices

Crude oil prices remained weak in September



In September, West Texas Intermediate (WTI) crude oil prices fell to \$39.63 per barrel, which was a decrease of 6.4% m/m following four monthly increases. By comparison, Brent crude oil spot prices averaged \$40.91 per barrel in September, cutting the Brent-WTI price differential by nearly half to \$1.28 per barrel.

Low oil prices continued to correspond with low gasoline prices. The U.S. average conventional gasoline price held steady at \$2.27 per gallon in September, down by 15.2% (\$0.41 per gallon) from September 2019, according to [AAA](#).

Macroeconomy

Leading economic indicators improved

API's economic indicator, The D-E-I™, which is based primarily on diesel/distillate supply, demand and inventories, had a reading of -2.7 in September and a three-month average of -2.8, which historically has corresponded with slower year-on-year changes in U.S. industrial production. However, the three-month average rose from -4.3 in September, suggesting economic activity rose from a low base.

The Institute for Supply Management's Purchasing Managers Index (PMI) had a reading of 55.4 in September, a 0.6 percentage point decrease from August. Index values above 50.0 suggest an expansion. Production, new orders, and trade rose. Employment, inventories, and deliveries fell while prices increased. Among the 18 manufacturing industries surveyed, 14 reported growth.

Based on [University of Michigan's consumer sentiment index](#), consumer sentiment improved as the index rose to 80.4 in September from 74.1 in August. Although the survey noted consumers were more optimistic about an economic rebound, they remained concerned by uncertainties due to the U.S. Presidential election, new COVID-19 cases and vaccine development. The survey also indicated a divergence in sentiment between upper and lower-income households that has been reinforced by recent differences between high stock market values and weak employment conditions.

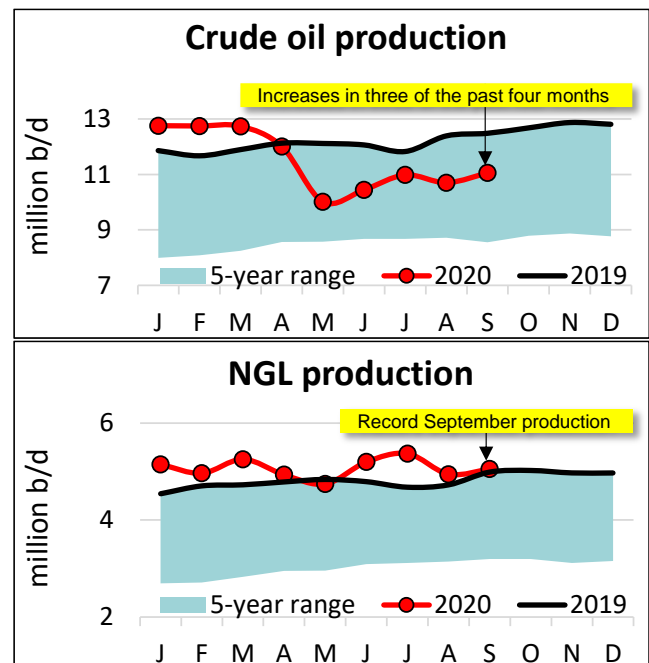
According to the [Bureau of Labor Statistics \(BLS\)](#), non-farm payrolls increased by 661 thousand, and

the unemployment rate declined to 7.9% in September from 8.4% in August.

Supply

U.S. crude oil production rose to 11.1 mb/d while NGLs set a record for September

In September, U.S. crude oil production was 11.1 mb/d, an increase of 3.3% (0.4 mb/d) from revised September data on increased drilling activity. Oil-directed drilling activity (181 rigs in September) picked up from lows over the summer and [EIA's](#) drilling productivity report indicated record high productivity among most basins.



U.S. natural gas liquids (NGLs), which are co-products with natural gas production, set a September record at 5.1 mb/d, up by 2.2% m/m (0.2 mb/d) from revised August values.

International trade

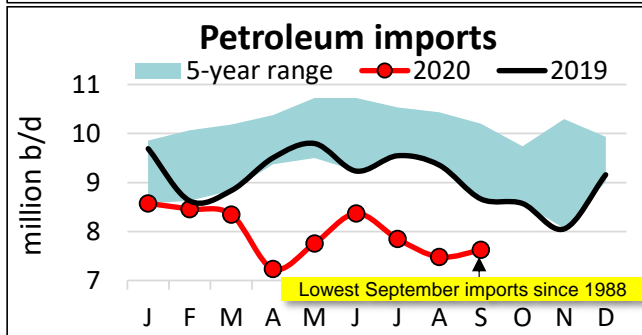
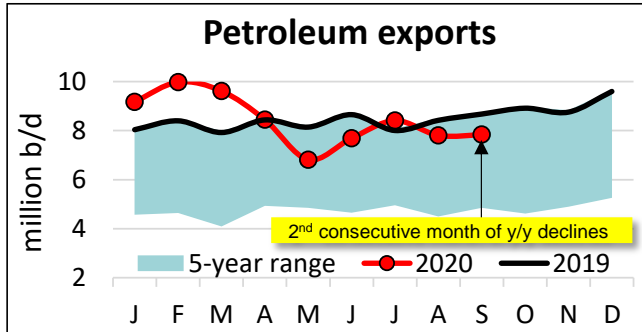
U.S. a petroleum net exporter for the third consecutive month

In September, the U.S. was a petroleum net exporter for the third consecutive month.

The U.S. imported 7.6 mb/d of crude oil and petroleum products in September. This was a 2.0% m/m (0.1 mb/d) increase from September, with [EIA](#) data suggesting that imports from OPEC nations picked up slightly from multi-decade lows.

By contrast, U.S. exports of crude oil and refined products held steady at 7.8 mb/d, implying U.S. petroleum net exports of 0.2 mb/d in September.

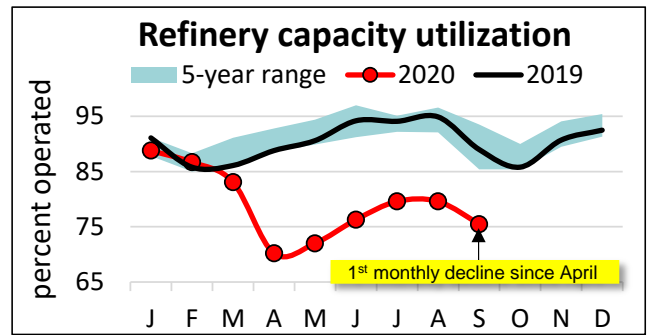
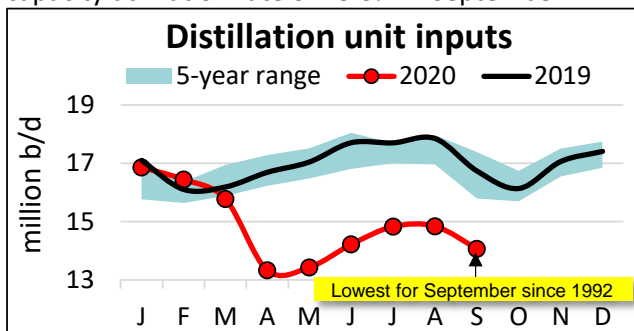
Within the exports, 4.9 mb/d was refined products, which increased by 0.5% m/m, and the remaining 3.0 mb/d was crude oil that rose by 0.4% m/m to the second highest September value on record.



Industry operations

Decreased refinery activity continued to navigate Gulf Coast hurricane season shut-ins

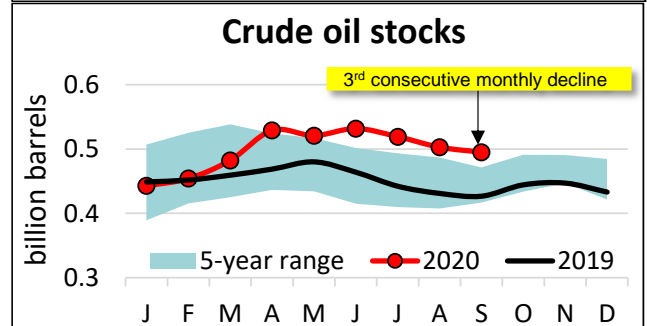
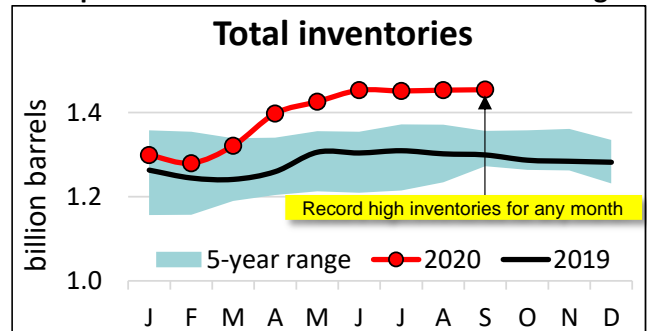
U.S. refinery throughput of 14.1 mb/d implied a capacity utilization rate of 75.5% in September.



Refinery throughput fell by 5.2% m/m while capacity utilization declined by 4.1 percentage points. As refinery activity resumed in the wake of Hurricane Laura, additional disruptions arose due to Hurricanes Marco, Alpha, and Beta. Approximately 15% of U.S. refining capacity was temporarily shut-in during September.

Inventories

Total petroleum inventories reached a record high



U.S. total petroleum inventories, including crude oil and refined products but excluding the Strategic Petroleum Reserve were 1.45 billion barrels in September. This was the highest inventory on record for any month since 1956, increasing 0.1% from revised September values and, notably, 13.0% since the onset of COVID-19 in March.

Within the total, crude oil stocks of 495.3 million fell by 1.5% m/m and stood 6.9% below the high of this year's June crude supply glut.

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

Disposition and Supply	September			Year-to-Date		
	2020 ²	2019	% Change	2020 ³	2019	% Change
Disposition:						
Total motor gasoline.....	8,556	9,198	(7.0)	8,072	9,359	(13.8)
Finished reformulated.....	2,700	3,000	(10.0)	2,503	3,053	(18.0)
Finished conventional.....	5,856	6,197	(5.5)	5,569	6,306	(11.7)
Kerosene-jet.....	930	1,702	(45.4)	1,070	1,741	(38.5)
Distillate fuel oil.....	3,694	3,921	(5.8)	3,717	4,099	(9.3)
≤ 500 ppm sulfur.....	3,692	3,920	(5.8)	3,687	4,025	(8.4)
≤ 15 ppm sulfur.....	3,665	3,918	(6.5)	3,668	4,016	(8.7)
> 500 ppm sulfur.....	2	1	100.0	30	74	(59.5)
Residual fuel oil.....	245	305	(19.7)	204	276	(26.1)
All other oils (including crude losses).....	4,481	5,026	(10.8)	4,718	4,991	(5.5)
Reclassified ⁴	(34)	97	na	77	47	na
Total domestic product supplied.....	17,872	20,248	(11.7)	17,859	20,514	(12.9)
Exports.....	7,840	8,672	(9.6)	8,415	8,280	1.6
Total disposition.....	25,712	28,920	(11.1)	26,274	28,793	(8.7)
Supply:						
Domestic liquids production						
Crude oil (including condensate).....	11,061	12,495	(11.5)	11,490	12,070	(4.8)
Natural gas liquids.....	5,056	4,990	1.3	5,069	4,764	6.4
Other supply ⁵	954	1,087	(12.3)	983	1,141	(13.8)
Total domestic supply.....	17,071	18,572	(8.1)	17,542	17,975	(2.4)
Imports:						
Crude oil (excluding SPR imports).....	5,315	6,483	(18.0)	5,965	6,969	(14.4)
From Canada.....	3,262	3,702	(11.9)	3,547	3,833	(7.5)
All other.....	2,053	2,781	(26.2)	2,418	3,135	(22.9)
Products.....	2,311	2,229	3.7	1,999	2,346	(14.8)
Total motor gasoline (incl. blend.comp)....	678	759	(10.7)	591	845	(30.1)
All other.....	1,633	1,470	11.1	1,407	1,501	(6.3)
Total imports.....	7,626	8,712	(12.5)	7,964	9,315	(14.5)
Total supply.....	24,697	27,283	(9.5)	25,506	27,290	(6.5)
Stock change, all oils.....	(1,015)	(1,637)	na	(768)	(1,503)	na
Refinery Operations:						
Input to crude distillation units.....	14,059	16,728	(16.0)	14,861	17,040	(12.8)
Gasoline production.....	9,120	9,916	(8.0)	8,663	10,074	(14.0)
Kerosene-jet production.....	826	1,799	(54.1)	1,032	1,798	(42.6)
Distillate fuel production.....	4,456	5,035	(11.5)	4,832	5,146	(6.1)
Residual fuel production.....	182	383	(52.5)	207	382	(45.7)
Operable capacity.....	18,622	18,808	(1.0)	18,782	18,808	(0.1)
Refinery utilization ⁶	75.5%	88.9%	na	79.1%	90.6%	na
Crude oil runs.....	13,484	16,403	(17.8)	14,335	16,646	(13.9)

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)

	September 2020	August 2020	September 2019	% Change From	
				Month Ago	Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks).....	495.3	502.8	425.6	(1.5)	16.4
Unfinished oils.....	81.8	84.4	92.3	(3.1)	(11.3)
Total motor gasoline.....	227.9	233.9	232.0	(2.6)	(1.8)
Finished reformulated.....	0.0	0.0	0.0	(0.1)	4.7
Finished conventional.....	23.5	24.0	23.0	(2.1)	2.4
Blending components.....	204.4	209.9	209.0	(2.6)	(2.2)
Kerosene-jet.....	39.8	39.5	44.3	0.8	(10.2)
Distillate fuel oil.....	173.0	179.5	131.8	(3.6)	31.2
≤ 500 ppm sulfur.....	163.6	170.9	121.5	(4.3)	34.7
≤ 15 ppm sulfur.....	160.3	167.6	117.4	(4.4)	36.5
> 500 ppm sulfur.....	9.4	8.6	10.4	9.3	(9.3)
Residual fuel oil.....	32.2	36.3	30.0	(11.3)	7.2
All other oils.....	404.0	376.6 R	347.9	7.3	16.1
Total all oils.....	1,454.0	1,453.0 R	1,304.0	0.1	11.5