Note:

The DPR rig productivity metric new-well oil/gas production per rig can become unstable during periods of rapid decreases or increases in the number of active rigs and well completions. The metric uses a fixed ratio of estimated total production from new wells divided by the region's monthly rig count, lagged by two months. The metric does not represent new-well oil/natural gas production per newly completed well.

The DPR metric legacy oil/gas production change can become unstable during periods of rapid decreases or increases in the volume of well production curtailments or shut-ins. This effect has been observed during winter weather freeze-offs, extreme flooding events, and the 2020 global oil demand contraction. The DPR methodology involves applying smoothing techniques to most of the data series because of inherent noise in the data.
### Bakken Region

#### Drilling Productivity Report

**June 2022**

**Oil**

- **New-well oil production per rig**
  - June 2012: 5,000 barrels/day
  - July 2022: 2,500 barrels/day

- **Legacy oil production**
  - June 2012: 1,250 thousand barrels/day
  - July 2022: 750 thousand barrels/day

**Gas**

- **New-well gas production per rig**
  - June 2012: 2,000 million cubic feet/day
  - July 2022: 1,000 million cubic feet/day

- **Legacy gas production**
  - June 2012: 3,000 million cubic feet/day
  - July 2022: 1,500 million cubic feet/day

**Other Data**

- **Rig count**
  - June 2012: 400
  - July 2022: 100

- **Indicated change in oil production (Jul vs. Jun)**
  - June 2022: +19 thousand barrels/day

- **Indicated change in natural gas production (Jul vs. Jun)**
  - June 2022: +30 million cubic feet/day

**Additional Notes**

- **Oil**
  - June 2022: 1,711 barrels/day
  - July 2022: 1,800 barrels/day

- **Gas**
  - June 2022: 2,480 thousand cubic feet/day
  - July 2022: 2,610 thousand cubic feet/day

**Drilling data through May**

**Projected production through July**
Niobrara Region
Drilling Productivity Report

**Oil**
-16 barrels/day month over month

1,532 July
1,548 June

**Monthly additions from one average rig**

**Gas**
-79 thousand cubic feet/day month over month

3,875 July
3,954 June

**Niobrara Region**
**New-well oil production per rig**
barrels/day

**Rig count**
rigs

**Niobrara Region**
**New-well gas production per rig**
thousand cubic feet/day

**Rig count**
rigs

**Niobrara Region**
**Legacy oil production change**
thousand barrels/day

**Niobrara Region**
**Legacy gas production change**
million cubic feet/day

**Indicated change in oil production (Jul vs. Jun)**
thousand barrels/day

**Indicated change in natural gas production (Jul vs. Jun)**
million cubic feet/day

**Niobrara Region**
**Oil production**
thousand barrels/day

**Niobrara Region**
**Natural gas production**
million cubic feet/day

**June 2022**
drilling data through May
projected production through July

**Niobrara Region**
new-well oil production per rig
barrels/day

new-well oil production per rig

rig count

new-well gas production per rig
thousand cubic feet/day

new-well gas production per rig

rig count

 Legacy oil production change
thousand barrels/day

 Legacy gas production change
million cubic feet/day

 Indicated change in oil production (Jul vs. Jun)
thousand barrels/day

 Indicated change in natural gas production (Jul vs. Jun)
million cubic feet/day

Oil +4 thousand barrels/day month over month

Gas +7 million cubic feet/day month over month

Drilling data through May
Projected production through July

New-well oil production per rig:
-

Niobrara Region

New-well gas production per rig:
-

Niobrara Region

Legacy oil production change:
-

Niobrara Region

Legacy gas production change:
-

Indicated change in oil production (Jul vs. Jun):
-

Indicated change in natural gas production (Jul vs. Jun):
-
The Drilling Productivity Report uses recent data on the total number of drilling rigs in operation along with estimates of drilling productivity and estimated changes in production from existing oil and natural gas wells to provide estimated changes in oil and natural gas production for seven key regions. EIA’s approach does not distinguish between oil-directed rigs and gas-directed rigs because once a well is completed it may produce both oil and gas; more than half of the wells do that.

**Monthly additions from one average rig**
Monthly additions from one average rig represent EIA’s estimate of an average rig’s3 contribution to production of oil and natural gas from new wells.4 The estimation of new-well production per rig uses several months of recent historical data on total production from new wells for each field divided by the region’s monthly rig count, lagged by two months.5 Current- and next-month values are listed on the top header. The month-over-month change is listed alongside, with +/- signs and color-coded arrows to highlight the growth or decline in oil (brown) or natural gas (blue).

**New-well oil/gas production per rig**
Charts present historical estimated monthly additions from one average rig coupled with the number of total drilling rigs as reported by Baker Hughes.

**Legacy oil and natural gas production change**
Charts present EIA’s estimates of total oil and gas production changes from all the wells other than the new wells. The trend is dominated by the well depletion rates, but other circumstances can influence the direction of the change. For example, well freeze-offs or hurricanes can cause production to significantly decline in any given month, resulting in a production increase the next month when production simply returns to normal levels.

**Projected change in monthly oil/gas production**
Charts present the combined effects of new-well production and changes to legacy production. Total new-well production is offset by the anticipated change in legacy production to derive the net change in production. The estimated change in production does not reflect external circumstances that can affect the actual rates, such as infrastructure constraints, bad weather, or shut-ins based on environmental or economic issues.

**Oil/gas production**
Charts present all oil and natural gas production from both new and legacy wells since 2007. This production is based on all wells reported to the state oil and gas agencies. Where state data are not immediately available, EIA estimates the production based on estimated changes in new-well oil/gas production and the corresponding legacy change.

**Footnotes:**
1. Oil production represents both crude and condensate production from all formations in the region. Production is not limited to tight formations. The regions are defined by all selected counties, which include areas outside of tight oil formations.
2. Gas production represents gross (before processing) gas production from all formations in the region. Production is not limited to shale formations. The regions are defined by all selected counties, which include areas outside of shale formations.
3. The monthly average rig count used in this report is calculated from weekly data on total oil and gas rigs reported by Baker Hughes.
4. A new well is defined as one that began producing for the first time in the previous month. Each well belongs to the new-well category for only one month. Reworked and recompleted wells are excluded from the calculation.
5. Rig count data lag production data because EIA has observed that the best predictor of the number of new wells beginning production in a given month is the count of rigs in operation two months earlier.
The data used in the preparation of this report come from the following sources. EIA is solely responsible for the analysis, calculations, and conclusions.

**Drilling Info** (http://www.drillinginfo.com) Source of production, permit, and spud data for counties associated with this report. Source of real-time rig location to estimate new wells spudded and completed throughout the United States.

**Baker Hughes** (http://www.bakerhughes.com) Source of rig and well counts by county, state, and basin.

**North Dakota Oil and Gas Division** (https://www.dmr.nd.gov/oilgas) Source of well production, permit, and completion data in the counties associated with this report in North Dakota

**Railroad Commission of Texas** (http://www.rrc.state.tx.us) Source of well production, permit, and completion data in the counties associated with this report in Texas

**Pennsylvania Department of Environmental Protection** (https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx) Source of well production, permit, and completion data in the counties associated with this report in Pennsylvania

**West Virginia Department of Environmental Protection** (http://www.dep.wv.gov/oil-and-gas/Pages/default.aspx) Source of well production, permit, and completion data in the counties associated with this report in West Virginia

**Colorado Oil and Gas Conservation Commission** (http://cogcc.state.co.us) Source of well production, permit, and completion data in the counties associated with this report in Colorado

**Wyoming Oil and Conservation Commission** (http://wogcc.state.wy.us) Source of well production, permit, and completion data in the counties associated with this report in Wyoming

**Louisiana Department of Natural Resources** (http://dnr.louisiana.gov) Source of well production, permit, and completion data in the counties associated with this report in Louisiana

**Ohio Department of Natural Resources** (http://oilandgas.ohiodnr.gov) Source of well production, permit, and completion data in the counties associated with this report in Ohio

**Oklahoma Corporation Commission** (http://www.occeweb.com/og/oghome.htm) Source of well production, permit, and completion data in the counties associated with this report in Oklahoma