

MARCELLUS SHALE FAST FACTS

AUGUST 2013 EDITION*

Each of the following sections is a quick snapshot of labor market information for Pennsylvania's Marcellus Shale (MS) related industries and related economic activity.

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*Note: Data sets from the Quarterly Census of Employment and Wages (QCEW) and the New Hires Program in this edition are for 2012Q4 and 2013Q2, respectively. For both data sets, this is the most current data available. Because neither data set is seasonally adjusted, the same quarter must be used when analyzing growth over time, in order to ensure seasonal factors are not influencing employment change. Therefore, 2012Q4 QCEW data are compared to 2009Q4, and 2013Q2 New Hire data are compared to 2nd quarter data for 2010, 2011, and 2012.

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CWIA-MS

BACKGROUND INFORMATION

The purpose of this Fast Facts publication is to provide the most current available data on Marcellus Shale related economic activity. While several data sources are utilized in this document, the primary source is the Quarterly Census of Employment and Wages (QCEW).

The QCEW program derives its data from quarterly tax reports submitted to the Pennsylvania Unemployment Compensation system by employers subject to the state's unemployment insurance laws. This includes 95 percent or more of all wage and salary civilian employment in Pennsylvania.

In 2009, CWIA used the North American Industry Classification System (NAICS) to define the Marcellus Shale related industries. Much of the information included in this document reflects data on a group of six industries identified as "core," and a group of 30 industries identified as "ancillary" for Marcellus Shale related activity (see notes section below).

As Marcellus Shale related activity develops further in Pennsylvania, additional industries may be added to the ancillary group, based on factors such as significant employment gains in an industry in a Marcellus Shale geographic region or identification of a group of companies in the same industry involved in Marcellus Shale related activity. Of the current 30 ancillary industries, nine have been added since the April 2011 edition of this publication (* denotes one of the new nine).

Also included in this publication are several additional data sources that capture employer demand and hiring activity. For an explanation of all data sources, please refer to the "Definitions" section on page 17.

The data in this edition include government (federal, state, and local) employment in all Marcellus Shale related industries because significant non-private employment is present in a number of these industries, most notably: Highway, Street, & Bridge Construction; Engineering Services; Water Supply & Irrigation Systems; and Sewage Treatment Facilities.

Notes:

Marcellus Shale Core Industries (NAICS): Crude Petroleum & Natural Gas Extraction (21111); Natural Gas Liquid Extraction (21112); Drilling Oil & Gas Wells (21311); Support Activities for Oil & Gas Operations (21312); Oil & Gas Pipeline & Related Structures Construction (23712); and Pipeline Transportation of Natural Gas (486210).

Marcellus Shale Ancillary Industries (NAICS): Fossil Fuel Electric Power Generation (22112); Natural Gas Distribution (22120); Water Supply & Irrigation Systems (22130); Sewage Treatment Facilities (22132); Water & Sewer Line & Related Structures Construction (23710); Highway, Street, and Bridge Construction (23730)*; 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)*; Regulation and Administration of Communications, Electric, Gas, and Other Utilities (926130)*.

While the vast majority of Marcellus Shale related employment can be found in these industries, not all establishments in these industries are involved in Marcellus Shale. Asterisks indicate industries that have been added to the group of ancillary industries since the April 2011 edition of this publication.

¹NAICS 331110 replaced NAICS 331111 due to a change made by the Bureau of Labor Statistics – for an explanation of the implications of this change, please refer to page 19 in the "Definitions" section.

PENNSYLVANIA

ECONOMIC BACKGROUND

- **Pennsylvania's seasonally adjusted unemployment rate for July 2013 was 7.5%.**
 - This was higher than the U.S. rate of 7.4%.
 - O-T-M change was 0.0 percentage points.
 - O-T-Y change was -0.6 percentage points.
- **Pennsylvania's seasonally adjusted total nonfarm jobs for July 2013 was 5,751,900.**
 - O-T-M change was -1,700 (-0.0%)
 - O-T-Y change was +27,600 (+0.5%)
 - PA was still down 60,600 jobs since the start of the recession (December 2007).
- **Pennsylvania's new hire activity increased.**
 - There were 632,100 new hires across all industries in the 2nd quarter of 2013.
 - This was an increase of 50,800 (8.7%) from the 2nd quarter of 2012.
- **Employer demand increased slightly in Pennsylvania.**
 - 208,271 job ads were posted online in July 2013.
 - This was an increase of 8,608 (4.3%) over July 2012.
- **In Pennsylvania there were 2.5 unemployed persons for every online job posting in July 2013.**
 - The Pennsylvania rate was greater than the U.S. rate, which stood at 2.4.
 - The Pennsylvania rate was down from a peak of 4.8 unemployed per online job posting in late 2009.

O-T-M: Over-the-Month
O-T-Y: Over-the-Year

MARCELLUS SHALE RELATED

INDUSTRIES EMPLOYMENT:

SUMMARY STATISTICS

Employment (2009Q4 to 2012Q4):

- Core industries were up 18,181 (+149.2%).
- Ancillary industries were up 15,234 (+7.9%).
- All industries increased 146,583 (+2.7%).
- 2012Q4 Marcellus Shale related industries total employment was 239,474.

Establishments (2009Q4 to 2012Q4):

- 1,203 establishments were added (353 core, 850 ancillary).
- This represented 49.3% growth in the core industries and 7.0% growth in the ancillary industries; over the same time period, PA experienced 4.9% growth for all industries.
- Marcellus Shale related industries totaled 14,148 establishments in 2012Q4.

Wages (2012Q1 through 2012Q4):

- The average wage across all industries was \$48,400.
- The average wage in the core industries was \$83,100 which was approximately \$34,700 greater than the average for all industries.
- The average wage in the ancillary industries was \$65,100, which was approximately \$16,700 greater than the average for all industries.

New Hires (2010Q2 to 2013Q2):

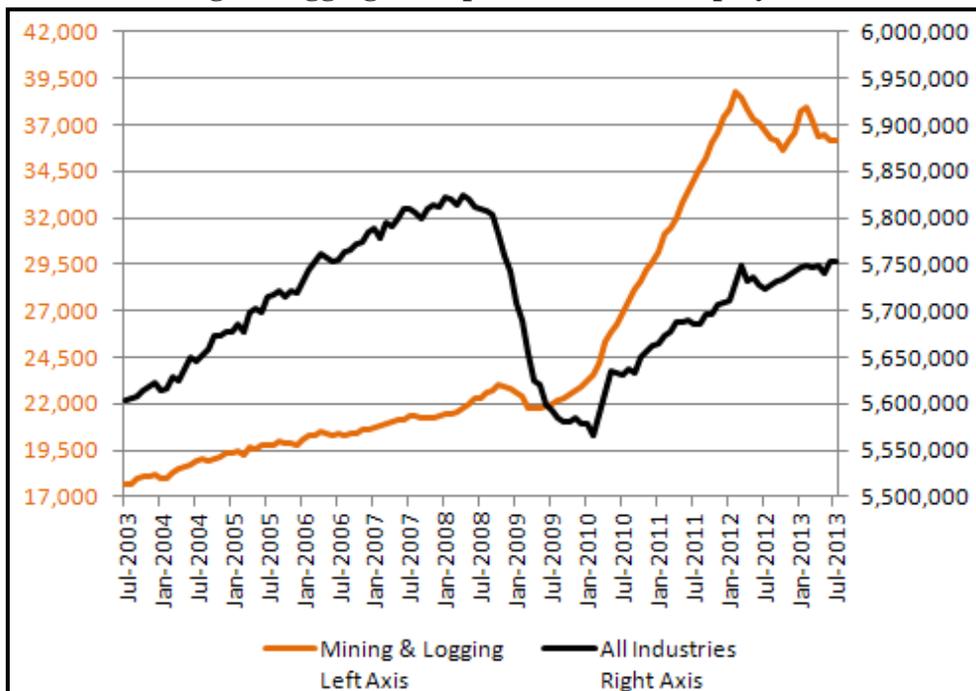
- Statewide new hires in the core industries were 35.0% higher in 2013Q2 than in 2010Q2.
- Statewide new hires in the ancillary industries were 17.9% higher in 2013Q2 than in 2010Q2.
- New hire counts also increased both in core industries (2.2%) and in Ancillary industries (6.6%) from 2012Q2 to 2013Q2.
- Statewide new hires across all industries were 21.6% higher in 2013Q2 than in 2010Q2; statewide new hires across all industries increased by 8.7% from 2012Q2 to 2013Q2.

Online Job Postings (July 2013):

- There were about 4,000 online job postings statewide in core and ancillary industries.

MINING JOBS VS. TOTAL JOBS IN PENNSYLVANIA

Mining & Logging¹ Compared to Total Employment



Current Employment Statistics (All data are seasonally adjusted)

- Total Pennsylvania jobs were 5,751,900 (July 2013).
 - O-T-M change was -1,700 (-0.0%).
 - O-T-Y change was +27,600 (+0.5%).
 - Change from 10 years ago was +149,000 (+2.7%).
- Mining & Logging employment in Pennsylvania was 36,200.
 - O-T-M change was 0 (0.0%).
 - O-T-Y change was -500 (-1.4%).
 - Change from 10 years ago was +18,500 (+104.5%).

O-T-M: Over-the-Month
O-T-Y: Over-the-Year

¹ Mining & Logging data are seasonally adjusted. Mining data, which are included in Mining & Logging, are not seasonally adjusted.

PENNSYLVANIA MARCELLUS SHALE RELATED INDUSTRIES DATA

Establishments & Employment in CWIA's Identified Core & Ancillary Marcellus Shale Related Industries

Core Industries		2009Q4		2012Q4 ¹		Vol. Change	
NAICS	Title	Est.	Emp.	Est.	Emp.	Est.	Emp.
211111	Crude Petroleum & Natural Gas Extraction	206	2,719	234	4,922	28	2,204
211112	Natural Gas Liquid Extraction	14	180	23	637	9	457
213111	Drilling Oil & Gas Wells	96	2,309	117	3,441	21	1,132
213112	Support Activities for Oil & Gas Operations	192	3,102	401	10,869	209	7,767
237120	Oil & Gas Pipeline & Related Structures	78	2,523	159	8,814	81	6,291
486210	Pipeline Transportation of Natural Gas	130	1,356	135	1,685	5	329
Totals		716	12,188	1,069	30,369	353	18,181
Ancillary Industries		2009Q4		2012Q4 ¹		Vol. Change	
NAICS	Title	Est.	Emp.	Est.	Emp.	Est.	Emp.
221112	Fossil Fuel Electric Power Generation	65	4,269	69	3,846	4	-423
221210	Natural Gas Distribution	158	4,731	172	5,324	14	593
221310	Water Supply & Irrigation Systems	375	6,806	385	6,829	10	23
221320	Sewage Treatment Facilities	479	4,333	493	4,378	14	45
237110	Water, Sewer, & Related Structure Const.	374	6,427	364	6,029	-10	-398
237310	Highway, Street, & Bridge Construction	533	21,091	532	21,228	-1	137
238912	Nonresidential Site Preparation Contractors	635	8,931	661	9,110	26	179
325110	Petrochemical Manufacturing	3	628	5	599	2	-30
325120	Industrial Gas Manufacturing	34	1,463	36	1,489	2	26
331110*	Iron & Steel Mills & Ferroalloy Mfg.	64	12,463	60	13,582	-4	1,119
331210	Iron, Pipe, & Tube Mfg. from Prchsd. Steel	41	3,615	36	3,472	-5	-143
333131	Mining Machinery & Equipment Mfg.	22	3,105	25	3,422	3	317
333132	Oil & Gas Field Machinery & Equip. Mfg.	8	296	10	426	2	130
423810	Const. & Mining Mach. Equip. Wholesalers	214	3,603	203	3,585	-11	-18
423830	Industrial Machinery & Equip. Wholesalers	987	11,104	972	12,330	-15	1,226
423840	Industrial Supplies Merchant Wholesalers	319	3,089	352	3,764	33	675
484110	General Freight Trucking, Local	1,173	8,505	1,385	10,740	212	2,235
484220	Specialized Freight Trucking, Local	1,023	9,988	1,271	12,942	248	2,954
484230	Specialized Freight Trucking, Long-Distance	267	3,521	290	3,502	23	-18
531190	Lessors of Other Real Estate Property	240	786	252	900	12	114
532412	Const., Mining, & Forestry Equip. Rental	119	2,247	163	3,177	44	930
541330	Engineering Services	2,459	41,577	2,585	44,159	126	2,582
541360	Geophysical Surveying & Mapping Services	53	227	58	340	5	113
541380	Testing Laboratories	386	7,219	407	9,100	21	1,881
541620	Environmental Consulting Services	467	3,036	497	3,402	30	365
562910	Remediation Services	237	2,596	250	2,857	13	261
811310	Comm. & Industrial Mach. & Equip. Repair	1,024	7,669	1,074	8,096	50	427
924110	Admin. of Air & Water Res. & Waste Mgmt.	104	4,621	109	4,710	5	89
924120	Admin. of Conservation Programs	318	4,424	315	4,357	-3	-66
926130	Reg. & Admin. of Comm., Elec., Gas, & Util.	48	1,501	48	1,411	0	-90
Totals		12,229	193,871	13,079	209,105	850	15,234

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- From 2009Q4 to 2012Q4, employment in Core industries increased by 149.2%.
- Over the same period, employment in the Ancillary industries was up 7.9%.
- Employment across all industries increased 2.7% (146,583) over the same time period.

¹2012Q4 QCEW data are initial. These data may be revised upon release of QCEW 2013Q1 data.

Notes: These data are not seasonally adjusted. While most change was due to actual growth or decline, some movement may be due to seasonal patterns or administrative changes to data.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on Page 19.

WORKFORCE INVESTMENT AREA MARCELLUS SHALE RELATED INDUSTRIES DATA¹

The tables below depict employment growth in the core and ancillary industries for Workforce Investment Areas (WIA) with substantial Marcellus Shale drilling activity.

Northern Tier	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	217	2,726	2,509	1156.2%
Ancillary	1,965	3,925	1,960	99.7%

Southwest Corner	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	990	4,612	3,622	365.9%
Ancillary	10,072	11,910	1,838	18.2%

Central	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	184	2,576	2,392	1300.0%
Ancillary	9,265	10,775	1,510	16.3%

North Central	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	2,031	2,692	661	32.5%
Ancillary	3,890	4,655	765	19.7%

Tri-County	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	2,503	2,942	439	17.5%
Ancillary	9,202	9,305	103	1.1%

Westmoreland & Fayette	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	537	1,887	1,350	251.4%
Ancillary	10,357	11,313	956	9.2%

6 WIA Total	2009Q4	2012Q4 ¹	Vol. Change	Pct. Change
Core	6,462	17,435	10,973	169.8%
Ancillary	44,751	51,883	7,132	15.9%

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- Southwest Corner WIA experienced the largest volume increase in Marcellus Shale Core Industries, with an increase of 3,622 employees; Northern Tier WIA was second with a volume increase of 2,509 employees. Central WIA experienced the largest percentage increase in Core industry employment, equal to 1300.0%; second was Northern Tier WIA with an increase of 1156.2%.
- Northern Tier WIA experienced the most growth in Marcellus Shale Ancillary industries in terms of both volume and percentage with an increase of 1,960 employees; this represents a 99.7% increase.
- Across all six WIAs, employment in the Core industries increased by 169.8%; Ancillary industries employment increased by 15.9%.

¹2012Q4 QCEW data are initial. These data may be revised upon release of QCEW 2013Q1 data.

Notes: These data are not seasonally adjusted. While most change was due to actual growth or decline, some movement may be due to seasonal patterns or administrative changes to data.

WAGES FOR MARCELLUS SHALE CORE AND ANCILLARY INDUSTRIES¹

Core Industries Title	Average Wage ²
Crude Petroleum & Natural Gas Extraction	\$110,192
Natural Gas Liquid Extraction	\$94,653
Drilling Oil & Gas Wells	\$86,152
Support Activities for Oil & Gas Operations	\$69,889
Oil & Gas Pipeline & Related Structures Construction	\$82,818
Pipeline Transportation of Natural Gas	\$86,163
Average	\$83,096
Ancillary Industries Title	Average Wage ²
Fossil Fuel Electric Power Generation	\$114,928
Natural Gas Distribution	\$78,881
Water Supply & Irrigation Systems	\$55,823
Sewage Treatment Facilities	\$45,582
Water & Sewer Line & Related Structures Construction	\$67,635
Highway, Street, & Bridge Construction	\$55,563
Nonresidential Site Preparation Contractors	\$53,298
Petrochemical Manufacturing	\$78,923
Industrial Gas Manufacturing	\$127,762
Iron & Steel Mills & Ferroalloy Manufacturing*	\$75,905
Iron & Steel Pipe & Tube Manufacturing from Purchased Steel	\$61,747
Mining Machinery & Equipment Manufacturing	\$64,418
Oil & Gas Field Machinery & Equipment Manufacturing	\$73,586
Construction & Mining Machinery Equipment Wholesalers	\$64,508
Industrial Machinery & Equipment Merchant Wholesalers	\$68,967
Industrial Supplies Merchant Wholesalers	\$62,365
General Freight Trucking, Local	\$42,272
Specialized Freight Trucking, Local	\$45,976
Specialized Freight Trucking, Long-Distance	\$51,630
Lessors of Other Real Estate Property	\$36,241
Construction, Mining, & Forestry Machinery & Equip. Rental	\$78,157
Engineering Services	\$78,813
Geophysical Surveying & Mapping Services	\$59,343
Testing Laboratories	\$65,634
Environmental Consulting Services	\$68,496
Remediation Services	\$57,107
Commercial & Industrial Mach. & Equip. Repair & Maintenance	\$53,879
Admin. of Air & Water Res. & Solid Waste Mgmt. Programs	\$60,683
Admin. of Conservation Programs	\$49,361
Reg. & Admin. Of Communications, Electric, Gas, & Other Utils.	\$79,776
Average	\$65,097

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- The average wage across all industries for 2012Q1 through 2012Q4 was \$48,391.
- The average wage in the core industries was \$34,705 greater than the average for all industries; the average wage in the ancillary industries was \$16,706 higher.

¹ Average Wages for these industries were calculated by combining the most recent four quarters of available wage data; in this case 2012Q1 through 2012Q4.

²2012Q4 QCEW data are initial. These data may be revised upon release of QCEW 2013Q1 data.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on page 19.

PENNSYLVANIA & WORKFORCE **INVESTMENT AREA MARCELLUS SHALE** **RELATED INDUSTRIES ONLINE JOB** **POSTING ACTIVITY¹**

Pennsylvania Statewide Online Job Postings

Area	July-2013	July-2012	Pct. Change
Total All Industries²	208,271	199,663	4.3%
Core Industries	337	261	29.1%
Ancillary Industries	3,633	3,571	1.7%
Total MS related	3,970	3,832	3.6%

Select WIA Online Job Postings (core & ancillary combined)

WIA	July-2013	July-2012	Pct. Change
Northern Tier	64	66	-3.0%
Southwest Corner	195	183	6.6%
Central	201	214	-6.1%
North Central	74	50	48.0%
Tri-County	225	217	3.7%
Westmoreland & Fayette	93	116	-19.8%
Total	852	846	0.7%

- **Pennsylvania Online Job Postings**
 - In July 2013, total job postings across all industries for Pennsylvania increased by 4.3% over July 2012.
 - Online postings for statewide Marcellus Shale related (core + ancillary) industries increased by 3.6% over the same period.
- **WIA Online Job Postings**
 - Three WIAs with substantial Marcellus Shale drilling activity experienced an increase in online job posting activity O-T-Y, while the other three saw an annual decrease in HWOL postings.
 - The North Central WIA experienced the largest O-T-Y increase in Marcellus Shale related job posting activity, rising by 48.0% followed by Southwest Corner WIA, which rose 6.6%
 - The six WIAs with substantial Marcellus Shale drilling activity saw online job postings increase by a combined 0.7%.

¹ Job Postings are counted using Wanted Analytics' Help Wanted Online job posting Spidering tool. Job posting increases should be viewed as an indication of **trend only**. For a complete explanation of this data set, please refer to the Definitions section of this document.

² Total Job postings in this table may not be equal to total postings for July 2013 published in the August 2013 edition of the Pennsylvania Fast Facts, due to continuous updates to the data.

2012 STATEWIDE HIGH-PRIORITY OCCUPATIONS **RELATED TO MARCELLUS SHALE**

The occupations listed in the table below are found within the staffing patterns of Marcellus Shale related core and ancillary industries and have been identified as High-Priority for Pennsylvania. High-Priority Occupations (HPOs) are identified as in demand by employers, have higher skills needs, and are most likely to provide family sustaining wages.

A Standard Occupational Code (SOC) is provided for each occupation. For a complete list of terms, please refer to the Staffing Pattern definition on page 18.

SOC Code	SOC Title	Average Annual Wage	Education Level
13-2011	Accountants & Auditors	\$70,650	Bachelor's degree
17-3011	Architectural & Civil Drafters	\$46,740	Associate degree
43-3031	Bookkeeping, Accounting & Auditing Clerks	\$36,140	Moderate-term OJT
49-3031	Bus, Truck & Diesel Engine Mechanics	\$41,300	Long-term training
17-2051	Civil Engineers	\$77,600	Bachelor's degree
47-4011	Construction & Building Inspectors	\$48,100	HS diploma plus expr
43-4051	Customer Service Representatives	\$34,030	Short-term OJT
49-9051	Electrical Power-Line Installers & Repairers	\$59,080	Long-term training
11-1021	General & Operations Managers	\$111,730	Associate plus expr
53-3032	Heavy & Tractor-Trailer Truck Drivers	\$41,920	HS diploma plus expr
49-9041	Industrial Machinery Mechanics	\$45,570	Long-term training
51-9061	Inspectors, Testers & Sorters	\$37,770	Moderate-term OJT
53-3033	Light Truck/Delivery Drivers	\$31,950	Short-term OJT
49-9071	Maintenance & Repair Workers, General	\$36,630	Moderate-term OJT
17-2141	Mechanical Engineers	\$79,300	Bachelor's degree
43-9061	Office Clerks, General	\$29,440	Short-term OJT
47-2073	Operating Engineers	\$45,510	Moderate-term OJT
47-2152	Plumbers, Pipefitters & Steamfitters	\$52,740	Long-term training
47-5012	Rotary Drill Operators, Oil & Gas	\$46,080	Moderate-term OJT
47-5071	Roustabouts, Oil & Gas	\$35,930	Moderate-term OJT
41-4012	Sales Representatives	\$64,760	Moderate-term OJT
43-6014	Secretaries	\$31,750	Short-term OJT
47-5013	Service Unit Operators, Oil, Gas & Mining	\$48,170	Moderate-term OJT
47-1011	Supervisors - Construction/Extraction Workers	\$66,410	HS diploma plus expr
53-1031	Supervisors - Transportation & Vehicle Oprs	\$58,360	HS diploma plus expr
49-9052	Telecommunications Line Installers/Repairers	\$56,030	Long-term training
51-4121	Welders, Cutters, Solderers & Brazers	\$37,530	Moderate-term OJT
53-7073	Wellhead Pumpers	\$36,430	Moderate-term OJT

Source: *The Center for Workforce Information & Analysis*

Workforce development funding in the commonwealth may be available for training programs required to enter these occupations.

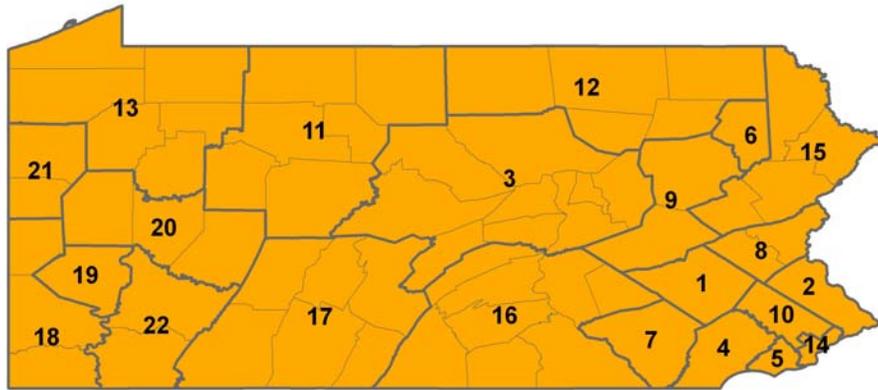
2012 REGIONAL HIGH-PRIORITY OCCUPATIONS RELATED TO MARCELLUS SHALE

The occupations listed in the table below are found within the staffing patterns of Marcellus Shale related core industries and have been identified as High-Priority for certain Workforce Investment Areas (WIAs).¹ High Priority Occupations (HPOs) are identified as in demand by employers, have higher skills needs, and are most likely to provide family sustaining wages.

A Standard Occupational Code (SOC) is provided for each occupation. For a complete list of terms, please refer to the Staffing Pattern definition on page 18.

SOC Code	SOC Title	Education Level	HPO in WIA Numbers
47-2061	Construction Laborers	Short-term OJT	1,2,3,4,5,7,10,14
47-5011	Derrick Operators, Oil & Gas	Short-term OJT	3,11,12,13,18,19,20,21,22
17-2071	Electrical Engineers	Bachelor's degree	1,2,4,5,7,8,10,14
53-7032	Excavating & Loading Machine Oprs	HS diploma plus expr	8
53-7071	Gas Compressor Oprs	Moderate-term OJT	3,12
49-3042	Mobile Heavy Equipment Mechanics	Long-term training	3,12
53-7072	Pump Operators	Moderate-term OJT	3,12

Source: The Center for Workforce Information & Analysis



Workforce development funding in the commonwealth may be available for training programs required to enter these occupations.

¹ These occupations were added to Local Workforce Investment Areas HPO lists through the HPO petition process.

WIA #	WIA Name	WIA #	WIA Name
1	Berks County WIA	12	Northern Tier WIA
2	Bucks County WIA	13	Northwest WIA
3	Central WIA	14	Philadelphia County WIA
4	Chester County WIA	15	Pocono Counties WIA
5	Delaware County WIA	16	South Central WIA
6	Lackawanna County WIA	17	Southern Alleghenies WIA
7	Lancaster County WIA	18	Southwest Corner WIA
8	Lehigh Valley WIA	19	Three Rivers WIA
9	Luzerne-Schuylkill Counties WIA	20	Tri-County WIA
10	Montgomery County WIA	21	West Central WIA
11	North Central WIA	22	Westmoreland-Fayette Counties WIA

PENNSYLVANIA MARCELLUS SHALE RELATED INDUSTRIES NEW HIRES

Core Industries Title	Volume of New Hires by Quarter				Change 2010Q2 - 2013Q2		
	2010Q2	2011Q2	2012Q2	2013Q2	Vol.	Pct.	
Crude Petroleum & Natural Gas Extraction	418	366	368	399	-19	-4.5%	
Natural Gas Liquid Extraction	44	73	38	36	-8	-18.2%	
Drilling Oil & Gas Wells	351	453	340	318	-33	-9.4%	
Support Activities for Oil & Gas Operations	697	1,070	793	804	107	15.4%	
Oil & Gas Pipeline & Related Structures	199	253	721	753	554	278.4%	
Pipeline Transportation of Natural Gas	16	19	18	18	2	12.5%	
Total	1,725	2,234	2,278	2,328	603	35.0%	
Ancillary Industries Title		Volume of New Hires by Quarter				Change 2010Q2 - 2013Q2	
		2010Q2	2011Q2	2012Q2	2013Q2	Vol.	Pct.
Fossil Fuel Electric Power Generation		30	25	42	12	-18	-60.0%
Natural Gas Distribution		171	225	229	241	70	40.9%
Water Supply & Irrigation Systems		70	125	120	148	78	111.4%
Sewage Treatment Facilities		111	107	91	93	-18	-16.2%
Water, Sewer Line & Related Structures		470	505	479	562	92	19.6%
Highway, Street, & Bridge Construction		3,337	3,225	2,855	3,190	-147	-4.4%
Nonresidential Site Preparation Contractors		748	792	677	749	1	0.1%
Petrochemical Manufacturing		9	17	12	12	3	33.3%
Industrial Gas Manufacturing		11	45	36	41	30	272.7%
Iron & Steel Mills & Ferroalloy Mfg.*		444	692	530	359	-85	-19.1%
Iron, Steel Pipe, Tube Mfg. from Prchsd. Steel		181	246	237	174	-7	-3.9%
Mining Machinery & Equipment Mfg.		183	339	299	253	70	38.3%
Oil & Gas Field Machinery & Equipment		6	5	12	26	20	333.3%
Const. & Mining Mach. Equip. Wholesalers		215	200	161	158	-57	-26.5%
Industrial Mach. & Equip. Wholesalers		448	655	709	622	174	38.8%
Industrial Supplies Merchant Wholesalers		254	307	264	251	-3	-1.2%
General Freight Trucking, Local		521	606	1014	809	288	55.3%
Specialized Freight Trucking, Local		570	986	959	1,048	478	83.9%
Specialized Freight Trucking, Long-Distance		225	198	197	206	-19	-8.4%
Lessors of Other Real Estate Property		56	46	17	46	-10	-17.9%
Const., Mining, & Forestry Mach. & Equip.		191	190	265	320	129	67.5%
Engineering Services		3,662	5,199	4,014	5,241	1,579	43.1%
Geophysical Surveying & Mapping Services		11	14	30	25	14	127.3%
Testing Laboratories		767	794	852	539	-228	-29.7%
Environmental Consulting Services		207	317	278	254	47	22.7%
Remediation Services		435	465	397	398	-37	-8.5%
Commercial & Industrial Mach. & Equip.		329	442	320	294	-35	-10.6%
Admin. Of Air & Water Res. & Waste		11	14	11	14	3	27.3%
Admin. Of Conservation Programs		14	7	33	52	38	271.4%
Reg. & Admin. of Comm., Elec., Gas &		0	0	0	0	0	0
Totals		13,687	16,788	15,140	16,137	2,450	17.9%

- In 2013Q2 there were 2,328 New Hires in the Marcellus Shale related core industries. This was 35.0% higher than 2010Q2 and 2.2% higher than 2012Q2.
- In 2013Q2 there were 16,137 New Hires in the Marcellus Shale related ancillary industries. This was 17.9% higher than 2010Q2 and 6.6% higher than 2012Q2.
- Across all industries in Pennsylvania, total New Hires in 2013Q2 were 21.6% higher than in 2010Q2 and 8.7% higher than 2012Q1.

Note: In every economy there is job creation and job destruction every month and the result is employment change. New hires are linked to job creation; however, an increase in new hires does not directly equate to an increase in the total employment count. The new hires count is simply an indication of hiring activity in an industry. Separations, in the form of layoffs or quits, are linked to job destruction and account for the other half of the employment change equation. The balance of hires and separations result in the employment change.

*NAICS definition implemented with 2011Q1 data. Please see [NAICS Changes in "Definitions" section on page 19.](#)

WORKFORCE INVESTMENT AREA

MARCELLUS SHALE RELATED

INDUSTRIES NEW HIRES

The tables below depict the number of new hires in the core and ancillary industries for WIAs with substantial Marcellus Shale drilling activity during the first quarter of each year from 2010 to 2013. Volume change and percent change are both based on 2010Q2 to 2013Q2 calculations.

Northern Tier	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	64	199	204	386	322	503.1%
Ancillary	107	185	195	290	183	171.0%

Southwest Corner	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	204	220	293	320	116	56.9%
Ancillary	380	416	394	426	46	12.1%

Central	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	15	214	137	71	56	373.3%
Ancillary	259	416	373	417	158	61.0%

North Central	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	254	484	175	120	-134	-52.8%
Ancillary	108	169	125	149	41	38.0%

Tri-County	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	210	179	119	247	37	17.6%
Ancillary	516	594	423	366	-150	-29.1%

Westmoreland/Fayette	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	62	32	43	102	40	64.5%
Ancillary	634	705	755	817	183	28.9%

6 WIA Total	2010Q2	2011Q2	2012Q2	2013Q2	Vol. Change	Pct. Change
Core	809	1,328	971	1,246	437	54.0%
Ancillary	2,004	2,485	2,265	2,465	461	23.0%

- Across these six WIAs, there were greater than 50% more new hires in the Marcellus Shale related core industries in 2013Q2 than in 2010Q2; there were greater than 20% more new hires in the ancillary industries in 2013Q2 than in 2010Q2.
- Northern Tier WIA had the largest volume increase in the core industries with an increase of 322; Northern Tier WIA also had the largest percentage increase in the core industries with an increase of 503.1%.
- Overall the six WIAs had more core and ancillary new hires in 2013Q2 than in both 2010Q2 and 2012Q2.

QUARTERLY WORKFORCE INDICATORS

(based on the U.S. Census Bureau, Local Employment Dynamics (LED))

Percentage of Industry¹ Employment by Age Group (2012Q3)

Northern Tier	14-24	25-34	35-44	45-54	55+
All industry groups	15.8%	19.0%	19.8%	24.1%	21.2%
2111 Oil and Gas Extraction	9.4%	34.9%	24.2%	21.9%	9.4%
2131 Support Activities for Mining	16.4%	35.3%	22.1%	17.1%	9.3%
2371 Utility System Construction	13.1%	27.4%	18.6%	23.5%	17.6%
4862 Pipeline Transportation of Natural Gas	***	21.1%	24.2%	33.6%	***

Southwest Corner	14-24	25-34	35-44	45-54	55+
All industry groups	13.9%	19.5%	19.3%	23.6%	23.6%
2111 Oil and Gas Extraction	***	30.4%	21.8%	21.9%	14.0%
2131 Support Activities for Mining	16.7%	39.0%	22.7%	14.7%	7.0%
2371 Utility System Construction	13.7%	24.0%	22.4%	22.6%	17.3%
4862 Pipeline Transportation of Natural Gas	5.1%	17.3%	23.0%	27.0%	26.5%

Central	14-24	25-34	35-44	45-54	55+
All industry groups	14.8%	19.0%	19.7%	23.8%	22.7%
2111 Oil and Gas Extraction	17.4%	31.0%	28.4%	11.0%	***
2131 Support Activities for Mining	16.1%	36.0%	24.6%	16.4%	7.0%
2371 Utility System Construction	10.4%	26.1%	21.1%	23.9%	18.6%
4862 Pipeline Transportation of Natural Gas	***	17.9%	22.6%	36.8%	20.8%

North Central	14-24	25-34	35-44	45-54	55+
All industry groups	14.3%	18.0%	20.0%	24.9%	22.8%
2111 Oil and Gas Extraction	8.0%	23.7%	22.8%	25.7%	19.9%
2131 Support Activities for Mining	13.6%	31.9%	21.1%	20.8%	12.6%
2371 Utility System Construction	17.1%	22.7%	21.1%	23.4%	15.8%
4862 Pipeline Transportation of Natural Gas	4.5%	15.2%	19.2%	34.8%	26.8%

Tri-County	14-24	25-34	35-44	45-54	55+
All industry groups	14.7%	19.5%	19.6%	23.8%	22.5%
2111 Oil and Gas Extraction	6.9%	25.2%	21.2%	27.0%	19.6%
2131 Support Activities for Mining	13.9%	31.9%	22.5%	19.6%	12.1%
2371 Utility System Construction	5.2%	15.6%	21.0%	29.3%	29.0%
4862 Pipeline Transportation of Natural Gas	***	48.6%	14.3%	25.7%	8.6%

Westmoreland & Fayette	14-24	25-34	35-44	45-54	55+
All industry groups	14.4%	18.5%	19.4%	24.1%	23.6%
2111 Oil and Gas Extraction	***	33.9%	21.4%	25.1%	13.2%
2131 Support Activities for Mining	14.9%	31.1%	25.9%	17.5%	10.4%
2371 Utility System Construction	13.5%	21.5%	23.4%	26.7%	14.7%
4862 Pipeline Transportation of Natural Gas	***	22.6%	20.1%	30.5%	20.1%

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

- Workers in the Marcellus Shale related industry groups tended, on average, to be younger than the total across all industries.
- The percentage of workers in core related industry groups aged 55 and over was smaller than found across all industries.

¹ Local Employment Dynamics data are only available at the 4-digit NAICS level. While these industry groups contain some employment from non-Marcellus Shale related core industries, they help to provide an understanding of the industries' employment composition by age.

SHALENET TRAINING AND JOB PLACEMENT DATA¹:

(AS PROVIDED BY THE ALLEGHENY CONFERENCE ON COMMUNITY DEVELOPMENT)

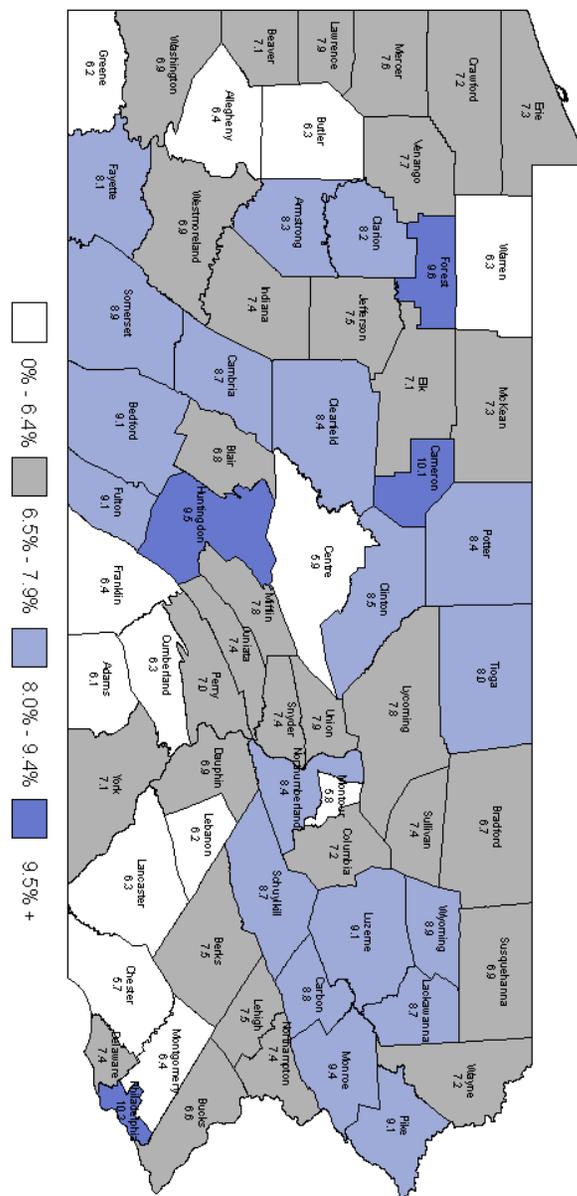
ShaleNET is a three-year, \$4.9 million grant from the United States Department of Labor, Employment and Training Administration. The mission of the grant is to design a comprehensive recruitment, training, placement, and retention program for high priority occupations in the natural gas drilling and production industry throughout the Marcellus Shale footprint. For more information visit www.shalenet.org.

July 1 st 2010 - December 31 st 2012	
Participants being served by ShaleNET	12,021
Beginning education and training activities	7,122
Completing training activities and education	5,047
Completed training with degree/certification	821
Employed	2,646

Top job placement for ShaleNET graduates, October 2010-January 2012:	
1	Roustabout
2	Floor hand
3	Truck driver
4	Mechanic
5	Casing specialist

¹Definitions for these indicators are as follows: *Participants served by ShaleNET* equals the total number of people who have registered with ShaleNET.org through the Talent Match System. *Beginning education and training activities* measures those participants who have begun ShaleNET training. *Completed training with degree/certificate* measures participants who have finished ShaleNET training. *Employed* represents training participants who have gained employment during or after ShaleNET training, through on-the-job training grants, as well as, those participants who have found jobs with the help of ShaleNET and Pennsylvania CareerLink.

PENNSYLVANIA UNEMPLOYMENT RATES BY COUNTY JULY 2013



DEFINITIONS:

LABOR FORCE STATISTICS* - Source: Pennsylvania 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 Local Area Unemployment Statistics (LAUS) program measures employment and unemployment on a place-of-residence basis and produces estimates using equations based on regression techniques. This method utilizes data from several sources, including the CPS, the Current Employment Statistics (CES) program, and state unemployment insurance (UI) programs. The LAUS program does not produce estimates for any demographic groups.

Unemployment Rate: The number of unemployed as a percent of the labor force.

Unemployment: All persons aged 16 years and older who had no employment during the reference week (contains the 12th day of the month), were available for work (except for temporary illness), and had made specific efforts to find employment sometime during the four-week period ending with the reference week. Persons who were waiting to be recalled to jobs from which they had been laid off need not to have been looking for work to be classified as unemployed.

Employment: All persons who, during the week which includes the 12th 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: All persons either working or looking for work or classified as employed or unemployed.

JOBS* - Source: Pennsylvania Department of Labor & Industry, Current Employment Statistics (CES)

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

Nonfarm Jobs: The total number of persons on establishment payrolls employed full or part time who received pay for any part of the pay period that includes the 12th 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 work during only part of the specified pay period. A striking employee who only works a small portion of the survey period, and is paid, would be included as employed under the CES definitions. Persons on the payroll of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed, unpaid family or volunteer workers, farm workers, and domestic workers. Persons 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 the change in employment that is due to normal seasonal hiring or layoffs (holidays, weather, etc.), thus leaving an over-the-month change that reflects only employment change due to trend and irregular movements.

DEFINITIONS:

QUARTERLY WORKFORCE INDICATORS - Source: U.S. Census Bureau, Local Employment Dynamics

The Quarterly Workforce Indicators (QWI) are a set of economic indicators that can be queried by different levels of geography as well as by industry, gender, and age of workers. The QWI are built upon wage records in the Unemployment Insurance (UI) system and information from state Quarterly Census of Employment and Wages (QCEW) data.

QUARTERLY CENSUS OF EMPLOYMENT AND WAGES - Source: The Pennsylvania Department of Labor & Industry, Quarterly Census of Employment and Wages

Employment: Employment data include all employment covered under the Pennsylvania Unemployment Compensation program for each of the three months in the quarter. The employment count represents the number of full-time and part-time employees who worked during or received pay for the payroll period including the 12th of the month. The employment totals for each month are averaged for the quarter employment count. Included are persons on paid vacations or on paid sick leave. Workers temporarily earning no wages due to labor-management disputes, layoffs or other reasons are not reported as employed. Persons on the payroll of more than one employer during the same reference week are reported more than once.

Establishment: The location of a certain economic activity, such as a factory, store, office, or mine, that 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.

Wages: Total 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 - Source: Pennsylvania Department of Labor & Industry

Staffing Pattern: A listing of the occupations most commonly found within a particular industry. This information comes from the biennial *Long-Term Occupational Employment Projections* data.

Average Annual Wage: The mean annual wage earned by workers in the occupation, assuming 40 hours per week, 52 weeks a year. Wage data is derived from the annual *Occupational Employment Statistics (OES)* survey.

Educational Attainment: The Bureau of Labor Statistics (BLS) provides information about entry-level education, related work experience, and typical on-the-job training requirements for each of several hundreds of occupations.

Educational Attainment Level Abbreviations:

- **Short-term or Moderate-term OJT** – basic tasks and skills are learned through a period of on-the-job training lasting up to one year. A high school diploma may be required.
- **Long-term training** – a high school diploma and at least one year of on-the-job training or an apprenticeship.
- **HS diploma plus experience** – a high school diploma and training gained through hands-on work in a similar occupation.
- **Postsecondary training** – training is gained through a postsecondary training program. Some period of related work experience may be required.
- **Associate degree** – degree completed after two years of full-time schooling beyond high school. Some period of related work experience may be required.
- **Bachelor's degree** – degree completed after four years of full-time schooling beyond high school. Some period of related work experience may be required.
- **Master's Degree** – degree completed after two years of full-time schooling beyond a bachelor's degree. Some period of related work experience may be required.
- **Doctoral, or Professional degree** – degree programs requiring 3-6 years of education at the college or university level beyond a four-year bachelor's degree.

DEFINITIONS:

NEW HIRES - Source: *The Pennsylvania Department of Labor & Industry*

New Hire Reporting is a process by which employers report information on all employees hired on or after January 1, 1998 to locate non-custodial parents, establish child support orders, or enforce existing orders. Company and individual data are confidential and cannot be reported on. However, the data can be aggregated to show where and in what industries hiring is taking place as an indication of which sectors of the economy are experiencing growth or decline. Approximately sixty percent of all new hires are captured. New hire counts by industry are an indication of trend only.

HELP WANTED ONLINE ADS - Source: *The Conference Board Help Wanted OnLine™ data set*

The Conference Board Help Wanted OnLine 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.

MAP OF MARCELLUS SHALE FORMATION - Source: *Department of Environmental Protection*

WORKFORCE INVESTMENT AREA (WIA)

A WIA is labor market area that is usually a group of contiguous counties, where employment, training and educational services are provided. Established through the Workforce Investment Act to provide services for dislocated workers and other eligible individuals, Pennsylvania's 22 WIAs are based on common geographic and economic factors.

NAICS CHANGES

The North American Industry Classification System (NAICS), established in 1997, is reviewed for potential revisions every five years. The latest revision (2012) was implemented by BLS in the QCEW program with the release of 1st quarter 2011 data. As part of this revision, the NAICS code of only one Marcellus 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). To account for this change, the Marcellus Shale ancillary industry list was modified to change NAICS 331111 to NAICS 331110, and all ancillary industry data will now include NAICS 331110. **To retain comparability, for time periods prior to 2011, data for NAICS 331111 & 331112 will be combined and shown under NAICS 331110.**

MARCELLUS SHALE FORMATION

