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