Drilling Productivity Report
For key tight oil and shale gas regions

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Anadarko Region

Drilling Productivity Report

December 2023

Drilling data through November
projected production through January

**Oil**

+14 barrels/day month over month

712 barrels/day January

698 barrels/day December

**Gas**

+116 thousand cubic feet/day month over month

4,775 thousand cubic feet/day January

4,659 thousand cubic feet/day December

**New-well oil production per rig**

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<tbody>
<tr>
<td>barrels/day</td>
<td>1,200</td>
<td>900</td>
<td>600</td>
<td>300</td>
<td>0</td>
<td>100</td>
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**Legacy oil production change**

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<tbody>
<tr>
<td>thousand barrels/day</td>
<td>100</td>
<td>50</td>
<td>(50)</td>
<td>(100)</td>
<td>(150)</td>
<td>(200)</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>250</td>
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**Indicated change in oil production (Jan vs. Dec)**

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<tr>
<td>thousand barrels/day</td>
<td>+28</td>
<td>-31</td>
<td>-3</td>
<td>50</td>
<td>25</td>
<td>0</td>
<td>-25</td>
<td>-50</td>
<td>-75</td>
<td>-100</td>
<td>-125</td>
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**New-well gas production per rig**

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<tbody>
<tr>
<td>thousand cubic feet/day</td>
<td>7,200</td>
<td>6,000</td>
<td>4,800</td>
<td>3,600</td>
<td>2,400</td>
<td>1,200</td>
<td>0</td>
<td>-120</td>
<td>-240</td>
<td>-360</td>
<td>-480</td>
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**Legacy gas production change**

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<tbody>
<tr>
<td>million cubic feet/day</td>
<td>600</td>
<td>300</td>
<td>0</td>
<td>-300</td>
<td>-600</td>
<td>-900</td>
<td>-1,200</td>
<td>-1,500</td>
<td>-1,800</td>
<td>-2,100</td>
<td>-2,400</td>
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**Indicated change in natural gas production (Jan vs. Dec)**

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<tbody>
<tr>
<td>million cubic feet/day</td>
<td>+186</td>
<td>-231</td>
<td>-45</td>
<td>200</td>
<td>150</td>
<td>100</td>
<td>50</td>
<td>0</td>
<td>-50</td>
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<td>-150</td>
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**Oil production**

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<tbody>
<tr>
<td>thousand barrels/day</td>
<td>9,000</td>
<td>8,000</td>
<td>7,000</td>
<td>6,000</td>
<td>5,000</td>
<td>4,000</td>
<td>3,000</td>
<td>2,000</td>
<td>1,000</td>
<td>0</td>
<td>-1,000</td>
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**Natural gas production**

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<tr>
<td>million cubic feet/day</td>
<td>9,000</td>
<td>8,000</td>
<td>7,000</td>
<td>6,000</td>
<td>5,000</td>
<td>4,000</td>
<td>3,000</td>
<td>2,000</td>
<td>1,000</td>
<td>0</td>
<td>-1,000</td>
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**New-well oil production per rig**

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<tbody>
<tr>
<td>barrels/day</td>
<td>1,200</td>
<td>900</td>
<td>600</td>
<td>300</td>
<td>0</td>
<td>100</td>
<td>200</td>
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<td>400</td>
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**Rig count**

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<tbody>
<tr>
<td>rigs</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
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</table>
Appalachia Region

Drilling Productivity Report

Monthly additions from one average rig

January

209

December

208

barrels/day

month over month

Oil +1

thousand cubic feet/day

Gas +127

month over month

thousand cubic feet/day

Drilling data through November

Projected production through January

Appalachia Region
New-well oil production per rig

Rig count

barrels/day

rigs


3,000

2,000

1,000

0

New-well oil production per rig

Rig count

Appalachia Region
Legacy oil production change

thousand barrels/day


14 (1)

10 (2)

6 (3)

2 (4)

0 (5)

Appalachia Region
Indicated change in oil production (Jan vs. Dec)

thousand barrels/day


10

8

6

4

2

0

Oil -2

month over month

Appalachia Region
Oil production

thousand barrels/day


7,000

6,000

5,000

4,000

3,000

2,000

1,000

0

Appalachia Region
New-well gas production per rig

Rig count

thousand gas production per rig

rigs


36,000

24,000

12,000

6,000

0

New-well gas production per rig

Rig count

Appalachia Region
Legacy gas production change

million cubic feet/day


1,400

1,200

1,000

800

600

400

200

0

Gas -135

month over month

Appalachia Region
Natural gas production

million cubic feet/day


42,000

36,000

30,000

24,000

18,000

12,000

6,000

0

U. S. Energy Information Administration | Drilling Productivity Report
**Bakken Region**

**Drilling Productivity Report**

**December 2023**

- **Oil:** +20 barrels/day (month over month)
  - January: 1,838 barrels/day
  - December: 1,818 barrels/day

- **Gas:** +41 thousand cubic feet/day (month over month)
  - January: 2,746 MMcf/d
  - December: 2,705 MMcf/d

**New-well oil production per rig**
- barrels/day
  - Rig count

**Legacy oil production change**
- thousand barrels/day

**Indicated change in oil production (Jan vs. Dec)**
- thousand barrels/day

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

**Legacy gas production change**
- million cubic feet/day

**Indicated change in natural gas production (Jan vs. Dec)**
- million cubic feet/day

**Oil production**
- thousand barrels/day
  - Oil +2 thousand barrels/day (month over month)

**Natural gas production**
- million cubic feet/day
  - Gas +13 million cubic feet/day (month over month)

Drilling data through November
Projected production through January

*U.S. Energy Information Administration | Drilling Productivity Report*
**Eagle Ford Region**

**Drilling Productivity Report**

**December 2023**

**Projected production through January**

- **Oil**: New-well oil production per rig (barrels/day)
  - January: 1,629 barrels/day
  - December: 1,590 barrels/day
  - Monthly additions from one average rig:
    - January: 5,989 thousand barrels/day
    - December: 5,930 thousand barrels/day

- **Gas**: New-well gas production per rig (thousand cubic feet/day)
  - January: 7,167 MMcf/d
  - December: 7,126 MMcf/d

**Eagle Ford Region**

**New-well oil production per rig**

- barrels/day
- Rig count

**Legacy oil production change**

- thousand barrels/day

**Indicated change in oil production (Jan vs. Dec)**

- thousand barrels/day

**Oil production**

- thousand barrels/day

**Natural gas production**

- million cubic feet/day

**Monthly additions from one average rig**

- thousand cubic feet/day

**Gas production change**

- million cubic feet/day

**Eagle Ford Region**

**New-well gas production per rig**

- thousand cubic feet/day
- Rig count

**Legacy gas production change**

- million cubic feet/day

**Indicated change in natural gas production (Jan vs. Dec)**

- million cubic feet/day

**Eagle Ford Region**

**Oil production**

- thousand barrels/day

**Natural gas production**

- million cubic feet/day

**Oil**

- +39 barrels/day
- month over month

**Gas**

- +59 thousand cubic feet/day
- month over month

**Indicated change in oil production**

- +90 -92 -2 thousand barrels/day

**Indicated change in natural gas production**

- +329 -370 -41 million cubic feet/day

**Rig count**

- rigs

**New-well oil production per rig**

- barrels/day

**New-well gas production per rig**

- thousand cubic feet/day

**Rig count**

- rigs

**Average rig**

- barrels/day

**Average rig**

- thousand cubic feet/day

**Average rig**

- thousand barrels/day

**Average rig**

- million cubic feet/day

**New-well oil production per rig**

- barrels/day

**New-well gas production per rig**

- thousand cubic feet/day

**Rig count**

- rigs

**Average rig**

- barrels/day

**Average rig**

- thousand cubic feet/day

**Average rig**

- thousand barrels/day

**Average rig**

- million cubic feet/day
### Haynesville Region

#### Drilling Productivity Report

**December 2023**

**Oil**
- January 2018: 0 barrels/day
- December 2018: 18 barrels/day
- Monthly additions: from one average rig
  - January: 13,517 thousand barrels/day
  - December: 13,239 thousand barrels/day

**Gas**
- December 2023: +278 thousand cubic feet/day

**New-well oil production per rig**
- Haynesville Region: barrels/day
- Rig count: rigs

**Legacy oil production change**
- Haynesville Region: thousand barrels/day

**Indicated change in oil production (Jan vs. Dec)**
- Haynesville Region: thousand barrels/day

**New-well gas production per rig**
- Haynesville Region: thousand cubic feet/day
- Rig count: rigs

**Legacy gas production change**
- Haynesville Region: million cubic feet/day

**Indicated change in natural gas production (Jan vs. Dec)**
- Haynesville Region: million cubic feet/day

**Oil production**
- Haynesville Region: thousand barrels/day

**Natural gas production**
- Haynesville Region: million cubic feet/day

### Notes:
- Drilling data through November
- Projected production through January
- Month over month
### Niobrara Region

**Drilling Productivity Report**

**December 2023**

- **Oil**
  - New-well oil production per rig
  - Rig count

- **Gas**
  - New-well gas production per rig
  - Rig count

### Indicated change in oil production (Jan vs. Dec)

- **Oil**
  - Thousand barrels/day
  - New from new wells
  - Legacy production change
  - Net change

### Indicated change in natural gas production (Jan vs. Dec)

- **Gas**
  - Million cubic feet/day
  - New from new wells
  - Legacy production change
  - Net change

### Oil production

- Thousand barrels/day

### Natural gas production

- Million cubic feet/day

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U. S. Energy Information Administration | Drilling Productivity Report
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\(^1\) and natural gas\(^2\) 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's\(^3\) 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.
Sources
Drilling Productivity Report

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