Drilling Productivity Report
For key tight oil and shale gas regions

Contents

Year-over-year summary 2
Anadarko Region 3
Appalachia Region 4
Bakken Region 5
Eagle Ford Region 6
Haynesville Region 7
Niobrara Region 8
Permian Region 9
Explanatory notes 10
Sources 11
Anadarko Region
Drilling Productivity Report

May 2018

drilling data through April
projected production through June

Monthly additions from one average rig

Anadarko Region
New-well oil production per rig

barrels/day


Rig count

rigs


Anadarko Region
Legacy oil production change

thousand barrels/day

Anadarko Region
Indicated change in oil production (Jun vs. May)

thousand barrels/day

May 518 Mbbl/d

Production from new wells

May 524 Mbbl/d

Legacy production change

Net change

Anadarko Region
Oil production

thousand barrels/day


Natural gas production

million cubic feet/day


Anadarko Region
New-well gas production per rig

thousand cubic feet/day

Rig count

rigs


Anadarko Region
Legacy gas production change

million cubic gas/day

Anadarko Region
Indicated change in natural gas production (Jun vs. May)

million cubic feet/day

May 6,544 MMcf/d

Production from new wells

May 6,601 MMcf/d

Legacy production change

Net change

Anadarko Region
Natural gas production

million cubic feet/day


Oil +5

barrels/day

month over month

June 407

May 402

Gas +19

thousand cubic feet/day

month over month

June 2,806

May 2,787

Oil +6

gas +57

thousand barrels/day

month over month

Gas +57

million cubic feet/day

month over month

June 7,206

May 6,639
### Bakken Region

**Oil production**
- Thousand barrels/day

**Natural gas production**
- Million cubic feet/day

**Rig count**
- Rigs

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

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

**Indicated change in oil production (Jun vs. May)**
- Thousand barrels/day

**Indicated change in natural gas production (Jun vs. May)**
- Million cubic feet/day

**New-well oil production per rig**
- Barrels/day

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

**Drilling Productivity Report**

**May 2018**

Drilling data through April projected production through June

**Monthly additions from one average rig**

- June 1,696
- May 1,688

**Oil**

- May 1,463
- June 1,453

**Gas**

- Gas +8

**+10** barrels/month over month

**+80** thousand barrels/month over month

**+93** thousand cubic feet/month over month

**+43** thousand cubic feet/month over month
Eagle Ford Region
Drilling Productivity Report

May 2018

Drilling data through April
Projected production through June

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Niobrara Region
Drilling Productivity Report
May 2018

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

Niobrara Region
Legacy oil production change
thousand barrels/day

Niobrara Region
Indicated change in oil production (Jun vs. May)
thousand barrels/day

Niobrara Region
Oil production
thousand barrels/day

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

Niobrara Region
Legacy gas production change
million cubic feet/day

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

Niobrara Region
Natural gas production
million cubic feet/day

New-well oil production per rig
rig count

New-well gas production per rig
rig count

Oil +8 barrels/day month over month
Niobrara Region

1,190 June
1,182 May

Legacy production change
thousand barrels/day

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

Oil +3 thousand barrels/day month over month
Niobrara Region

June 4,511 thousand cubic feet/day
May 4,474 thousand cubic feet/day

Gas +37 thousand cubic feet/day month over month
Niobrara Region
May 2018
Drilling Productivity Report
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### Permian Region

#### Monthly additions from one average rig
- **Oil**
  - June: 639 barrels/day
  - May: 637 barrels/day
  - +2 barrels/day month over month
- **Gas**
  - June: 1,191 thousand cubic feet/day
  - May: 1,190 thousand cubic feet/day
  - +1 thousand cubic feet/day month over month

#### New-well oil production per rig
- Per barrel/day:
  - 2009: 200
  - 2010: 300
  - 2011: 400
  - 2012: 500
  - 2013: 600
  - 2014: 700
  - 2015: 800
  - 2016: 900
  - 2017: 1,000
  - 2018: 1,100

#### Legacy oil production change
- Thousand barrels/day:
  - 2009: +50
  - 2010: -100
  - 2011: -150
  - 2012: -200
  - 2013: -250
  - 2014: -300
  - 2015: -350
  - 2016: -400
  - 2017: -450
  - 2018: -500

#### Indicated change in oil production (Jun vs. May)
- Thousand barrels/day:
  - May: 3,199 Mbbl/d
  - June: 3,277 Mbbl/d
  - +78 thousand barrels/day

#### New-well gas production per rig
- Thousand cubic feet/day:
  - 2009: 1,190 MMcf/d
  - 2010: 1,191 MMcf/d
  - 2011: 1,192 MMcf/d
  - 2012: 1,193 MMcf/d
  - 2013: 1,194 MMcf/d
  - 2014: 1,195 MMcf/d
  - 2015: 1,196 MMcf/d
  - 2016: 1,197 MMcf/d
  - 2017: 1,198 MMcf/d
  - 2018: 1,199 MMcf/d

#### Legacy gas production change
- Million cubic feet/day:
  - 2009: +350 MMcf/d
  - 2010: -300 MMcf/d
  - 2011: -250 MMcf/d
  - 2012: -200 MMcf/d
  - 2013: -150 MMcf/d
  - 2014: -100 MMcf/d
  - 2015: -50 MMcf/d
  - 2016: 0 MMcf/d
  - 2017: 50 MMcf/d
  - 2018: 100 MMcf/d

#### Indicated change in natural gas production (Jun vs. May)
- Million cubic feet/day:
  - May: 10,273 MMcf/d
  - June: 10,498 MMcf/d
  - +225 million cubic feet/day

### Drilling data through April
Projected production through June

### Monthly
- Oil production
  - June: 3,199 Mbbl/d
  - May: 3,277 Mbbl/d
  - +78 thousand barrels/day month over month

- Natural gas production
  - June: 10,273 MMcf/d
  - May: 10,498 MMcf/d
  - +225 million cubic feet/day month over month
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’s contribution to production of oil and natural gas from new wells. 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. 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