

# OHIO SHALE



QUARTERLY ECONOMIC TRENDS FOR  
OHIO OIL AND GAS INDUSTRIES

July 2014



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### **A Message from Director Dungey**

Oil and gas drilling has only recently begun to accelerate in Ohio, and already many families and communities have begun to see a positive impact. As you'll see in the pages that follow, core shale-related employment, which includes such things as pipeline construction and well drilling, increased more than 62.8 percent from the fourth quarter of 2011 to the fourth quarter of 2013. Ancillary employment – for example, freight trucking and environmental consulting – also increased. We expect non-shale industries, such as food and retail businesses near drilling sites and the surrounding communities, to benefit from increasing shale activity, as well.

Ohio is fortunate to have this natural resource that can provide good jobs for families and reinvigorate many of our communities, especially those in the eastern part of the state. The average wages of shale-related jobs are excellent: \$62,045 in core industries and \$60,516 in ancillary industries. In both cases, this is higher than the average wage in all Ohio industries: \$44,659.

At the Ohio Department of Job and Family Services (ODJFS), we have been working hard to help more Ohioans take advantage of these opportunities. We've been working closely with local workforce investment areas, community colleges, other post-secondary educational institutions and employers to identify the occupations most in need of workers and to make sure that appropriate training programs are in place. In any given month, thousands of shale-related job openings are posted online, at [www.ohiomeansjobs.com](http://www.ohiomeansjobs.com). The Ohio Board of Regents also provides an overview of shale-related employment opportunities and information about education and training at [www.ohioenergypathways.org](http://www.ohioenergypathways.org).

Individuals can sign up for on-the-job training opportunities at any of the state's local OhioMeansJobs Centers, which provide free job training and other services to Ohioans looking for work and employers looking for workers. Individuals can post their resumes, and employers can post job openings at [www.ohiomeansjobs.com](http://www.ohiomeansjobs.com). We encourage any Ohioans in need of work or who may be considering new careers to explore these opportunities. We're committed to improving the well-being of Ohio's workforce and families, and are excited about the potential shale holds to make a significant difference in so many families' lives.

A handwritten signature in black ink that reads "Cynthia C. Dungey".

Cynthia C. Dungey, Director  
Ohio Department of Job and Family Services

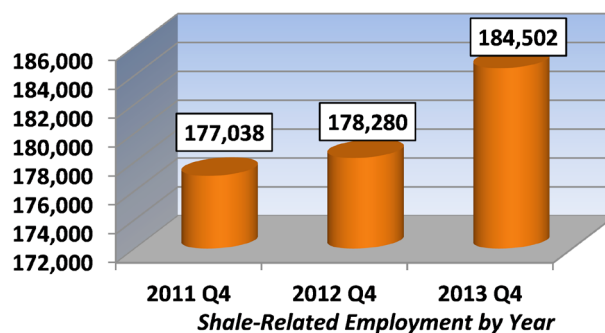




## EXECUTIVE SUMMARY

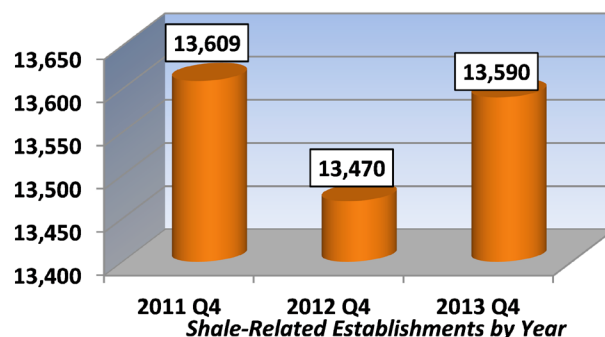
### Employment (2011 Q4 to 2013 Q4)

- Core shale-related industry employment (such as pipeline construction and well drilling) was up 4,686 (62.8 percent).
- Ancillary shale-related industry employment (such as freight trucking and environmental consulting) increased 2,778 (1.6 percent).
- All industry employment was up 146,547 (2.9 percent).



### Business Establishments (2011 Q4 to 2013 Q4)

- There were 118 core shale-related business establishments added (18.8 percent).
- Ancillary shale-related industries declined by 137 establishments (1.1 percent).
- Over the same time period, Ohio experienced a slight decline of 0.2 percent in business establishments in all industries.
- Shale-related business establishments totaled 13,590 during the fourth quarter of 2013.



### Wages (2013 Q1 through 2013 Q4)

- The average wage across all industries was \$44,659.
- The average wage in core shale-related industries was \$62,045, which was \$17,386 greater than the average for all industries.
- The average wage in ancillary shale-related industries was \$60,516, which was \$15,857 greater than the average for all industries.

### Stable Employment, All Hires and Separations (2011 Q2 to 2013 Q2)

- Stable jobs, those present at the beginning and end of a quarter, increased in three core shale-related industries: support activities for mining, utility system construction and pipeline transportation of natural gas.

### Online Job Postings (2014 Q2)

- There were 2,844 online job postings statewide in core and ancillary shale-related industries.

These data are meant to provide a barometer of shale-related economic activity and employment trends. While the vast majority of shale-related employment can be found in certain industries, not all business establishments in those industries are involved in shale activity. For those that are, not all of their products and services and, therefore, their employment, are necessarily linked to shale-related economic activity.

## **BACKGROUND INFORMATION**

### **Data Sources**

The purpose of this quarterly publication is to provide the most current available data on shale-related economic activity in Ohio as compared to the base year of 2011. Although several data sources are cited in this publication, the primary source is the Quarterly Census of Employment and Wages (QCEW).

The QCEW program derives its data from quarterly tax reports of employers subject to state and federal unemployment insurance laws. This includes 95 percent or more of all wage and salary employment in Ohio. Under the QCEW program, employment data represent the number of covered workers who worked during, or received pay for, the pay period including the 12<sup>th</sup> of the month. Excluded are members of the armed forces, the self-employed, unpaid family workers and railroad workers covered by the railroad unemployment insurance system. Data is published approximately six months after the quarter ends.

Also included in this publication are several additional data sources that capture Ohio's most current overall economic situation (Local Area Unemployment Statistics and Current Employment Statistics), employer demand (The Conference Board Help Wanted OnLine™ Data Set) and hiring activity (Quarterly Workforce Indicators). For an explanation of all data sources, please refer to the "Definitions" section on page 18.

In this edition, most current data from the QCEW program are for the fourth quarter of 2013. Because the data are not seasonally adjusted, the same quarter of a given year must be used when analyzing growth over time. This will ensure that seasonal factors are not influencing employment change. Therefore, fourth quarter 2013 QCEW data are compared to fourth quarter 2011 QCEW data.

### **Data Limitations**

The North American Industry Classification System (NAICS) was used to define shale-related industries. Much of the information included in this publication reflects data on a group of six industries identified as "core" and a group of 30 industries identified as "ancillary." These data are meant to provide a barometer of shale-related economic activity and employment trends. While the vast majority of shale-related employment can be found in these industries, not all business establishments in these industries are involved in shale activity. For those that are, not all of their products and services and, therefore, their employment are necessarily linked to shale-related economic activity. This is particularly true for the ancillary industries.

The data in this publication include government employment (federal, state and local) in all shale-related industries because significant non-private employment is present in a number of these industries, most notably: highway, street and bridge construction; engineering services; water supply and irrigation systems; and sewage treatment facilities.

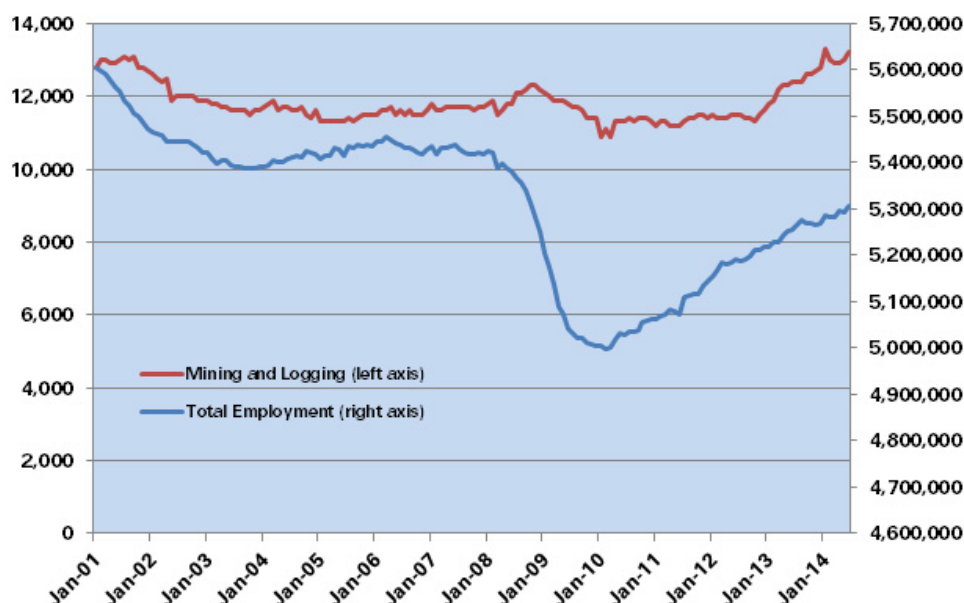
As shale-related activity develops further in Ohio, additional industries may be added to the ancillary group, based on such factors as significant employment gains in an industry in a geographic region or the identification of a group of companies in the same industry involved in shale-related activity.

## Snapshot of Ohio's Economy

- **Ohio's seasonally adjusted unemployment rate for June 2014 was 5.5 percent.**
  - The rate was 1.9 percentage points lower than the June 2013 rate.
- **Ohio had 5,305,400 seasonally adjusted nonfarm jobs in June 2014.**
  - Compared to June 2013, employment increased by 50,200 jobs.
- **Ohio's hiring activity increased from the second quarter of 2011 to the second quarter of 2013.**
  - Across all industries, an estimated 933,533 workers started new jobs (new hires and rehires) during the second quarter of 2013, an increase of 83,092 hires over the second quarter of 2011.
- **Employer demand decreased in Ohio.**
  - 165,592 job ads were posted online in second quarter 2014, a decrease of 15,939 from second quarter 2013.
- **Ohio's supply/demand rate, which is the ratio of the number of unemployed people to advertised job vacancies, is lower than the U.S. rate (The Conference Board).**
  - The June Ohio supply/demand rate was 1.80, which was below the U.S. rate (2.00). A lower rate is better.

## Mining and Logging Jobs vs. Total Jobs in Ohio

Total Mining and Logging Employment since January 2001 (Seasonally Adjusted)



Source: Current Employment Statistics. Estimates may be revised.

- **In June 2014, 13,200 workers were employed in the mining and logging industries.**
  - From June 2013 to June 2014, employment increased by a total of 800 jobs.



## STATEWIDE SHALE-RELATED INDUSTRIES

Number of Business Establishments and Employment in Shale-Related Industries (2011 Q4-2013 Q4)\*

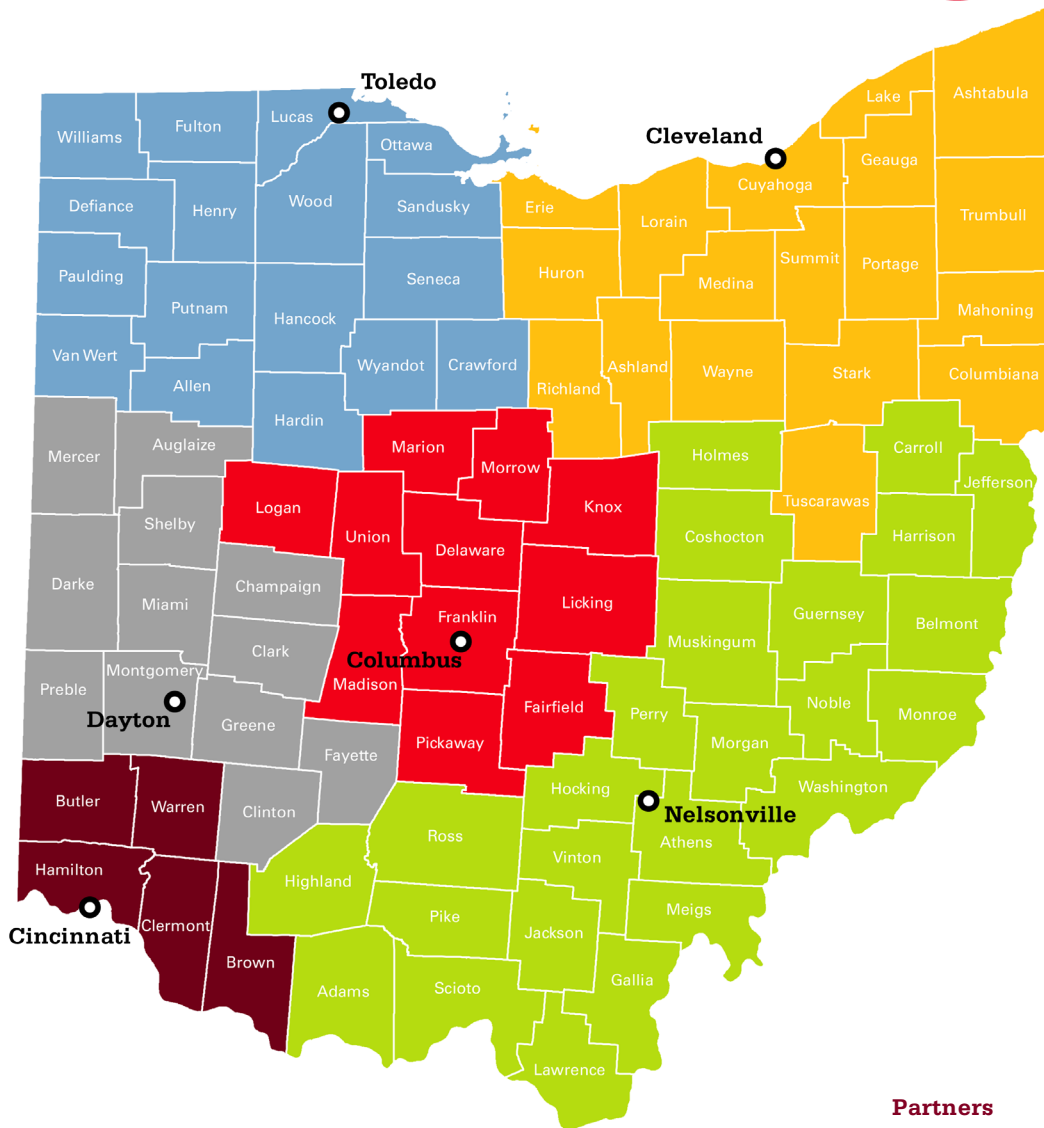
Core Industries		2011 Q4		2013 Q4		Change	
NAICS	Title	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.
211111	Crude petroleum and natural gas extraction	202	2,861	209	1,734	7	-1,127
211112	Natural gas liquid extraction	8	47	17	366	9	319
213111	Drilling oil and gas wells	87	604	92	1,176	5	572
213112	Support activities for oil and gas operations	193	1,383	249	2,850	56	1,467
237120	Oil and gas pipeline construction	100	2,254	139	5,705	39	3,451
486210	Pipeline transportation of natural gas	36	313	38	317	2	4
Core Industry Totals		626	7,462	744	12,148	118	4,686
Ancillary Industries		2011 Q4		2013 Q4		Change	
NAICS	Title	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.
221112	Fossil fuel electric power generation	83	5,207	71	4,158	-12	-1,049
221210	Natural gas distribution	148	3,950	146	4,137	-2	187
221310	Water supply and irrigation systems	249	6,016	256	5,929	7	-87
221320	Sewage treatment facilities	211	3,763	209	3,847	-2	84
237110	Water and sewer system construction	383	5,232	367	5,122	-16	-110
237310	Highway, street, and bridge construction	727	15,461	720	15,662	-7	201
238912	Nonresidential site preparation contractors	632	5,504	595	5,549	-37	45
325110	Petrochemical manufacturing	5	350	5	331	0	-19
325120	Industrial gas manufacturing	45	759	42	753	-3	-6
331110	Iron and steel mills and ferroalloy manufacturing	62	10,469	60	9,228	-2	-1,241
331210	Iron, steel pipe and tube from purchase steel	54	3,182	37	2,847	-17	-335
333131	Mining machinery and equipment manufacturing	11	487	12	471	1	-16
333132	Oil and gas field machinery and equipment	7	146	11	361	4	215
423810	Construction equipment merchant wholesalers	203	2,850	187	3,254	-16	404
423830	Industrial machinery merchant wholesalers	1,709	15,727	1,624	16,573	-85	846
423840	Industrial supplies merchant wholesalers	511	4,988	484	4,759	-27	-229
484110	General freight trucking, local	1,375	12,650	1,379	12,941	4	291
484220	Other specialized trucking, local	1,016	7,322	1,019	7,693	3	371
484230	Other specialized trucking, long-distance	293	4,692	310	5,526	17	834
531190	Lessors of other real estate property	292	912	274	882	-18	-30
532412	Other heavy machinery rental and leasing	174	1,373	192	2,022	18	649
541330	Engineering services	2,313	28,130	2,374	28,901	61	771
541360	Geophysical surveying and mapping services	51	289	54	301	3	12
541380	Testing laboratories	364	6,538	370	6,091	6	-447
541620	Environmental consulting services	301	1,635	314	1,783	13	148
562910	Remediation services	191	2,605	200	3,813	9	1,208
811310	Commercial machinery repair and maintenance	1,098	7,478	1,075	7,677	-23	199
924110	Air, water, and waste program administration	165	6,083	155	6,048	-10	-35
924120	Administration of conservation programs	281	5,301	274	5,264	-7	-37
926130	Utility regulation and administration	29	477	30	431	1	-46
Ancillary Industry Totals		12,983	169,576	12,846	172,354	-137	2,778
Core Industries and Ancillary Industries Totals		13,609	177,038	13,590	184,502	-19	7,464

Source: Quarterly Census of Employment and Wages.

\*Large increases and decreases in employment may be the result of a change in industry classification following a routine NAICS assignment review.

- From 2011 Q4 to 2013 Q4, employment in core industries increased by 4,686 (62.8 percent). Over the same period, employment in ancillary industries increased by 2,778 (1.6 percent).
- From 2011 Q4 to 2013 Q4, the number of business establishments in the core industries grew by 118 (18.8 percent), while establishments in ancillary industries declined by 137 (1.1 percent).

# JOBSCOHO NETWORK



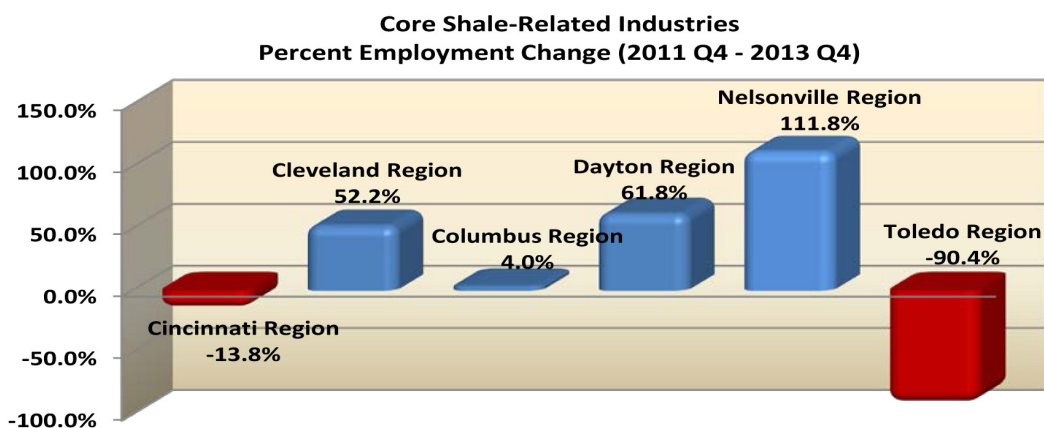
## Partners

-  **Appalachian Partnership for Economic Growth**
-  **Cincinnati USA Partnership**
-  **Columbus 2020!**
-  **Dayton Development Coalition**
-  **Regional Growth Partnership**
-  **Team NEO**

## REGIONAL SHALE-RELATED INDUSTRIES

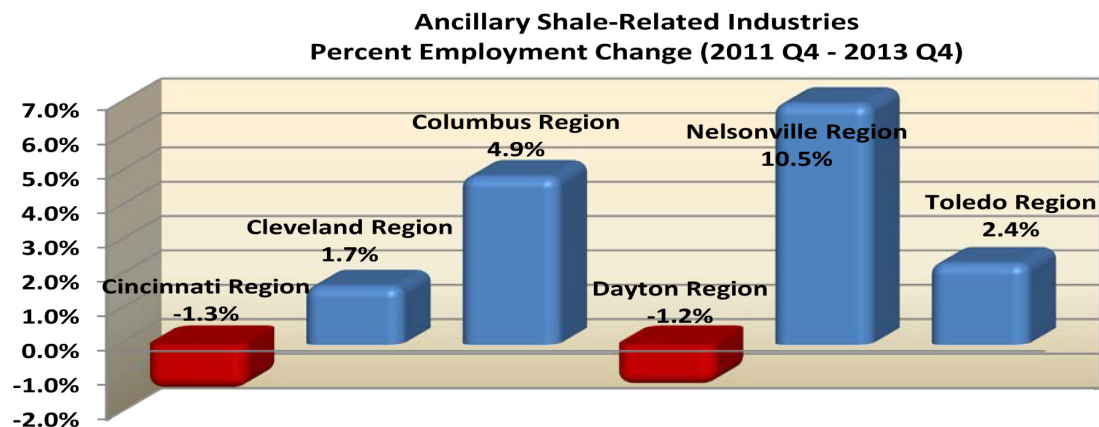
The JobsOhio Network is a partnership of statewide economic development organizations with deep ties to their business communities. The following charts show trends in shale-related employment for each of the six JobsOhio regions.

Large percent increases and decreases in employment may be the result of a change in industry classification following a routine NAICS assignment review. Changes in NAICS assignment are typically done with the publication of first quarter data.



Source: Quarterly Census of Employment and Wages.

- For the core shale-related industries, the largest percent growth in employment was in the Nelsonville region (111.8 percent), followed by the Dayton region (61.8 percent).



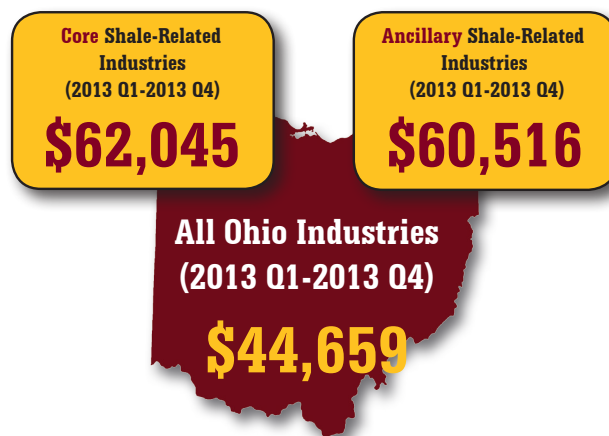
Source: Quarterly Census of Employment and Wages.

- For the ancillary shale-related industries, the largest percent growth in employment was in the Nelsonville region (10.5 percent), followed by the Columbus region (4.9 percent).



## WAGES FOR OHIO SHALE-RELATED CORE AND ANCILLARY INDUSTRIES

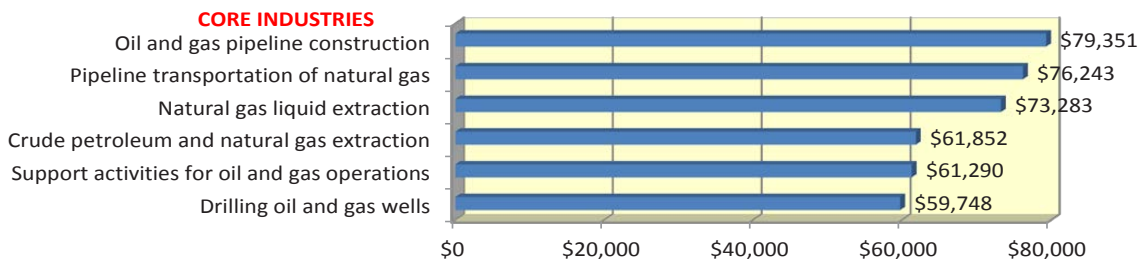
- The average wage across all industries for 2013 Q1 through 2013 Q4 was \$44,659.
- The average wage in the core industries was \$17,386 greater than the average wage for all industries.
- The average wage in the ancillary industries was \$15,857 higher than the average wage for all industries.



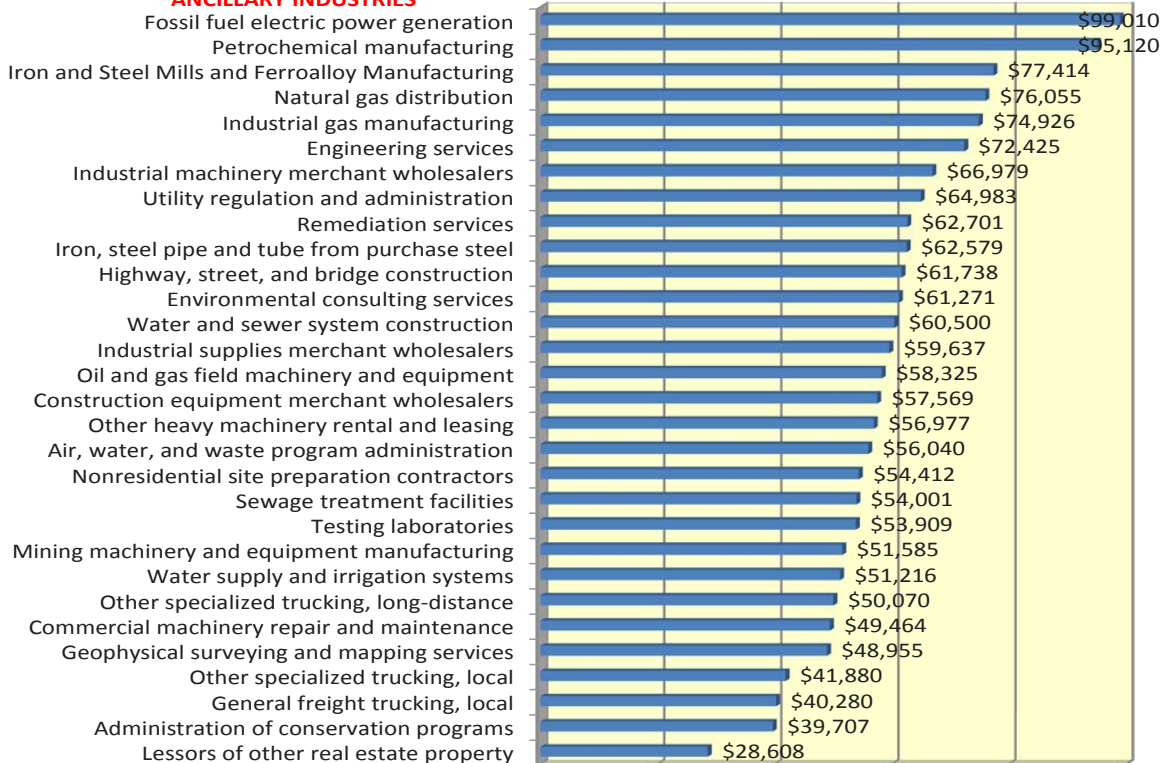
*Large changes in average wages may be the result of a change in industry classification following a routine NAICS assignment*

### Average Wage by Industry

#### CORE INDUSTRIES



#### ANCILLARY INDUSTRIES



Source: Quarterly Census of Employment and Wages.

## OHIO SHALE-RELATED ONLINE JOB POSTINGS

### Ohio Statewide Online Job Postings

	2013 Q2	2014 Q2	% Change
<b>Core Industries</b>	127	114	-10.2%
<b>Ancillary Industries</b>	2,662	2,620	-1.6%
<b>Total: ALL Industries</b>	<b>181,531</b>	<b>165,592</b>	<b>-8.8%</b>

### JobsOhio Network Regional Online Job Postings

Core & Ancillary Combined	2013 Q2	2014 Q2	% Change
Cincinnati Region (SW Ohio)	483	466	-3.5%
Cleveland Region (NE Ohio)	943	935	-0.8%
Columbus Region (Central Ohio)	598	558	-6.7%
Dayton Region (West Ohio)	396	352	-11.1%
Nelsonville Region (SE Ohio)	190	135	-28.9%
Toledo Region (NW Ohio)	270	251	-7.0%
<b>Total*</b>	<b>2,888</b>	<b>2,844</b>	<b>-1.5%</b>

Source: The Conference Board Help Wanted Online® (HWOL). Data subject to revision. Not seasonally adjusted.

Data are not comparable to previous *Ohio Shale Quarterly Economic Trends for Ohio Oil and Gas Industries* reports due to HWOL 2014 methodological revisions.

*\*The total includes job ads that may have listed Ohio as the only geographical area. As a result, the sum of the job ads for the JobsOhio Regions may be lower, since it does not include these ads without a city or metropolitan statistical area specification.*

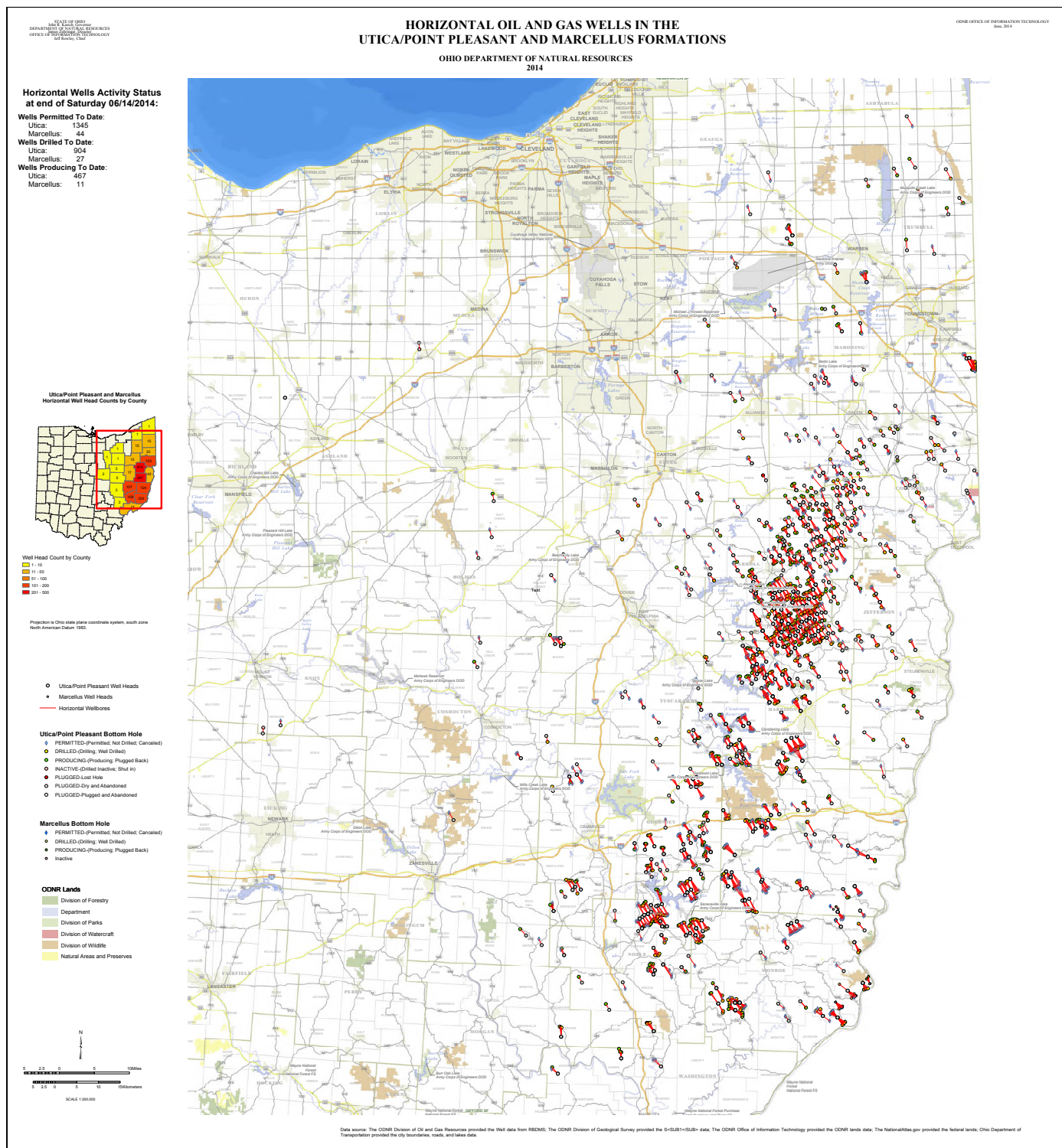
### Ohio Online Job Postings

- Total job postings across all industries for Ohio and for ancillary shale-related industries decreased in second quarter 2014 compared to second quarter 2013.
- Overall, job postings decreased 10.2 percent and 1.6 percent in core and ancillary shale-related industries respectively.

### JobsOhio Network Regional Online Job Postings

- Job postings decreased in all JobsOhio Network Regions in second quarter 2014 when compared to second quarter 2013.

# WELL ACTIVITY STATUS AS OF JUNE 14, 2014





## KEY OCCUPATIONS IN CORE SHALE-RELATED INDUSTRIES

The occupations listed in the table below are found within the national staffing patterns of core shale-related industries. While these occupations are not exclusive to the core shale-related industries, all are in the top 20 of one or more of these industries.

A standard occupation classification (SOC) code is provided for each occupation. For a complete list of terms, please refer to the Staffing Patterns definition on page 19.

SOC Code	SOC Title	Median Wage	Typical Education, Training, Experience
Nov-41	Architectural and engineering managers	\$112,470	Bachelor's, More than 5 years related experience
13-1199	Business operations specialists, all other	\$60,990	HS/GED, Long-term OJT
17-2171	Petroleum engineers	\$95,730	Bachelor's degree
19-2042	Geoscientists, except hydrologists and geographers	\$71,440	Bachelor's degree
19-4041	Geological and petroleum technicians	\$52,070	Associate's, Moderate-term OJT
43-3031	Bookkeeping, accounting, and auditing clerks	\$35,130	HS/GED, Moderate-term OJT
47-2111	Electricians	\$49,660	HS/GED, Apprenticeship
47-2151	Pipelayers	\$39,670	HS/GED, Short-term OJT
47-3015	Helpers--pipelayers, plumbers, pipefitters, and steamfitters	\$23,420	HS/GED, Short-term OJT
47-5011	Derrick operators, oil and gas	\$33,700	Less than HS, Short-term OJT
47-5012	Rotary drill operators, oil and gas	\$30,080	Less than HS, Moderate-term OJT
47-5071	Roustabouts, oil and gas	\$29,010	Less than HS, Moderate-term OJT
47-5081	Helpers--extraction workers	\$28,990	HS/GED, Short-term OJT
49-1011	First-line supervisors of mechanics, installers, and repairers	\$57,750	HS/GED, 1-5 years related experience
49-9012	Control and valve installers and repairers, except mechanical door	\$54,910	HS/GED, Moderate-term OJT
49-9041	Industrial machinery mechanics	\$45,580	HS/GED, Long-term OJT
51-1011	First-line supervisors of production and operating workers	\$52,940	Post-HS cert, 1-5 years related experience
51-4121	Welders, cutters, solderers, and brazers	\$35,330	HS/GED, Moderate-term OJT
51-8092	Gas plant operators	\$64,280	HS/GED, Long-term OJT
51-8093	Petroleum pump system operators, refinery operators, and gaugers	\$55,990	HS/GED, Long-term OJT
53-7062	Laborers and freight, stock, and material movers, hand	\$22,570	Less than HS, Short-term OJT
53-7071	Gas compressor and gas pumping station operators	\$66,730	Less than HS, Moderate-term OJT

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2013.

## IN-DEMAND SHALE-RELATED OCCUPATIONS

The occupations listed below are found in shale-related industries and have been identified as in-demand occupations through the Ohio Workforce Information Exchange — Job Forecast initiative as of July 2014. This initiative works directly with employers with at least one Ohio location to identify employers' most in-demand occupations over the next one, three and five years.

For more information on the Workforce Information Exchange, please refer to page 21.

SOC Code	SOC Title	Median Wage*	Typical Education, Training and Experience*
11-3071	Transportation, Storage and Distribution Managers	\$80,640	HS/GED
11-9021	Construction Managers	\$78,480	Associate's degree
11-9199	Managers, All Other	\$88,090	HS/GED
11-1021	General and Operations Managers	\$89,740	Associate's degree
13-1081	Logisticians	\$68,980	Bachelor's degree
13-1151	Training and Development Specialists	\$56,050	Bachelor's degree
13-2051	Financial Analysts	\$71,380	Bachelor's degree
15-1199	Computer Occupations, All Other	\$80,020	Bachelor's degree
17-2041	Chemical Engineers	\$83,430	Bachelor's degree
17-2141	Mechanical Engineers	\$70,940	Bachelor's degree
17-3023	Electrical and Electronic Engineering Technicians	\$56,260	Associate's degree
17-3026	Industrial Engineering Technicians	\$46,910	Associate's degree
29-9011	Occupational Health and Safety Specialists	\$69,870	Bachelor's degree, Moderate-Term OJT
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$58,750	HS/GED
47-2061	Construction Laborers	\$36,520	Less than HS, Short-term OJT
47-2073	Operating Engineers and Other Construction Equipment Operators	\$44,510	HS/GED, Moderate-Term OJT
47-2152	Plumbers, Pipefitters, and Steamfitters	\$48,990	HS/GED, Apprenticeship
47-5013	Service unit operators, oil, gas, and mining	\$42,530	Less than HS, Moderate-term OJT
49-9071	Maintenance and Repair Workers, General	\$35,800	HS/GED, Short-Term OJT
51-4121	Welders, Cutters, Solderers and Brazers	\$35,330	HS/GED, Moderate-Term OJT
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$37,720	HS/GED, Short-Term OJT
53-3033	Light Truck or Delivery Services Drivers	\$28,390	HS/GED, Short-Term OJT
53-7073	Wellhead Pumpers	\$31,150	Less than HS, Moderate-Term OJT

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2013.

## STATEWIDE SHALE-RELATED EMPLOYMENT DATA

The Quarterly Workforce Indicators (QWI) are a set of economic indicators derived from state administrative records and basic demographic information from the Census Bureau. They can be examined based on geography, industry, gender and age of workers. Data presented are the most recent available. Because QWI data are not seasonally adjusted, the same quarter must be used when analyzing changes over time. This will ensure that seasonal factors are not influencing employment change. Therefore, in the table below and on the following page, second quarter data from 2011 is presented with second quarter data from 2013.

The tables below and on the following page show Ohio shale-related employment. “Stable Employment” is an estimate of the number of jobs that were present at the beginning and end of a quarter. “All Hires” is the estimated number of workers who started a job during the quarter; it includes new and recalled employees. “Separations” is the estimated number of workers whose jobs with a given employer ended during a quarter.

Ohio	2011 Q2			2013 Q2		
	Stable Employ.	All Hires	Separations	Stable Employ.	All Hires	Separations
All industry groups	4,304,878	850,441	765,203	4,467,926	933,533	764,696
2111 Oil and Gas Extraction	2,744	284	185	1,639	513	542
2131 Support Activities for Mining	2,599	736	515	3,817	1,430	971
2371 Utility System Construction	8,757	4,443	2,456	10,476	8,056	4,174
4862 Pipeline Transportation of Natural Gas	321	15	9	329	17	19

Source: U.S. Census Bureau, Quarterly Workforce Indicators.

Quarterly Workforce Indicators are only available at the four-digit NAICS level. Consequently, although these industry groups contain some employment from non-shale related core industries, they provide an indication of labor activity for these shale-related industries.

- Stable jobs, those present at the beginning and end of a quarter, increased in three core shale-related industries from second quarter 2011 to second quarter 2013: support activities for mining, utility system construction and pipeline transportation of natural gas.
- It is also clear there is significant turnover in the job market, as demonstrated by the numbers of hires and separations.



## JOB OHIO NETWORK SHALE-RELATED EMPLOYMENT

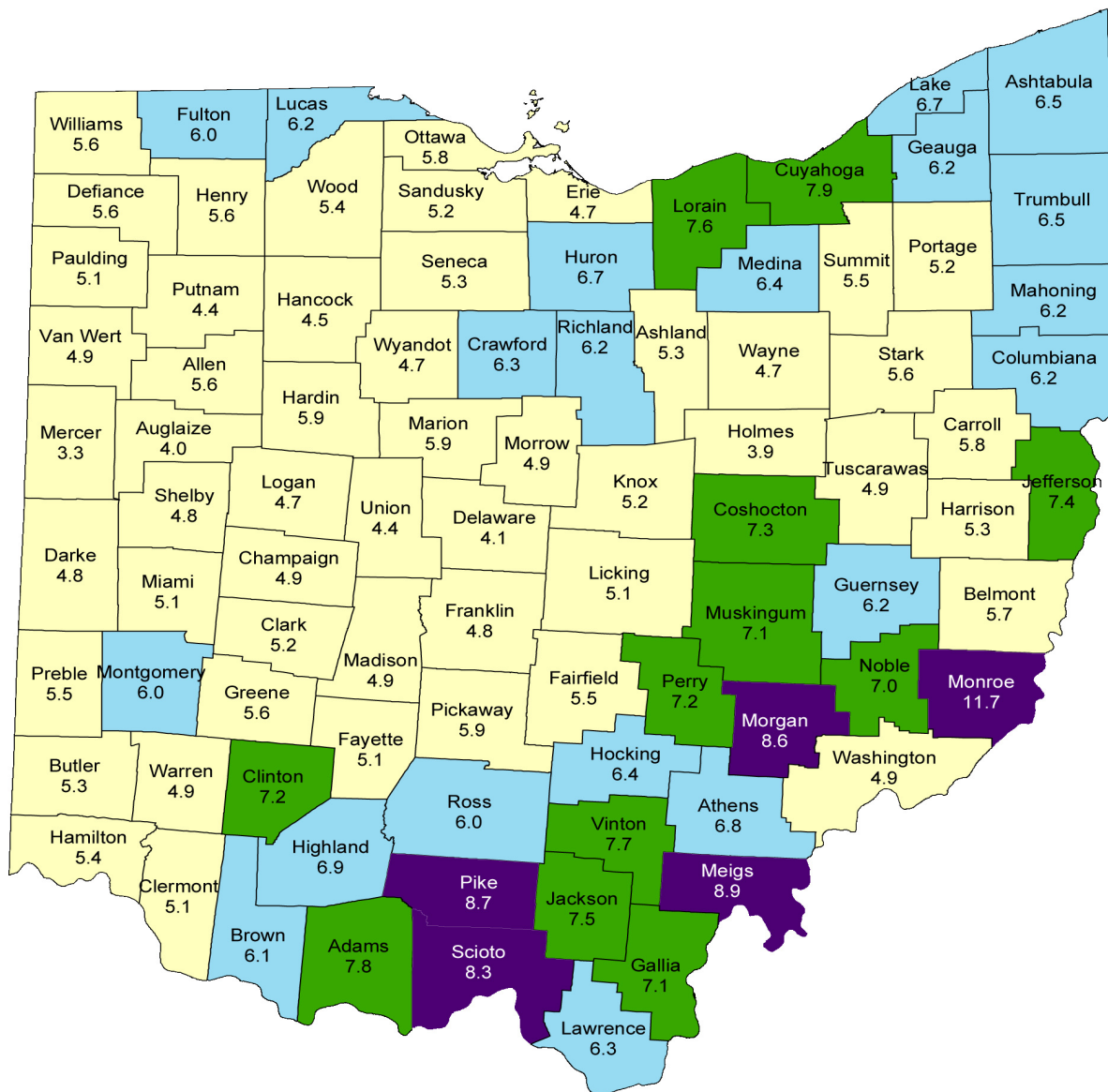
	2011 Q2			2013 Q2		
	Stable Employment	All Hires	Separations	Stable Employment	All Hires	Separations
<b>Central Ohio - Columbus Region</b>						
All industry groups	858,212	162,353	151,826	899,051	186,263	158,685
2111 Oil and Gas Extraction	165	11	15	166	13	6
2131 Support Activities for Mining	242	183	100	283	73	48
2371 Utility System Construction	1,754	613	353	2,011	1,349	532
4862 Pipeline Transportation of Natural Gas	122	8	***	126	8	5
<b>Northeast Ohio - Cleveland Region</b>						
All industry groups	1,622,552	326,420	302,788	1,686,228	352,169	280,145
2111 Oil and Gas Extraction	560	79	42	746	133	85
2131 Support Activities for Mining	662	114	106	943	416	268
2371 Utility System Construction	3,208	1,938	1,193	3,578	3,177	1,678
4862 Pipeline Transportation of Natural Gas	81	4	3	82	3	4
<b>Northwest Ohio - Toledo Region</b>						
All industry groups	444,819	89,408	78,241	458,162	100,588	80,961
2111 Oil and Gas Extraction	1,493	139	104	19	11	13
2131 Support Activities for Mining	10	***	***	122	41	29
2371 Utility System Construction	1,109	794	192	1,219	447	385
4862 Pipeline Transportation of Natural Gas	28	0	0	32	***	0
<b>Southeast Ohio - Nelsonville Region</b>						
All industry groups	262,333	53,035	44,465	263,787	56,865	47,608
2111 Oil and Gas Extraction	371	44	10	600	315	417
2131 Support Activities for Mining	1,636	426	306	2,131	684	547
2371 Utility System Construction	588	328	369	1,162	2,280	1,028
4862 Pipeline Transportation of Natural Gas	71	***	4	69	***	7
<b>Southwest Ohio - Cincinnati Region</b>						
All industry groups	665,328	138,273	118,707	700,497	149,093	121,938
2111 Oil and Gas Extraction	155	11	13	***	***	***
2131 Support Activities for Mining	26	3	0	136	108	47
2371 Utility System Construction	1,491	554	255	1,789	495	411
4862 Pipeline Transportation of Natural Gas	***	0	***	***	***	***
<b>West Ohio - Dayton Region</b>						
All industry groups	451,634	80,951	69,176	460,201	88,555	75,359
2111 Oil and Gas Extraction	***	0	0	***	***	***
2131 Support Activities for Mining	24	9	3	203	108	31
2371 Utility System Construction	607	216	93	717	308	141
4862 Pipeline Transportation of Natural Gas	***	0	0	***	0	0

Source: U.S. Census Bureau, Local Employment Dynamics, Quarterly Workforce Indicators.

\*\*\*Indicates data cannot be disclosed due to confidentiality restrictions or data quality standards.

Quarterly Workforce Indicators are only available at the four-digit NAICS level. Consequently, although these industry groups contain some employment from non-shale related core industries, they help provide an indication of labor activity for these shale-related industries.

## COUNTY UNEMPLOYMENT RATES IN JUNE 2014 (Not seasonally adjusted)



### Unemployment Rates

	Not Seasonally Adjusted	Seasonally Adjusted
United States	6.3%	6.1%
Ohio	5.9%	5.5%

Ohio rate of 5.9% or lower

Above Ohio rate of 5.9%;  
U.S. rate of 6.3% or lower

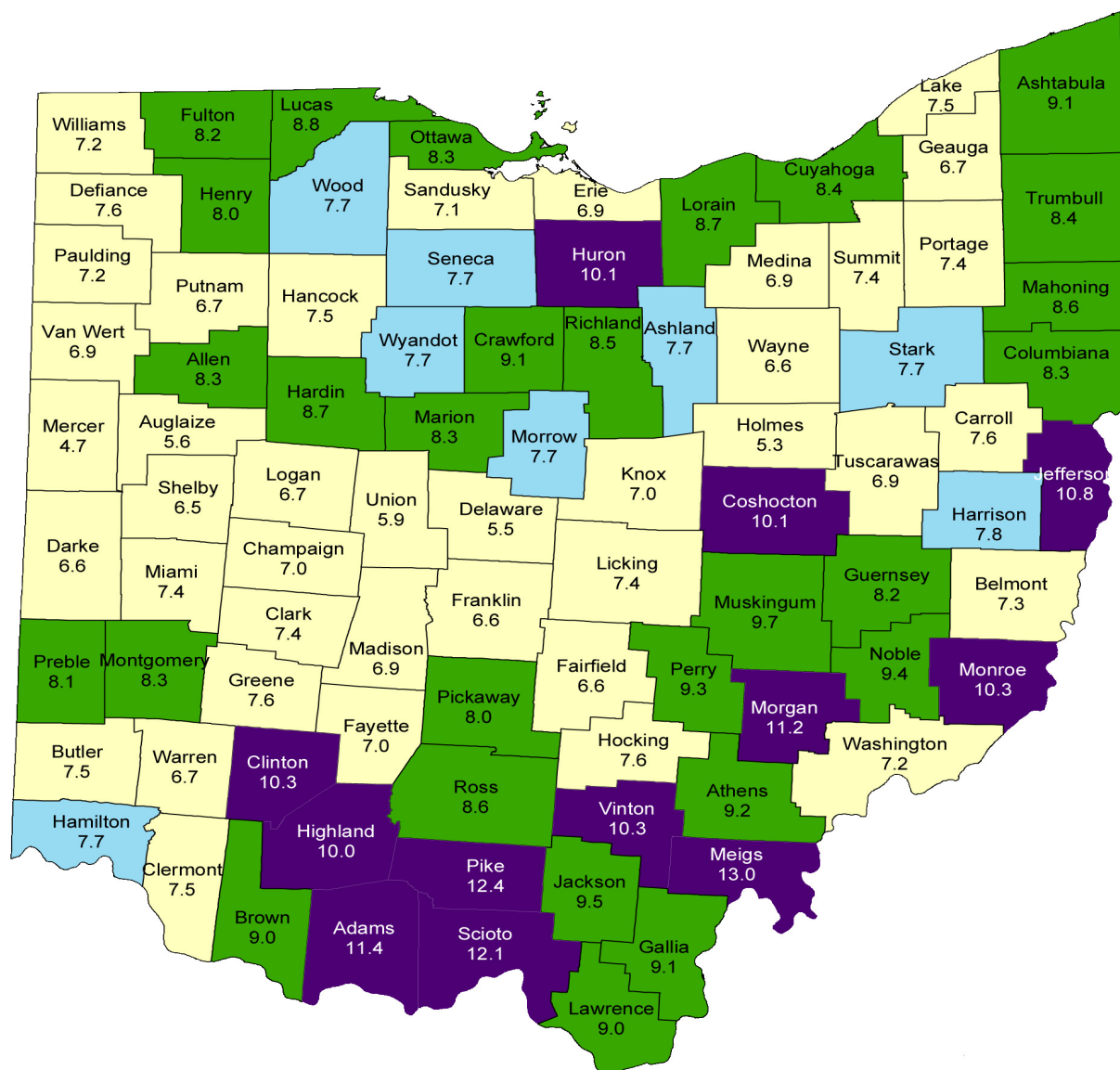
Above U.S. rate of 6.3%;  
below 8.0%

8.0% or above

Source: Ohio Department of Job and Family Services  
Office of Workforce Development  
Bureau of Labor Market Information

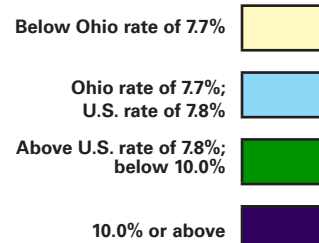
\*Data are preliminary and are subject to revision.

## COUNTY UNEMPLOYMENT RATES IN JUNE 2013 (Not seasonally adjusted)



### Unemployment Rates

	Not Seasonally Adjusted	Seasonally Adjusted
United States	7.8%	7.5%
Ohio	7.7%	7.4%



Source: Ohio Department of Job and Family Services  
Office of Workforce Development  
Bureau of Labor Market Information

\*Data based on 2013 benchmark.

## DEFINITIONS

### OHIO LABOR FORCE STATISTICS\*

**Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information, Local Area Unemployment Statistics (LAUS)**

The labor force and unemployment data are based on the same concepts and definitions as those used for the official national estimates obtained from the Current Population Survey (CPS). The LAUS program measures employment and unemployment on a place-of-residence basis and produces estimates using equations based on regression techniques. This method uses data from several sources, including the CPS, the Current Employment Statistics (CES) program, and state unemployment insurance programs. The LAUS program does not produce estimates for any demographic groups.

**Employment** – A count of all persons who, during the week that includes the 12<sup>th</sup> day of the month, (a) did any work as paid employees, worked in their own businesses or professions or on their own farm, or worked 15 hours or more as unpaid workers in enterprises operated by members of their families, or (b) were not working but who had jobs from which they were temporarily absent. Each employed person is counted only once, even if the person holds more than one job. Included are the self-employed, unpaid family workers, agricultural workers and private household workers, who are excluded by the CES survey.

**Labor Force** – The population of people either working or looking for work, or classified as employed or unemployed.

**Unemployment** – A count of all persons aged 16 years and older who had no employment during the reference week (the week containing the 12<sup>th</sup> day of the month), who were available for work (except for temporary illness), and who had made specific efforts to find employment sometime during the four-week

period ending with the reference week. This includes those waiting to be recalled to jobs from which they had been laid off.

**Unemployment Rate** – The number of unemployed workers as a percent of the labor force.

### JOBS\*

**Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information, Current Employment Statistics**

Each month the CES program surveys about 140,000 national businesses and government agencies to provide detailed industry data on employment, hours and earnings of workers on non-farm payrolls. This is a collaborative effort between the Bureau of Labor Statistics (BLS) and the states. CES produces a count of jobs, not of people.

**Nonfarm Jobs** – The total number of persons on established payrolls employed full- or part-time who received pay for any part of the pay period that includes the 12<sup>th</sup> day of the month. Temporary and intermittent employees are included, as are any employees who are on paid sick leave, on paid holiday, or who worked during only part of the specified pay period. A striking employee who works only a small portion of the survey period, and is paid, is included as employed. Those on payrolls of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed workers, unpaid family or volunteer workers, farm workers, and domestic workers. Those on layoff, strike or leave without pay for the entire pay period, or who have not yet reported for work are not counted as employed. Government employment covers only civilian employees.

\*THESE DATA ARE SEASONALLY ADJUSTED. Seasonal adjustment removes changes in employment due to normal seasonal hiring or layoffs (such as holidays, weather, etc.).



## DEFINITIONS

### QUARTERLY WORKFORCE INDICATORS

**Source: U.S. Census Bureau**

The Quarterly Workforce Indicators are data that can be examined by region, industry, gender and age of workers. These indicators are built upon wage records in the unemployment insurance system and information from state Quarterly Census of Employment and Wages (QCEW) data.

### QUARTERLY CENSUS OF EMPLOYMENT AND WAGES

**Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information, Quarterly Census of Employment and Wages**

**Business Establishment** – An establishment is the location of a certain economic activity, such as a factory, store, office or mine, which produces goods or services. It is typically at a single physical location and engaged in one, or predominantly one, type of economic activity. An employer may have one or more establishments.

**Employment** – Employment data include all employment covered under federal and Ohio unemployment insurance laws for each of the three months in a quarter. The employment count represents the number of full- and part-time employees who worked during or received pay for the payroll period including the 12<sup>th</sup> day of the month. The employment totals for each month are averaged for the quarter employment count. Those on paid vacations or paid sick leave are included. Workers temporarily earning no wages due to labor-management disputes, layoffs or other reasons are not reported as employed. Those on the payroll of more than one employer during the same reference week are reported more than once.

**Wages** – Wages include total compensation paid during a calendar quarter, including

bonuses. Average wages are calculated by dividing total wages for a quarter by average employment in that quarter.

### STAFFING PATTERNS (Key Occupations Section)

**Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information**

A staffing pattern is a list of the occupations most commonly found within a particular industry. This information comes from the biennial Long-Term Occupational Employment Projections data.

**Annual Median Wage** – The annual median wage earned by workers in an occupation, assuming 40 hours of work per week, 52 weeks a year. Wage data is derived from the annual Occupational Employment Statistics survey.

**Typical Education, Training and Experience** – To assist with career planning, the BLS has determined the typical education needed for entry into an occupation, years of commonly needed work experience in a related occupation, and typical on-the-job training needed to attain competency in the occupation. For definitions of available categories, see [www.bls.gov/emp/ep\\_definitions\\_edtrain.pdf](http://www.bls.gov/emp/ep_definitions_edtrain.pdf).

#### Typical Education Levels

- Less than high school
- High school diploma or equivalent (HS/GED)
- Postsecondary non-degree award (Post-HS Cert.)
- Associate's degree
- Bachelor's degree
- Master's degree
- Doctoral or professional degree

#### Work Experience in a Related Occupation

- 5 years or more
- Less than 5 years

## DEFINITIONS

### Typical On-The-Job (OJT) Training

- Long-term OJT – More than 12 months OJT or combined work experience and formal classroom instruction
- Moderate-term OJT – One to 12 months OJT and informal training
- Short-term OJT – Less than one month OJT

### HELP WANTED ONLINE ADS

#### Source: The Conference Board Help Wanted OnLine™ Data Set

The Conference Board HWOL data set provides real-time insight into the employment marketplace through the world's largest database of online job ads. Jobs ads can be classified by industry, occupation, employer and geographic area.

Data are analyzed for employment trends and to forecast economic conditions. The underlying data for The Conference Board HWOL are provided by Wanted Technologies Corporation.

### NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CHANGES

NAICS, established in 1997, is reviewed for potential revisions every five years. The latest revision, in 2012, was implemented by BLS in the QCEW program with the release of first quarter 2011 data. As part of this revision, the NAICS code of only one shale-related industry was impacted: NAICS 331111 (Iron & Steel Mills). The NAICS 2012 structure eliminated NAICS 331111, combining it with NAICS 331112 (Electrometallurgical ferroalloy product manufacturing) to form NAICS 331110 (Iron & Steel Mills and Ferroalloy Manufacturing).

#### Core Shale-Related Industries (NAICS):

Crude Petroleum & Natural Gas Extraction (211111); Natural Gas Liquid Extraction (211112); Drilling Oil & Gas Wells (213111); Support Activities for Oil & Gas Operations (213112); Oil & Gas Pipeline & Related Structures Construction (237120); and Pipeline Transportation of Natural Gas (486210).

#### Ancillary Shale-Related Industries (NAICS):

Fossil Fuel Electric Power Generation (221112); Natural Gas Distribution (221210); Water Supply & Irrigation Systems (221310); Sewage Treatment Facilities (221320); Water & Sewer Line & Related Structures Construction (237110); Highway, Street, and Bridge Construction (237310); Nonresidential Site Preparation Contractors (238912); Petrochemical Manufacturing (325110); Industrial Gas Manufacturing (325120); Iron & Steel Mills & Ferroalloy Manufacturing (3311101); Iron & Steel Pipe & Tube Manufacturing from Purchased Steel (331210); Mining Machinery & Equipment Manufacturing (333131); Oil & Gas Field Machinery & Equipment Manufacturing (333132); Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers (423810); Industrial Machinery and Equipment Merchant Wholesalers (423830); Industrial Supplies Merchant Wholesalers (423840); General Freight Trucking, Local (484110); Specialized Freight Trucking, Local (484220); Specialized Freight Trucking, Long-Distance (484230); Lessors of Other Real Property (531190); Construction, Mining & Forestry Machinery & Equipment Rental & Leasing (532412); Engineering Services (541330); Geophysical Surveying & Mapping Services (541360); Testing Laboratories (541380); Environmental Consulting Services (541620); Remediation Services (562910); Commercial & Industrial Machinery & Equipment Repair & Maintenance (811310); Administration of Air and Water Resource and Solid Waste Management Programs (924110); Administration of Conservation Programs (924120); and Regulation and Administration of Communications, Electric, Gas, and Other Utilities (926130).

## DEFINITIONS

### WORKFORCE INFORMATION EXCHANGE

**Source: Governor's Office of Workforce Transformation**

(<http://workforce.ohio.gov/>)

The Governor's Office of Workforce Transformation deployed a statewide jobs forecasting tool to the top companies of predefined industry clusters. These companies represent small, medium and large businesses with at least 10 employees and at least one Ohio location. Through the forecasting tool, businesses identify the top five critical, difficult-to-fill job needs over the next one, three and five years. The information from the forecast tool is aggregated with current job postings in OhioMeansJobs and occupation projections from ODJFS to better align the in-demand jobs with education and training providers and Ohio's workforce development system.





John R. Kasich, Governor  
State of Ohio

Cynthia C. Dungey, Director  
Ohio Department of Job and Family Services

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