The seven regions analyzed in this report accounted for 95% of domestic oil production growth and all domestic natural gas production growth during 2011-13.
**Year-over-year summary**

Drilling Productivity Report

**Oil production**

- New-well oil production per rig (barrels/day):
  - December-2013 vs. December-2014
  - Bakken, Eagle Ford, Haynesville, Marcellus, Niobrara, Permian, Utica

- Legacy oil production change (thousand barrels/day):
  - December-2013 vs. December-2014
  - Bakken, Eagle Ford, Haynesville, Marcellus, Niobrara, Permian, Utica

- Indicated monthly change in oil production (Dec vs. Nov) (thousand barrels/day):
  - December-2013 vs. December-2014

- Oil production (thousand barrels/day):
  - December-2013 vs. December-2014

**Gas production**

- New-well gas production per rig (thousand cubic feet/day):
  - December-2013 vs. December-2014
  - Bakken, Eagle Ford, Haynesville, Marcellus, Niobrara, Permian, Utica

- Legacy gas production change (million cubic feet/day):
  - December-2013 vs. December-2014

- Indicated monthly change in gas production (Dec vs. Nov) (million cubic feet/day):

- Natural gas production (million cubic feet/day):

**November 2014**

Drilling data through October

Projected production through December
Drilling Productivity Report

**November 2014**

Projected production through December

**New-well oil production per rig**
- November: 536 barrels/day
- December: 543 barrels/day

**New-well gas production per rig**
- November: 550 thousand cubic feet/day
- December: 559 thousand cubic feet/day

**Legacy oil production change**
- November: 1,191 Mbbl/d
- December: 1,219 Mbbl/d

**Legacy gas production change**
- November: 1,473 MMcf/d
- December: 1,503 MMcf/d

**Indicated change in oil production (Dec vs. Nov)**
- November: +104 thousand barrels/day
- December: -76 thousand barrels/day

**Indicated change in natural gas production (Dec vs. Nov)**
- November: +107 million cubic feet/day
- December: -77 million cubic feet/day

**New-well oil production**
- November: 1,191 barrels/day
- December: 1,219 barrels/day

**New-well gas production**
- November: 1,473 thousand cubic feet/day
- December: 1,503 thousand cubic feet/day

**Rig count**
- November: 80 rigs
- December: 70 rigs

**U.S. Energy Information Administration | Drilling Productivity Report**
Oil production

- **Barrel/day**
- **Month over month**

**Haynesville Region**

- **New-well oil production per rig**
  - **Barrel/day**
  - **2007**
  - **2008**
  - **2009**
  - **2010**
  - **2011**
  - **2012**
  - **2013**
  - **2014**

- **Rig count**
  - **2007**
  - **2008**
  - **2009**
  - **2010**
  - **2011**
  - **2012**
  - **2013**
  - **2014**

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

- **Indicated change in oil production (Dec vs. Nov)**
  - **Thousand barrels/day**

- **Oil production**
  - **Thousand barrels/day**

Gas production

- **Million cubic feet/day**
- **Month over month**

**Haynesville Region**

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

- **Rig count**
  - **2007**
  - **2008**
  - **2009**
  - **2010**
  - **2011**
  - **2012**
  - **2013**
  - **2014**

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

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

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

**Note:**
- Drilling data through October
- Projected production through December
- November 2014
- Monthly additions from one average rig
Marcellus Region
Drilling Productivity Report

November 2014
projected production through December

Marcellus Region
Oil production
thousand barrels/day

Marcellus Region
Natural gas production
million cubic feet/day

Marcellus Region
Legacy oil production change
thousand barrels/day

Marcellus Region
Indicated change in oil production (Dec vs. Nov)
thousand barrels/day

Marcellus Region
Indicated change in natural gas production (Dec vs. Nov)
million cubic feet/day

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

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

Marcellus Region
Legacy gas production change
million cubic feet/day

Marcellus Region
Rig count
rigs

U. S. Energy Information Administration | Drilling Productivity Report
Niobrara Region
Drilling Productivity Report

November 2014

Monthly additions from one average rig

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 (Dec vs. Nov)
thousand barrels/day

Niobrara Region
Oil production
thousand barrels/day

Niobrara Region
Natural gas production
million cubic feet/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 (Dec vs. Nov)
million cubic feet/day

Niobrara Region
Oil +7 barrels/day month over month

Niobrara Region
Gas +29 thousand cubic feet/day month over month

Niobrara Region
December 1,815 thousand cubic feet/day

Niobrara Region
November 1,786 thousand cubic feet/day

Niobrara Region
December 374 Mbbl/d

Niobrara Region
November 365 Mbbl/d

Niobrara Region
Production from new wells

Niobrara Region
Legacy production change

Niobrara Region
Net change

Niobrara Region
Dec 374 Mbbl/d

Niobrara Region
Oil +9 thousand barrels/day month over month

Niobrara Region
Gas +67 million cubic feet/day month over month

Niobrara Region
December

Niobrara Region
November

Niobrara Region
Month over month

Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
rigs

Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
rigs

Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
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Rig count
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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

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Rig count
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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

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Niobrara Region
New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well oil production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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New-well oil production per rig

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New-well gas production per rig

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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
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Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
rigs

Niobrara Region
New-well oil production per rig

Niobrara Region
New-well gas production per rig

Niobrara Region
Rig count
rigs

Niobrara Region
Rig count
rigs
Permian Region

Oil production per rig

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

Legacy oil production change

- Thousand barrels/day

Indicated change in oil production (Dec vs. Nov)

- Thousand barrels/day

Oil production

- Thousand barrels/day
- Month over month

Natural gas production

- Million cubic feet/day
- Month over month

Gas production per rig

- Thousand cubic feet/day
- Month over month
November 2014
Drilling Productivity Report

Utica Region

Monthly additions from one average rig

Barrels/day

Month over month

Oil +7

201

November

194

December

barrels/day

Projected production through December

Gas +98

thousand cubic feet/day

Month over month

0

5

10

15

20

25

30

35

2007

2008

2009

2010

2011

2012

2013

2014

Oil production

thousand barrels/day

November

1,581

Mmbbl/d

December

4,246

Mmbbl/d

201

194

New well oil production per rig

barrels/day

Utica Region

Rig count

rigs

2007

2008

2009

2010

2011

2012

2013

2014

4,800

new-well oil production per rig

4,000

rig count

2,400

1,200

0

2,000

1,000

500

300

200

100

50

0

Utica Region

Rig count

rigs

2007

2008

2009

2010

2011

2012

2013

2014

4,800

new-well gas production per rig

4,000

rig count

2,400

1,200

0

2,000

1,000

500

300

200

100

50

0

Utica Region

Rig count

rigs

2007

2008

2009

2010

2011

2012

2013

2014

1,581

MMcf/d

1,667

MMcf/d

0

100

200

300

400

500

600

700

800

900

1,000

1,100

1,200

1,300

1,400

1,500

1,600

1,700

2007

2008

2009

2010

2011

2012

2013

2014

Natural gas production

million cubic feet/day

Indicated change in oil production (Dec vs. Nov)

thousand barrels/day

Utica Region

November

December

+6

-2

+4

+4

month over month

Oil

+4

thousand barrels/day

month over month

Natural gas production

million cubic feet/day

Indicated change in natural gas production (Dec vs. Nov)

million cubic feet/day

Utica Region

November

December

+126

-40

+86

+86

month over month

Gas

thousand 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