

# **United States Gulf of Mexico Oil and Natural Gas Industry Economic Impact Analysis**

*The Economic Impacts of GOM Oil and Natural Gas Development on the U.S. Economy*

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## Key Findings

This report has documented the decline in capital expenditures and operational spending of the GoM offshore oil and natural gas industry that occurred over the 2008 to 2010 period. The principal reasons for this decline include the economic recession in 2008-09 and the establishment of a moratorium on deepwater drilling and subsequent slowdown of permit issuance in both GoM deep and shallow waters in 2010 and into 2011. We estimate that tens of thousands of jobs have been lost in response to the decline in capital expenditures and operational spending of the offshore GoM oil and natural gas industry over this period.

We also demonstrate the near term potential of the offshore GoM oil and natural gas industry to create jobs, boost GDP and

generate tax revenues at all levels of government – if the government pursues a balanced regulatory approach that allows for the timely development of the backlog of GoM projects in an environmentally responsible manner. Under such government policy, we estimate total spending by the GoM offshore oil and natural gas industry to increase by over 70 percent by 2013 from 2010 levels, and capital expenditures to increase by over 140 percent. If potential spending levels are reached, total employment supported by the Gulf of Mexico oil and natural gas industry in 2013 could exceed 430 thousand jobs or a 77 percent increase from 2010.

**Table 1: Estimated Historical and Projected Capital and Operational Spending, GDP Impacts, and Employment<sup>1</sup> Supported by the Offshore Gulf of Mexico Oil and Natural Gas Industry (2008-2013)\***

(\$billions)	Historical			Projected		
	2008	2009	2010	2011	2012	2013
Operating Expenditures	\$16.7	\$17.2	\$17.7	\$21.6	\$25.0	\$25.7
Capital Expenditures	\$11.9	\$9.7	\$6.5	\$8.9	\$10.4	\$15.7
GDP Impacts	\$30.8	\$29.1	\$26.1	\$32.9	\$38.2	\$44.5
Total Employment	306,870	285,042	242,317	311,023	356,174	429,208

\*Projected spending, GDP, and employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

<sup>1</sup> Total employment includes direct, indirect, and income induced employment.



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## Executive Summary

The offshore oil and natural gas industry is instrumental to the United States both from an energy supply perspective and due to its contribution to U.S. GDP and job creation. In 2010, over 30 percent of the oil and 11 percent of the natural gas produced in the United States was produced in the Gulf of Mexico (GoM). This production is crucial to U.S. energy security. In addition, capital investment and purchases of intermediate inputs of the oil and natural gas industry stimulate its entire value chain and ripple through many sectors of the economy, creating jobs, contributing to GDP and generating tax revenue at all levels of government. Oil and natural gas industry activity supports employment across a wide swath of industries in manufacturing and services, including oil and natural gas machinery, air and marine transport, legal and insurance services.

This report builds out the entire value chain of oil and natural gas development and production in the Gulf of Mexico. It quantifies the capital investment and purchases of intermediate goods undertaken by the oil and natural gas industry, identifies linkages to supplying industries, and estimates both job creation and contribution to GDP associated with oil and natural gas development. A unique feature and strength of this study is the primary nature of the capital investment and spending data. Quest Offshore Resources, Inc. (Quest), drawing on its proprietary database of suppliers of

capital equipment and intermediate goods to Gulf of Mexico oil and natural gas operations, is able to bring primary data to bear on the issues of importance to this study.

## Capital Investment and Spending of the Oil and Natural Gas Industry – Gulf of Mexico

### Historical Spending 2008-2010

The development of oil and natural gas resources in the offshore Gulf of Mexico is highly capital intensive. Total industry investment and spending in the GoM is estimated to have been \$80 billion from 2008 to 2010 or an average of \$26.5 billion a year<sup>2</sup> (Figure 1). Capital investments, which are required to bring new oil and natural gas production online, totaled \$28.0 billion over the same three-year period, averaging \$9.3 billion per year over this period. Operating expenditures, which are comprised of purchases of intermediate inputs totaled \$51.6 billion or an average of \$17.2 billion per year<sup>3</sup>.

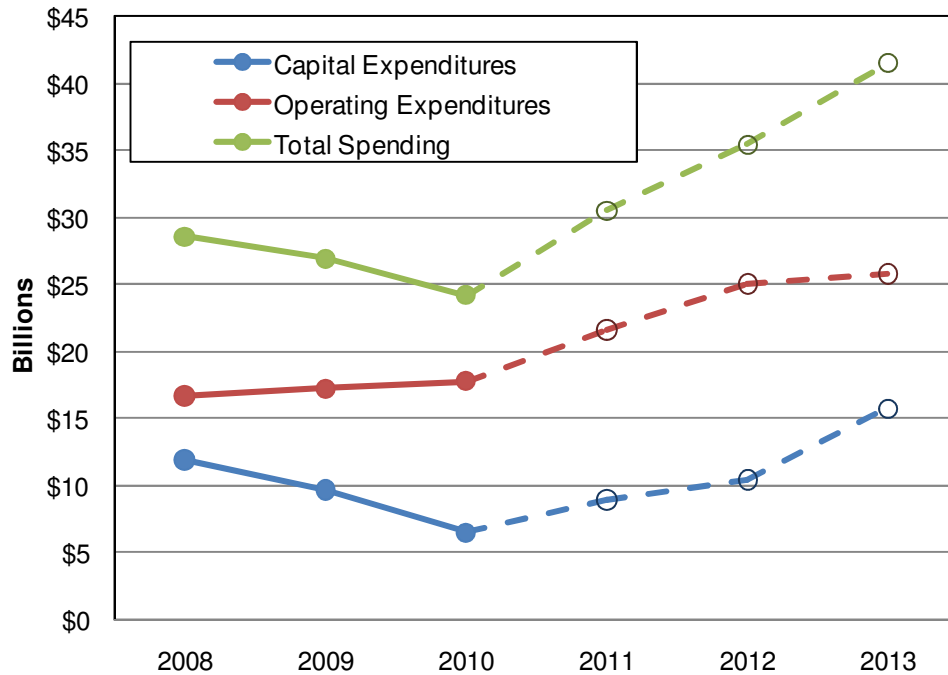
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<sup>2</sup> Industry investment and spending includes labor associated with design, fabrication, and installation.

<sup>3</sup> Operating expenditures include labor for operations.



**Figure 1: Estimated Historical and Projected Offshore Gulf of Mexico Oil and Natural Gas Industry Domestic Spending (2008-2013)\***



\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

Total spending in the Gulf of Mexico declined 15 percent over the 2008 to 2010 time period from \$28.5 billion to \$24.2 billion per year. Operational expenditures increased slightly during that period while capital expenditures plummeted by 46 percent. The principal reasons for reduced GoM capital investment were declining energy prices, the economic recession which began in late 2008, and the establishment of a deepwater drilling moratorium and subsequent reduced offshore permitting following the Macondo incident in 2010. The 10 percent year-to-year decline in total spending and 33 percent decline in capital spending from 2009 to 2010 were due in large part to the

drilling moratorium. Approximately one-third of the 2010 decline in capital investment was due to reductions in GoM shallow water capital investment even though the shallow water was not directly subjected to the drilling moratorium. Shallow water drilling significantly slowed due to a slowdown in permitting activity.

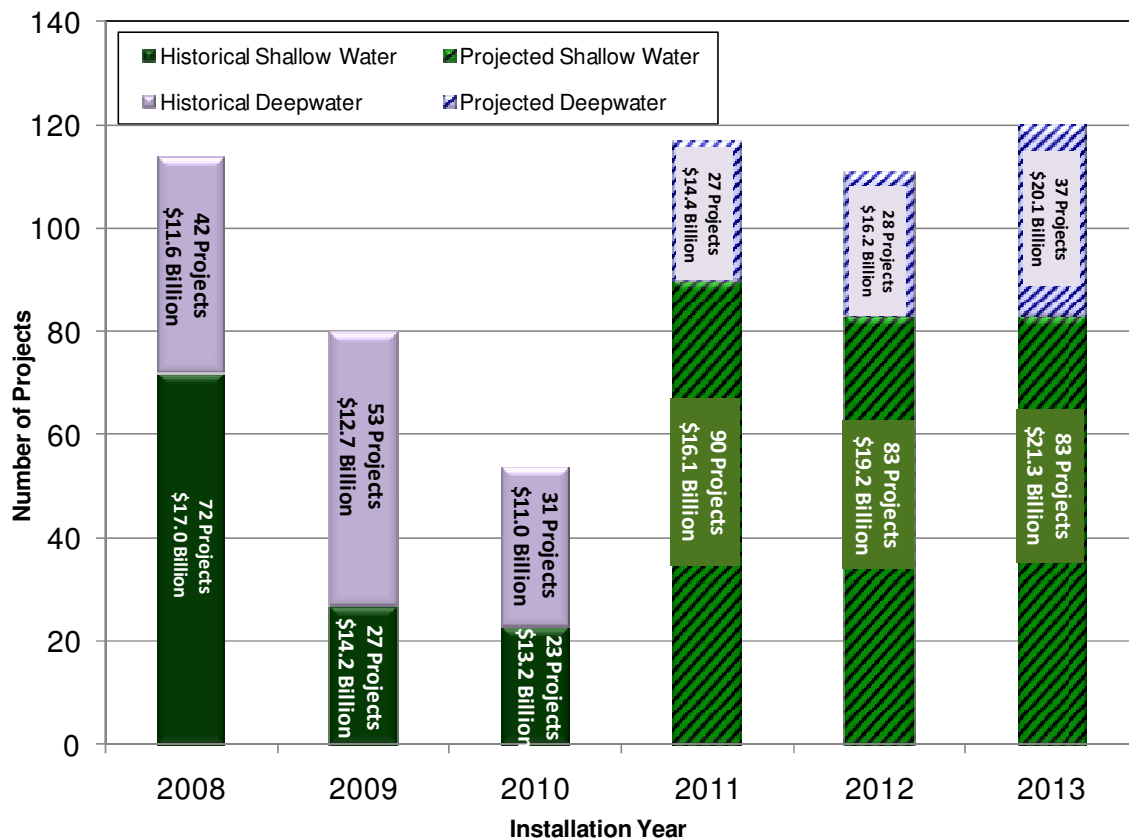
Quest's forecasts for Gulf of Mexico spending are based on actual project developments in the Gulf of Mexico. Quest tracks individual projects<sup>4</sup> on a day to day basis and utilizes actual contracts (when available) and historical benchmark data to

<sup>4</sup> Projects are defined as oil field developments or oil field development components.

best ascertain the timing and scope of future projects (Figure 2). This project data, coupled with historical benchmarks of spending for various equipment and services, provide the basis for Quest's capital investment projections. Operational expenditures are determined using actual

expenditure data where possible. When actual operational expenditures are not known, operational expenditures are determined through benchmarking against comparable projects on a project by project basis.

**Figure 2: Estimated Historical and Projected Number of Projects and Capital Expenditures in the Gulf of Mexico (2008-2013)\***



\* Projected number of projects contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

Quest has identified key providers to the oil and natural gas supply chain throughout the country, both along the Gulf Coast region and in other parts of the United States.

A sample of companies that contribute to the offshore oil and natural gas industry is identified in Table 2.

**Table 2: Selected Gulf of Mexico Oil and Natural Gas Industry Suppliers**

State	Company	What they do?
Alabama	Alabama Drydock & Shipping Company	Marine Production Facility
Alaska	RJE International Inc	Supplier of Subsea Communication Systems
Arizona	Valley Forge & Bolt Manufacturing Co.	Manufacture Fasteners
Arkansas	Baldor Electric Company	Manufacture Electrical Industrial Motors, Drives and Generators
California	Compass Water Solutions	Specialized Water Solutions
Colorado	BAND- IT	Engineer Band Clamping and Fastening Solutions
Connecticut	APS Technology	Oilfield Equipment Manufacturer
Delaware	DuPont	Upstream Oil and Gas Technology Solutions
Florida	Oceaneering	Manufacture Umbilicals
Georgia	WIKA Instrument Corporation	Pressure & Temperature Measurement Solutions
Hawaii	Structural Solution	Architecture Design and Engineering
Illinois	Caterpillar	Power Generation
Indiana	Trellborg	Insulation and Pipeline Technologies
Iowa	Fisher Valves	High Pressure Valves
Kansas	KMT Aqua- Dyne	Water Blasting Technologies and Solutions
Kentucky	General Cable	Communications Wire and Cable
Louisiana	McDermott	Fabricator & Installer for Offshore Structures
Maine	Flotation Technologies	R&D and Manufacturing Distributed Buoyancy Offshore Oil and Gas
Maryland	Aerotek	Staffing Solutions
Massachusetts	Cashman Equipment Corporation	Material Barges
Michigan	Dow Chemical	Pipeline and Subsea Equipment Insulation & Coatings
Minnesota	3M Corporation	Foams for Pipeline Insulation
Mississippi	Ingalls Shipbuilding	Construction and Repair for Commercial Marine Structures
Missouri	Emerson Electric	Provider of Process Management, Topsides Automation
Nebraska	Pieter Kiewit and Sons	Engineer and Build FPS Topsides and Platforms
Nevada	GE Energy	Measurement and Control
New Hampshire	Sponge- Jet, Inc.	Abrasive Blasting
New Jersey	Honeywell	Topsides and Control Systems, High Performance Fibers
New Mexico	Murchison Drilling Schools	Drilling Training
New York	Rotork	Manufacture Valve Actuators & Control Systems
North Carolina	SOS Global Express	Transport Specialist
North Dakota	Revel Digital	Technology Management
Ohio	Parker Corporation	Umbilicals, Mooring Systems
Oklahoma	Roxtec	Cable and Pipe Sealing Solutions
Oregon	Sulzer Pumps	Manufacture Centrifugal Pumps
Pennsylvania	Whitehill Manufacturing	Mooring Rope Manufacturing
Rhode Island	Bad Dog Tools	Manufacture Tools
South Carolina	Zues, Inc.	Polymer Extrusionist and Material Science
South Dakota	Sioux Corporation	Drill Pipe Environment Cleaner
Tennessee	Thomas & Betts Corporation	Manufacture Specialty Electric Connectors
Texas	Baker Hughes	Oilfield Service
Utah	TankLogix	Machine Automation
Vermont	Superior Technical Ceramics Corporation	Custom Technical Ceramic Parts and Components
Virginia	Marine Spill Response Corporation	Spill Response Services
Washington	Rasmussen Equipment Company	Energy and Environmental Research and Development
West Virginia	PCC Energy Group	Equipment and Pipe Manufacturer
Wisconsin	Veolia VES Special Services	Offshore Oil and Gas and Inland Marine Services

Source: Quest Offshore Resources, Inc.

Please see Appendix 7 for a more comprehensive company list of Gulf of Mexico suppliers.

### Projected Spending 2011-2013

The vast majority of the Gulf of Mexico oil and natural gas industry expenditures are spent domestically. Less than five percent of GoM operational spending and capital investment is spent outside the U.S. Total domestic spending levels are projected to increase from the 2010 level of \$24.2 billion to \$41.4 billion by 2013, a 71 percent increase. Capital expenditures are projected to reach \$15.7 billion in 2013, a 141 percent increase from 2010 levels. Crucial to Quest's spending/investment projection is the assumption that permitting rates in the Gulf of Mexico return to their pre-Macondo levels. To the extent that this does not happen, all spending and economic projections in this report would need to be revised downward accordingly.

The unique confluence of the global economic recession, volatile energy prices, the deepwater drilling moratorium, and the slow down in GoM permit rates have aligned to drop Gulf of Mexico offshore spending to its lowest level in years. These factors have contributed to a large back log of projects which operators are expected to develop assuming a balanced regulatory environment going forward. If this backlog of existing projects is developed in a timely manner spending by the Gulf of Mexico offshore oil and natural gas industry could change course and resume an upward trend. This rise in capital and operational spending would also facilitate an increase in

employment, contributions to GDP, and tax revenues at all levels of government.

### **Economic Impacts Associated with Gulf of Mexico Oil and Natural Gas Industry Activity**

Quest estimated both the employment and GDP impacts associated with offshore Gulf of Mexico oil and natural gas industry investment and spending at both national and state levels. Our estimated economic impacts are likely conservative because they do not take into account the benefits of increased government revenue from bonus bids, royalties, and corporate income taxes. They also do not account for the economic impact associated with certain profit type income.

As expected, the GDP and employment impacts track the pattern of spending/investment, declining over the historical period from 2008 to 2010 and rising over the projected period of 2011 to 2013. The GDP impacts decreased by an estimated 15 percent from 2008 to 2010, largely attributable to the same forces driving the spending reduction over this period. The total U.S GDP impact associated with offshore Gulf of Mexico oil and natural gas industry spending is projected to improve to \$32.9 billion in 2011, after falling to its lowest level in the study period in 2010 at \$26.1 billion. (Table 3) If the issuance of permits returns to

pre-Macondo levels required to support planned developments, the total contribution to U.S. GDP is expected to reach \$44.5 billion by 2013, a 70% increase over the

2010 level. To the extent that permitting rates do not return to historical levels, these estimates would need to be adjusted downwards.

**Table 3: Total Estimated Historical and Projected Contribution to Gross Domestic Product due to the Offshore Gulf of Mexico Oil and Natural Gas Industry Investments and Spending, \$billions (2008-2013)\***

	Historical			Projected		
	2008	2009	2010	2011	2012	2013
<b>GDP Impact Associated with GoM</b>	\$30.8	\$29.1	\$26.1	\$32.9	\$38.2	\$44.5

\* Projected GDP impacts contingent on returning to pre-Macondo permitting rates.

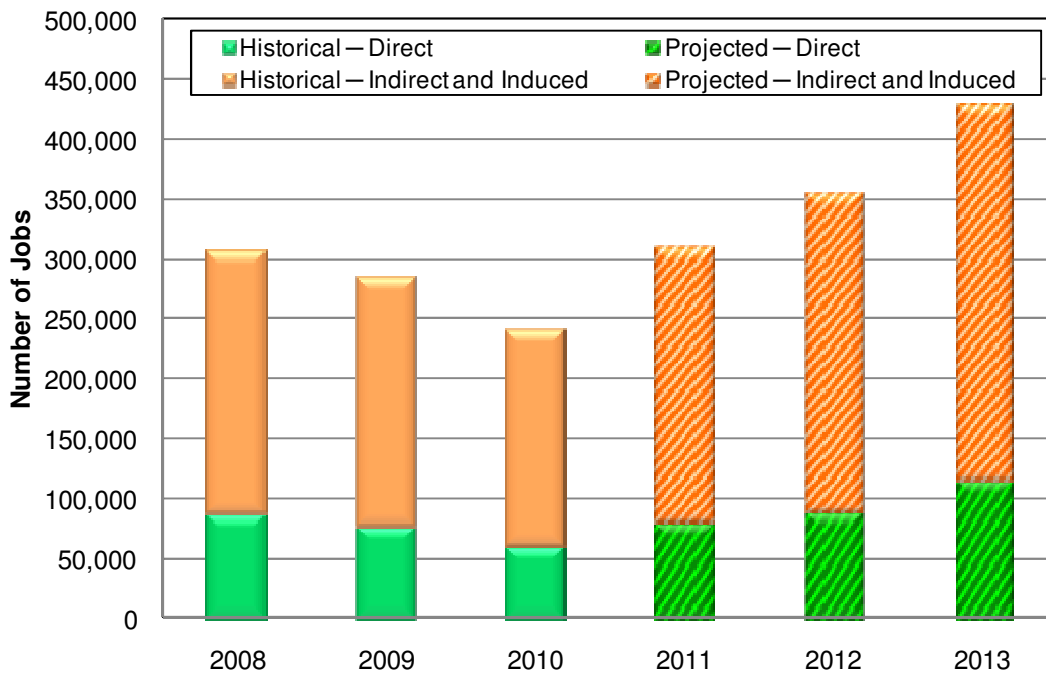
Source: Quest Offshore Resources, Inc.

Similar to GDP impacts, estimates of total employment (direct, indirect and induced jobs<sup>5</sup>) associated with offshore Gulf of Mexico oil and natural gas industry investments reached its lowest level over the study period in 2010 (Figure 3). Even so, the GoM offshore oil and natural gas industry is a significant provider of employment in the United States, with an estimated 242 thousand jobs supported by industry activity in 2010. Quest estimates that over 60 thousand of these jobs were within the oil and natural gas industry and 180 thousand were either indirect (providing equipment and services to the offshore Gulf of Mexico oil and natural gas industry) or induced jobs. For 2010, Quest estimated a

15 percent reduction in total jobs associated with GoM oil and natural gas industry activity compared to 2009. Likewise, the 2009 employment level is estimated to be 7 percent below 2008 levels. Employment in 2011 is expected to grow to 310 thousand jobs, a 28 percent increase on 2010 due to increased investments associated with long delayed projects. This estimate is likely optimistic given the current rate of permitting. Employment levels in 2012 are expected to increase by 15 percent compared to 2011 to 350 thousand jobs. In 2013, employment is projected to reach its highest level in the study period at 430 thousand jobs which is a 20 percent increase on the 2012 level and a 77 percent increase over the 2010 level.

<sup>5</sup> Direct employment is defined as jobs within the oil and natural gas industry. Indirect employment occurs throughout the supply chain of the oil and natural gas industry. Induced employment is jobs supported by household spending of labor income earned either directly or indirectly from oil and natural gas business activity.

**Figure 3: Estimated Historical and Projected Direct, Indirect and Induced Employment<sup>6</sup> due to Offshore Gulf of Mexico Oil and Natural Gas Industry Activity (2008-2013)\***



\* Projected employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

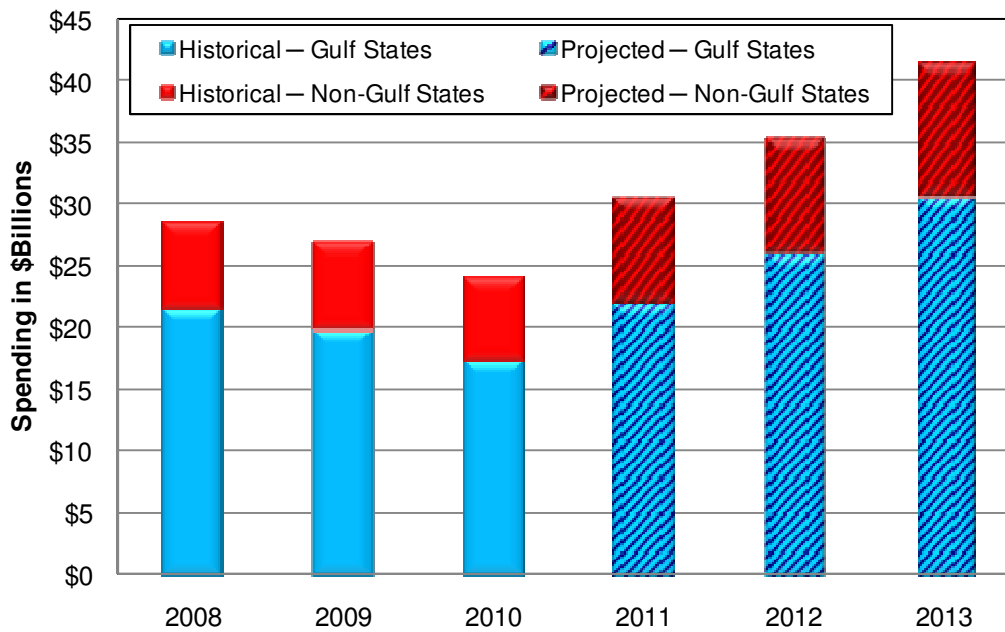
<sup>6</sup> Employment is defined as total payroll, and self employed employment inclusive of part time workers. Includes employment throughout the U.S. including states outside the Gulf region.

## State Impacts

The majority of the spending/capital investments and therefore the majority of the associated economic impacts are estimated to occur in the four main producing Gulf coast states: Texas, Louisiana, Mississippi, and Alabama. In 2010, 72 percent of spending and investment, or approximately \$17.5 billion, is estimated to have occurred in the four Gulf States (Figure 4), down 19

percent from 2008. Total employment in the four GoM states supported by the offshore Gulf of Mexico oil and natural gas industry is estimated to have been 175 thousand in 2010, a decrease of 60 thousand (25 percent) from 2008 (Figure 5). The Gulf State's direct oil and natural gas industry employment is estimated to have dropped by 25 thousand jobs over the same time period.

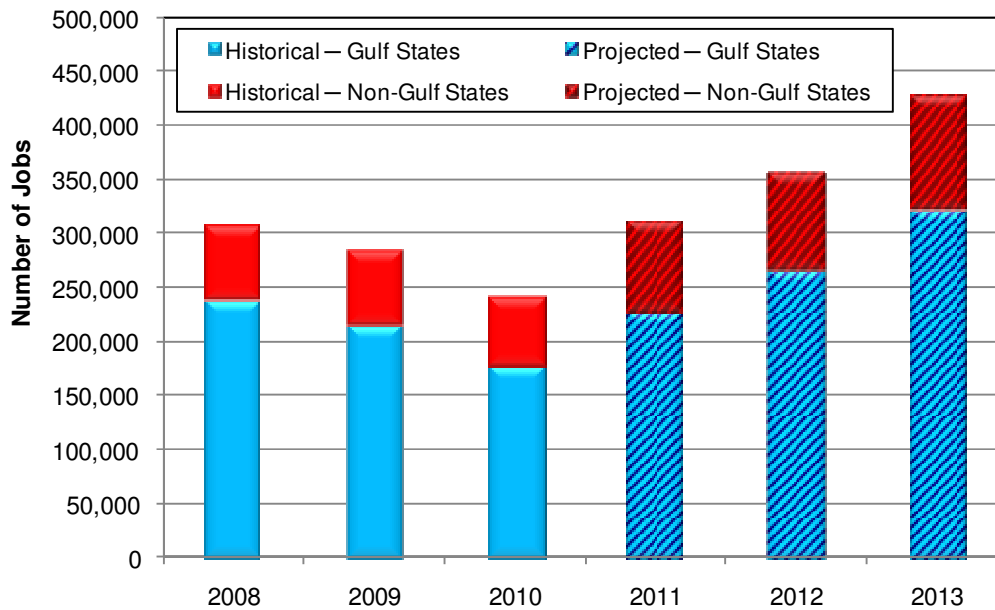
**Figure 4: Estimated Historical and Projected Spending of the Gulf of Mexico Offshore Oil and Natural Gas Industry in Gulf Coast States and Non-Gulf States (2008-2013) \***



\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

**Figure 5: Estimated Historical and Projected Employment in Gulf Coast States and Non-Gulf States due to Gulf of Mexico Offshore Oil and Natural Gas Industry Activity (2008-2013)\***



\* Projected employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

**Table 4: Total Employment Supported by the Gulf of Mexico Offshore Oil and Gas Industry by State (2013)**

<b>Alabama</b>	48,793	<b>Nebraska</b>	971
<b>Alaska</b>	3,116	<b>New Jersey</b>	480
<b>Arkansas</b>	4,355	<b>New Mexico</b>	12,842
<b>California</b>	22,216	<b>New York</b>	165
<b>Colorado</b>	14,582	<b>North Dakota</b>	143
<b>Florida</b>	1,340	<b>Ohio</b>	6,150
<b>Illinois</b>	2,842	<b>Oklahoma</b>	20,000
<b>Indiana</b>	871	<b>Pennsylvania</b>	3,911
<b>Kansas</b>	2,559	<b>Tennessee</b>	148
<b>Kentucky</b>	1,522	<b>Texas</b>	140,213
<b>Louisiana</b>	129,108	<b>Utah</b>	1,570
<b>Michigan</b>	721	<b>Virginia</b>	978
<b>Minnesota</b>	191	<b>West Virginia</b>	1,555
<b>Mississippi</b>	3,359	<b>Wisconsin</b>	1,272
<b>Missouri</b>	990	<b>Wyoming</b>	2,010
<b>Montana</b>	161		

\* Projected employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.



We estimate that supported employment levels could exceed 320 thousand in the four Gulf Coast states by 2013 if projected spending and investment levels are met (Table 4). This would represent an 80 percent increase over the 2010 employment levels and would be comprised of approximately 85 thousand direct industry jobs and 235 thousand indirect and induced jobs. Reaching these employment levels will require a return to pre-Macondo permitting rates and a balanced regulatory environment that allows for a resumption of environmentally safe development and production.

The positive economic impacts of the offshore oil and natural gas industry investments/spending in the Gulf of Mexico are not restricted to the Gulf States or limited to the oil and natural gas industry. They are spread over a wide geographic area and ripple through many sectors of the economy, from oil and natural gas machinery manufacturers to marine and air transport services to food service providers servicing offshore operations and financial companies that provide financial services and insurance to the industry. The offshore Gulf of Mexico oil and natural gas industry is estimated to have spent \$6.7 billion in 2010 outside the Gulf Coast states. This accounted for 35 percent of annual investment/spending and supported 65 thousand jobs in the non-Gulf of Mexico

Coast States. The 2010 spending was 4 percent lower than in 2008 with employment 7 percent lower. In 2013, Quest projects spending in the non-Gulf States due to the offshore Gulf of Mexico activity to increase to \$10.8 billion as operators invest heavily to bring forward delayed projects. This estimated 29 percent increase in spending from 2010 is projected to spur an expansion of non-Gulf State employment to 110 thousand, a 66 percent increase.

While the industry remains committed to developing the natural resources located in the Gulf of Mexico, they will only be able to do so according to the speed with which offshore drilling permits are granted. Quest's projections of domestic spending increasing by 71 percent from 2010-2013, contributions to GDP increasing by 70 percent, and employment increasing 77 percent are all predicated on the assumption of a return to historical rates of permitting.

Growth of the offshore Gulf of Mexico oil and natural gas industry will be crucial for meeting U.S. energy needs over the coming decades, and for spurring job creation and economic growth. In light of the potential of the offshore oil and natural gas industry to create jobs, enhance U.S. energy security, and increase U.S. GDP, the return to normal activity in the Gulf of Mexico in a safe and environmentally responsible manner is of utmost importance to the United States.

# 1. Introduction

Production of oil and natural gas from the offshore Gulf of Mexico (“GoM”) provides a significant share of total U.S. oil and natural gas production. Approximately 1.6 million barrels per day of crude oil or 30 percent of 2010 domestic oil production, and 6.7 billion cubic feet per day of U.S. natural gas production (11 percent) originated from the GoM<sup>7</sup>. The development of these resources provides positive economic impacts to our nation’s economy in terms of employment, GDP and tax revenues. It is also crucial to U.S. energy security.

Quest Offshore Resources, Inc. (Quest) was commissioned by the American Petroleum Institute (API) and the National Ocean Industries Association (NOIA) to provide an evaluation of the impacts of offshore GoM oil and natural gas development. Quest is a full-service market research and consulting firm focused on the global deepwater oil and natural gas industry. Much of the analysis in this report relies on information that Quest has received directly from companies operating in the GoM. This report assesses the total economic impacts of GoM development (both shallow and deepwater) on the U.S. economy as a whole as well as estimates of economic contributions to individual states.

This analysis accounts for all offshore GoM capital investment and operational spending through the entire “life cycle” of offshore operations. Every offshore oil or natural

gas project must go through a series of steps in order to be developed. Initial expenditures necessary to identify targets and estimate the potential recoverable resources in place include seismic surveys and the drilling and evaluation of exploration wells. For projects that are commercially viable, the full range of above and below water equipment must be designed and purchased. Offshore equipment includes production platforms and potentially on-site processing facilities as-well as below water equipment generally referred to as SURF (Subsea, Umbilicals, Risers and Flowlines). Finally the equipment must be installed and additional development wells must be drilled. The full process necessary to bring an offshore field to production from initial appraisal to operation is detailed in Appendix 2.

This report is structured as follows. Preceding this introductory section is the Key Findings and Executive Summary outlining all principal results and conclusions of this report. Immediately following this section is the Data Development section outlining how Quest gathers data on current projects and creates projections of future offshore industry spending. Following this is the I/O Methodology section that outlines how economic impacts from offshore spending are estimated as well as how these impacts are allocated among the individual states. In the next section we review recent historical offshore capital investment and operational spending as well

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<sup>7</sup> Source: Energy Information Administration. Includes offshore state waters.

as project spending through 2013. The following section details the estimated national and individual state economic impacts including number of jobs supported as well as contributions to GDP. The final section of the report summarizes the main conclusions and results. Appendixes included in this report are:

- Appendix 1: Summary of Non-Gulf Coast State Economic Impacts
- Appendix 2: An Introduction to the Offshore Oil & Natural Gas Industry
- Appendix 3: RIMS II I/O Model Definitions
- Appendix 4: Explanation of Terms
- Appendix 5: RIMS Category Summary Tables
- Appendix 6: Employment Summary Table
- Appendix 7: Gulf of Mexico Oil and Natural Gas Industry Suppliers

Quest Offshore is providing this study on the impacts of Gulf of Mexico offshore oil and natural gas development under the assumption that permits for offshore drilling which began to be reissued during the first half of 2011, will continue to be issued at an increasing pace throughout the year, and ultimately arriving back at pre-Macondo rates. To the extent that this is not the case, all spending and economic projections in this report would need to be revised downward accordingly.

## **2. Data Development**

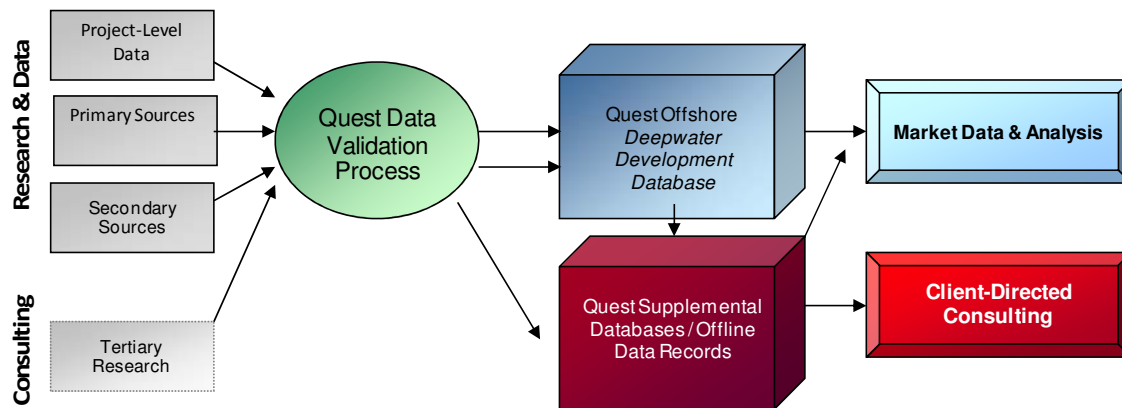
## 2-1 Overview of Quest Offshore Data Development

Quest Offshore Resources, Inc. is a full-service market research and consulting firm focused on the global deepwater oil and natural gas industry. As a function of Quest's core business, the company is daily engaged in the collection and analysis of data as it relates to the offshore oil and natural gas industry. Quest serves the global community of operating oil and natural gas companies, their suppliers, financial firms, and many others by providing detailed data and analysis on capital investment and operational spending undertaken by the offshore industry.

Quest collects and develops market data from a variety of sources at the project-level (Figure 6). A unique feature of this analysis, and which lends it high credibility, is its reliance on primary data through direct contact with the industry's supply chain. This connection with operating oil and natural gas companies through to the smallest of equipment and service providers imparts a high quality/accuracy to the data. This data

is tracked in Quest's proprietary *Quest Enhanced Deepwater Development Database* as well as other proprietary databases related to shipyards and other facets of the supply chain. Quest builds up capital and operating expenditures on a project by project basis, with detailed information recorded on the supply of the equipment and services necessary to develop offshore oil and natural gas projects. Quest Offshore tracks not only existing or historical projects, but also projects that are in all stages of development from the prospect (or undrilled target) stage through to development. For projects without firm development information, Quest utilizes benchmarking based on Quest's proprietary databases to forecast development timing and scenarios; this information coupled with operators expected exploration and appraisal programs are used to take into account yet to be discovered and delineated fields that may be developed in the forecast time frame.

**Figure 6: Quest Offshore, Inc. - Simplified Data Collection and Research Model**



Source: Quest OffshoreResources, Inc.

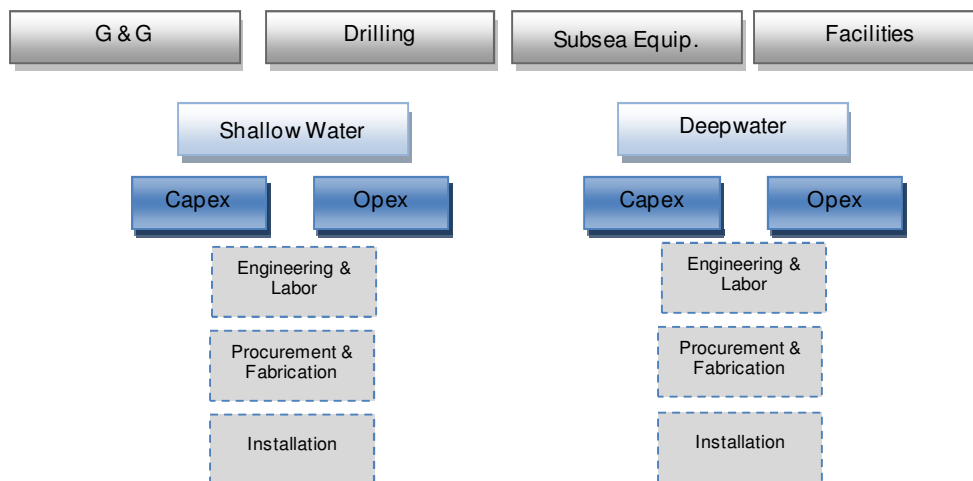
Secondary data development was also undertaken in this analysis and refers to any source of information and data that is not collected via direct contact with the industry, such as press releases, financial reports (and other SEC filings), industry white papers, industry presentations, and other publicly available sources. The designation of “Tertiary” data collection was reserved for areas of research that fell outside of the offshore oil and natural gas industry. This information was collected in the same manner as described for secondary data development and relied heavily on public sources of information.

This proprietary approach allows Quest to ensure a comprehensive “canvassing” of the industry, which in turn facilitates a high level of validation and quality control needed to

produce accurate analysis and forecasts. Once collected and verified, the data is housed and maintained in Quest Offshore’s Deepwater Development Database. The primary components of this proprietary database are the numerous pieces of offshore oilfield equipment and services that are used in the development of an offshore project.

Quest Offshore’s estimation of domestic GoM offshore spending was delineated into four primary categories (Geoseismic and Geophysical (G&G), Drilling, Subsea Equipment and Facilities), which were then cross classified according to shallow water and deepwater, capital and operations spending and further by engineering and labor, procurement, and fabrication and installation (Figure 7).

**Figure 7: Quest Spending Categories**



Source: Quest Offshore Resources, Inc.

These categories represent the four main expenditure classes of offshore oil and natural gas production, and roughly follow the life cycle of a field described in the “Life-Cycle of a Field Development” section (Appendix 2). G&G or geological and geophysical describes the work done before drilling to identify drilling prospects, drilling constitutes the actual drilling of the wells, while subsea equipment and facilities constitutes the two major capital expenditures related to the equipment needed to bring the field into production. Facilities are platforms and floating production units that act as the physical location where oil or natural gas is initially produced as well as drilling and control centers. Subsea equipment includes trees, pipelines, umbilicals and other associated equipment.

Information on the number of historical shallow water platforms, pipelines and wells was collected from the Bureau of Ocean

Energy Management and was combined with Quest’s forecast of shallow water platforms and wells to provide information on the number of shallow water developments for historical and forecast years. This information was then combined with estimated costs for the various equipment pieces to provide estimates of capital investment. Operational costs were based on known operating costs for facilities and were extrapolated for unknown facilities based on benchmarks according to facility type, facility size, production, and age.

**2-2 Uncertainty and Assumptions in Data Collection and Forecasting**

As with any market forecast, the projections provided herein are subject to change according to the dynamics of the offshore oil and natural gas industry and macroeconomic conditions. While Quest has provided the spending numbers according to a sound forecasting methodology that has



been widely accepted throughout the industry, there will remain some margin of error (or uncertainty) when assessing long-term activity for individual companies. Also, a changed economic outlook or regulatory environment could have a significant impact on the forecast contained herein. In particular, this analysis assumed that permitting rates in the Gulf of Mexico return to their pre-Macondo levels over the 2011 to 2013 period. To the extent that this does not happen, capital investment and associated economic impacts would need to be adjusted downward.

### **2-3 Allocation of Capital Investment and Operational Spending to States**

The data compiled for this analysis allows for a comprehensive characterization of the complete value chain associated with oil and natural gas field developments in the Gulf of Mexico. In particular, this data provides Quest with the ability to tie offshore capital investment with specific pieces of equipment for known and named offshore field development projects. Hence, Quest believes that both historical and projected capital investment projections provided herein are based upon the highest quality data available, and are realistic given the universe of development projects that are assumed to be undertaken through 2013. Additionally, due to the level of detail available in Quest's data, Quest is able to track the supply chain involved in the

offshore oil and natural gas industry. This allows Quest to provide accurate information on the supply chain accounting for a majority of capital spending which enables Quest to allocate a majority of historical spending to the location where it was spent. Quest has utilized these actual historical spending breakdowns to extrapolate the spending locations for future projects, which should continue to provide an accurate depiction of the location of supplies associated with primary offshore oil and natural gas capital investment and operational spending.

When determining spending by state, Quest has relied on its industry experience to assign the cost of equipment to certain states based on known manufacturing contracts placed with equipment providers. For example, via the data contained in Quest's database, spending for a subsea production system can be tied directly to a specific state based on which manufacturer is producing the final product (given Quest's knowledge of oilfield equipment manufacturing locations). Platform and floating production unit construction takes place at shipyards in known locations so this spending is placed into the appropriate states. Other key equipment manufacturing and support services also take place at known location allowing this spending to be accurately placed in the appropriate state as well. This level of spending – referred to herein as “Primary Spending” – represents the cost for goods and services that can be assigned to certain components of equipment by location, and accounts for

over half of the total annual spending. Quest's proprietary database provides this level of detail for all major components of developments, which allows Quest to track manufacturing, construction and installation locations for projects in the Gulf of Mexico. Quest used this data to determine historical spending trends by state for those parts of developments with known manufacturing locations. Quest then utilized these historical trends to project spending locations by state associated with potential future projects.

Allocation of spending across states was carried out as follows. Initially each state was apportioned the primary spending that could be reasonably determined due to Quest's knowledge of the oil and natural gas supply chain. Due to the complexity of the offshore Gulf of Mexico oil and natural gas supply chain some of the state locations for some spending could not be determined with certainty. This spending (referred to as allocated) was divided into two sections, spending occurring within one of the four GoM states and spending deemed to have occurred outside the GoM region.

For the Gulf of Mexico states, the allocated spending was partitioned by state based upon the need for the equipment and services in offshore Gulf operations and the assessed ability of each Gulf of Mexico state to provide them.

The non-Gulf of Mexico allocated spending was assigned to states using a measure of oil and natural gas industry "intensity" by state.

A measure of oil and natural gas intensity by state was developed with Bureau of Economic Analysis state level data on oil and natural gas production, manufacturing of oil and natural gas equipment and support services, and engineering and management services provided to the oil and natural gas industry.

Quest weighted the state level oil and natural gas intensity factors by distance factors (given below) under the assumption that the further the distance between the state and the GoM, the less likely it is that the allocated spending occurred there.

**Table 5: Distance Multipliers**

Band	Distance Multiplier	Example of States
Band 1	36%	AL, LA, MS, TX
Band 2	25%	GA, AR, FL, TN
Band 3	16%	MO, NC, KY, IL
Band 4	12%	NE, IA, CO, MD
Band 5	8%	UT, WY, NY, CT
Band 6	2%	AK, HI, MT, ND

*Source: Quest Offshore Resources, Inc.*

This resulting weighted state intensity factors were employed to determine each state's share of allocated non-Gulf of Mexico capital investment and operational spending.

**Table 6: Steps to Determine Non-Gulf of Mexico State Allocated Spending**

Step Number	Determining Non-GoM State Allocated Spending
1	Calculate total non-GoM allocated spending
2	Calculate state oil and gas intensity factor
3	Calculate distance weighted state oil and natural gas intensity factor
4	Calculate state share of non-GoM allocated spending
5	Calculate state GoM allocated spending

*Source: Quest Offshore Resources, Inc.*

## **3. I/O Methodology**

Rims II Input/Output<sup>8</sup> multipliers from the Bureau of Economic Analysis were employed to estimate GDP and employment impacts from the estimated capital investment and operational spending data. Rims II multipliers give contribution to GDP and employment per unit increase in final per dollar spending. For each state and for each year primary and allocated spending were partitioned into five BEA industrial sectors corresponding to the relevant Rims II multipliers (drilling oil of natural gas wells, support activities for oil and natural gas operations, construction, oil and natural

gas extraction, mining and oil and natural gas field machinery manufacturing). This was accomplished by dividing spending according to the activity type this spending entailed, e.g. drilling spending to the drilling category, manufacturing to the manufacturing category, etc. Primary and allocated spending across these categories was then summed to provide yearly state by state totals for each category (Table 7).

**Table 7: Determining State Spending by RIMS II Industrial Category**

Step Number	Determining State Spending by Category
2	Apportion State Primary Spending by RIMS II Industrial Category
3	Apportion State Allocated Spending by RIMS II Industrial Category
4	Calculate Total Spending by RIMS II Industrial Category
5	Sum State Totals to Calculate National Impacts

*Source: Quest Offshore Resources, Inc.*

State level GDP impacts were estimated by multiplying the capital and operational spending (partitioned into BEA industrial sectors as described above) by the corresponding Rims II GDP multipliers and summing the products. Quest followed the same procedure to estimate employment impacts for each state, using the appropriate spending and corresponding Rims II employment multipliers.

Direct and indirect/induced employment impacts were derived from total employment impacts. This was accomplished by utilizing the detailed industry effects of spending provided by the BEA RIMS II model multipliers (which detail the industry by industry activity for each spending category).

Reported national GDP impacts and employment are the sum total of the individual state impacts.

<sup>8</sup> For a more detailed explanation of the RIMS II multipliers please see Appendix 2.

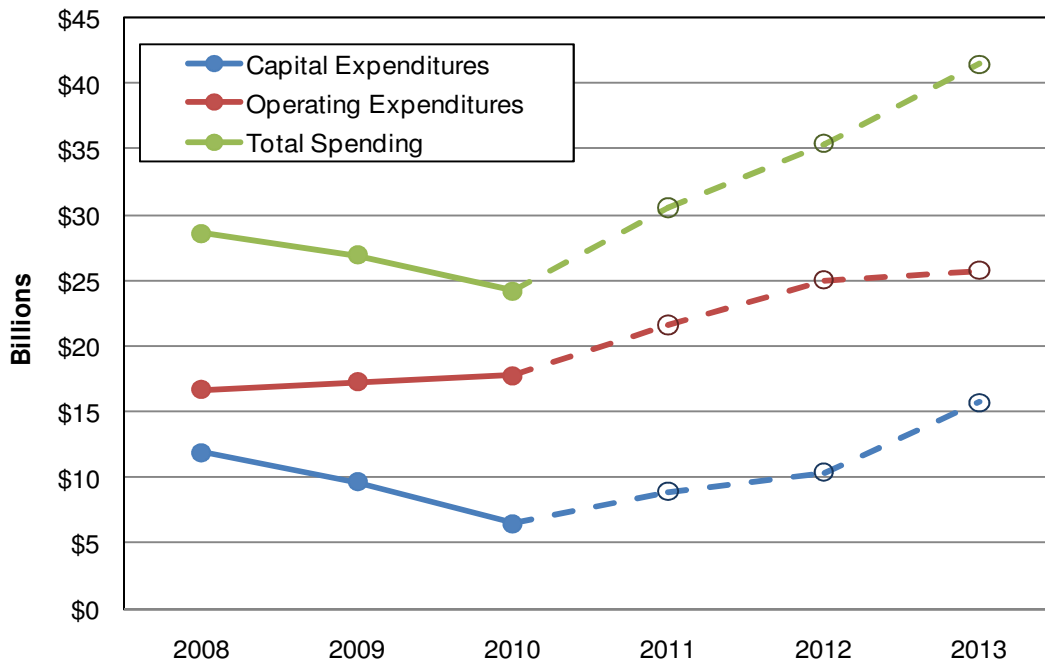
## **4. Review of Capital Investment and Operational Spending**

The U.S. Gulf of Mexico's offshore oil and natural gas industry invests billions of dollars each year for the development and operation of offshore oil and natural gas fields that provide critical energy resources to the country. The annual sums invested in the Gulf of Mexico are regularly in the tens-of-billions of dollars range, making this sector one of the most capital intensive industries in the economy.

Spending due to the offshore Gulf of Mexico oil and natural gas industry in 2008 was \$28.5 billion. For 2009, due primarily to the global recession, spending fell 6 percent to

\$26.9 billion. In 2010, spending again declined to \$24.2 billion despite the economy beginning to recover. This 10 percent decrease was due primarily to the drilling moratorium and the slowdown in permitting after the Macondo incident. The impacts of the moratorium are more accurately indicated by the 33 percent decrease in capital spending<sup>9</sup> from 2009 to 2010, which fell to \$6.4 billion from \$9.6 billion (Figure 8).

**Figure 8: Estimated Historical and Projected Gulf of Mexico Offshore Oil and Natural Gas Spending Trends by Type of Spending (2008-2013)\***



\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

<sup>9</sup> Capital spending includes labor associated with design, fabrication, and installation

Of the \$24.2 billion in spending in 2010, operational expenditures<sup>10</sup> accounted for 64 percent of total spending (its highest over the 2010-2013 period) due to a major decrease in capital investment of 46 percent compared to 2008. Capital expenditures are expected to be highest over the study period relative to operating expenditures in 2013 at \$15.7 billion, or 38 percent of total expenditures of \$41.4 billion. A significant backlog of projects are expected to proceed if and when regulatory uncertainties are removed.

While the federal moratorium on offshore deepwater drilling activity and subsequent regulatory changes caused (and are still

causing) significant reductions in spending, the future for the region has the potential to be very positive and could see increasing levels of spending under a balanced regulatory environment. It should also be noted that shallow water spending activity in the Gulf has been adversely affected due to a significant slowdown in permitting activity in 2010 (despite their being no official moratorium on shallow water permits) with shallow water capital expenditures down 32 percent in 2010 as compared to 2009 (Table 8).

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<sup>10</sup> Operational spending includes labor for operations.



**Table 8: Estimated Historical and Projected Gulf of Mexico Oil and Natural Gas Industry Domestic Spending Trends by Detailed Spending Type\***

	<b>Capital Expenditures (Billions)</b>					
	<b>Historical</b>			<b>Projected</b>		
	<b>Deepwater</b>			<b>Deepwater</b>		
	2008	2009	2010	2011	2012	2013
<b>G&amp;G</b>	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1
<b>Drilling</b>	\$2.6	\$3.5	\$1.8	\$2.6	\$3.5	\$4.8
<b>Facilities</b>	\$0.0	\$0.0	\$1.2	\$1.9	\$0.8	\$1.9
<b>SURF</b>	\$3.0	\$2.9	\$1.3	\$1.3	\$1.9	\$2.9
<b>Total Deepwater</b>	<b>\$5.8</b>	<b>\$6.5</b>	<b>\$4.3</b>	<b>\$5.9</b>	<b>\$6.3</b>	<b>\$9.8</b>
	<b>Shallow Water</b>			<b>Shallow Water</b>		
	2008	2009	2010	2011	2012	2013
<b>G&amp;G</b>	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1
<b>Drilling</b>	\$4.0	\$2.4	\$1.6	\$1.3	\$2.5	\$4.3
<b>Facilities</b>	\$1.1	\$0.4	\$0.4	\$1.4	\$1.3	\$1.3
<b>SURF</b>	\$0.8	\$0.2	\$0.1	\$0.4	\$0.3	\$0.3
<b>Total Shallow Water</b>	<b>\$6.1</b>	<b>\$3.2</b>	<b>\$2.2</b>	<b>\$3.1</b>	<b>\$4.1</b>	<b>\$5.9</b>
<b>Total CAPEX</b>	<b>\$11.9</b>	<b>\$9.7</b>	<b>\$6.5</b>	<b>\$8.9</b>	<b>\$10.4</b>	<b>\$15.7</b>
	<b>Operating Expenditures (Billions)</b>					
	<b>Deepwater</b>			<b>Deepwater</b>		
	2008	2009	2010	2011	2012	2013
<b>Total Deepwater</b>	<b>\$5.8</b>	<b>\$6.2</b>	<b>\$6.7</b>	<b>\$8.5</b>	<b>\$9.9</b>	<b>\$10.3</b>
	<b>Shallow Water</b>			<b>Shallow Water</b>		
	2008	2009	2010	2011	2012	2013
<b>Total Shallow Water</b>	<b>\$10.9</b>	<b>\$11.0</b>	<b>\$11.1</b>	<b>\$13.1</b>	<b>\$15.1</b>	<b>\$15.4</b>
<b>Total OPEX</b>	<b>\$16.7</b>	<b>\$17.2</b>	<b>\$17.7</b>	<b>\$21.6</b>	<b>\$25.0</b>	<b>\$25.8</b>
<b>Total Spend</b>	<b>\$28.5</b>	<b>\$26.9</b>	<b>\$24.2</b>	<b>\$30.5</b>	<b>\$35.4</b>	<b>\$41.5</b>

\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

From 2009-2010, overall spending (both deep and shallow water) fell by 10 percent. The most affected sector was the drilling sector, which saw a 41 percent decrease in spending during the period as deepwater drilling all but halted for two quarters of the year due to the moratorium and shallow water drilling significantly declined due to the extreme slowing of drilling permit issuances. The drilling sector is also expected to see

the most significant growth in spending if a return to historical conditions occurs, with drilling spending in 2013 expected to rise 165 percent from 2010 levels to \$9.1 billion.

Facilities spending is also expected to see significant growth from 2010 to 2013, with spending expected to be up by 113 percent over 2008 levels reaching \$3.2 billion. For this particular category, 2010 spending was

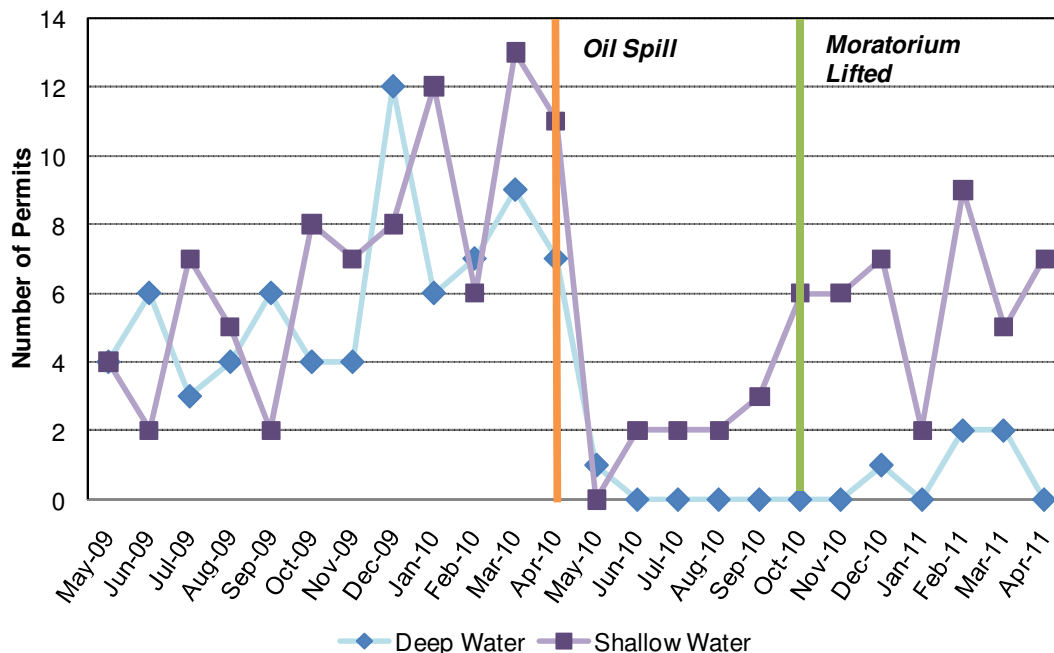
actually 236 percent higher at \$1.5 billion than in 2008 as specific large projects, which had already completed exploration and appraisal drilling moved forward. Subsea spending inclusive of hardware, risers, pipelines and umbilicals is expected to grow 125 percent to \$3.2 billion in 2013 from \$1.4 billion in 2010. This level will still be slightly below the \$3.8 billion seen in 2008, due to the drilling moratorium pushing the next big wave of very large projects further out into the future. Such major projects drive subsea spending through major hardware and pipeline installation contracts.

Quest's spending projections are based on actual projects to be developed in the Gulf of

Mexico, coupled with operators expected exploration and appraisal programs which are used to take into account yet to be discovered and delineated fields that may be developed in the forecast time frame.

It is important to note that Quest Offshore is providing the spending forecasts used in this report on the U.S. Gulf of Mexico's offshore oil and natural gas industry under the assumption that permits for offshore drilling, which began to be reissued during the first half of 2011, will continue to be issued at an increasing pace throughout the year, and ultimately arriving back at levels seen prior to the Macondo incident (Figure 9).

**Figure 9: Gulf of Mexico Deep and Shallow Water Drilling Permit Approvals**



Note: Excludes Water Injection Wells

Source: Greater New Orleans, Inc. Bureau of Ocean Energy Management.

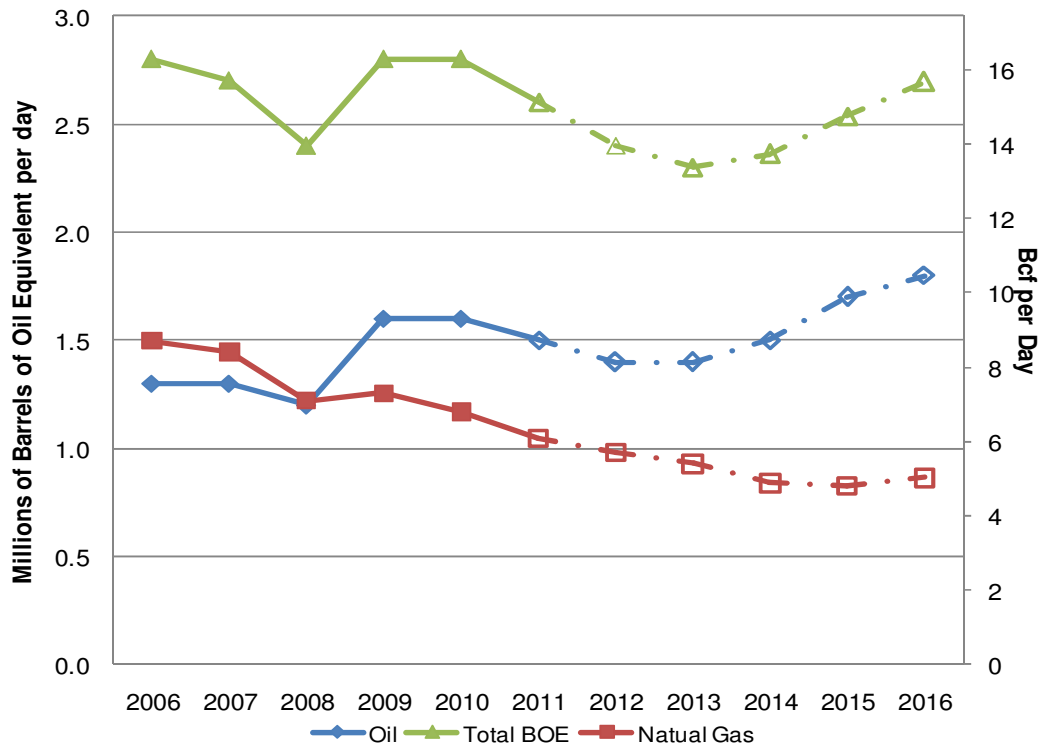
Although activity has slowed dramatically in 2010, as well as the first half of 2011, it is important to note that the projects slated for evaluation and development by oil companies still exist. The halt in drilling permits has likely not resulted in cancellation of these projects; rather it has delayed the sanctioning of numerous world class deepwater projects postponing deepwater production growth into 2015-2016. The capital investment and operational spending projections estimated by Quest Offshore rely on the assumption that permitting activity in the U.S. Gulf of Mexico will see a noticeable increase during the second half of 2011 further accelerating in 2012 and continue into the future as oil companies, drilling contractors and federal regulators work to restore permitting rates back to historical levels. To the extent that this is not the case, investment levels and projected economic impacts estimated herein would need to be revised downward.

If there is a return to historical permitting levels and annual GoM investment and

operational spending levels increase as forecasted, Quest projects that GoM oil production will begin to increase after 2013 (Figure 10). Increases in production will lag spending due to the time necessary for development to come online. GoM oil production levels could reach approximately 1.8 million barrels per day by 2016 given that many large capital projects have already been sanctioned. Quest projects declining natural gas production through 2013 followed by several years of relative steady production levels of around 5 Bcf per day. Recent increases in on-shore natural gas production have made purely natural gas targets in the Gulf less attractive.

Quest's forecast for both oil and natural gas GoM production would need to be revised downward if permitting activity does not see a significant increase from current levels. One upside to Quest's production projections is that natural gas production could be higher if there is a relatively greater amount of associated gas with newly developed oil projects.

**Figure10: Estimated Historical and Projected Gulf of Mexico Oil and Natural Gas Production Trends**



Source: Energy Information Administration, Quest Offshore Resources

### 4-1 Domestic vs. International Capital Investment

As many of the service providers employed by the oil and natural gas industry are located overseas, it is important to understand what portion of the capital investment remains in the U.S., and what part flows to other countries. Quest’s analysis reveals that while a portion of offshore capital investment flows abroad, the vast majority is used to purchase equipment and structures manufactured in the United States. Most of the internationally purchased equipment is of relatively lower value, consisting of, for instance, steel pipe and floating production system hulls. For floating production systems, while the hull is likely

built in an Asian shipyard, the processing and production topsides, which are the more technically complex and thus expensive equipment, are fabricated in the United States. Operating expenditures, which account for the spending required to maintain and operate existing producing assets, account on average for 66 percent of spending over the 2008-2013 period and occur almost exclusively in the United States. From 2008 to 2010, 98 percent of total spending (capital investment and operational spending) was domestic with an average of only 2 percent occurring overseas. This changed only slightly for the

period 2011-2013 with 97 percent of total spending being domestic compared to 3 percent occurring overseas. This is due to a higher share of capital spending flowing

overseas (primarily floating production units hull and pipelines) relative to the earlier time frame (Table 9).

**Table 9: Estimated Historical and Projected Gulf of Mexico Offshore Oil and Natural Gas Industry Domestic vs. International Spending Trends (2008-2013)\***

<b>\$Billions</b>	Historical			Projected		
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Spending</b>						
<i>Domestic</i>	\$28.5	\$26.9	\$24.2	\$30.5	\$35.4	\$41.4
<i>International</i>	\$0.76	\$0.40	\$0.71	\$1.43	\$0.94	\$1.45
<b>Total</b>	<b>\$29.3</b>	<b>\$27.3</b>	<b>\$24.9</b>	<b>\$31.9</b>	<b>\$36.3</b>	<b>\$42.9</b>
<b>Percentage of Spending</b>						
<i>Domestic</i>	97%	99%	97%	96%	97%	97%
<i>International</i>	3%	1%	3%	4%	3%	3%

\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

#### **4-2 Spending Trends Within and Outside of the Gulf States**

The majority (roughly three-quarters) of GoM offshore operational spending and investment occurs in the Gulf Coast states: Texas, Louisiana, Mississippi, and Alabama (Table 10). Quest estimates that a significant portion of the spending, about one-quarter, occurs over a wider geographic area outside the Gulf. The primary reason spending is significantly higher in the Gulf states is due to supplying firms location near to

production due to the cost (or in some cases impossibility) of transporting supplies and equipment and the need for services to be located close to producing areas. Despite this, spending outside the region results in the economic impacts of GoM offshore development being felt throughout the U.S. and throughout many sectors of the economy.

**Table 10: Estimated Historical and Projected Gulf State vs. Non-Gulf State Total Spending (2008 –2013)\***

Domestic Spending (\$billions)						
	Historical			Projected		
	2008	2009	2010	2011	2012	2013
<i>Alabama</i>	\$3.3	\$3.0	\$2.7	\$3.5	\$4.2	\$4.8
<i>Louisiana</i>	\$9.3	\$8.6	\$7.3	\$9.0	\$10.7	\$12.9
<i>Mississippi</i>	\$0.3	\$0.3	\$0.3	\$0.3	\$0.4	\$0.4
<i>Texas</i>	\$8.7	\$8.0	\$7.3	\$9.3	\$10.7	\$12.5
<i>Other States</i>	\$7.0	\$7.1	\$6.7	\$8.4	\$9.4	\$10.8
<b>Total Spending</b>	<b>\$28.5</b>	<b>\$26.9</b>	<b>\$24.3</b>	<b>\$30.5</b>	<b>\$35.4</b>	<b>\$41.4</b>
AL, LA, MS, TX	76%	74%	72%	72%	73%	74%
Other States	24%	26%	28%	28%	27%	26%

\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

The Gulf States Alabama, Louisiana, Mississippi and Texas account for 74 percent of spending on average, and up to 76 percent of spending (in 2008). The percentage of total spending is higher in the Gulf States in years with less capital investment, as non-Gulf Coast States see most of their spending from capital expenditures. A relatively higher proportion of operational expenditures occur in the Gulf States. Growth in operational expenditures accounts for the slight decline in the share of total expenditures in non-Gulf Coast States over the forecast period.

Although it may appear that the estimated amount of spending in non-Gulf Coast States is not significant, it is important to understand the absolute scale of investment

that constitute these percentages. In 2010, the estimated amount of spending totaled \$6.7 billion across 36 non-Gulf Coast States. Spending is expected to grow 61 percent to \$10.8 billion in 2013. This spending thus contributes to both GDP and employment impacts outside the immediate Gulf Coast area.

Forecasted spending increases are driven by increases in development activity in the Gulf of Mexico, with development activity expected to increase steadily into the forecast period. After dismal showings in 2009 and 2010, key indicators of development activity such as host facilities, number of wells drilled and miles of pipelines installed are projected to begin to steadily grow (Table 11).

**Table 11: Estimated Historical and Projected Key Development Equipment for Offshore Gulf of Mexico Oil and Natural Gas Fields (2008-2013)\***

	Year	Host Facilities		Drilling		Pipelines	
		# of Units	Domestic Spend (\$Billions)	# of Wells	Domestic Spend (\$Billions)	Miles	Domestic Spend (\$Billions)
Historical	2008	148	\$0.3	566	\$6.7	1,828	\$1.6
	2009	57	\$0.1	320	\$6.0	850	\$1.6
	2010	52	\$1.1	252	\$3.0	353	\$0.7
Projected	2011	183	\$2.0	247	\$3.3	730	\$0.7
	2012	169	\$1.0	414	\$5.0	1,050	\$0.9
	2013	171	\$2.0	615	\$7.7	1,070	\$1.4

\* Projected Activity contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

## **5. National and State Economic Impacts**

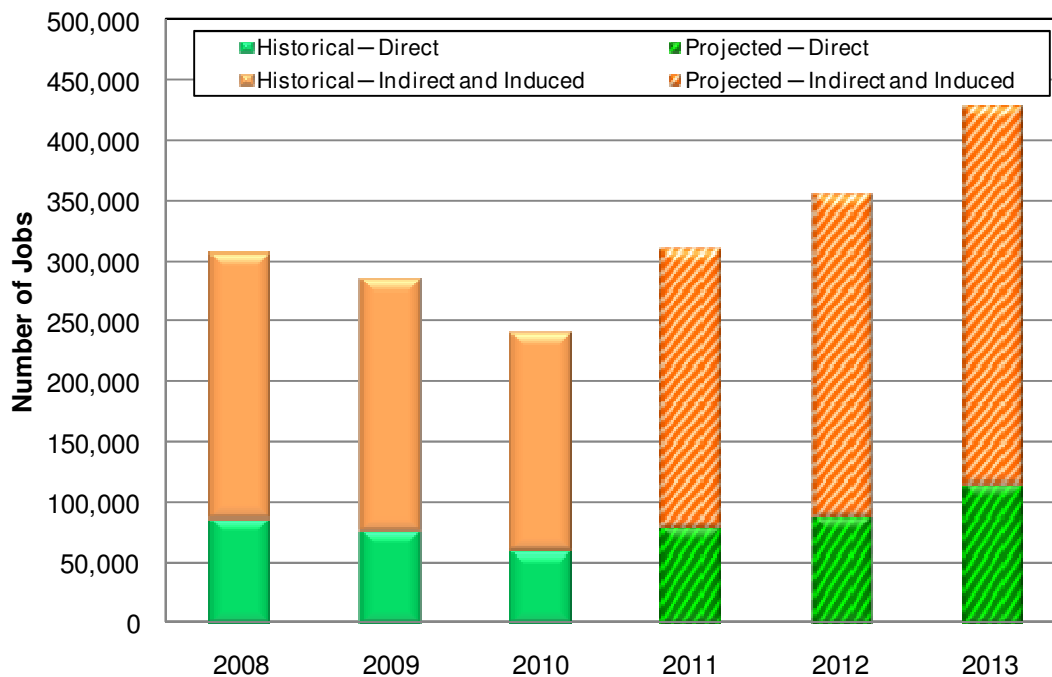


## 5-1 National Impacts

Overall spending for the Gulf of Mexico offshore industry in 2008 was over \$28.5 billion which translated into a total GDP impact of over \$30.8 billion (Figure 12)<sup>11</sup>. This impact was felt throughout the country and supported over 305 thousand jobs nationwide (Figure 11). Approximately 90 thousand of those jobs were directly related to the industry (meaning jobs working directly for oil and natural gas companies or for contractors that are directly paid by the oil and natural gas industry) while 220 thousand

were indirect (meaning jobs providing goods and services to oil companies such as components for manufacturing, legal and financial services, etc.) and induced jobs (meaning jobs throughout the economy that result from the spending of income from direct and indirect employment such as waiters, retail workers, automobile manufacturers, service providers, etc). The year 2008 coincided with, the tail end of a strong investment period which had seen development activity increase and economic impacts grow.

**Figure 11: Estimated Historical and Projected Total Employment Supported by Gulf of Mexico Oil and Natural Gas Industry Activity (2008 - 2013)\***



\* Projected employment contingent on returning to pre-Macondo permitting rates.

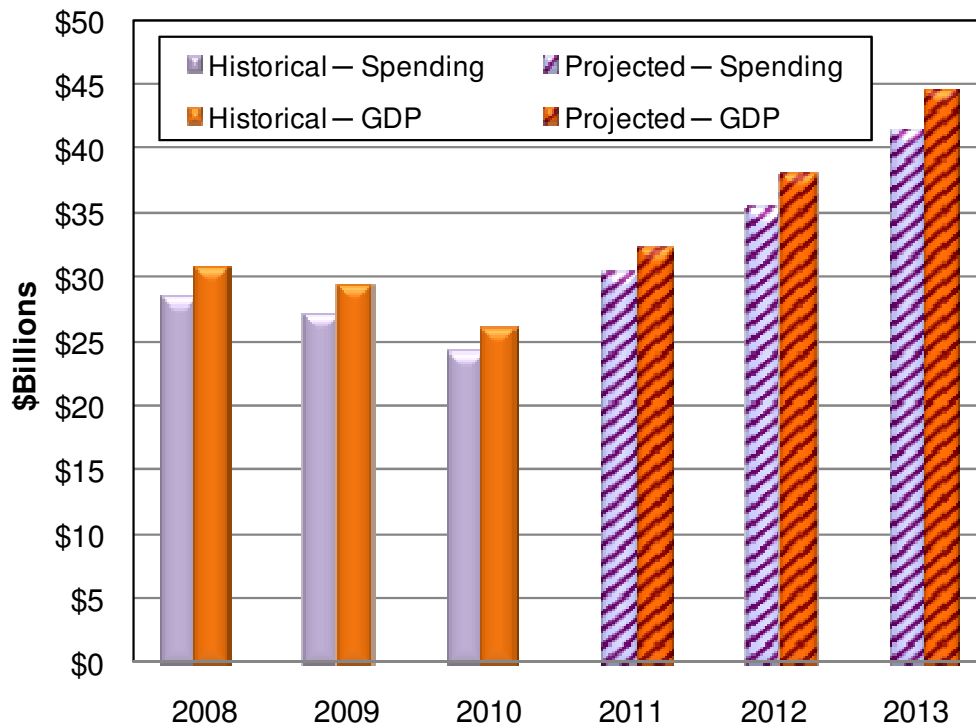
Source: Quest Offshore Resources, Inc

<sup>11</sup> GDP and employment impact results are likely conservative because they do not take into account the economic impacts of increased government revenue from bonus bids, royalties, and corporate income taxes. Nor do they account for the impacts of certain profit type income associated with oil and gas operations.

In 2009, in part due to the effects of the economic recession, industry capital investment and operational spending fell to \$27.1 billion with an associated GDP impact of just over \$29.3 billion (Figure 12). This economic activity supported approximately 285 thousand jobs in total of which 80 thousand were direct, and 205 thousand were indirect and induced jobs. The year 2010 saw capital investment and operational spending fall to its lowest level over the period of interest to \$24.2 billion. This was primarily due to the moratorium on drilling in the deepwater GoM and the subsequent lack of deepwater drilling permits issued and the associated slow down in drilling in the

shallow water due to the decrease in permits issued. As a result of the decrease in capital investment and operational spending in 2010, the total GDP impact decreased to \$26.1 billion despite the stirrings of economic recovery. This led to total employment levels associated with GoM offshore oil and natural gas development falling to roughly 240 thousand jobs of which 60 thousand were direct jobs and 180 thousand were indirect and induced jobs. Overall this was a 21 percent decline nationwide from supported employment levels in 2008, contributions to GDP fell 15 percent nationwide.

**Figure 12: Estimated Historical and Projected Total Spending and Contribution to GDP of Gulf of Mexico Oil and Natural Gas Industry Activity (2008-2013)\***



\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

Our industry capital investment and operational spending outlook for the GoM in 2011 was predicated on a return to historical permitting rates by the second half of 2011, which was an optimistic assumption not in line with current permitting rates. Spending is expected to reach \$30.5 billion, resulting in a total GDP impact of over \$32.3 billion. Total supported employment is estimated at 311 thousand jobs of which 80 thousand are direct and 230 thousand are indirect and induced. This would represent a 28 percent increase in employment over 2010 and a 24 percent increase in contributions to GDP. A large portion of this projected spending increase stems from major projects far along in the development cycle which had been delayed in the previous two years.

In 2012, again assuming a return to historical permitting rates in the GoM, it is estimated that capital and operational spending in the GoM could reach \$35.4 billion resulting in an estimated GDP impact of over \$38.2 billion. Capital spending is projected to grow at the fastest rate at 17 percent due to more and more delayed projects beginning development while operational expenditures are projected to increase by 16 percent as more projects come into production. This uptick in activity should see the industry and its suppliers hiring with total supported employment associated with GoM oil and natural gas development projected to reach 355 thousand jobs of which 90 thousand are

Economic impacts from oil and natural gas capital investment and purchases of intermediate goods ripple through many sectors of the economy. In the combined Louisiana, Texas, Alabama and Mississippi region almost all sectors of the economy benefit. Examples include the transportation and warehousing sectors with increases of \$340 million in 2010, the real estate industry, which shows a \$2.5 billion increase, the health care and social assistance industry, with a \$686 million increase, and the food service industry, with a \$221 million increase.

direct and 265 thousand are indirect and induced. This would represent a 15 percent increase in supported employment from 2011 and an 18 percent increase in contribution to GDP.

Finally we estimate that in 2013, which is projected to yield all time record investment and spending levels under the assumption that permitting rates in the GoM had returned to pre-Macondo levels by mid 2011, (an optimistic assumption not met), investment and spending should reach nearly \$41.4 billion. In 2013, projects which had seen their exploration and appraisal drilling halted by the drilling moratorium should see final investment decisions and subsequent major spending. This is estimated to result in a total GDP impact of \$44.5 billion, a 16 percent increase over

2012, propelling employment levels to an all time high of 430 thousand jobs, a 21 percent increase over the 2012 level. Direct employment is estimated to comprise 115 thousand of these jobs while 315 thousand are estimated to be indirect and induced. This would represent a 21 percent increase in supported employment from 2012 and a 17 percent increase in contribution to GDP.

## 5-2 State and Regional Impacts

The Gulf Coast states, with the primary four being Texas, Louisiana, Mississippi, and Alabama, (including the federal waters of these states) are areas which produce oil and natural gas and receive the majority of the spending from the offshore oil and natural gas industry in the Gulf of Mexico. These states are the location of most of the primary spending for capital equipment and purchases of intermediate inputs needed for the operational activities of the Gulf of Mexico oil and natural gas industry.

Throughout the Gulf Coast, activities such as engineering and management, manufacturing of equipment, support of offshore activities, and fabrication of platforms and topsides are widespread. Due to this concentration of primary investment and spending, the offshore Gulf of Mexico oil and natural gas industry is instrumental in the economic health of these states. In 2010, capital investment and operational spending in these four states totaled \$17.5 billion, with Alabama accounting for \$2.7 billion of spending, Louisiana accounting for \$7.3 billion, Mississippi accounting for \$0.3 billion of spending and Texas \$7.3 billion (Table 12). The total contribution to GDP of these states associated with GoM offshore oil and natural gas activity stood at just over \$19.1 billion in 2010 with \$2.6 billion centered in Alabama, \$7.4 billion in Louisiana, \$0.2 billion in Mississippi and \$8.9 billion in Texas.

**Table 12: Estimated Historical and Projected Gulf Coast States Spending and GDP Impacts due to the Offshore Gulf of Mexico Oil and Natural Gas Industry Activity (2008-2013)\***

<b>Billions</b>	Historical			Projected		
	2008	2009	2010	2011	2012	2013
AL Spending	\$3.3	\$3.0	\$2.7	\$3.5	\$4.2	\$4.8
AL Contribution to GDP	\$3.3	\$3.0	\$2.6	\$3.4	\$4.1	\$4.7
LA Spending	\$9.3	\$8.6	\$7.3	\$9.0	\$10.7	\$12.9
LA Contribution to GDP	\$9.4	\$8.7	\$7.4	\$9.1	\$10.8	\$13.0
MS Spending	\$0.3	\$0.3	\$0.3	\$0.3	\$0.4	\$0.4
MS Contribution to GDP	\$0.2	\$0.2	\$0.2	\$0.3	\$0.3	\$0.4
TX Spending	\$8.7	\$8.0	\$7.3	\$9.3	\$10.7	\$12.5
TX Contribution to GDP	\$10.6	\$9.8	\$8.9	\$11.2	\$13.1	\$15.2
Total Spending: AL, LA, MS, TX	<b>\$21.6</b>	<b>\$19.9</b>	<b>\$17.5</b>	<b>\$22.1</b>	<b>\$26.0</b>	<b>\$30.6</b>
Total Contribution to GDP: AL, LA, MS, TX	<b>\$23.5</b>	<b>\$21.8</b>	<b>\$19.1</b>	<b>\$24.1</b>	<b>\$28.3</b>	<b>\$33.3</b>

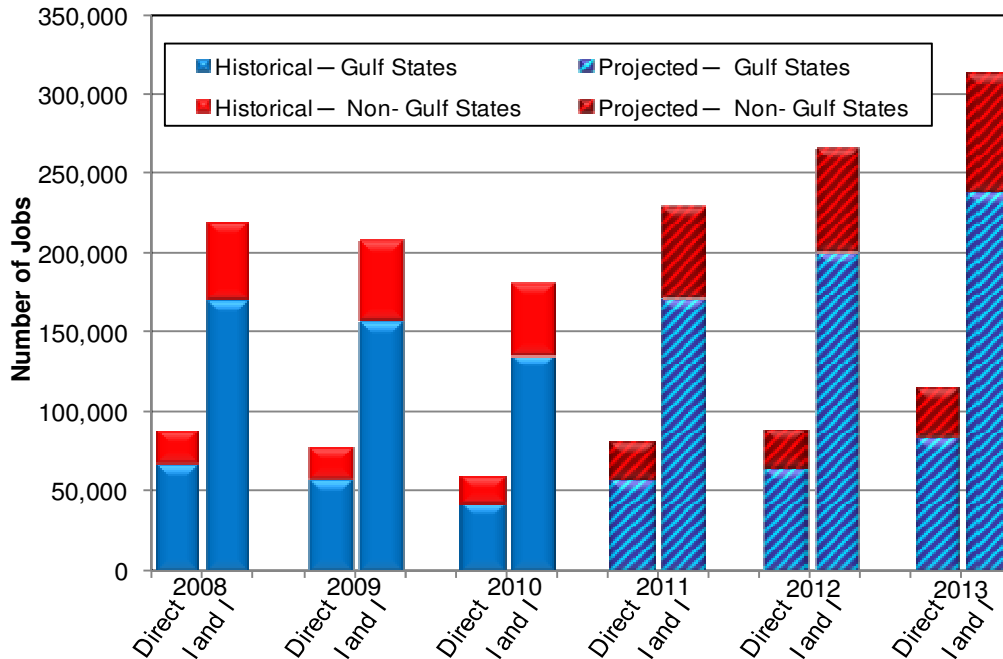
\* Projected spending contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

In 2013 capital investment and purchases of intermediate goods are projected to reach their highest levels in the studied period, assuming that permitting rates in the Gulf of Mexico return to pre-Macondo levels. Total capital investment and spending in the four state region is projected to reach \$30.6 billion. More specifically, investment and spending in Alabama associated with offshore GoM oil and natural gas development is estimated at \$4.8 billion, Louisiana at \$12.9 billion, Mississippi at \$0.4 billion and Texas at \$12.5 billion. This investment and purchases of intermediate inputs is estimated to increase GDP in the four state area by over \$33.2 billion. In particular for 2013, the contributions to GDP in Alabama due to GoM offshore oil and natural gas industry activity is projected to be \$4.7 billion, Louisiana \$13 billion, Mississippi \$0.4 billion and Texas at \$15.1 billion.

In 2010 the Gulf Coast States, defined as Alabama, Louisiana, Mississippi, and Texas, saw employment levels of 175 thousand due to Gulf of Mexico offshore oil and natural gas industry activity (Figure 13). Jobs tied directly to the industry were estimated at 42 thousand while indirect and induced jobs were estimated at 135 thousand. These states see the highest employment levels due to the concentration of spending in the region as many goods and services providers to the industry are located near to the Gulf coast. Employees on drilling rigs and other offshore personnel who often work offshore for two week stretches normally live close to their onshore bases for ease of transportation.

**Figure 13: Estimated Historical and Projected Direct and Indirect/Induced Jobs in Gulf Coast States Supported by Gulf of Mexico Oil and Natural Gas Industry Activity vs. Other States (2008-2013)\***



\*\*"I and I" defined as Indirect and Induced;

\* Projected employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

At the time of the moratorium the Louisiana Mid-Continent Oil and Natural Gas Association stated that for every idle rig platform there were 800-1400 jobs at risk.<sup>12</sup> According to the association wages lost for these jobs could exceed \$5 to \$10 million for one month per platform, with a maximum of 33 rigs having been idled at the peak.

Direct employment associated with oil and natural gas operations in the Gulf States stood at 42 thousand in 2010, with employment at 7 thousand in Alabama,

18 thousand in Louisiana, 500 in Mississippi and 16 thousand in Texas. In 2010 an estimated 135 thousand indirect and induced jobs in the Gulf States were due to the GoM offshore oil and natural gas industry's investment and spending (Table 13). More specifically, 19 thousand jobs in Alabama were supported due to the indirect and induced effects of offshore oil and natural gas industry investment and spending, 52 thousand jobs supported in Louisiana, 15 hundred jobs supported in Mississippi and 63 thousand jobs were

<sup>12</sup> Source: Louisiana Mid-Continent Oil and Natural Gas Association

supported in Texas. Total employment impacts for Texas, Louisiana, Alabama and Mississippi are projected to reach 320 thousand jobs (direct, indirect and induced)

in 2013 with 50 thousand being supported in Alabama, 130 thousand in Louisiana, 3 thousand in Mississippi and 140 thousand being supported in Texas.

**Table 13: Estimated Historical and Projected Texas, Louisiana, Mississippi, and Alabama Direct, Indirect & Induced Employment (2008-2013)\***

<b>Number of Jobs</b>	Historical			Projected		
	2008	2009	2010	2011	2012	2013
AL Direct Jobs	11,851	10,134	7,186	9,959	11,312	14,338
AL Indirect and Induced Jobs	24,275	22,158	18,635	24,606	29,354	34,456
LA Direct Jobs	30,301	26,385	18,110	23,804	27,326	36,469
LA Indirect and Induced Jobs	67,947	62,798	52,363	64,943	76,814	92,638
MS Direct Jobs	648	640	531	685	759	929
MS Indirect and Induced Jobs	1,629	1,658	1,529	1,889	2,162	2,431
TX Direct Jobs	24,619	20,717	16,524	22,760	25,201	32,060
Tx Indirect and Induced Jobs	76,189	70,066	62,751	79,818	92,443	108,152
Total Direct Jobs: AL,LA, MS, TX	<b>67,419</b>	<b>57,876</b>	<b>42,351</b>	<b>57,208</b>	<b>64,598</b>	<b>83,796</b>
Total Indirect and Induced Jobs: AL,LA,MS,TX	<b>170,040</b>	<b>156,680</b>	<b>135,278</b>	<b>171,256</b>	<b>200,773</b>	<b>237,677</b>

\* Projected employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

Outside of the Gulf States, Quest estimated that offshore Gulf of Mexico oil and natural gas industry activity supported 65 thousand jobs in 36 other states in 2010. Total contribution to GDP from these states due to offshore GoM oil and natural gas industry activity was estimated at \$7.0 billion in 2010 based on total spending in these states of \$6.7 billion. The non-Gulf of Mexico States, which primarily provide manufactured goods, component parts and services to the industry, are expected to see spending levels rise 61 percent to \$10.8 billion in 2013 from 2010 levels. This spending rise is expected to yield a 61 percent increase in

contributions to GDP to \$11.3 billion and a 67 percent increase in employment to 105 thousand jobs. (See Appendix 1 for a detailed description of non-Gulf Coast State impacts)

### 5-3 Impacts on Other Industries

While the economic impact of the offshore Gulf of Mexico oil and natural gas industry is felt across many sectors, certain industries are impacted more than others. The largest other industry beneficiary, due to the investment and operations of the offshore Gulf of Mexico oil and natural gas industry,

was the real estate and rental and leasing industry (Table 14). Activity in this sector was nearly \$3.5 billion and over 18,500 jobs

were supported due to offshore GoM oil and natural gas industry activity.

**Table 14: Estimated Historical Sectoral GDP and Employment Impacts Due to Offshore Gulf of Mexico Oil and Natural Gas Industry Activity (2010)**

	Contribution to GDP (Billions)	Employment Impact (In Jobs)
<b>Real Estate and Rental Leasing</b>	\$3.5	18,533
<b>Manufacturing</b>	\$2.0	23,303
<b>Profession, Scientific, and Technical Services</b>	\$1.2	14,061
<b>Construction</b>	\$1.1	23,192

*Source: Quest Offshore Resources, Inc.*

Other industries in 2010 which were beneficially supported include the manufacturing sector, with a GDP impact of approximately \$2.0 billion and over 23 thousand jobs supported and the professional, scientific and technical services sector with GDP impact in 2010 of \$1.2 billion and supported employment of approximately 14 thousand jobs. The GoM oil and natural gas industry also supports jobs in the real estate and construction sectors.

Total indirect and induced jobs due to offshore GoM oil and natural gas industry activity stood at 180 thousand jobs in 2010. The large impacts of oil and natural gas industry activity on other sectors make up a large share of the total economy-wide economic impacts. This plays an important role in the value of the industry to the U.S. economy.



## **6. Conclusions**

This report has documented the decline in capital expenditures and operational spending of the GoM offshore oil and natural gas industry that occurred over the 2008 to 2010 period. The principal reasons for this decline include the economic recession in 2008-09 and the establishment of a moratorium on deepwater drilling and subsequent slowdown of permit issuance in both GoM deep and shallow waters in 2010 and into 2011. We estimate that tens of thousands of jobs have been lost in response to the decline in capital expenditures and operational spending of the offshore GoM oil and natural gas

industry over this period. We also demonstrate the near term potential of the offshore GoM oil and natural gas industry to create jobs, boost GDP and generate tax revenues at all levels of government – if the government pursues a balanced regulatory approach that allows for the timely development of the backlog of GoM projects in an environmentally responsible manner. Under such government policy, we estimate total spending by the GoM offshore oil and natural gas industry to increase by over 70 percent by 2013 from 2010 levels, and capital expenditures to increase by over 140 percent.

- The Gulf of Mexico oil and natural gas industry's operational and capital investment spending is projected to average \$35.7 billion from 2011-2013, with spending estimated at \$26.5 billion for the 2008-2010 period. In 2013 spending is projected to reach \$41.4 billion, a 71 percent increase from the 2010 level of \$24.2 billion.
- The majority of the Gulf of Mexico oil and natural gas industry's spending is spent domestically, with an average of 98 percent of industry expenditures occurring within the United States from 2008-2010 and 97 percent expected to be spent domestically from 2011-2013.
- Direct employment from GoM development expenditures and operations is projected to average 95 thousand from 2011 to 2013, after averaging 75 thousand from 2008-2010, with direct employment reaching a high of nearly 115 thousand by 2013. Total employment supported by the Gulf of Mexico oil and natural gas industry, including indirect and induced (income related) effects, is projected to average nearly 365 thousand jobs from 2011-2013 compared to total estimated employment of 275 thousand from 2008-2010. Employment in 2013 is projected to exceed 430 thousand jobs or a 77 percent increase from 2010.

- The Gulf of Mexico oil and natural gas industry is projected to contribute an average of \$38.5 billion a year to U.S. GDP from 2011-2013 as compared to \$28.7 billion a year from 2008-2010. In 2013 total contributions to GDP are projected to reach \$44.5 billion, or a 71 percent increase over the 2010 estimated level of \$26.1 billion. These results are likely conservative because they do not take into account the economic impacts of increased government revenue from bonus bids, royalties, corporate income taxes, and certain profit type income associated with oil and natural gas operations.
- GDP impacts in the Gulf of Mexico states of Alabama, Louisiana, Mississippi and Texas, due to offshore GoM oil and natural gas industry activity, are projected to average \$28.5 billion a year from 2011-2013, as compared to \$21.4 billion a year from 2008-2010. Total contributions to GDP in 2013 are expected to have increased 73 percent from 2010 to \$33.2 billion due to offshore GoM oil and natural gas industry activity. Total supported employment in the Gulf states due to offshore GoM oil and natural gas industry activity is expected to average 270 thousand jobs from 2011-2013 compared to 210 thousand jobs in the 2008-2010 period. In 2013, total supported employment is expected to grow to 320 thousand jobs, an 80 percent increase over the 2010 level.
- While spending from the offshore Gulf of Mexico oil and natural gas industry is focused along the Gulf coast, many states see benefits from the industry. Non-Gulf Coast States are expected to average \$9.9 billion in spending from 2011-2013, compared to an average of \$7.2 billion spending per year from 2008-2010. Total supported non-Gulf State employment due to offshore oil and natural gas industry operations is expected to average 94 thousand from 2011-2013, compared to estimated total employment of 67 thousand in the 2008-2010 period.
- Quest's forecast for spending and hence contribution's to GDP and employment for forecast years are predicated on a return to normal permitting activity in the second half of 2011. This may be optimistic given current rates of permitting. A failure to return to historical issuance of drilling permits, as well as implementation of overly excessive regulation, would significantly decrease projections of spending and thus economic and job impacts.

- Quest's estimated and projected spending are based on Quest's proprietary Enhanced Deepwater Development Database and thus provide a high degree of accuracy with relation to both spending levels and the locations of spending. This is likely to yield realistic estimates of economic activity both with respect to magnitude and location.

The offshore oil and natural gas industry is a key contributor to the energy supply of the United States; additionally the industry contributes both to the gross national product and overall employment of the country. The offshore GoM industry contributed 14 percent of the oil and natural gas produced in the United States in 2010. Additionally, capital investment and operational spending by the Gulf of Mexico oil

and natural gas industry supports hundreds of thousands of jobs across multiple sectors and regions, spurs economic growth, and generates significant tax revenue at all levels of government. It is therefore critical that permitting return to historical rates, and that development and production are allowed to reach their potential in an environmentally responsible manner under a balanced regulatory regime.

# **Appendix 1: Summary of Non-Gulf Coast State Economic Impacts**

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## Non- Gulf Coast States

### California

The results of the study indicate that California has the next largest economic impact (second to the Gulf Coast States) as a result of the Offshore Gulf of Mexico oil and natural gas industry with total contribution to GDP of \$1.7 billion in 2010 derived from \$1.5 billion in spending. It may seem surprising that the economy of a west coast state would benefit so greatly from oil and natural gas operations in the GoM. However, there are areas where California is directly involved in the offshore oil and natural gas industry, for instance Chevron, a major player in the offshore Gulf of Mexico, is headquartered in San Ramon, California.



*Source: Quest Offshore Resources, Inc.*

In general, the reason GoM oil and natural gas development impacts the California

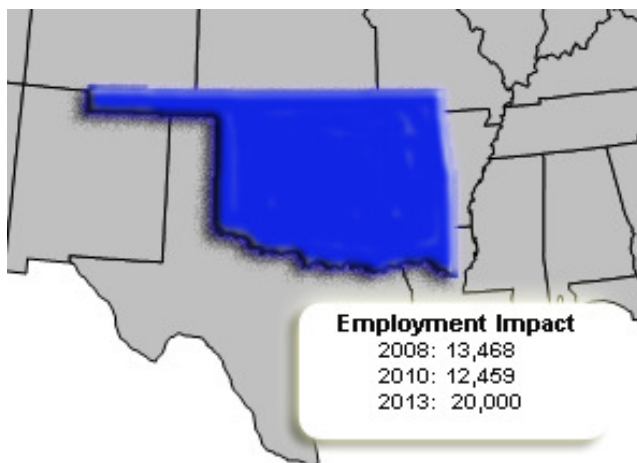
economy is due to California's standing as the largest overall state economy. In addition, California has had a long historical involvement in oil and natural gas production. Its base of high tech industries supports a large number of equipment manufacturers and technology providers. Examples include companies such as Teledyne Technologies that produce sophisticated electronics and instrumentation for the industry. These types of manufacturers supply components that are used throughout offshore developments in important equipment such as platform topsides and subsea hardware. From an employment perspective, approximately 14 thousand men and women in California were employed due to the offshore Gulf of Mexico oil and natural gas industry in 2010 as a result of spending of \$1.5 billion associated with GoM oil and natural gas operations.

Notably affected industries in California include real estate with a \$262 million impact in 2010, professional scientific and technical services with an \$88 million impact, finance and insurance, which sees an \$81 million impact and manufacturing with an \$85 million impact in 2010. In 2013 total contribution to GDP in California due to GoM oil and natural gas operations is projected to reach \$2.6 billion with total related employment estimated to reach over 22 thousand on spending of \$2.3 billion.

## Oklahoma

Oklahoma while not directly on the Gulf of Mexico, borders Texas and has historically been heavily involved in oil production both inside the state and through its legacy as one of the historical centers of the oil and natural gas industry. Some of Oklahoma's involvement the offshore Gulf of Mexico operations is through corporate operations such as ConocoPhillips headquartered in Bartlesville, Oklahoma or through equipment manufacturing, or the ownership of key infrastructure such as Williams Partners, LP; a key owner of pipelines in the Gulf of Mexico.

The state of Oklahoma sees significant economic and employment due to the Offshore Gulf of Mexico offshore oil and natural gas industry. Total contributions to GDP stood at \$1.3 billion in 2010 based on spending of almost \$1.2 billion, with total employment impact



Source: Quest Offshore Resources, Inc.

## Williams Partners L.P. – Tulsa, Oklahoma

Williams Partners L.P. is a leading diversified master limited partnership focused on natural gas transportation; gathering, treating, and processing; storage; natural gas liquid (NGL) fractionation; and oil transportation. Williams operates three natural gas transmission pipelines: With a combined design capacity of more than 12 billion cubic feet per day, these three pipelines transport enough natural gas in one day to serve the needs of more than 30 million homes. Placed into service in May 2002, Gulfstream is a state-of-the-art, 745-mile natural gas delivery network across the Gulf of Mexico. As the Sunshine State's first new natural gas pipeline in more than 40 years, Gulfstream can transport approximately 1.26 billion cubic feet of natural gas each day from vast natural gas reserves to a wide array of customers, including electric utilities, local distribution companies and municipal users.

reaching 12 thousand jobs. Industries such as Real estate which sees employment 11 hundred and over \$188 million of contributions to GDP and finance with supported employment of 500 and over \$43 million of contributions to GDP. In 2013 Oklahoma is forecast to see slightly over 2 billion dollars of contributions to GDP from the offshore Gulf of Mexico oil and natural gas industry due to slightly over 1.9 billion dollars of spending, with total employment impact set to reach slightly over 20 thousand jobs, a 60 percent increase from 2010.



## **Colorado**

Colorado, which is home to a large domestic oil and natural gas industry, also benefits through the supply chain from the offshore Gulf of Mexico oil and natural gas industry. In 2010, the total economic impact stood at nearly \$1.1 billion, with total employment impact at over 9 thousand jobs based on spending of \$1 billion. Job losses from 2008 to 2010 were 680 jobs.

Industries such as real estate with \$174 million of economic impact, professional, scientific and technical services with \$60 million in impact, and management of companies and enterprises with \$52 million in economic impact see the most benefits.

2013 should see total economic impact in Colorado at about \$1.8 billion leading to a total employment impact of slightly of 15 thousand jobs due to spending of \$1.5 billion.

## **New Mexico**

New Mexico which also has a large domestic oil and natural gas industry felt a total economic impact due to the offshore Gulf of Mexico oil and natural gas industry of \$810 million in 2010 due to spending of slightly over \$943 million. New Mexico experienced a loss of 700 jobs in 2010 compared to 2008.

Key industries include real estate industry with contributions to GDP of \$61 million, the construction industry with contributions to GDP at \$37 million, and retail trade with \$30 million. 2013 economic impact is predicted to reach \$1.3 billion due to \$1.5 billion in spending; total employment impact is predicted to reach 13 thousand jobs.

## Ohio

Ohio which produces very little oil and natural gas relative to the largest producing states is still a major manufacturer of goods utilized in both the onshore and offshore oil and natural gas industries. Some of the leading members of the oil and natural gas supply chain are based in Ohio. Parker Hannifin corporation which is based out of Cleveland is heavily involved in the offshore Gulf of Mexico oil and Natural gas industry fabricating such items as umbilicals and mooring ropes.

The total economic impact of the offshore Gulf of Mexico oil and natural gas industry was \$306 million in 2010, based on spending of \$280 million. Employment impact stood at 34 hundred jobs.

Impacts to the manufacturing industry stood at \$56 million with 750 employed. 2013 total economic impact for Ohio is predicted to reach \$530 million based on spending of \$476 million, total employment impact in 2013 should reach 6 thousand, a 100 percent increase on 2009.

### **Parker Hannifin – Cleveland, Ohio**

Parker Hannifin is the 13<sup>th</sup> largest Manufacturing Company in Ohio with 9 facilities in the state (including headquarters). Parker Hannifin has operations in 36 states and 153 U.S. cities. With annual sales of \$10 billion for fiscal year 2010, Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of commercial, mobile, industrial and aerospace markets. Parker is a global supplier of umbilicals, subsea power cables and associated termination equipment to the offshore oil & natural gas industry, and the offshore wind turbine industry.

*Other top 50 manufacturing companies directly involved in the oil & natural gas supply chain with facilities in Ohio: Siemens, GE, Rockwell Automation, AK Steel Corp., Emerson Electric.*

### **Aubert & Duval- Ohio**

Aubert & Duval (A&D), a member of the Eramet Group, provides advanced metallurgical solutions in the form of parts or long products required for projects in the most demanding industries including aerospace, energy, industrial tool steels, and motor racing.

The Company's core activity is developing, melting and hot processing (open and closed-die forging and rolling, casting or powder metallurgy) special steels, super alloys, aluminum alloys and titanium alloys which need to meet clients' stronger specifications.

## **Arkansas**

Arkansas which borders the gulf coast region, sees significant impacts to its economy due to the offshore Gulf of Mexico oil and natural gas industry. Total economic impact in 2010 reached \$273 million, with the industry accounting for over 3 thousand jobs based on spending of \$300 million.

In 2013 spending levels are set to reach over \$472 million in Arkansas, which should see total economic impact reach \$430 million. Total employment impact is predicted to reach slightly over 4 thousand.

## **Alaska**

Alaska though very distant from the Gulf Coast and the offshore Gulf of Mexico oil and natural gas industry, still sees significant economic impact from the industry due to its links to the oil and natural gas industry as a whole based on its significance as one of the leading oil and natural gas producing states in the country. Total economic impact in 2010 was \$262 million based on spending of \$291 million. Total employment impact was slightly under 2 thousand jobs.

2013 should see spending levels in Alaska reach \$455 million, with total economic impact reaching \$404 million; due to this spending total employment impact is predicted to reach slightly over 3 thousand jobs, a gain of 200 jobs on 2010.

## **Murphy Oil – El Dorado, Arkansas**

Murphy Exploration & Production Company, (Murphy EXPRO) is engaged worldwide in crude oil and natural gas exploration and production. Murphy EXPRO is headquartered in Houston, Texas. Murphy Oil USA, Inc., (MOUSA) is engaged in refining, marketing and transportation of petroleum products in the United States. It is headquartered in El Dorado at Murphy's corporate offices.

Murphy's refining and marketing operations are conducted through wholly-owned subsidiaries including Murphy Oil USA. Murphy operates over 1,000 retail natural gas stations in 23 U.S. states under the Murphy USA brand and 93 Murphy Express stations in 11 U.S. states. The company's refining business includes a 125,000 barrel-a-day refinery in Meraux, Louisiana, which produces refined petroleum products for distribution in the Gulf Coast market, and a 35,000 barrel-a-day refinery in Superior, Wisconsin, which serves the Upper Midwest. In 2010 Murphy's U.S. production was 20,100 barrels of oil per day and 53 million cubic feet of natural gas. Over 60 percent of the production came from just two deepwater Gulf of Mexico fields – Thunder Hawk and Medusa – both of which are expected to see production declines in 2011 due inability to drill new wells. The deepwater Gulf of Mexico remains an integral component of Murphy's upstream strategy. Murphy moved to the deepwater in 1996 and to date has three major discoveries on production (Habanero, Medusa and Front Runner) and a fourth now in development at Thunder Hawk. Murphy is the 16<sup>th</sup> largest leaseholder in deepwater Gulf of Mexico (>500fsw) with 113 operated leases and 57 leases as partner.

## **Pennsylvania**

Pennsylvania, due to its legacy as both a key manufacturing state for the United States and its past (and now growing) involvement in the oil and natural gas industry, saw spending due to the offshore Gulf of Mexico oil and natural gas industry of \$170 million in 2010.

Total economic impact stood at \$200 million with total employment impact of 2 thousand jobs. In 2013, total economic impact is predicted to reach \$404 million based on spending of \$341 million. Total employment impact in 2013 is predicted to reach slightly over 4 thousand jobs, a two fold increase on 2010.

## **Kansas**

Offshore Gulf of Mexico oil and natural gas spending for Kansas stood at \$190 million for 2010, leading to a total economic impact of \$170 million. Total employment impact was 15 hundred jobs.

The industry contributed \$16 million to Kansas's real estate industry in 2010. In 2013 spending for Kansas is predicted to reach \$292 million leading to a total economic impact of \$266 million and a total employment impact of impact of 25 hundred.

## **Whitehill Manufacturing- PA**

Whitehill supplies mooring lines for the navy, oil tankers and drilling rigs and floating production units.

Whitehill can be described as a differentiated niche player in the high performance rope arena. Many of their competitors produce high volume, low cost products for general use. Whitehill focuses its efforts and expertise on demanding projects that require high quality materials, engineering precision and technical support. These problem-solving projects often involve developing new technical solutions for existing industries using a unique engineering experience with high performance synthetic fibers.

Whitehill's competitive advantage is their experience with high performance synthetic materials. Whitehill has invented and reinvented high performance rope with new fibers, new designs and new concepts supported with rigorous testing to meet the changing requirements of evolving applications. Offshore rigs and floating units are very reliant on these products.

## **United States Steel – Pittsburgh, Pennsylvania**

U.S. Steel is an integrated steel producer with major production operations in the United States, Canada and Central Europe and an annual raw steel-making capability of 31.7 million net tons. The company manufactures a wide range of value-added steel sheet and tubular products for the automotive, appliance, container, industrial machinery, construction, and oil and natural gas industries. U.S. Steel is the ninth largest fortune 500 company in Pennsylvania and one of the few fully integrated steel manufacturers left in the United States. In 2010 U.S. Steel revenues were \$17.4BN. U. S. Steel Tubular Products manufactures quality tubular products for the energy industry including drill pipe for offshore applications. Major product lines include oil country tubing, casing and drill pipe, standard and line pipe, and coupling stock. Tubular Products are manufactured in Alabama, Ohio, Texas and Pennsylvania.

## **Wyoming**

Wyoming, though very distant from the Gulf of Mexico offshore oil and natural gas industry geographically still received spending of almost \$186 million in 2010. This spending was responsible for a total economic impact of \$161 million and a total employment impact of almost 12 hundred jobs.

In 2013 total economic impact for Wyoming is expected to reach \$248 million dollars on spending of \$291 million leading to an employment impact of slightly over 2 thousand.

## **Illinois**

In 2010 Illinois saw a total economic impact due to the offshore Gulf of Mexico oil and natural gas industry of \$124 million based on spending of \$104 million. Total employment impact in 2010 stood at 13 hundred jobs. In 2013 industry growth should lead to spending of \$213 million,

leading to a total economic impact of \$254 million and a total employment impact of 3 thousand jobs.

## **Utah**

Utah, while relatively distant geographically from the Gulf of Mexico has a strong domestic oil and natural gas industry through which it is connected to the offshore Gulf of Mexico oil and natural gas supply chain.

Spending in 2010 due to the industry stood at \$83 million leading to a total economic impact of \$96 million. Total employment impact was at slightly under 1 thousand jobs.

In 2013, total economic is predicted to rise to \$150 million based on spending of \$130 million with total employment impact predicted to reach slightly over 15 hundred jobs, a 50 percent increase over 2010.

### **West Virginia**

West Virginia, though traditionally seen as a coal state, also is involved in oil and natural gas production domestically and with the overall oil and natural gas supply chain. Through this West Virginia saw total economic impact due to the offshore Gulf of Mexico oil and natural gas industry of \$95 million in 2010.

Total employment impact was 1 thousand jobs. In 2013, total economic impact should reach \$150 million, with total employment impact at 15 hundred jobs due to spending of \$168 million.

### **U.S. DOE National Energy Tech Labs-WV**

The Office of Research and Development (ORD) provides DOE's Fossil Energy R&D program an onsite "corporate laboratory" at NETL. The onsite R&D efforts utilize state-of-the-art capabilities and facilities in Morgantown, WV. About one-quarter of NETL's approximately 1,100 Federal and contractor employees are involved with onsite research activity. Because NETL is DOE's only government-owned, government-operated (GOGO) national laboratory, the onsite research program has a core group of about 150 Federal scientists and engineers.

One of DOE's primary strategic goals is "to protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy." NETL contributes to this strategic goal through cutting-edge research and development, focused on the clean production and use of the Nation's domestic fossil energy resources. Advanced technologies provide policymakers with expanded options for meeting vital national energy, environmental, and security needs.

### **Kentucky**

Kentucky's portion of Offshore Gulf of Mexico oil and natural gas spending was at \$74 million in 2010, leading to a total economic impact of \$71 million and a total employment impact of 800 jobs. In 2013 total economic impact should reach about \$121 million, while total employment impact is expected to reach 15 hundred jobs.

### **Virginia**

In Virginia, which has often been seen as a possible location for future offshore production, the effects of the offshore Gulf of Mexico oil and natural gas industry are still felt despite its distance from the centers of production. In 2010 Virginia spending from the offshore Gulf of Mexico oil and natural gas industry was at \$65 million, with total economic impact of \$67 million and total employment impact of 600 jobs.

In 2013 growth in the industry should see spending into Virginia reach \$102 million leading to a total economic impact of \$105

### **General Cable – Highland Heights, Kentucky**

General Cable is a leader in the development, design, manufacture, marketing and distribution of copper, aluminum and fiber optic wire and cable products for the energy, industrial, specialty and communications markets. General Cable is the fifth largest company in Kentucky. The company is present in 13 U.S. states and 19 U.S. cities. In 2010 General Cable had \$4.9BN in sales. General Cable is one of few experienced global manufacturers with the technical expertise, material science and processing and testing capabilities called upon to service the Oil, Natural gas & Petrochemical (OGP) market.

General Cable offers the most comprehensive line of specialty IEEE, IEC, Industrial and Communications wire and cable solutions tested and certified on both a global and regional scale. With years of industry knowledge and insight, General Cable engineers exclusive designs to meet product and application specifications and withstand demanding environments. Our ongoing technology effort delivers new solutions that continue to advance the drilling, exploration, production and refining of natural resources for Oil, Natural gas & Petrochemical (OGP) markets globally.

million and a total employment impact of 1 thousand jobs.



## **Missouri**

Missouri's share of Offshore Gulf of Mexico oil and natural gas spending was \$43 million in 2010, leading to a total economic impact of \$43 million and a total employment impact of 500 jobs. In 2013 total economic impact should reach about \$80 million, while total employment impact is expected to reach 1 thousand jobs.

## **Florida**

Florida, despite being geographically on the Gulf of Mexico coast does not produce significant amounts of oil and natural gas offshore. Relative to its closeness to the producing region Florida has little involvement in the oil and natural gas industries both on and offshore. However some key suppliers to the oil and natural gas industry have a presence in the state, such as Oceaneering International which operates an umbilical manufacturing plant in Panama City, Florida.

Despite this, Florida still sees the impacts of the offshore Gulf of Mexico oil and natural gas industry. Total economic impact in 2010 stood at \$42 million derived from spending of \$44 million. Total employment impact in 2010 stood at 600 jobs, which should reach 13 hundred jobs in 2013. Total spending in 2013 is forecasted to be \$98 million leading to a total economic impact of about \$91 million.

## **Emerson Electric – St. Louis, Missouri**

Emerson is a diversified global manufacturing and technology company that offers a wide range of products and services in the industrial, commercial, and consumer markets through its network power, process management, industrial automation, climate technologies, and tools and storage businesses. Recognized widely for its engineering capabilities and management excellence, Emerson has approximately 127,700 employees and 240 manufacturing locations worldwide. In 2010 Emerson had revenues of \$21BN including \$1.3MM attributed to U.S. exports. The company spends nearly \$500MM annually in research and development. Emerson is the second largest company in Missouri and the largest Fortune 500 Company in Electrical Equipment. Emerson is the leading U.S. based provider of process management solutions, topsides automation and network power for offshore platforms, rigs and floating production systems. In 2009 Emerson acquired the Norwegian based subsea metering specialists Roxar ASA. The deal creates the world's first integrated automation solutions company whose products span from subsea oil and natural gas reservoirs, to platform and floating production, to transmission, and ultimately through refining and production of goods .

## **Oceaneering - Panama City, FL**

Oceaneering is a global oilfield provider of engineered services and products, primarily to the offshore oil and natural gas industry, with a focus on deepwater applications. Oceaneering is a leading provider of Remotely Operated Vehicles as well as subsea production umbilicals. Oceaneering operates and umbilical manufacturing plant in Panama City, FL.

## **Almaco - Boca Raton, FL**

ALMACO provides a complete range of products and services in Accommodations and Food Handling Systems, addressing all aspects from conceptualization and design, through complete turnkey deliveries and efficient post-delivery support for passenger ships, floating accommodations, offshore platforms and land-based buildings.



## Wisconsin

In 2010 Wisconsin had a total economic impact of \$41 million due to the offshore Gulf of Mexico oil and natural gas industry spending. Employment Impact from the industry was 600 jobs with expectations to reach 12 hundred by 2013. Predicted spending of \$88 million should lead to a total economic impact of about \$ 90 million in 2013.

### **Rockwell Automation – Milwaukee, Wisconsin**

Rockwell Automation is the 8<sup>th</sup> largest company in Wisconsin with 2010 revenues of nearly \$5BN. The company is present in 33 states and 49 U.S. cities. Rockwell is the second leading U.S. based provider of process and control solutions for large manufacturing facilities. The company spends nearly \$200MM annually on research and development. Rockwell's Integrated Architecture Solutions, provides sequential, process and power control in one architecture for seamless information flow from production fields and platforms. These advanced technologies enable the safe operations of large fields in complex environments where 24/7 monitoring is required.

### **Veolia Environmental Services- WI**

Veolia Environmental Services in North America is a subsidiary of Veolia Environmental Service (VES).

Veolia Environmental Services - Industrial Services (VES-IS) offers proven experience in environmental, industrial cleaning and maintenance solutions.

Industrial services include: Industrial cleaning, environmental waste management, mechanical services, and special services.

## Michigan

Michigan received spending of \$34 million due to the offshore Gulf of Mexico oil and natural gas industry in 2010; this led to a total economic impact of \$38 million. Total employment impact of 400 jobs was felt. In 2013 total economic impact is expected to reach \$67 million on spending of \$61 million, with total employment impact at 700 jobs.

### **Dow Chemical Corporation - Midland, Michigan**

Dow Chemical is the third largest company in Michigan (the largest non-auto manufacturing company in the state). The company ranks 46 on the fortune 500. Dow is present in 24 U.S. states with roughly 24 thousand U.S. based employees. Dow's diversified industry-leading portfolio of specialty chemical, *advanced materials*, agrosiences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 160 countries and in high growth sectors such as electronics, water, energy, *coatings* and agriculture.

Dow Oil & Natural gas is a business unit of The Dow Chemical Company and its consolidated subsidiaries combining Dow's experience in the chemicals industry with their knowledge of the energy business. As a leading expert in materials science Dow provides essential knowledge around insulation and coatings for deepwater pipelines and subsea equipment.

### **R.M. Young Company- MI**

The company has 40 years of experience in manufacturing meteorological instruments, and provides sensors for many unique applications.

The company provides meteorological instruments that are used on offshore vessels, drilling rigs and platforms.

## Nebraska

Nebraska received spending due to the offshore Gulf of Mexico oil and natural gas industry of \$44 million in 2010. This spending led to a total economic impact of about \$33 million and a total employment impact of 500 jobs. In 2013 spending is predicted to rise to \$80 million dollars, leading to a total economic impact of \$60 million and a total employment impact of 900 jobs.

### **Peter Kiewit Sons – Omaha, Nebraska**

Kiewit is one of North America's largest and most respected construction and mining organizations. For over 125 years, Kiewit has delivered world-class solutions to projects of every size, in every market. Kiewit is the 4<sup>th</sup> largest company in Nebraska with just under \$10BN in annual revenues. The company is present in 19 U.S. states and 29 U.S. cities. Through their subsidiary Kiewit Offshore Services, Ltd., the company fabricates large, complex offshore oil production platforms at their 400-acre fabrication facility in Ingleside, Texas. Kiewit builds fixed and floating structures for most of the world's major oil companies. Kiewit has extensive experience in the fabrication, erection and construction of offshore jackets and decks; concrete gravity base structures; oil and natural gas processing units; well heads, flow lines and flow stations; pipelines and compressor stations; and enhanced oil-recovery facilities.

## **Indiana**

Indiana received spending of \$24 million in 2010 from the offshore Gulf of Mexico oil and natural gas industry leading to a total economic impact of \$24 million and a total employment impact of 300 jobs. In 2013 growth in spending to \$62 million will lead to a total economic impact of about \$63 million and total employment impact of 900 jobs, a threefold increase from 2010.

### **Cummins, Inc. – Columbus, Indiana**

Cummins Inc., a global power leader, is a corporation that designs, manufacture, distributes and services engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Cummins serves customers in approximately 190 countries and territories.. Cummins reported net income of \$428 million on sales of \$10.8 billion in 2009. Cummins is the third largest fortune 500 company in Indiana. The company is present in 13 U.S. states and 22 U.S. cities. Cummins is a leading supplier of engines and generators for offshore drilling and production units in addition to power supply solutions for well servicing, pressure pumping, and natural gas compression.

### **Trelleborg- Indiana**

The company offers customized and standard sealing solutions for the Construction, Industrial and Transport sectors mainly in Europe and North America

Using their extensive application knowledge coupled with state-of-the-art design and tooling technology Trelleborg provides optimized sealing solutions to meet customer needs. Trelleborg offer profiles from a comprehensive range of elastomer and thermoplastic materials including multi-component composite solutions. Supported by the polymer materials expertise available within Trelleborg can offer a full range of materials, surface treatments and fabrication techniques for use in the oil and natural gas industry.

## **New Jersey**

In 2010, spending by the offshore Gulf of Mexico oil and natural gas industry in New Jersey was \$15 million, leading to a total economic impact of over \$15 million and a total employment impact of 200 jobs. In 2013 spending should rise to \$42 million leading to a total economic impact of \$41 million and a total employment impact of 500 jobs

### **Honeywell International – Morristown, New Jersey**

Honeywell is the 4<sup>th</sup> largest Fortune 500 Company in New Jersey and the 6<sup>th</sup> largest U.S. Aerospace and Defense Contractor. Honeywell invents and manufactures technologies to address tough challenges linked to global macro trends such as safety, security, and energy. In 2010 Honeywell spent \$1.5BN in research and development. The company has approximately 122,000 employees worldwide, including more than 19,000 engineers and scientists. Nearly 50 percent of the workforce is based in the U.S. Honeywell operates through four distinct business units: Aerospace, Transportation Systems, Automation & Control Solutions, and Specialty Materials. Honeywell's key roles in the offshore oil & natural gas market include topside control systems, safety & security systems, and high performance fibers. The ACS business unit provides topside control systems & safety/security systems for floating production platforms and drilling rigs. Specialty Materials provides advanced fibers and coatings for deepwater mooring ropes, slings, and installation work ropes.

## **New York**

New York State received \$12 million of spending due to the offshore Gulf of Mexico oil and natural gas industry in 2010, this spending led to a total economic impact of \$11 million and a total employment impact of 85 jobs. In 2013 spending is set to rise to \$23 million leading to a total economic impact of \$21 million and a total employment impact of 156 jobs.

## **Pall Subsea Division- Port Washington, NY**

Pall Corporation is a technology leader in the \$48 billion global filtration, separation and purification industry. Pall has become a \$2.4 billion company by solving complex fluid management challenges for diverse customers around the world. Revenues are almost evenly split between the Industrial and Life Sciences markets.

Pall Corp is a leading provider of topsides fluid processing and separation equipment to the oil and natural gas industry. Pall corp's equipment is deployed on drilling rigs, floating production units and fixed platforms to enable the separation of fluids for environmental and commercial purposes. Their water filtrations systems are also deployed on subsea components offshore.

## **Hess Corporation – New York, New York**

Hess Corporation is a fully integrated energy company engaged in exploration and production of crude oil and natural gas, as well as the refining and marketing of petroleum products, natural gas and electricity. Hess operates 1,350 natural gas and retail stores serving 1.3MM customers per day in 16 states along the East Coast USA. Hess is the 13<sup>th</sup> largest Fortune 500 Company in New York City. The company offices can be found in 8 U.S. states and 11 U.S. cities. In 2010 Hess produced domestically (U.S.) 89,000 barrels of crude and natural gas liquids per day and 108 million cubic feet of natural gas per day. Roughly 70 percent of Hess crude and natural gas liquid production comes from offshore while 50 percent of natural gas production comes from offshore fields. The company spends roughly \$3BN per year on U.S. exploration and production activities. Hess is one of a few large independent oil companies that play an active role in exploration and production of deepwater Gulf of Mexico. The company is the ninth largest leaseholder in deepwater (>500fsw) with 237 operated leases and 58 leases as partner.

### **Montana**

Montana has a large domestic oil and natural gas industry and thus sees a relatively small percentage of its oil and natural gas industry spending from the offshore Gulf of Mexico. In 2010 total spending in Montana was at \$12 million, leading to a total economic impact of \$11 million dollars and total employment impact of 100 jobs.

In 2013 spending should rise to \$19 million, with a total economic impact of \$17 million and a total employment impact of 150 jobs.

### **North Dakota**

North Dakota has significant domestic oil and natural gas production and as such sees very little of its substantial oil and natural gas related domestic product derived from the offshore Gulf of Mexico oil and natural gas industry. However, through its involvement in the oil and natural gas supply chain still saw spending of \$11 million in

2010 leading to a total economic impact of \$9 million. Total employment impact stood at 90 jobs.

Due to increasing spending levels total economic impact is projected to reach \$14 million in 2013, with total employment impact expected to reach 100 jobs from spending of \$17 million.

### **Tennessee**

In 2010 offshore Gulf of Mexico oil and natural gas spending in Tennessee was \$8 million, total economic impact of this spending stood at \$9 million while total employment impact was at 100 jobs.

In 2013 due to growth in the offshore Gulf of Mexico oil and natural gas industry, spending in Tennessee is expected to reach \$12 million leading to a total economic impact of \$13 million while total employment impact is expected to reach 150 jobs.

### **Minnesota**

In 2010, spending by the offshore Gulf of Mexico oil and natural gas industry in Minnesota was \$4 million, leading to a total economic impact of over \$4 million and a total employment impact of 60 jobs. In 2013 spending should rise to \$13 million dollars leading to a total economic impact of over \$13 million and a total employment impact of 200 jobs.

### **South Dakota**

In 2010 offshore Gulf of Mexico oil and natural gas spending in South Dakota was \$3 million, total economic impact of this spending stood at \$2 million while total employment impact was at 15 jobs in 2010.

In 2013 due to growth in the offshore Gulf of Mexico oil and natural gas industry, spending in South Dakota is expected to reach \$4.5 million leading to a total economic impact of over \$3 million while total employment impact is expected to reach 25 jobs.

### **Idaho**

Idaho felt an economic impact of \$1 million in 2010 due to the offshore Gulf of Mexico oil and natural gas industry based on spending of \$2 million, total employment

### **3M Corporation – St. Paul, Minnesota**

3M is the largest publicly held manufacturing company in Minnesota which is home base to the world renowned 3M Corporate Research Labs. The company has 33,000 U.S. employees including 3,700 scientific researchers and an annual R&D budget of \$1.5BN including \$20MM on pure scientific research. With nearly \$25 billion dollars in annual revenues and 74 manufacturing facilities across 27 US states 3M Corporation is one of America's most notable innovation leaders.

Though widely known as the company that introduced the "sticky-note", 3M has also been supplying products to the Oil and Natural gas business for over 50 years. Today, nearly 10,000 3M products are available into every corner of the industry – from exploration and production to transportation, refining and marketing. 3M's key enabling contribution to the deepwater sector is the advanced material solutions for syntactic foams used to insulate pipelines in water-depths with extreme pressures and temperatures such as the Gulf of Mexico.

impact stood at 20 jobs. In 2013 spending should reach \$2 million leading to a total economic impact of \$2 million and a total employment impact of 30 jobs.



## Other States

The total offshore Gulf of Mexico oil and natural gas industry spending for the remaining states, as well as their total contributions to GDP and employment is listed below (Table 15). The remaining non-Gulf States include, Nevada, Oregon, North Carolina, Maine, Arizona, Massachusetts, Hawaii, Connecticut, Delaware, Georgia, Iowa, Maryland, New Hampshire, Rhode Island, South Carolina, Vermont, and Washington.

## APS Technology- CT

APS Technology, Inc. specializes in the design, development and manufacture of electromechanical, instrumentation, sensor, and software designs for the oilfield and other harsh environments. APS has engineering expertise in oilfield drilling and sensor equipment, shock and vibration isolation designs, and stress analysis for static and rotating conditions. APS's customers include all of the major integrated multinational oilfield service companies, independent directional drilling companies, MWD service companies and oilfield companies engaged in non-drilling related services. APS also provides engineering analysis, product development services, and proprietary products to customers worldwide.

**Table 15: Estimated Historical and Projected Total Spending, Contributions to GDP, and Employment Impact for Other States due to Oil and Natural Gas Operations (2008-2013)\***

	Historical			Projected		
	2008	2009	2010	2011	2012	2013
<b>Total Contribution to GDP (Millions)</b>	\$1.1	\$1.1	\$1.0	\$1.3	\$1.5	\$1.6
<b>Total Spending (Millions)</b>	\$1.2	\$1.2	\$1.2	\$1.4	\$1.7	\$2.3
<b>Total Employment Impact</b>	13	14	12	15	17	19

\* Projected employment contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

## **Appendix 2: Introduction to the U.S. Gulf of Mexico's Offshore Oil & Natural Gas Industry**

## Life-Cycle of a Field Development

The domestic offshore oil and natural gas industry provides vital energy for the U.S. economy. However, developing offshore oil and natural gas resources is significantly more challenging than their land-based counterparts. These challenges only increase with increasing water depth. The purpose of this section is to give the reader a better understanding of the necessary

activities and practices the industry must engage in to provide offshore oil and natural gas production.

This section outlines all of the major steps that a typical project must go through from initial resource appraisal to production (Figure 16). The review also discusses the relevant pieces of equipment at the reservoir level, the sea floor, and at the water surface.

**Figure 14: Typical Development Timeline for Offshore Oil and Natural gas Developments**



*Source: Quest Offshore Resources, Inc.*

Every potential offshore oilfield development project goes through a “life-cycle”. What follows is a walk-through of this cycle to provide an understanding of the functioning and process of the offshore oil and natural gas industry via a typical offshore oilfield development plan. This plan essentially involves deciding the equipment pieces and infrastructure that will be needed to produce the wells and transport resources back to shore, and where these pieces of equipment will be placed to optimize production.

The typical field development plan moves through predetermined stages – the terminology may vary from operator to operator, but the steps are generally the same. These six stages outline the main processes every offshore oil and natural gas development goes through in order to become a producing asset. A review of what actions are undertaken during each stage provides insight into the operational plans of offshore oil companies operating in the U.S.

## Stage 1: Assessment, Exploration, Appraisal and Definition



During the “Assessment, Exploration, Appraisal and Definition” stage, oil companies engage in the evaluation and appraisal of potential oil and natural gas targets. Seismic surveys must be conducted to locate promising areas. Exploration wells must be drilled to further determine the size and extent of the potential field.

### *G&G Assessment*

The first stage in developing an offshore oil and natural gas field is finding out where these resources may be present. To do this, the industry relies on specialized seismic contractors who provide imaging and data of the geologic formations below the GoM's seafloor.

**Figure 15: Seismic Vessel**



*Source: Quest Offshore Resources, Inc.*

These seismic contractors own and operate a fleet of boats that use acoustic imaging techniques to assess the geological formations lying beneath the seafloor (Figure 17). Operations typically involve a vessel towing “streamers” which are sensors used to send and receive electromagnetic waves in a set pattern throughout a defined area which normally encompasses a group of standardized “blocks” which operators

have leased. These boats, or vessels, are highly specialized pieces of equipment that play a pivotal role in the acquisition of this information.

The seismic images and data captured by these vessels provide critical information to properly trained eyes. According to the physical composition of these formations, geologists, geoscientists, and other experts

will then determine the areas in which oil and natural gas may be present. If a potential oil or natural gas target looks promising, the oil company that owns the federal offshore lease will create an exploration plan which involves the scheduling of exploration wells.

#### *Exploration Drilling*

Direct physical evaluation of formations, or reservoirs, is accomplished by drilling exploration wells. In general terms, an exploration well is viewed as a “sample” production well. This exploration well will allow companies to determine <sup>1</sup>if oil or natural gas is present, <sup>2</sup>the quality of the product and <sup>3</sup>the potential size of the formation (or “drilling target”). Offshore drilling contractors have been vital to the industry since the first underwater well was drilled beneath a lake in Louisiana in the 1910s. These contractors own and operate a sophisticated fleet of offshore drilling rigs whose equipment specifications are relevant to the intended water depth in which these drilling rigs will be used.

In general, the industry’s fleet of offshore drilling rigs can be subdivided between shallow water rigs (often referred to as “Jackups”) and deepwater rigs (floating Mobile offshore drilling units, or MODUs).

#### *Jack-up Drilling Rig*

A jack-up rig is a combination of a drilling rig and floating barge, fitted with long support

legs that can be raised or lowered independently of each other (Figure 18).

The jack-up is towed onto location with its legs up and the barge section floating on the water. Upon arrival at the drilling location, the legs are jacked down onto the seafloor, preloaded to securely drive them into the

**Figure 16: Jack-up Drilling Rig**



*Source: Quest Offshore Resources, Inc.*

sea bottom, and then all three legs are jacked further down. Since the legs have been preloaded and will not penetrate the seafloor further, this jacking down of the legs has the effect of raising the jacking mechanism, which is attached to the barge and drilling package. In this manner, the entire barge and drilling structure are slowly raised above the water to a predetermined height above the water. Wave, tidal and current loading acts only on the relatively small legs and not the bulky barge and

drilling package. From March 2009- March 2011 there was an average of 39 jack-up drilling rigs working in the Gulf of Mexico,

while in the same period and average of 301 were working in the rest of the world (Table 15).

**Table16: Estimated Historical Offshore Drilling Rigs in Service (2009 – 2011)**

<b>Type of Rig in Service</b>			
<b>U.S. GoM</b>	<b>March 2009</b>	<b>March 2010</b>	<b>March 2011</b>
Drill Ships	7	7	8
Semi-Submersibles	22	24	18
Jack-Ups	40	40	38
<b>Rest of World</b>	<b>March 2009</b>	<b>March 2010</b>	<b>March 2011</b>
Drill Ships	35	40	45
Semi-Submersibles	139	138	138
Jack-Ups	319	296	289
<b>Total Worldwide</b>	<b>562</b>	<b>545</b>	<b>536</b>

Source: Quest Offshore Resources, Inc.

#### *Drillship*

A drillship is a maritime vessel modified to include a drilling rig and special station-keeping equipment. The vessel is typically capable of operating in deep water. A drillship must stay relatively stationary on location in the water for extended periods of time. This positioning may be accomplished with multiple anchors, dynamic propulsion (thrusters) or a combination of these. Drillships typically carry larger payloads than semisubmersible drilling vessels (discussed below), but their motion characteristics are usually inferior. An average of 7 drillships have been in service in the U.S. GoM from March 2009-2011 compared to an average of 40 in the rest of the world.

#### *Semisubmersible Drilling Rig*

A semisubmersible drilling rig is a particular type of floating vessel that is supported

primarily on large pontoon-like structures submerged below the sea surface. The operating decks are elevated perhaps 100 or more feet above the pontoons on large steel columns. This design has the advantage of submerging most of the area of components in contact with the sea and minimizing loading from waves and wind. Semisubmersibles can operate in a wide range of water depths, including ultra deep water. They are usually anchored with six to twelve anchors tethered by strong chains and wire cables, which are computer controlled to maintain station keeping (mooring systems). Semisubmersibles (called semi-subs or simply semis) can be used for drilling, work over operations, and production platforms, depending on the equipment with which they are equipped. On average 21 semi-submersible drilling rigs

have been in service in the U.S. GoM from March 2009-2011 compared to an average of 138 in the rest of the world.

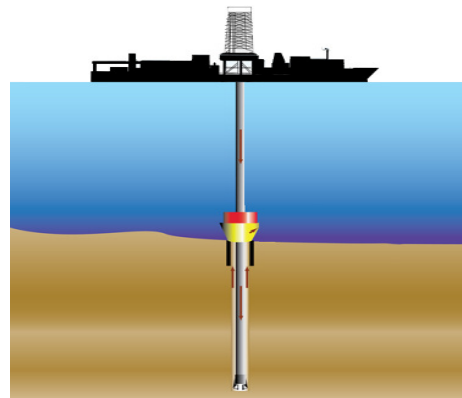
#### *Drilling the Well*

Once the appropriate drilling target has been located, and a suitable drilling rig has been contracted, the operator will then engage in a drilling campaign to explore the potential formation found in the G&G process. This process is performed under some of the most technically advanced and challenging conditions in the world. Whether drilling a well in shallow waters or the ever complex deepwater, drilling contractors are aiming at a target that is often many miles from the drilling rig; averaging between 15 thousand and 30 thousand feet below the subsurface (beneath the ocean floor).

A drill bit surrounded by an outer pipe is sent thousands of feet below the waterline to penetrate the Earth's surface at the sea floor (Figure 19). The drilling contractor continues to feed more and more pipe through the rig, while the drill bit churns deeper and deeper, until the targeted depth is reached.

Approximately 125 crew men are on the rig at any given time. The crew consists of a mixture of personnel from the drilling contractor such as rough necks (manual laborers), drillers, and support staff and people from the operating oil company and other various contractors. Most employees work on a rotational schedule with two weeks offshore followed by two weeks off.

**Figure 17: Drillship Drilling Well**



*Source: Quest Offshore Resources, Inc.*

Products consumed in this period include drill pipe, drilling mud, and other supplies such as food and fuel which are transported by specialized supply ships from shore bases located along the Gulf Coast.

Once the target depth is reached, the drilling contractor will allow the well to flow briefly in order to collect some oil for further assessment (a drill stem test). Once an adequate quantity is produced, the drilling contractor will then temporarily plug the well until the operator is able to make a decision on the commerciality of the well.

#### *Field Definition*

The “define” stage is very important, as it sets the foundation for if and how a field is developed. The operating company uses data and information collected during exploration and appraisal drilling to define the layout and physical composition of the oil and natural gas resources in place.



Flow tests during exploration drilling are very important because they determine how easily oil and natural gas flows throughout the reservoir. Operators consider the estimated recoverable amount of resource in place and apply financial models to

determine the commercial viability of the field. If the field is deemed economic, further development plans are made in the “concept selection” phase of field development.

## Stage 2: Concept Selection



During the “concept selection” stage, the operating oil company and its partners work together to develop an optimal plan for developing an offshore field or well. During this stage, the companies will consider different concepts for how to best develop the field in a manner that adheres to any and all regulations and is efficiently profitable to all parties.

Often included in this stage are discussions around whether or not the field is large enough to require its own in-field host / processing facility (a stand alone, fixed platform, or floating platform). This stage is also where the companies will decide how many wells to drill offshore, optimize well placement, the pipeline needs and designs, as well as determining the quantity and location of other equipment to be placed on the seafloor.

What follows is a concise overview of the various equipment and oil field infrastructure

components that are used in the development of these resources. This stage of development is primarily undertaken by engineers and their support staff working in both the major oil and natural gas centers such as Houston, Texas or in the headquarters location of the company. Contract engineers also contribute to this process as do contractors throughout the country who provide information to the oil companies on the products they can supply and how these could fit into the development.

### *Shallow Water Fields*

In general, there are few options available to fields that will require a host facility. For shallow water fields, the primary choice is the employment of a fixed platform – or a steel jacketed structure that is physically attached to the seafloor.

While these fields require less technical difficulty than their deepwater counterparts, they account for a very large portion of the



GoM's production. Most of the Gulf's fixed platforms consist of the fixed platform, surface wells and export pipelines. On

average from 2008-2013, 63 fixed platforms are expected to be installed in the Gulf of Mexico per year (Table 16).

**Table 17: Estimated Historical and Projected Number of Platforms Installed in the Gulf of Mexico by Year (2008-2013)\***

Year	Number of Platforms Installed
2008	72
2009	27
2010	23
2011	90
2012	83
2013	83

\* Projected platforms contingent on returning to pre-Macondo permitting rates.

*Source: Quest Offshore Resources, Inc.*

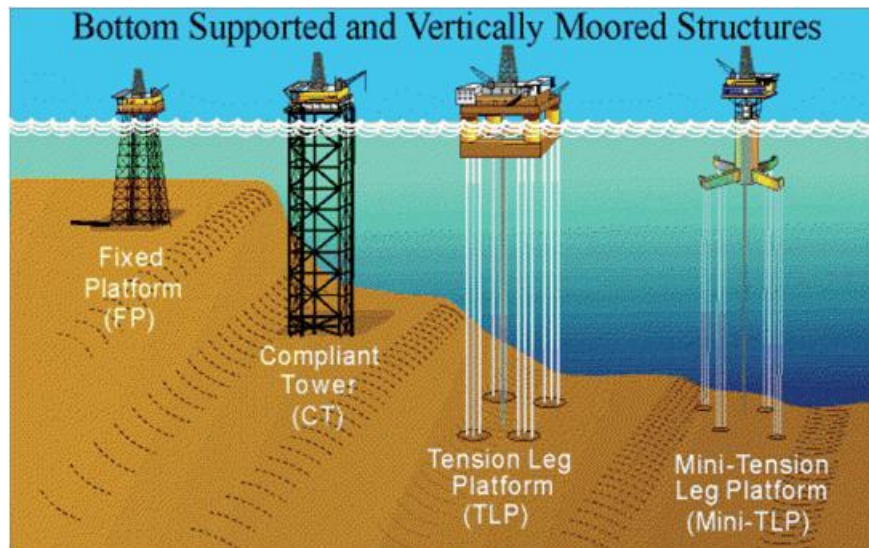
The surface wells are all controlled from the platform topsides and allow for easier access to the reservoir to ensure the field maintains its desired production rates. Once production reaches the platform, the processed liquid is then transported via underwater pipeline (export pipeline) back to shore to be refined into the multitude of components for which the final product is used.

Most of the platforms utilized in the Gulf of Mexico are fabricated in shipyards along the gulf coast. Being near to the water allows for ease of transportation as these are often either towed out or placed on barges. In the shipyards workers such as welders and machinists assemble steel into the sections

of the hull according to the engineered design using heavy equipment such as cranes.

A platform's weight can vary widely from a few thousand tons to tens of thousands of tons depending on the size of the field and amount of production expected. The "topsides" are where the actual processing of the produced fluids (which normally includes water, oil and natural gas in addition to other impurities) takes place, as well as the drilling in the case of most fixed platforms. These are assembled in shipyards from steel, piping, and other components such as separation units, power supply units, and drilling equipment which is sourced from throughout the country.

**Figure 18: Types of Production Platforms / Floating Production Units Used in the Gulf of Mexico**



Source: Quest Offshore Resources, Inc.

#### *Deepwater Fields: Facilities*

In deepwater environments, the application of a fixed platform is unfeasible. The practical limit is 1,000 feet. Therefore in deep water, operators must use floating hosts or “floating production systems” (FPS’s). The FPS solutions that are currently available are the Tension-Leg Platform (TLP), the SPAR, the Semi-Submersible platform, and in specific instances a Floating Production Storage and Offloading (FPSO) vessel (Figure 20).

Tension-Leg Platforms are very buoyant platforms either with three or four columns which are moored to the sea bottom via multiple steel tendons. These tendons are shorter than the distance the platform would settle at if it was not moored to the sea floor; this leads the platform to be very stable and prevents vertical and horizontal movement

thus allowing drilling operations to be conducted from the platform.

Spar platforms are long cylindrical hulled platforms with the length and weight of the hull providing enough stability necessary to conduct drilling operations. Due to the length of the hull, the hull must be towed out to the field horizontally and righted at the field. Therefore, topsides must be lifted and integrated onto the platform offshore.

Semi-submersible platforms, which are often utilized for the largest projects in the offshore Gulf of Mexico normally consist of four columns on pontoons with a large deck built on top. The arrangement leads to a large topside area. The lower part of the hull sits below the water level while the upper part sits above the waterline, this can be actively adjusted via the movement of water

into and out of the tanks which are inside the pontoons at the bottom of the hull.

Floating production storage and offloading units (FPSO) are a technology that is rare in the Gulf, with only one existing unit which is due to start up this year. These are of a simpler design, which basically constitutes a strengthened oil tanker with production topsides. This allows for the export of oil without a pipeline and thus makes it more common in less developed regions where less infrastructure is in place.

Most hulls for floating production units are fabricated in foreign shipyards due to the lack of suitable facilities in the United States. Fabrication of Topsides for floating platforms is done almost exclusively in Shipyards in the United States. The topsides are more complex and highly engineered than the platform hulls though, leading to more spending from floating production platforms in the country versus overseas.

#### *Deepwater Fields: SURF Equipment*

Equipment below the water line and at the seafloor is generally referred to as the “SURF” market, where SURF stands for **S**ubsea, **U**mbilicals, **R**isers and **F**lowlines. These technologically advanced components tie together to power and transport the production back to the surface facility for processing and delivery. A thorough review of each of these components is provided below.

#### *Subsea*

While subsea equipment is used as a “catch all” for a large portion of the equipment on the sea floor, the most critical component of subsea production equipment is the subsea “Christmas tree,” or tree. The tree and control pod is a highly technical piece of equipment that sits on top of the well and allows for the control of each well’s production and performance. (Figure 21) From 2008-2013, an average of 60 subsea trees are expected to be installed per year (Table 17).

**Table 18: Estimated Historical and Projected Number of Subsea Trees Installed in the Gulf of Mexico by Year (2008-2013)\***

Year	Number of Trees Installed
2008	79
2009	87
2010	79
2011	46
2012	22
2013	30

\* Projected trees contingent on returning to pre-Macondo permitting rates.

Source: Quest Offshore Resources, Inc.

**Figure 19: Subsea Christmas Tree**



*Source: Quest Offshore Resources, Inc.*

These pieces of equipment are of a fairly standard composition from a general standpoint, but differ greatly from oilfield to oilfield. However, all trees serve as the primary access point to the reservoir(s) being produced on a field. Operating oil companies often access a well via the subsea tree to performing operating maintenance operations to ensure a safe and productive flow of liquids from the well.

Other components included in the broader “subsea” equipment category include the various pieces of connection machinery. These include:

- **Manifold:** A central collection point for multiple subsea wells. A manifold is then connected to a pipeline to transport production to the host location

- **Pipeline End Termination (PLET):** a connection point between a pipeline and a subsea tree or manifold
- **Jumper:** short, pipeline-like link connecting a PLET or manifold to a pipeline
- **Flying Lead:** short-range connector of power (electric or hydraulic) to subsea tree(s)

Whatever the specific component, the pieces of equipment in the “Subsea” category of SURF all serve to connect and control production from the well to the infrastructure and / or equipment that will transport the produced product.

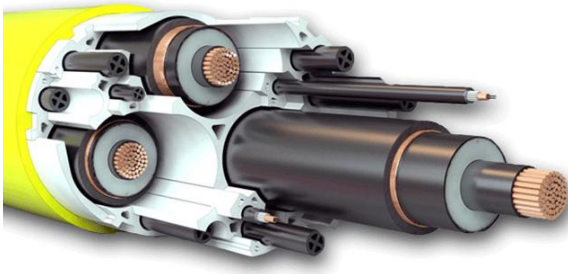
Subsea equipment utilized in the U.S. Gulf of Mexico is almost exclusively manufactured inside the United States, with

all the contractors involved (including foreign companies) maintaining factories and shore bases to serve the U.S. Gulf of Mexico. This activity provides large levels of spending due to their high value and complexity into not only the key states where these are primarily physically located (Texas, Louisiana, and Alabama) but also throughout the country due to companies which as subcontractors supply components to the industry.

#### *Umbilicals*

The umbilical performs functions that are required to provide power and fluids to the entire subsea production system. These

**Figure 20: Umbilical Cross Section**



*Source: Quest Offshore Resources, Inc.*

“cables” are often very complex and technologically advanced containing multiple functions in a single umbilical (Figure 22)

Moreover, in addition to providing the electrical or hydraulic power for the subsea trees, these cables also carry various chemicals that are injected into a well to enhance production and inhibit the formation of hydrates that can block the flow of liquids through the well. This optimization is called flow assurance.

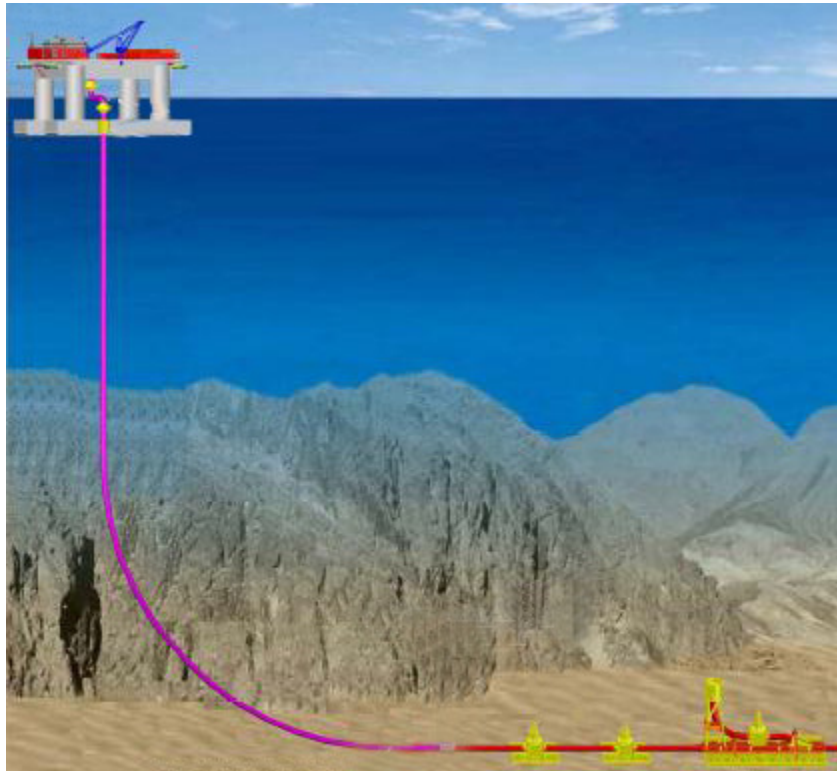
The umbilicals often require a large amount of engineering to ensure there is no negative interaction between the power and other functions in a single umbilical. Additionally, as umbilicals increase in the number of functions contained in a single line, the installation of that line becomes increasingly difficult – requiring extensive installation engineering to ensure that the unit is not damaged before coming online. These installation operations also require specialized and expensive marine construction and installation equipment.

#### *Risers & Flowlines*

The “R” (risers) and “F” (flowlines) portions of the SURF market refer to the pipelines needed for any offshore oilfield (the term flowlines is used interchangeably with pipelines). Both segments refer to the pipeline transportation system of an oilfield (Figure 23).



**Figure 21: The Purple Line Shows a Riser and the Red Shows Flowlines**



*Source: Quest Offshore Resources, Inc.*

The risers are pipelines that are run vertically to connect the production facility at the surface with the subsea hardware and equipment on the seafloor. While at first glance the riser pipelines may seem fairly rudimentary in terms of technology, these pieces of equipment are actually very highly engineered. Since risers run through the entire depth of the water column, these lines are subject to a great deal of environmental conditions with the potential to create disarray on any offshore oil production project.

This is especially true in the Gulf of Mexico as the region is home to the current-induced phenomenon known as “loop currents.” In

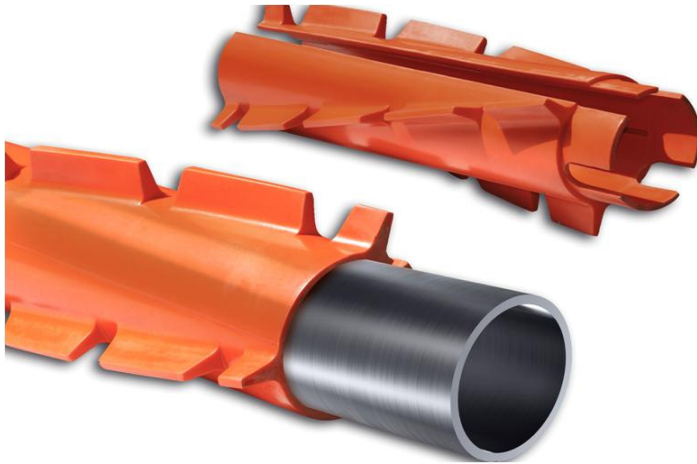
simple terms, these loop currents create excess force in underwater currents, which often hit riser pipelines directly. As these forces exert themselves on the riser, the pipeline has no choice but to experience some movement as a result. As stands to reason, excessive movement of a field’s riser pipelines poses a serious threat to the environment and to production.

Fortunately, the industry has – through exhaustive and ongoing research and technology development efforts – essentially solved this problem. Special pieces of equipment, called “strakes,” are typically added to a riser to serve as a deflector for these environmental conditions such as

vortex induced vibration (Figure 24). In effect, these strakes allow the riser to “shed” the force of the loop currents and maintain a

reliable position in relation to the surface and subsea equipment being connected.

**Figure 22: Riser Pipe with Anti Vortex Induced Vibration Strakes**



*Source: Quest Offshore Resources, Inc.*

Additionally, risers are still evolving as oil companies and equipment providers strive to refine and perfect these technologies. A few added benefits of increasingly new riser technologies will be the ability to quickly disconnect a surface facility in the event of a hurricane, reduce the weight of the riser to allow for smaller facilities, and many other technological advances that will increase the efficiency by which produced liquids flow through the pipeline system

.Pipelines are used to transport material both to and from a producing well(s). While it is generally understood what these lines are used for the technology being used in many of the Gulf’s subsea pipelines is leading edge incorporating space age materials.

As with risers, the primary purpose of an offshore, subsea flowline is to transport liquids either from the well back to the host facility, or from the host facility back to shore.

In every project development plan, pipeline routes from the production platform to onshore must be determined. This is done with the aid of additional services from “G&G” or seismic companies. Through the use of acoustic imaging technology, these companies can create a detailed map of the seafloor. This allows companies to visually map the best route for a subsea pipeline, ensuring the safe and efficient transportation of produced materials.

While conceptually fairly straightforward, the risers and flowlines of an oilfield are some of the most critical components that employ a high degree of technical complexity and subsequently high capital cost. To install offshore risers and flowlines, the offshore oil and natural gas industry utilizes a fleet of specialized offshore installation boats. The fleet is operated by a very capable group of companies with a very long history of successfully installing the multitude of equipment pieces needed to produce the offshore natural resources of the U.S.

These boats, or “vessels,” are large and expensive pieces of equipment, ranging from US\$150 million to more than US\$1 billion to design and build. For this reason, installation contractors are very selective when deciding whether or not to build any new vessels.

Once the partners for a given field have determined which solution best suits the field, and provides the most effective use of all parties’ capital expenses, a field development plan is presented to the relevant decision makers for the companies involved. When the plan has been thoroughly reviewed, and the potential economic value

**Figure 23: Marine Construction Vessel Installing Flowlines**



*Source: Quest Offshore Resources, Inc.*

of the project has been determined, the company(s) will then proceed to the “project sanctioning” phase of development wherein an offshore oilfield receives ultimate approval to proceed with the final investment decision.



### Stage 3: Project Sanctioning



Once the proposed concept for developing a field has been presented, a decision is made whether or not to Sanction, or give the go-ahead to, the field in question. The decision to sanction a project given a suitable development plan has been presented – is largely a consideration of the profitability of the field.

Moreover, the companies involved in developing and producing the field must be assured that each will receive a company-specific return on the capital investment that must be made. A field may cost as much as \$10 billion and make take several years to fully develop. The project sanctioning decision is crucial decision and must ensure that the owners in a project remain financially healthy and are able to maintain a long-term competitive position.

It is important to understand that oil and natural gas exploration and production companies consistently realize rather low profit margins. A fact that can often be overshadowed by the focus placed solely on announced profit numbers. In other words, the cost of being in this business is very, very high. In order to maintain domestic production, these companies face a rather steep investment – or re-employment of those profits. This happens at such a rate that most major oil companies only experience profit margins of three to ten percent. Table 18 below shows the 2010 revenues for a select group of major U.S. companies. Both ExxonMobil and Chevron rank at the top of the list when ranked by revenues. However, from a profitability perspective they are in fact outperformed by other large American companies.

**Table 19: Comparison of 2010 Revenue (\$ Billions), Income and Profit Margin for Major Companies – Various Industries**

Industry	Company	Revenue	Income	Profit Margin
Technology	Microsoft	19.9	6.6	33.3%
Food	McDonalds	16.2	4.9	30.5%
Pharmaceuticals	Eli Lilli	23.0	5.0	22.0%
Technology	Google	21.7	4.2	19.4%
Tobacco	Lorillard Tobacco Co.	5.9	1.0	17.4%
Tobacco	Reynolds American (Tobacco)	8.1	1.1	13.6%
Food	Pepsico	57.8	6.3	10.9%
Oil & Gas	Chevron	198.1	19.0	9.6%
Oil & Gas	ExxonMobil	370.1	30.4	8.2%
Pharmaceuticals	Merck & Co.	45.9	0.8	1.9%

Source: U.S. Securities and Exchange Commission

## Stage 4: FEED (Front-End Engineering & Design) & Detailed Engineering



Once sanctioned, the project moves into the engineering and design phase. During this time, the oil companies, their suppliers and third-party support organizations work together designing the highly technical pieces of equipment and installation methods that will be needed according to the concept chosen in the “Concept Selection” phase of development. This process can vary in duration depending on the overall size of the project being considered, but generally takes more than a year to complete.

This phase of the project development life cycle is a critical source of creation for jobs, as much of the engineering work that is to be done is contracted to third parties – namely engineering firms. While the vast majority of oil companies have their own engineers to carry out design and development plans, many contract to highly specialized engineering firms as an added measure of safety and quality assurance. Many of these engineering firms have grown fairly large over the last decade, with many employing upwards of 200 employees. Additionally, many of these firms serve as a

great entry point into the industry for young college graduates.

Specific tasks in this stage are to take the concept created in stage 2 and sanctioned in stage 3, and compile the designs that will guide the companies through the actual building and acquiring of the materials to create the equipment that is needed. Engineers spend many hours pouring over technical specifications and designs to ensure that the minute details of each piece of equipment are built exactly to specification. As such, this stage of work employs the use of many highly trained and highly skilled engineers.

At present, there is a large deficit of qualified, young engineers to continue this work when their more experienced counterparts move towards retirement. While this poses a large threat to the industry, it is one that is being addressed through university partnerships, public relations campaigns, early career engineer programs and other mediums. Regardless, this generational gap presents a great opportunity for young engineers and other business students to fill a growing, always vital role in the energy supply chain.

## Stage 5: Execute



The “execute” phase is the stage during which the field is “put together,” so to speak. Consequently, this stage is also the primary point during which the bulk of capital spending takes place. The execute phase sees the installation of the physical equipment that will be used to produce the oil and / or natural gas from a field. A vital component of this stage is ensuring that companies contracted by the oil company to perform various scopes of work have been fully vetted and meet company safety and quality requirements.

During an oil company’s execute cycle; the wells for the field are completed and finished with control modules (called subsea trees). The wells are then tied together via pipelines, and powered by subsea cables or “umbilicals.” Pipelines carry the produced product either straight back to shore, or to an offshore fixed or floating platform production facility.

The general stages of the Execute Phase are development drilling, materials and equipment procurement, facility fabrication and SURF fabrication.

*Development Drilling*

As the name suggests, development drilling simply refers to the process by which the wells that will produce the field are drilled and completed. While technically easy to understand, this component of a field regularly accounts for roughly 55 to 60 percent of a field overall capital cost (including exploration drilling).

The primary costs incurred during these activities are the contracting of an offshore drilling rig and the supporting services that accompany these assets (Table 19). By and large, these rigs are contracted under long-term, multi-year agreements ensuring that operators have access to a rig when needed, as well as providing an added measure of financial assurance to the rig operators.

**Table 20: Average Estimated Historical 2010 GoM Deepwater MODU Day-Rates**

	Price per Day in 2010
Drillship	\$500,000
Semi-Submersible	\$400,000

*Source: Quest Offshore Resources, Inc.*

Aside from the actual cost of the rig and its crew, the operator must also pay for the

support boats that transport all drilling fluids and other supplies to the rig, as well as

paying for helicopter transportation for personnel. Additionally, the operator will incur costs related to the physical materials used during drilling operations (pipe, drilling mud, etc.) which all must be procured and physically transported to the field.

#### *Materials & Equipment Procurement / Fabrication*

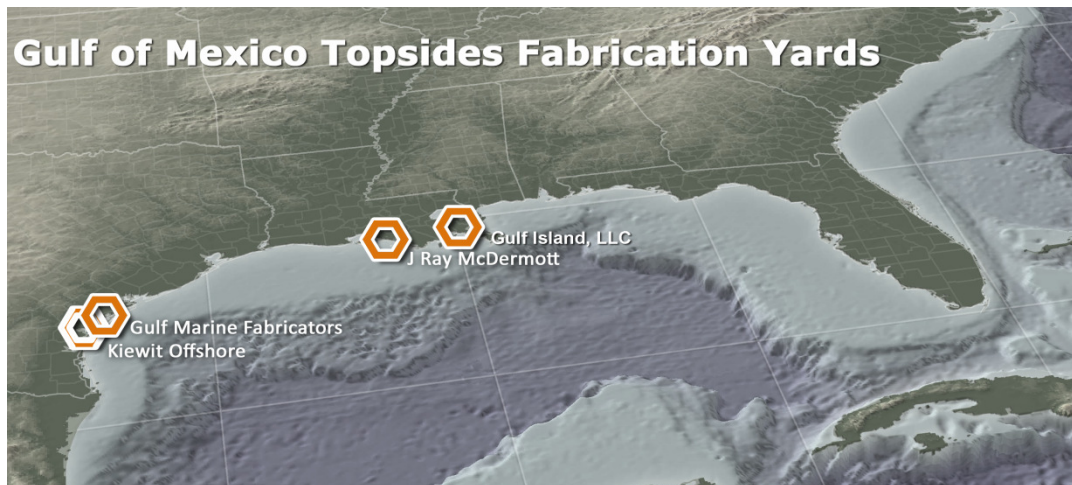
Simultaneous to the beginning of development drilling (and often even before development drilling begins), the oil company will begin the process of sourcing all of the materials needed for the subsea

and facility equipment. During these activities, oil companies rely on supply chain management professionals to negotiate mutually beneficial terms for all parties involved, while ensuring that the project schedule is maintained.

#### *Facility Fabrication*

Often, the most critical component to be fabricated is the host facility for the field. These units represent a large portion of capital costs to the oil company, and can take upwards of three years to complete depending on the size of the unit.

**Figure 24: Gulf of Mexico Topside Fabrication Yards**



*Source: Quest Offshore Resources, Inc.*

When contracting for a facility in the GoM, operators will often seek to separate the hull (base of the structure that supports the weight of the topsides processing equipment) and topsides (above-water processing equipment) portion of the facility. This is due to the region's fortunate position

of having multiple fabrication yards along the Gulf Coast that are specially geared to providing topsides fabrication services (Figure 26). This provides an added value of allowing the oil company to maintain a presence at the construction yard – ensuring

that designs and plans are carried out per specifications.

This separation in the construction of the hull and topsides of a facility is an important distinction for the Gulf, as nearly 60 percent of facilities spending are allocated to the topsides. The existence of local fabrication yards for these services provides a large amount of jobs to the nation, as well as ensuring that a majority of the facility (often the most expensive piece of equipment) is purchased and manufactured domestically.

Once fabrication is completed, the hull and topsides are “mated” either just offshore from the fabrication yard, or the topsides are transported to the field and lifted onto the hull for final commissioning in preparation for production.

#### *SURF Fabrication: Subsea Systems*

The company must also take the designs and plans previously developed for the subsea production systems and contract for the fabrication and delivery of these technologically advanced equipment pieces that will control the production of each well. The contracts are often quite large compared to other SURF equipment pieces, with an average control system (subsea tree plus control package) costing between \$9 million to \$15 million. A great advantage the U.S. has in terms of these systems is that Gulf of Mexico subsea production systems are largely built and assembled domestically.

Once fabricated and delivered, the oil company will employ the use of the drilling rig working on the development wells to install the system on each completed well. The control systems are connected and controlled at the surface by the use of subsea umbilicals.

#### *SURF Fabrication: Subsea Umbilicals*

To ensure proper control and powering of the well, subsea umbilicals are employed. As mentioned above, these units are essentially long underwater cables used to provide power (electric or hydraulic) to subsea systems, as well as providing essential fluids and chemicals to maintain production.

Similar to subsea production systems, a large majority of these units are manufactured domestically. Similar to subsea trees and control systems, the umbilical is a highly engineered piece of equipment that requires a fair amount of engineering work to safely employ on a field. The costs for this piece of equipment can be generally categorized as: Engineering / Design, Raw Materials, Fabrication, and Delivery & Installation.

Once the umbilical has been delivered, the oil company will contract for the installation of this equipment using one of the industries highly capable installation boats. While costs for these assets can reach rather large numbers of a “cost-per-day” basis, it is important to note that the industry’s highly

skilled contractors have created large efficiencies in the installation of these cables, reducing the total time required for installation significantly.

*SURF Fabrication: Risers & Flowlines*

While subsea umbilicals are highly specialized units, offshore pipelines (and pipelines in general) are essentially a global commodity (Table 20).

**Table 21: Estimated Historical and Projected Pipeline Capex Spent Overseas (2008-2013)\***

<i>Billions</i>	Total Pipeline Capex Spent
2008	\$0.6
2009	\$0.3
2010	\$0.1
2011	\$0.3
2012	\$0.4
2013	\$0.3

\* Projected spending contingent on returning to pre-Macondo permitting rates.

*Source: Quest Offshore Resources, Inc.*

Even though there are added complexities with the fabrication of subsea pipelines, generally speaking, a pipeline is a pipeline. Moreover, steel is traded globally across a multitude of industries.

This means that for every pipeline that needs to be purchased, the oil company is competing for the raw materials, whose cost is dependent on global demand for steel, on a global inter-industry scale. Additionally, the cost of all pipelines needed for a field can see volatile shifts across the life of the project's development cycle, making costs harder to control.

Once the amount of material needed has been determined, and suitable pipeline manufacturing has been contracted, the operator begins the process of contracting

for the installation of these pipelines typically through a competitive tendering process. A very important distinction to understand regarding the offshore pipelines of a project is that between 67 to 85 percent of the offshore pipelines installed in the Gulf of Mexico are purchased outside of the U.S. This can primarily be attributed to the migration of heavy industrial activities to developing countries. India, for example, is home to many of the world's largest pipeline fabrication companies.

Like the subsea umbilical, the installation of pipelines relies on the industry's fleet of offshore installation vessels to complete these activities. However, a key difference for these pieces of equipment is seen in the type of boat needed.



Given that pipelines weigh a significant amount more than an umbilical, the assets that install these flowlines and / or risers are often noticeably more expensive. This increase in boat cost reflects the larger, more highly rated equipment needed on the boat to ensure that these lines can be safely installed.

Once the flowlines and risers are installed, the lines are tested to ensure there was no

damage during installation. Provided that these tests produce positive results, the transportation system of the oilfield is ready for use. While conceptually fairly straightforward, the risers and flowlines of an oilfield are some of the most critical components that employ a high degree of technical complexity and subsequently high capital cost.

### Stage 6: Operate



The “Operate” phase is generally used as a generic description for the activities that are undertaken once a field is brought on to production. The actual tasks required to maintain safe and efficient production are extremely vast in quantity. The general categories include all activities that maintain a suitable flow of material through the infrastructure and systems installed during the “execute” phases. Operations must ensure that production levels are capable of continuing at levels that are sufficient to ensure a financial return to the parties involved.

Operating activities range from continuously supplying food and fuel to the platform, repairing damage caused by the wear and

tear associated with full time exposure to the elements, performing routine maintenance to ensure continued safe operations, and ensuring safe transportation of produced fluids.

All these activities require continued employment of not only a large crew on the production platform itself, but also require support staff onshore. The operating company requires onshore administrative, management, and engineering support. Onshore suppliers must provide the necessary equipment and supplies. Boats and helicopters are needed to transfer crew and supplies back and forth. Wells must be monitored and worked over when necessary.

# Appendix 3: RIMS II I/O Model Definitions

## **RIMS II I/O Model Definitions**

*\*Provided by BEA*

### **Final-demand Multipliers**

Final-demand output multipliers show the total industry output per \$1 change in final demand. An estimate of the change in total



output in a region's economy is calculated by multiplying a final-demand change times a final-demand output multiplier.

Final-demand employment multipliers show the total number of jobs per \$1 million change in final demand. An estimate of the change in total number of jobs in a region's economy is calculated by multiplying a final-demand change times a final-demand employment multiplier.

Final-demand value-added multipliers show the total value added per \$1 change in final demand. An estimate of the change in total value added in a region's economy is calculated by multiplying a final-demand change times a final-demand value-added multiplier.

### **Type II Multipliers**

Type II multipliers not only account for the direct and indirect impacts based on how goods and services are supplied within the region, but they also account for the induced impacts associated with the purchases made by employees. Type II multipliers estimate an impact that is the sum of the direct impacts, indirect impacts, and induced impacts. For example, an individual who works in offshore manufacturing in Ohio earns a certain amount per year. This money does not disappear after being paid to the individual. Rather, this individual will use some portion of earnings to buy necessities, luxury items, etc. Furthermore, a good majority of this spending will occur in Ohio across multiple industries. The RIMS II multipliers account for this effect, and as such, provide for the comprehensive economic impact of the industry on an individual state.

## **Appendix 4: Explanation of Terms**

**Table 22: Explanation of Terms**

<b>FPS / Facilities</b>	
The processing facility located at the surface. In shallow water, a Fixed Platform. In deepwater, an FPS (TLP, SPAR, SEMI or FPSO). The primary components of spending are the steel for the hull (bottom structure) and topsides (processing facilities).	
component	price inputs
HULL	Steel, buoyancy, engineering
TOPSIDES	Steel piping, control systems, chemicals, engineering, processing equipment
<b>SURF</b>	
Subsea, Umbilicals, Risers & Flowlines. Refers to all equipment needed on the seafloor to bring production from the well to the host facility.	
component	price inputs
Subsea	Tree, Controls, Manifolds, Flying Leads, Jumpers, PLETs, SDUs <i>*PLET = Pipeline End-Termination</i>
Umbilicals	Steel piping, composite armoring, electrical wiring, chemicals <i>*SDU = Subsea power Distribution Unit</i>
Risers & Flowlines	Steel fabrication, installation
<b>Drilling</b>	
The shallow or deep water vessel used to drill the well. The cost of the drilling rig includes the day-rate for the rig, as well as the support boats and chemicals needed to operate the rig. <i>*Day-rate includes the labor on the rig.</i>	
component	price inputs
Drilling Rig (SW Jackup / DW MODU)	Day-rate cost of rig and supply boats, drill pipe, drilling mud
<b>Fixed Platforms (incl. surface wells)</b>	
Refer to "FPS / Facilities." This includes the fixed platforms, as well as the cost to drill and complete the surface (dry-tree) wells located on the platform.	
component	price inputs
JACKET	Steel, buoyancy, engineering
TOPSIDES	Steel piping, control systems, chemicals, engineering, processing systems
<b>Pipelines</b>	
Refer to "SURF." Pipeline = Flowline	

# **Appendix 5: RIMS Category Summary Tables**

**Table 23: Estimated Historical and Projected Total Contribution to GDP by State Associated with GoM Oil and Natural Gas Operations (2008-2013)**

*(US\$ Thousands)*

	2008	2009	2010	2011	2012	2013	Total
Texas	\$10,585,223	\$9,814,627	\$8,892,025	\$11,245,980	\$13,057,960	\$15,155,600	\$68,751,414
Louisiana	\$9,414,273	\$8,748,213	\$7,401,879	\$9,135,162	\$10,839,238	\$12,977,350	\$58,516,115
Alabama	\$3,271,252	\$3,009,148	\$2,591,354	\$3,408,831	\$4,081,917	\$4,746,262	\$21,108,764
Mississippi	\$241,801	\$247,060	\$231,263	\$284,478	\$326,595	\$363,159	\$1,694,356
California	\$1,764,332	\$1,795,231	\$1,694,347	\$2,081,301	\$2,389,138	\$2,644,663	\$12,369,012
Oklahoma	\$1,327,004	\$1,356,129	\$1,283,034	\$1,575,819	\$1,806,621	\$1,996,805	\$9,345,412
Colorado	\$1,164,135	\$1,190,423	\$1,126,617	\$1,382,638	\$1,586,308	\$1,750,942	\$8,201,063
New Mexico	\$841,650	\$861,518	\$808,920	\$992,353	\$1,141,306	\$1,262,103	\$5,907,849
Ohio	\$298,295	\$270,050	\$306,048	\$415,788	\$410,759	\$529,588	\$2,230,529
Arkansas	\$284,888	\$291,474	\$272,875	\$336,011	\$385,044	\$429,529	\$1,999,821
Alaska	\$269,724	\$276,403	\$262,249	\$320,773	\$368,819	\$404,398	\$1,902,366
Pennsylvania	\$281,751	\$260,325	\$201,211	\$254,165	\$318,342	\$403,753	\$1,719,547
Kansas	\$176,767	\$180,777	\$170,035	\$208,846	\$239,881	\$265,716	\$1,242,022
Wyoming	\$165,449	\$169,597	\$160,924	\$196,854	\$226,449	\$248,429	\$1,167,701
Illinois	\$113,863	\$132,113	\$123,956	\$179,872	\$172,734	\$254,215	\$976,753
Utah	\$99,747	\$101,888	\$96,282	\$118,338	\$135,615	\$150,122	\$701,992
West Virginia	\$99,272	\$101,538	\$95,310	\$117,079	\$134,545	\$149,174	\$696,919
Kentucky	\$45,308	\$41,859	\$71,180	\$107,052	\$83,146	\$120,709	\$469,254
Virginia	\$69,549	\$71,098	\$66,981	\$82,275	\$94,423	\$104,524	\$488,850
Missouri	\$8,973	\$3,687	\$43,150	\$77,281	\$39,352	\$78,851	\$251,294
Florida	\$76,638	\$57,380	\$41,694	\$50,172	\$70,245	\$91,183	\$387,312
Wisconsin	\$8,557	\$3,527	\$41,081	\$73,563	\$37,474	\$87,875	\$252,078
Michigan	\$49,336	\$43,139	\$37,639	\$46,319	\$56,674	\$66,618	\$299,725
Nebraska	\$11,244	\$7,946	\$33,188	\$56,480	\$32,876	\$59,225	\$200,959
Indiana	\$49,412	\$33,733	\$24,184	\$32,418	\$42,904	\$62,882	\$245,533
New Jersey	\$34,720	\$19,401	\$14,944	\$20,301	\$27,139	\$40,867	\$157,373
New York	\$12,081	\$13,168	\$11,484	\$15,620	\$16,641	\$20,980	\$89,973
Montana	\$11,411	\$11,825	\$11,029	\$13,336	\$15,596	\$16,885	\$80,083
North Dakota	\$9,646	\$9,879	\$9,322	\$11,423	\$13,138	\$14,481	\$67,889
Tennessee	\$8,810	\$8,988	\$8,513	\$10,470	\$11,974	\$13,253	\$62,008
Minnesota	\$12,898	\$7,174	\$4,246	\$5,209	\$8,985	\$13,008	\$51,521
South Dakota	\$2,107	\$2,185	\$2,000	\$2,422	\$2,844	\$3,108	\$14,665
Idaho	\$1,377	\$1,410	\$1,326	\$1,627	\$1,870	\$2,067	\$9,677
Other States	\$1,069	\$1,093	\$1,034	\$1,267	\$1,454	\$1,601	\$7,517
<b>Total</b>	<b>\$30,812,562</b>	<b>\$29,144,007</b>	<b>\$26,141,322</b>	<b>\$32,861,521</b>	<b>\$38,178,007</b>	<b>\$44,529,924</b>	<b>\$201,667,343</b>

**Table 24: Estimated Historical and Projected Total Spending by State Associated with GoM Oil and Natural Gas Operations (2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Texas	\$8,707,562	\$8,045,469	\$7,312,190	\$9,263,393	\$10,744,431	\$12,507,826	\$56,580,871
Louisiana	\$9,310,704	\$8,573,307	\$7,257,483	\$9,010,702	\$10,661,209	\$12,867,085	\$57,680,490
Alabama	\$3,291,903	\$3,032,149	\$2,654,435	\$3,490,340	\$4,182,305	\$4,843,675	\$21,494,808
Mississippi	\$276,293	\$282,107	\$266,769	\$328,287	\$376,067	\$417,351	\$1,946,873
California	\$1,518,021	\$1,541,986	\$1,453,308	\$1,789,693	\$2,052,603	\$2,284,369	\$10,639,981
Oklahoma	\$1,252,685	\$1,279,048	\$1,209,505	\$1,488,424	\$1,705,052	\$1,892,230	\$8,826,944
Colorado	\$987,561	\$1,008,345	\$953,520	\$1,173,407	\$1,344,187	\$1,491,750	\$6,958,769
New Mexico	\$976,753	\$997,308	\$943,083	\$1,160,565	\$1,329,475	\$1,475,423	\$6,882,607
Arkansas	\$311,690	\$318,598	\$300,445	\$370,269	\$423,365	\$472,141	\$2,196,507
Alaska	\$301,767	\$308,118	\$291,365	\$358,555	\$410,740	\$455,830	\$2,126,375
Ohio	\$269,941	\$246,354	\$277,624	\$374,713	\$473,388	\$476,062	\$2,018,082
Kansas	\$193,573	\$197,647	\$186,901	\$230,001	\$263,476	\$292,400	\$1,363,997
Wyoming	\$192,457	\$196,507	\$185,823	\$228,675	\$261,957	\$290,714	\$1,356,132
Pennsylvania	\$237,608	\$219,669	\$169,621	\$214,315	\$268,636	\$341,014	\$1,450,863
West Virginia	\$111,490	\$113,837	\$107,647	\$132,471	\$151,752	\$168,411	\$785,608
Illinois	\$96,255	\$111,646	\$104,185	\$150,717	\$145,652	\$213,206	\$821,662
Utah	\$86,247	\$88,063	\$83,274	\$102,478	\$117,393	\$130,280	\$607,735
Kentucky	\$46,355	\$42,750	\$73,617	\$110,825	\$85,806	\$124,661	\$484,014
Virginia	\$67,217	\$68,632	\$64,900	\$79,867	\$91,491	\$101,534	\$473,642
Nebraska	\$14,199	\$9,679	\$44,062	\$75,503	\$43,213	\$78,915	\$265,570
Florida	\$83,779	\$61,486	\$43,747	\$52,625	\$74,897	\$98,545	\$415,080
Missouri	\$8,955	\$3,671	\$43,115	\$77,223	\$39,315	\$78,788	\$251,067
Wisconsin	\$8,538	\$3,513	\$41,030	\$73,478	\$37,423	\$88,284	\$252,265
Michigan	\$44,805	\$39,263	\$34,384	\$42,295	\$51,715	\$60,677	\$273,139
Indiana	\$48,276	\$33,078	\$23,734	\$31,792	\$42,054	\$61,543	\$240,478
New Jersey	\$36,090	\$20,105	\$15,466	\$21,029	\$28,137	\$42,443	\$163,270
Montana	\$12,726	\$12,994	\$12,287	\$15,121	\$17,321	\$19,223	\$89,672
New York	\$12,807	\$13,984	\$12,203	\$16,736	\$17,683	\$22,523	\$95,936
North Dakota	\$11,402	\$11,642	\$11,009	\$13,547	\$15,519	\$17,223	\$80,342
Tennessee	\$8,045	\$8,215	\$7,768	\$9,559	\$10,951	\$12,153	\$56,690
Minnesota	\$12,735	\$7,077	\$4,184	\$5,133	\$8,863	\$12,838	\$50,829
South Dakota	\$3,009	\$3,072	\$2,905	\$3,575	\$4,096	\$4,545	\$21,203
Idaho	\$1,594	\$1,628	\$1,539	\$1,894	\$2,170	\$2,408	\$11,232
Other States	\$1,442	\$1,170	\$1,419	\$1,900	\$1,935	\$2,385	\$10,250
<b>Total</b>	<b>\$28,544,483</b>	<b>\$26,902,115</b>	<b>\$24,194,547</b>	<b>\$30,499,106</b>	<b>\$35,384,277</b>	<b>\$41,448,454</b>	<b>\$186,972,981</b>

**Table 25: Estimated Historical and Projected Total Employment by State Associated with GoM Oil and Natural Gas Operations (2008-2013)**

*(In Jobs)*

	2008	2009	2010	2011	2012	2013
Texas	100,809	90,783	79,274	102,577	117,644	140,213
Louisiana	98,248	89,183	70,473	88,747	104,140	129,108
Alabama	36,126	32,293	25,821	34,566	40,666	48,793
Mississippi	2,277	2,298	2,060	2,573	2,921	3,359
California	14,969	15,081	13,888	17,233	19,642	22,216
Oklahoma	13,468	13,621	12,459	15,499	17,601	20,000
Colorado	9,793	9,919	9,109	11,315	12,871	14,582
New Mexico	8,676	8,770	7,978	9,931	11,277	12,842
Ohio	3,342	2,901	3,415	4,789	4,528	6,150
Arkansas	2,918	2,950	2,688	3,357	3,793	4,355
Alaska	2,102	2,126	1,959	2,432	2,759	3,116
Pennsylvania	2,794	2,482	1,856	2,368	2,998	3,911
Kansas	1,715	1,738	1,588	1,975	2,249	2,559
Illinois	1,201	1,404	1,354	2,010	1,856	2,842
Wyoming	1,356	1,372	1,260	1,565	1,776	2,010
Utah	1,054	1,068	984	1,221	1,389	1,570
West Virginia	1,047	1,063	975	1,208	1,378	1,555
Kentucky	495	436	873	1,370	976	1,522
Wisconsin	129	52	626	1,122	570	1,272
Virginia	656	665	614	761	866	978
Florida	1,133	843	609	732	1,029	1,340
Missouri	112	46	542	970	494	990
Nebraska	162	104	540	934	522	971
Michigan	552	462	386	479	595	721
Indiana	691	462	330	445	590	871
New Jersey	408	227	174	237	317	480
Montana	112	116	103	125	146	161
Tennessee	99	100	95	117	133	148
North Dakota	97	98	91	112	128	143
New York	91	99	86	122	123	165
Minnesota	190	105	62	76	132	191
Idaho	19	20	18	22	26	29
South Dakota	17	18	15	18	22	25
Other States	13	13	12	15	17	19
<b>Total</b>	<b>306,870</b>	<b>282,915</b>	<b>242,317</b>	<b>311,023</b>	<b>356,174</b>	<b>429,208</b>

**Summary Tables: Support Activities for  
Oil and Natural Gas  
Operations**



**Table 26: Estimated Historical and Projected Support Activities for Oil and Natural Gas Operations Contribution to GDP by State (2008-2013)**

*(US\$ Thousands)*

	2008	2009	2010	2011	2012	2013	Total
Texas	\$18,229	\$17,683	\$6,652	\$8,623	\$9,658	\$12,845	\$73,689
Louisiana	\$15,677	\$15,207	\$5,720	\$7,415	\$8,305	\$11,046	\$63,370
Alabama	\$6,941	\$6,733	\$2,533	\$3,283	\$3,677	\$4,891	\$28,057
Mississippi	\$167	\$162	\$61	\$79	\$88	\$117	\$673
California	\$1,546	\$1,499	\$564	\$731	\$819	\$1,089	\$6,249
Oklahoma	\$863	\$837	\$315	\$408	\$457	\$608	\$3,489
Colorado	\$800	\$776	\$292	\$378	\$424	\$563	\$3,233
New Mexico	\$583	\$565	\$213	\$276	\$309	\$411	\$2,356
Arkansas	\$318	\$308	\$116	\$150	\$168	\$224	\$1,284
Illinois	\$292	\$283	\$107	\$138	\$155	\$206	\$1,180
New York	\$196	\$190	\$72	\$93	\$104	\$138	\$794
Alaska	\$166	\$161	\$61	\$79	\$88	\$117	\$673
Ohio	\$161	\$157	\$59	\$76	\$85	\$114	\$652
Kansas	\$121	\$117	\$44	\$57	\$64	\$85	\$487
Wyoming	\$99	\$96	\$36	\$47	\$52	\$70	\$400
Pennsylvania	\$91	\$88	\$33	\$43	\$48	\$64	\$366
Utah	\$69	\$67	\$25	\$33	\$36	\$48	\$278
West Virginia	\$67	\$65	\$25	\$32	\$36	\$47	\$272
Virginia	\$48	\$47	\$18	\$23	\$25	\$34	\$195
Kentucky	\$27	\$26	\$10	\$13	\$14	\$19	\$109
Michigan	\$24	\$23	\$9	\$11	\$13	\$17	\$96
Florida	\$17	\$17	\$6	\$8	\$9	\$12	\$69
Montana	\$7	\$7	\$3	\$3	\$4	\$5	\$30
Other States	\$22	\$22	\$8	\$11	\$12	\$16	\$91
Total	\$46,531	\$45,135	\$16,979	\$22,010	\$24,651	\$32,785	\$188,090

**Table 27: Estimated Historical and Projected Support Activities for Oil and Natural Gas Operations Spending by State (2008-2013)**

*(US\$ Thousands)*

	2008	2009	2010	2011	2012	2013	Total
Louisiana	\$16,024	\$15,544	\$5,847	\$7,580	\$8,489	\$11,291	\$64,775
Texas	\$14,559	\$14,123	\$5,312	\$6,887	\$7,713	\$10,258	\$58,852
Alabama	\$6,988	\$6,779	\$2,550	\$3,306	\$3,702	\$4,924	\$28,249
Mississippi	\$184	\$179	\$67	\$87	\$98	\$130	\$745
California	\$1,283	\$1,244	\$468	\$607	\$680	\$904	\$5,186
Oklahoma	\$836	\$810	\$305	\$395	\$443	\$589	\$3,377
Colorado	\$659	\$639	\$240	\$312	\$349	\$464	\$2,663
New Mexico	\$651	\$632	\$238	\$308	\$345	\$459	\$2,633
Arkansas	\$341	\$331	\$125	\$162	\$181	\$241	\$1,380
Illinois	\$228	\$221	\$83	\$108	\$121	\$160	\$920
Alaska	\$201	\$195	\$73	\$95	\$107	\$142	\$814
New York	\$192	\$186	\$70	\$91	\$102	\$135	\$775
Ohio	\$140	\$135	\$51	\$66	\$74	\$98	\$564
Kansas	\$129	\$125	\$47	\$61	\$68	\$91	\$522
Wyoming	\$128	\$125	\$47	\$61	\$68	\$90	\$519
West Virginia	\$74	\$72	\$27	\$35	\$39	\$52	\$301
Pennsylvania	\$73	\$71	\$27	\$35	\$39	\$52	\$296
Utah	\$58	\$56	\$21	\$27	\$30	\$41	\$233
Virginia	\$45	\$43	\$16	\$21	\$24	\$32	\$181
Kentucky	\$26	\$25	\$10	\$12	\$14	\$18	\$106
Michigan	\$21	\$20	\$8	\$10	\$11	\$15	\$84
Florida	\$16	\$16	\$6	\$8	\$9	\$11	\$66
Montana	\$8	\$8	\$3	\$4	\$4	\$6	\$34
Other States	\$25	\$24	\$9	\$12	\$13	\$18	\$101
<b>Total</b>	<b>\$42,890</b>	<b>\$41,604</b>	<b>\$15,650</b>	<b>\$20,288</b>	<b>\$22,722</b>	<b>\$30,221</b>	<b>\$173,375</b>

**Table 28: Estimated Historical and Projected Support Activities for Oil and Natural Gas Operations Employment by State (2008-2013)**

*(In Jobs)*

	2008	2009	2010	2011	2012	2013
Texas	202	196	74	96	107	142
Louisiana	190	184	69	90	101	134
Alabama	79	77	29	37	42	56
Mississippi	2	2	1	1	1	2
California	17	17	6	8	9	12
Oklahoma	11	11	4	5	6	8
Colorado	9	9	3	4	5	6
New Mexico	8	8	3	4	4	6
Arkansas	4	4	2	2	2	3
Illinois	4	4	1	2	2	3
Ohio	2	2	1	1	1	1
New York	2	2	1	1	1	1
Alaska	2	2	1	1	1	1
Kansas	2	2	1	1	1	1
Wyoming	1	1	0	1	1	1
Pennsylvania	1	1	0	0	1	1
Utah	1	1	0	0	1	1
Other States	3	3	2	2	2	2
Total	540	524	197	255	286	381

# Summary Tables: Oil and Natural Gas Extraction

**Table 29: Estimated Historical and Projected Oil and Natural Gas Extraction Contribution to GDP by State (2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Texas	\$6,240,741	\$6,455,402	\$6,644,698	\$8,083,124	\$9,360,127	\$9,642,931	\$46,427,022
Louisiana	\$4,760,236	\$4,922,845	\$5,066,414	\$6,115,248	\$7,046,837	\$7,261,617	\$35,173,197
Alabama	\$1,722,676	\$1,785,252	\$1,839,919	\$2,379,405	\$2,857,000	\$2,937,816	\$13,522,068
Mississippi	\$183,539	\$189,772	\$195,281	\$234,146	\$268,683	\$276,934	\$1,348,354
California	\$1,361,720	\$1,407,964	\$1,448,835	\$1,737,189	\$1,993,425	\$2,054,640	\$10,003,774
Oklahoma	\$1,034,819	\$1,069,961	\$1,101,021	\$1,320,151	\$1,514,874	\$1,561,393	\$7,602,220
Colorado	\$911,473	\$942,426	\$969,784	\$1,162,795	\$1,334,307	\$1,375,282	\$6,696,067
New Mexico	\$650,507	\$672,598	\$692,123	\$829,873	\$952,279	\$981,522	\$4,778,903
Alaska	\$215,369	\$222,683	\$229,147	\$274,753	\$315,279	\$324,961	\$1,582,191
Arkansas	\$215,137	\$222,443	\$228,900	\$274,457	\$314,939	\$324,610	\$1,580,486
Ohio	\$171,732	\$177,564	\$182,718	\$219,084	\$251,398	\$259,118	\$1,261,614
Kansas	\$136,299	\$140,928	\$145,019	\$173,881	\$199,528	\$205,656	\$1,001,310
Wyoming	\$132,037	\$136,521	\$140,484	\$168,444	\$193,289	\$199,225	\$969,999
Pennsylvania	\$101,067	\$104,499	\$107,532	\$128,934	\$147,952	\$152,495	\$742,478
Utah	\$77,365	\$79,993	\$82,315	\$98,698	\$113,255	\$116,733	\$568,360
West Virginia	\$76,205	\$78,793	\$81,080	\$97,217	\$111,557	\$114,982	\$559,834
Virginia	\$53,784	\$55,610	\$57,224	\$68,614	\$78,734	\$81,152	\$395,118
Kentucky	\$29,235	\$30,228	\$31,105	\$37,296	\$42,797	\$44,111	\$214,771
Illinois	\$28,334	\$29,297	\$30,147	\$36,147	\$41,479	\$42,752	\$208,156
Michigan	\$26,069	\$26,955	\$27,737	\$33,258	\$38,163	\$39,335	\$191,517
Florida	\$19,485	\$20,147	\$20,732	\$24,858	\$28,524	\$29,400	\$143,146
Montana	\$9,275	\$9,590	\$9,868	\$11,832	\$13,578	\$13,994	\$68,137
North Dakota	\$7,561	\$7,818	\$8,045	\$9,646	\$11,068	\$11,408	\$55,546
Tennessee	\$6,844	\$7,077	\$7,282	\$8,731	\$10,019	\$10,327	\$50,280
New York	\$5,646	\$5,838	\$6,007	\$7,203	\$8,265	\$8,519	\$41,477
Nebraska	\$4,484	\$4,637	\$4,771	\$5,721	\$6,564	\$6,766	\$32,943
Indiana	\$2,548	\$2,634	\$2,711	\$3,250	\$3,730	\$3,844	\$18,716
South Dakota	\$1,641	\$1,696	\$1,746	\$2,093	\$2,402	\$2,476	\$12,053
Idaho	\$1,069	\$1,105	\$1,137	\$1,363	\$1,565	\$1,613	\$7,852
New Jersey	\$722	\$747	\$768	\$921	\$1,057	\$1,090	\$5,305
Wisconsin	\$381	\$394	\$405	\$486	\$557	\$575	\$2,798
Missouri	\$379	\$392	\$404	\$484	\$555	\$572	\$2,787
Nevada	\$243	\$252	\$259	\$310	\$356	\$367	\$1,788
Other States	\$739	\$764	\$787	\$943	\$1,082	\$1,116	\$5,432
<b>Total</b>	<b>\$18,189,360</b>	<b>\$18,814,821</b>	<b>\$19,366,405</b>	<b>\$23,550,554</b>	<b>\$27,265,226</b>	<b>\$28,089,332</b>	<b>\$135,275,697</b>

**Table 30: Estimated Historical and Projected Oil and Natural Gas Extraction Spending by State (2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Texas	\$5,098,644	\$5,274,021	\$5,428,675	\$6,603,859	\$7,647,162	\$7,878,212	\$37,930,573
Louisiana	\$4,545,680	\$4,700,959	\$4,838,058	\$5,839,618	\$6,729,218	\$6,934,317	\$33,587,850
Alabama	\$1,800,832	\$1,866,247	\$1,923,394	\$2,487,357	\$2,986,619	\$3,071,102	\$14,135,551
Mississippi	\$213,268	\$220,511	\$226,912	\$272,073	\$312,204	\$321,791	\$1,566,761
California	\$1,154,098	\$1,193,291	\$1,227,931	\$1,472,319	\$1,689,487	\$1,741,368	\$8,478,493
Oklahoma	\$966,940	\$999,777	\$1,028,799	\$1,233,556	\$1,415,506	\$1,458,973	\$7,103,551
Colorado	\$762,292	\$788,180	\$811,060	\$972,480	\$1,115,921	\$1,150,189	\$5,600,123
New Mexico	\$753,949	\$779,553	\$802,183	\$961,837	\$1,103,708	\$1,137,601	\$5,538,830
Arkansas	\$237,536	\$245,603	\$252,733	\$303,033	\$347,730	\$358,408	\$1,745,044
Alaska	\$232,932	\$240,842	\$247,834	\$297,159	\$340,990	\$351,461	\$1,711,217
Ohio	\$161,463	\$166,946	\$171,792	\$205,983	\$236,366	\$243,624	\$1,186,174
Kansas	\$149,418	\$154,492	\$158,977	\$190,617	\$218,733	\$225,450	\$1,097,687
Wyoming	\$148,556	\$153,601	\$158,060	\$189,518	\$217,472	\$224,150	\$1,091,358
West Virginia	\$86,059	\$88,981	\$91,564	\$109,788	\$125,982	\$129,850	\$632,224
Pennsylvania	\$84,823	\$87,704	\$90,250	\$108,211	\$124,173	\$127,986	\$623,146
Utah	\$66,574	\$68,835	\$70,833	\$84,930	\$97,458	\$100,450	\$489,080
Virginia	\$51,885	\$53,647	\$55,204	\$66,191	\$75,954	\$78,287	\$381,167
Kentucky	\$30,308	\$31,337	\$32,247	\$38,664	\$44,367	\$45,730	\$222,653
Illinois	\$24,820	\$25,663	\$26,408	\$31,663	\$36,334	\$37,450	\$182,337
Michigan	\$23,970	\$24,784	\$25,503	\$30,579	\$35,089	\$36,167	\$176,092
Florida	\$18,824	\$19,464	\$20,029	\$24,015	\$27,557	\$28,403	\$138,292
Montana	\$9,823	\$10,157	\$10,451	\$12,532	\$14,380	\$14,821	\$72,164
North Dakota	\$8,801	\$9,100	\$9,364	\$11,228	\$12,884	\$13,279	\$64,656
Tennessee	\$6,210	\$6,421	\$6,607	\$7,922	\$9,091	\$9,370	\$45,622
New York	\$5,699	\$5,892	\$6,064	\$7,270	\$8,343	\$8,599	\$41,867
Nebraska	\$5,203	\$5,379	\$5,536	\$6,637	\$7,616	\$7,850	\$38,221
Indiana	\$2,619	\$2,708	\$2,787	\$3,341	\$3,834	\$3,952	\$19,242
South Dakota	\$2,323	\$2,402	\$2,471	\$2,963	\$3,400	\$3,505	\$17,063
Idaho	\$1,230	\$1,272	\$1,309	\$1,570	\$1,801	\$1,857	\$9,039
New Jersey	\$650	\$672	\$692	\$830	\$952	\$981	\$4,778
Missouri	\$374	\$387	\$398	\$477	\$548	\$565	\$2,749
Wisconsin	\$372	\$384	\$395	\$474	\$544	\$561	\$2,730
Nevada	\$259	\$268	\$276	\$330	\$379	\$391	\$1,903
Other States	\$755	\$780	\$803	\$963	\$1,105	\$1,139	\$5,544
<b>Total</b>	<b>\$16,657,188</b>	<b>\$17,230,260</b>	<b>\$17,735,596</b>	<b>\$21,579,989</b>	<b>\$24,992,906</b>	<b>\$25,747,839</b>	<b>\$123,938,233</b>

**Table 31: Estimated Historical and Projected Oil and Natural Gas Extraction Employment by State (2008-2013)**

*(In Jobs)*

	2008	2009	2010	2011	2012	2013
Texas	49,897	51,614	53,127	64,628	74,838	77,099
Louisiana	38,332	39,642	40,798	49,244	56,745	58,475
Alabama	14,619	15,150	15,614	20,193	24,246	24,932
Mississippi	1,484	1,534	1,579	1,893	2,172	2,239
California	10,531	10,889	11,205	13,435	15,417	15,890
Oklahoma	9,312	9,629	9,908	11,880	13,632	14,051
Colorado	6,869	7,102	7,308	8,763	10,055	10,364
New Mexico	5,920	6,121	6,298	7,552	8,666	8,932
Arkansas	1,957	2,024	2,082	2,497	2,865	2,953
Ohio	1,592	1,646	1,694	2,031	2,331	2,402
Alaska	1,489	1,539	1,584	1,899	2,179	2,246
Kansas	1,182	1,223	1,258	1,508	1,731	1,784
Wyoming	952	984	1,013	1,214	1,393	1,436
Pennsylvania	793	820	844	1,012	1,161	1,197
Utah	747	772	794	952	1,093	1,127
West Virginia	743	768	790	948	1,087	1,121
Virginia	468	483	497	596	684	705
Florida	279	289	297	356	409	422
Kentucky	265	274	282	338	388	400
Michigan	240	249	256	307	352	363
Illinois	204	211	217	260	298	307
Montana	82	85	87	105	120	124
Tennessee	76	78	80	96	111	114
North Dakota	71	73	75	90	103	107
Nebraska	51	53	54	65	74	77
New York	29	30	30	37	42	43
Indiana	27	28	28	34	39	40
Idaho	14	15	15	18	21	21
South Dakota	11	12	12	14	16	17
New Jersey	6	6	6	7	8	9
Wisconsin	5	5	5	6	7	7
Missouri	4	5	5	6	6	7
Oregon	3	3	3	4	4	4
Other States	9	9	9	11	13	13
<b>Total</b>	<b>148,262</b>	<b>153,361</b>	<b>157,858</b>	<b>191,999</b>	<b>222,309</b>	<b>229,027</b>

# **Summary Tables: Drilling Oil and Natural Gas Wells**



**Table 32: Estimated Historical and Projected Drilling Oil and Natural Gas Wells Contribution to GDP by State (2008-2013)**

*(US\$ Thousands)*

	2008	2009	2010	2011	2012	2013	Total
Louisiana	\$2,774,224	\$2,334,188	\$1,389,899	\$1,524,088	\$2,373,273	\$3,686,598	\$14,082,269
Texas	\$2,357,547	\$1,981,486	\$1,180,292	\$1,293,158	\$2,014,764	\$3,130,588	\$11,957,835
Alabama	\$669,644	\$563,252	\$335,424	\$367,717	\$572,691	\$889,682	\$3,398,410
Mississippi	\$35,217	\$37,882	\$20,959	\$27,213	\$38,133	\$54,988	\$214,391
California	\$232,044	\$248,644	\$137,711	\$178,386	\$250,322	\$361,376	\$1,408,483
Oklahoma	\$175,702	\$189,001	\$104,567	\$135,768	\$190,250	\$274,342	\$1,069,632
Colorado	\$152,943	\$164,519	\$91,022	\$118,182	\$165,606	\$238,805	\$931,078
New Mexico	\$116,598	\$125,423	\$69,392	\$90,097	\$126,252	\$182,056	\$709,817
Pennsylvania	\$96,883	\$106,580	\$58,608	\$77,116	\$107,198	\$155,557	\$601,941
Illinois	\$76,632	\$95,967	\$51,044	\$72,116	\$96,108	\$135,901	\$527,767
Arkansas	\$42,015	\$45,583	\$25,161	\$32,835	\$45,870	\$66,059	\$257,524
Ohio	\$33,238	\$35,754	\$19,781	\$25,684	\$35,990	\$51,898	\$202,346
Alaska	\$32,801	\$35,283	\$19,521	\$25,346	\$35,517	\$51,215	\$199,683
Kansas	\$24,829	\$26,709	\$14,777	\$19,186	\$26,885	\$38,768	\$151,154
Wyoming	\$20,715	\$22,283	\$12,328	\$16,007	\$22,430	\$32,345	\$126,108
West Virginia	\$14,217	\$15,293	\$8,461	\$10,986	\$15,394	\$22,199	\$86,550
Utah	\$13,410	\$14,425	\$7,981	\$10,362	\$14,520	\$20,938	\$81,634
Indiana	\$9,400	\$10,379	\$5,702	\$7,519	\$10,438	\$15,162	\$58,600
Virginia	\$9,524	\$10,245	\$5,668	\$7,359	\$10,313	\$14,871	\$57,979
Kentucky	\$5,599	\$6,023	\$3,332	\$4,326	\$6,062	\$8,742	\$34,084
Michigan	\$4,793	\$5,156	\$2,853	\$3,704	\$5,190	\$7,484	\$29,181
New York	\$3,170	\$3,937	\$2,098	\$2,952	\$3,944	\$5,570	\$21,672
Florida	\$3,297	\$3,546	\$1,962	\$2,547	\$3,570	\$5,148	\$20,070
Montana	\$1,486	\$1,598	\$884	\$1,148	\$1,609	\$2,320	\$9,045
North Dakota	\$1,289	\$1,386	\$767	\$996	\$1,395	\$2,012	\$7,844
Tennessee	\$1,133	\$1,218	\$674	\$875	\$1,227	\$1,769	\$6,896
Nebraska	\$777	\$836	\$462	\$600	\$841	\$1,213	\$4,729
South Dakota	\$327	\$352	\$195	\$253	\$354	\$510	\$1,990
Idaho	\$188	\$203	\$112	\$146	\$204	\$294	\$1,147
New Jersey	\$129	\$138	\$77	\$99	\$139	\$201	\$783
Missouri	\$71	\$76	\$42	\$55	\$77	\$111	\$433
Wisconsin	\$66	\$72	\$40	\$51	\$72	\$20,462	\$20,763
Nevada	\$43	\$46	\$25	\$33	\$46	\$67	\$260
Other States	\$114	\$123	\$68	\$88	\$123	\$178	\$694
<b>Total</b>	<b>\$6,910,063</b>	<b>\$6,087,605</b>	<b>\$3,571,890</b>	<b>\$4,056,999</b>	<b>\$6,176,806</b>	<b>\$9,479,430</b>	<b>\$36,282,793</b>

**Table 33: Estimated Historical and Projected Drilling Oil and Natural Gas Wells Spending by State (2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Louisiana	\$2,855,315	\$2,402,416	\$1,430,526	\$1,568,637	\$2,442,644	\$3,794,358	\$14,493,895
Texas	\$1,992,686	\$1,674,825	\$997,626	\$1,093,025	\$1,702,953	\$2,646,089	\$10,107,205
Alabama	\$683,589	\$574,981	\$342,409	\$375,375	\$584,617	\$908,210	\$3,469,182
Mississippi	\$39,073	\$42,031	\$23,254	\$30,193	\$42,309	\$61,009	\$237,869
California	\$216,076	\$231,534	\$128,235	\$166,111	\$233,096	\$336,508	\$1,311,559
Oklahoma	\$177,155	\$190,564	\$105,432	\$136,891	\$191,823	\$276,610	\$1,078,475
Colorado	\$139,661	\$150,232	\$83,118	\$107,919	\$151,225	\$218,067	\$850,222
New Mexico	\$138,133	\$148,588	\$82,208	\$106,738	\$149,570	\$215,681	\$840,916
Pennsylvania	\$82,792	\$91,078	\$50,084	\$65,900	\$91,606	\$132,932	\$514,392
Illinois	\$64,288	\$80,509	\$42,822	\$60,500	\$80,627	\$114,011	\$442,758
Arkansas	\$45,270	\$49,114	\$27,110	\$35,379	\$49,424	\$71,177	\$277,475
Alaska	\$42,676	\$45,906	\$25,398	\$32,976	\$46,209	\$66,634	\$259,800
Ohio	\$29,582	\$31,821	\$17,605	\$22,858	\$32,031	\$46,189	\$180,087
Kansas	\$27,375	\$29,447	\$16,292	\$21,153	\$29,642	\$42,744	\$166,653
Wyoming	\$27,217	\$29,277	\$16,198	\$21,031	\$29,471	\$42,497	\$165,692
West Virginia	\$15,767	\$16,960	\$9,384	\$12,183	\$17,072	\$24,619	\$95,985
Utah	\$12,197	\$13,120	\$7,259	\$9,425	\$13,207	\$19,045	\$74,253
Virginia	\$9,506	\$10,225	\$5,657	\$7,345	\$10,293	\$14,843	\$57,870
Indiana	\$9,310	\$10,279	\$5,647	\$7,446	\$10,338	\$15,017	\$58,037
Kentucky	\$5,553	\$5,973	\$3,305	\$4,291	\$6,012	\$8,670	\$33,804
Michigan	\$4,392	\$4,724	\$2,614	\$3,393	\$4,755	\$6,857	\$26,735
New York	\$3,444	\$4,277	\$2,279	\$3,206	\$4,284	\$6,051	\$23,541
Florida	\$3,449	\$3,710	\$2,053	\$2,665	\$3,734	\$5,385	\$20,996
Montana	\$1,800	\$1,936	\$1,071	\$1,391	\$1,949	\$2,810	\$10,956
North Dakota	\$1,612	\$1,734	\$960	\$1,246	\$1,746	\$2,518	\$9,816
Tennessee	\$1,138	\$1,224	\$677	\$879	\$1,232	\$1,777	\$6,926
Nebraska	\$953	\$1,025	\$567	\$737	\$1,032	\$1,488	\$5,803
South Dakota	\$426	\$458	\$253	\$329	\$461	\$664	\$2,591
Idaho	\$225	\$242	\$134	\$174	\$244	\$352	\$1,372
New Jersey	\$119	\$128	\$71	\$92	\$129	\$186	\$725
Missouri	\$69	\$74	\$41	\$53	\$74	\$107	\$417
Wisconsin	\$68	\$73	\$41	\$53	\$74	\$20,955	\$21,263
Nevada	\$47	\$51	\$28	\$37	\$51	\$74	\$289
Other States	\$138	\$149	\$82	\$107	\$150	\$216	\$842
<b>Total</b>	<b>\$6,631,101</b>	<b>\$5,848,689</b>	<b>\$3,430,440</b>	<b>\$3,899,739</b>	<b>\$5,934,084</b>	<b>\$9,104,348</b>	<b>\$34,847,559</b>

**Table 34: Estimated Historical and Projected Drilling Oil and Natural Gas Wells  
Employment by State (2008-2013)**

*(In Jobs)*

	2008	2009	2010	2011	2012	2013
Louisiana	28,321	23,829	14,189	15,559	24,228	37,635
Texas	23,084	19,402	11,557	12,662	19,728	30,654
Alabama	6,595	5,547	3,303	3,621	5,640	8,762
Mississippi	371	399	221	287	402	579
California	2,141	2,294	1,271	1,646	2,310	3,334
Oklahoma	1,993	2,144	1,186	1,540	2,158	3,112
Colorado	1,461	1,572	870	1,129	1,582	2,282
New Mexico	1,291	1,389	769	998	1,398	2,016
Illinois	881	1,103	587	829	1,105	1,562
Pennsylvania	937	1,030	567	746	1,036	1,504
Arkansas	449	487	269	351	491	706
Ohio	378	407	225	292	410	591
Alaska	280	301	167	216	303	437
Kansas	278	299	165	215	301	434
Wyoming	187	201	111	145	203	292
West Virginia	154	166	92	119	167	241
Utah	152	164	91	118	165	238
Indiana	121	134	73	97	135	195
Virginia	95	102	57	74	103	149
Kentucky	66	71	39	51	71	102
Michigan	52	56	31	41	57	82
Florida	42	45	25	32	45	65
New York	24	30	16	22	30	42
Montana	16	17	10	12	17	25
North Dakota	13	14	7	10	14	20
Tennessee	10	11	6	8	11	16
Nebraska	8	9	5	6	9	13
South Dakota	3	4	2	3	4	5
Idaho	3	3	2	2	3	4
New Jersey	1	1	1	1	1	2
Other States	3	3	2	2	3	4
<b>Total</b>	<b>69,413</b>	<b>61,236</b>	<b>35,914</b>	<b>40,834</b>	<b>62,129</b>	<b>95,349</b>

# **Summary Tables: Mining and Oil and Natural Gas Field Machinery Manufacturing**

**Table 35: Estimated Historical and Projected Mining Oil and Natural Gas Field Machinery Manufacturing Contribution to GDP by State (2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Texas	\$1,107,664	\$609,711	\$712,508	\$1,342,051	\$1,104,637	\$1,629,406	\$6,505,976
Louisiana	\$745,246	\$419,774	\$482,904	\$908,737	\$744,493	\$1,098,453	\$4,399,607
Alabama	\$381,751	\$204,239	\$214,060	\$389,142	\$344,850	\$504,196	\$2,038,238
Mississippi	\$8,294	\$4,952	\$8,746	\$15,050	\$10,492	\$18,292	\$65,825
Ohio	\$79,986	\$43,663	\$97,873	\$163,725	\$114,973	\$206,868	\$707,088
California	\$75,230	\$45,214	\$67,257	\$113,608	\$85,413	\$145,065	\$531,788
Oklahoma	\$44,323	\$26,464	\$46,740	\$80,430	\$56,070	\$97,755	\$351,783
Missouri	\$8,493	\$3,189	\$42,692	\$76,726	\$38,701	\$78,142	\$247,941
Illinois	\$6,522	\$4,526	\$41,770	\$70,329	\$33,679	\$73,524	\$230,350
Wisconsin	\$8,082	\$3,035	\$40,625	\$73,011	\$36,827	\$66,814	\$228,393
Colorado	\$37,172	\$22,194	\$39,200	\$67,454	\$47,024	\$81,984	\$295,028
Kentucky	\$8,206	\$3,386	\$35,778	\$64,189	\$32,859	\$65,866	\$210,284
Pennsylvania	\$76,569	\$42,159	\$31,993	\$44,158	\$58,639	\$89,355	\$342,873
Nebraska	\$5,670	\$2,167	\$27,822	\$49,987	\$25,274	\$50,971	\$161,891
New Mexico	\$24,934	\$14,887	\$26,294	\$45,246	\$31,543	\$54,993	\$197,898
Florida	\$52,411	\$32,271	\$18,385	\$21,977	\$37,242	\$55,367	\$217,654
Indiana	\$37,263	\$20,523	\$15,686	\$21,539	\$28,610	\$43,699	\$167,320
New Jersey	\$33,818	\$18,466	\$14,078	\$19,252	\$25,910	\$39,532	\$151,056
Arkansas	\$11,325	\$7,369	\$11,839	\$19,751	\$13,915	\$24,481	\$88,681
Alaska	\$7,009	\$4,185	\$7,391	\$12,718	\$8,866	\$15,458	\$55,626
Michigan	\$16,578	\$9,170	\$6,242	\$8,321	\$12,127	\$18,135	\$70,573
Kansas	\$5,700	\$3,403	\$6,011	\$10,343	\$7,211	\$12,571	\$45,239
Wyoming	\$4,306	\$2,571	\$4,541	\$7,814	\$5,447	\$9,497	\$34,175
Minnesota	\$12,721	\$6,991	\$4,076	\$5,003	\$8,744	\$12,746	\$50,282
Utah	\$3,448	\$2,059	\$3,637	\$6,258	\$4,362	\$7,606	\$27,370
West Virginia	\$3,184	\$1,901	\$3,357	\$5,777	\$4,028	\$7,022	\$25,269
New York	\$2,691	\$2,833	\$3,146	\$5,165	\$4,090	\$6,420	\$24,344
Virginia	\$2,278	\$1,360	\$2,403	\$4,134	\$2,882	\$5,025	\$18,083
Tennessee	\$321	\$192	\$339	\$583	\$406	\$709	\$2,550
North Dakota	\$273	\$163	\$288	\$495	\$345	\$602	\$2,166
Idaho	\$41	\$25	\$43	\$75	\$52	\$91	\$326
Nevada	\$10	\$6	\$10	\$18	\$12	\$21	\$77
Oregon	\$9	\$5	\$9	\$16	\$11	\$20	\$71
Other States	\$13	\$8	\$14	\$24	\$16	\$29	\$103
<b>Total</b>	<b>\$2,811,542</b>	<b>\$1,563,060</b>	<b>\$2,017,754</b>	<b>\$3,653,108</b>	<b>\$2,929,751</b>	<b>\$4,520,715</b>	<b>\$17,495,929</b>

**Table 36: Estimated Historical and Projected Mining Oil and Natural Gas Field Machinery Manufacturing Spending by State (2008-2013)**

*(US\$ Thousands)*

	2008	2009	2010	2011	2012	2013	Total
Texas	\$975,915	\$537,190	\$627,760	\$1,182,424	\$973,248	\$1,435,600	\$5,732,137
Louisiana	\$875,216	\$492,982	\$567,121	\$1,067,219	\$874,331	\$1,290,021	\$5,166,891
Alabama	\$392,707	\$210,101	\$220,204	\$400,311	\$354,747	\$518,667	\$2,096,737
Mississippi	\$10,194	\$6,086	\$10,750	\$18,498	\$12,896	\$22,483	\$80,906
Ohio	\$68,482	\$37,382	\$83,795	\$140,175	\$98,436	\$177,113	\$605,384
California	\$73,117	\$43,944	\$65,368	\$110,417	\$83,014	\$140,991	\$516,851
Oklahoma	\$46,218	\$27,595	\$48,739	\$83,868	\$58,467	\$101,935	\$366,822
Missouri	\$8,488	\$3,187	\$42,666	\$76,680	\$38,677	\$78,095	\$247,793
Wisconsin	\$8,074	\$3,032	\$40,584	\$72,938	\$36,790	\$66,748	\$228,165
Colorado	\$36,436	\$21,755	\$38,423	\$66,118	\$46,093	\$80,361	\$289,186
New Mexico	\$36,038	\$21,517	\$38,003	\$65,394	\$45,588	\$79,481	\$286,021
Nebraska	\$7,707	\$2,945	\$37,817	\$67,945	\$34,353	\$69,282	\$220,050
Kentucky	\$8,540	\$3,524	\$37,234	\$66,801	\$34,196	\$68,546	\$218,841
Illinois	\$5,340	\$3,705	\$34,198	\$57,581	\$27,574	\$60,197	\$188,595
Pennsylvania	\$64,522	\$35,526	\$26,960	\$37,211	\$49,414	\$75,297	\$288,930
Florida	\$60,291	\$37,123	\$21,149	\$25,281	\$42,841	\$63,692	\$250,378
Indiana	\$36,178	\$19,925	\$15,229	\$20,912	\$27,776	\$42,426	\$162,447
New Jersey	\$35,279	\$19,263	\$14,686	\$20,084	\$27,029	\$41,239	\$157,580
Arkansas	\$13,424	\$8,736	\$14,034	\$23,413	\$16,495	\$29,020	\$105,122
Alaska	\$11,134	\$6,648	\$11,741	\$20,204	\$14,085	\$24,556	\$88,366
Kansas	\$7,142	\$4,264	\$7,531	\$12,960	\$9,035	\$15,752	\$56,684
Wyoming	\$7,101	\$4,240	\$7,488	\$12,885	\$8,983	\$15,661	\$56,357
Michigan	\$14,897	\$8,241	\$5,609	\$7,477	\$10,897	\$16,297	\$63,419
West Virginia	\$4,113	\$2,456	\$4,338	\$7,464	\$5,204	\$9,072	\$32,648
Minnesota	\$12,573	\$6,910	\$4,028	\$4,944	\$8,642	\$12,598	\$49,695
New York	\$3,110	\$3,273	\$3,635	\$5,969	\$4,726	\$7,420	\$28,134
Utah	\$3,182	\$1,900	\$3,356	\$5,774	\$4,025	\$7,018	\$25,256
Virginia	\$2,480	\$1,481	\$2,615	\$4,500	\$3,137	\$5,470	\$19,683
Montana	\$470	\$280	\$495	\$852	\$594	\$1,036	\$3,726
North Dakota	\$421	\$251	\$444	\$763	\$532	\$928	\$3,339
Rhode Island	\$297	\$0	\$313	\$539	\$376	\$655	\$2,179
Tennessee	\$297	\$177	\$313	\$539	\$376	\$655	\$2,356
South Dakota	\$111	\$66	\$117	\$201	\$140	\$245	\$881
Other States	\$101	\$60	\$107	\$183	\$128	\$223	\$802
<b>Total</b>	<b>\$2,829,594</b>	<b>\$1,575,766</b>	<b>\$2,036,850</b>	<b>\$3,688,528</b>	<b>\$2,952,848</b>	<b>\$4,558,775</b>	<b>\$17,642,360</b>

**Table 37: Estimated Historical and Projected Mining Oil and Natural Gas Field Machinery Manufacturing Employment by State (2008-2013)**

*(In Jobs)*

	2008	2009	2010	2011	2012	2013
Texas	14,026	7,721	9,023	16,995	13,988	20,633
Louisiana	10,815	6,092	7,008	13,187	10,804	15,940
Alabama	5,460	2,921	3,062	5,566	4,932	7,211
Mississippi	128	77	135	233	162	283
Ohio	1,143	624	1,399	2,340	1,643	2,957
California	930	559	831	1,404	1,055	1,793
Oklahoma	707	422	745	1,282	894	1,559
Wisconsin	123	46	621	1,115	563	1,021
Missouri	107	40	536	964	486	982
Illinois	84	58	536	903	432	944
Kentucky	122	51	534	958	490	983
Colorado	491	293	518	891	621	1,083
New Mexico	458	273	482	830	579	1,009
Nebraska	98	37	479	860	435	877
Pennsylvania	957	527	400	552	733	1,117
Florida	787	485	276	330	559	831
Indiana	539	297	227	312	414	633
Arkansas	192	125	200	334	235	414
New Jersey	401	219	167	228	307	469
Alaska	106	63	111	192	134	233
Kansas	89	53	93	161	112	195
Michigan	227	126	86	114	166	249
Wyoming	69	41	72	125	87	151
Minnesota	188	103	60	74	129	188
Utah	52	31	55	95	66	115
West Virginia	47	28	49	85	59	103
New York	31	33	37	60	48	75
Virginia	32	19	34	58	40	70
Tennessee	5	3	5	8	6	10
North Dakota	4	2	4	7	5	8
Other States	1	1	1	2	1	3
<b>Total</b>	<b>38,417</b>	<b>21,368</b>	<b>27,786</b>	<b>50,264</b>	<b>40,188</b>	<b>62,139</b>

# Summary Tables: Construction



**Table 38: Estimated Historical and Projected Construction Contribution to GDP by State  
(2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Louisiana	\$1,118,890	\$1,056,200	\$456,941	\$579,675	\$666,330	\$919,636	\$4,797,673
Texas	\$861,042	\$750,346	\$347,876	\$519,024	\$568,776	\$739,830	\$3,786,893
Alabama	\$490,241	\$449,672	\$199,419	\$269,283	\$303,699	\$409,676	\$2,121,991
Mississippi	\$14,585	\$14,292	\$6,217	\$7,991	\$9,199	\$12,828	\$65,112
California	\$93,793	\$91,910	\$39,979	\$51,386	\$59,159	\$82,492	\$418,718
Oklahoma	\$71,296	\$69,865	\$30,390	\$39,061	\$44,970	\$62,706	\$318,289
Colorado	\$61,747	\$60,508	\$26,320	\$33,829	\$38,947	\$54,308	\$275,658
New Mexico	\$49,028	\$48,044	\$20,898	\$26,861	\$30,924	\$43,121	\$218,875
Arkansas	\$16,094	\$15,771	\$6,860	\$8,817	\$10,151	\$14,155	\$71,846
Alaska	\$14,379	\$14,091	\$6,129	\$7,878	\$9,070	\$12,647	\$64,193
Ohio	\$13,177	\$12,913	\$5,617	\$7,219	\$8,312	\$11,590	\$58,828
Kansas	\$9,818	\$9,621	\$4,185	\$5,379	\$6,193	\$8,635	\$43,831
Wyoming	\$8,292	\$8,126	\$3,535	\$4,543	\$5,230	\$7,293	\$37,019
Pennsylvania	\$7,143	\$7,000	\$3,045	\$3,913	\$4,505	\$6,282	\$31,888
West Virginia	\$5,598	\$5,486	\$2,386	\$3,067	\$3,531	\$4,924	\$24,993
Utah	\$5,454	\$5,345	\$2,325	\$2,988	\$3,440	\$4,797	\$24,350
Virginia	\$3,914	\$3,836	\$1,669	\$2,145	\$2,469	\$3,443	\$17,475
Kentucky	\$2,241	\$2,196	\$955	\$1,228	\$1,414	\$1,971	\$10,006
Illinois	\$2,083	\$2,041	\$888	\$1,141	\$1,314	\$1,832	\$9,300
Michigan	\$1,872	\$1,835	\$798	\$1,026	\$1,181	\$1,647	\$8,358
Florida	\$1,428	\$1,399	\$609	\$782	\$900	\$1,256	\$6,373
Montana	\$643	\$630	\$274	\$352	\$406	\$566	\$2,871
North Dakota	\$517	\$507	\$220	\$283	\$326	\$455	\$2,308
Tennessee	\$506	\$496	\$216	\$277	\$319	\$445	\$2,259
New York	\$378	\$370	\$161	\$207	\$238	\$332	\$1,686
Nebraska	\$309	\$303	\$132	\$169	\$195	\$272	\$1,381
Indiana	\$199	\$195	\$85	\$109	\$125	\$175	\$887
South Dakota	\$138	\$135	\$59	\$75	\$87	\$121	\$615
Idaho	\$78	\$77	\$33	\$43	\$49	\$69	\$349
New Jersey	\$51	\$50	\$22	\$28	\$32	\$45	\$226
Missouri	\$29	\$29	\$13	\$16	\$19	\$26	\$131
Wisconsin	\$27	\$27	\$12	\$15	\$17	\$24	\$123
Nevada	\$18	\$17	\$7	\$10	\$11	\$15	\$78
Other States	\$56	\$55	\$24	\$31	\$35	\$49	\$251
<b>Total</b>	<b>\$2,855,067</b>	<b>\$2,633,386</b>	<b>\$1,168,295</b>	<b>\$1,578,851</b>	<b>\$1,781,574</b>	<b>\$2,407,662</b>	<b>\$12,424,835</b>

**Table 39: Estimated Historical and Projected Construction Spending by State (2008-2013)**

**(US\$ Thousands)**

	2008	2009	2010	2011	2012	2013	Total
Louisiana	\$1,018,469	\$961,405	\$415,931	\$527,649	\$606,527	\$837,098	\$4,367,079
Texas	\$625,758	\$545,309	\$252,817	\$377,198	\$413,354	\$537,667	\$2,752,103
Alabama	\$407,786	\$374,041	\$165,878	\$223,992	\$252,619	\$340,772	\$1,765,090
Mississippi	\$13,573	\$13,300	\$5,785	\$7,436	\$8,561	\$11,937	\$60,592
California	\$73,448	\$71,973	\$31,307	\$40,239	\$46,327	\$64,598	\$327,892
Oklahoma	\$61,537	\$60,302	\$26,230	\$33,714	\$38,814	\$54,123	\$274,719
Colorado	\$48,513	\$47,539	\$20,678	\$26,578	\$30,599	\$42,668	\$216,576
New Mexico	\$47,982	\$47,019	\$20,452	\$26,288	\$30,264	\$42,201	\$214,205
Arkansas	\$15,117	\$14,814	\$6,444	\$8,282	\$9,535	\$13,296	\$67,487
Alaska	\$14,824	\$14,526	\$6,319	\$8,122	\$9,350	\$13,038	\$66,179
Ohio	\$10,276	\$10,069	\$4,380	\$5,630	\$6,481	\$9,038	\$45,873
Kansas	\$9,509	\$9,318	\$4,053	\$5,210	\$5,998	\$8,363	\$42,451
Wyoming	\$9,454	\$9,264	\$4,030	\$5,180	\$5,963	\$8,315	\$42,207
West Virginia	\$5,477	\$5,367	\$2,334	\$3,001	\$3,454	\$4,817	\$24,450
Pennsylvania	\$5,398	\$5,290	\$2,301	\$2,957	\$3,405	\$4,748	\$24,099
Utah	\$4,237	\$4,152	\$1,806	\$2,321	\$2,672	\$3,726	\$18,914
Virginia	\$3,302	\$3,236	\$1,407	\$1,809	\$2,083	\$2,904	\$14,741
Kentucky	\$1,929	\$1,890	\$822	\$1,057	\$1,217	\$1,696	\$8,611
Illinois	\$1,580	\$1,548	\$673	\$865	\$996	\$1,389	\$7,052
Michigan	\$1,525	\$1,495	\$650	\$836	\$962	\$1,342	\$6,810
Florida	\$1,198	\$1,174	\$511	\$656	\$756	\$1,054	\$5,348
Montana	\$625	\$613	\$266	\$342	\$394	\$550	\$2,791
North Dakota	\$560	\$549	\$239	\$307	\$353	\$493	\$2,500
Tennessee	\$395	\$387	\$168	\$217	\$249	\$348	\$1,764
New York	\$363	\$355	\$155	\$199	\$229	\$319	\$1,619
Nebraska	\$331	\$324	\$141	\$181	\$209	\$291	\$1,478
Indiana	\$167	\$163	\$71	\$91	\$105	\$147	\$744
South Dakota	\$148	\$145	\$63	\$81	\$93	\$130	\$660
Idaho	\$78	\$77	\$33	\$43	\$49	\$69	\$350
New Jersey	\$41	\$41	\$18	\$23	\$26	\$36	\$185
Missouri	\$24	\$23	\$10	\$13	\$15	\$21	\$106
Wisconsin	\$24	\$23	\$10	\$13	\$15	\$21	\$106
Nevada	\$16	\$16	\$7	\$9	\$10	\$14	\$74
Other States	\$48	\$47	\$20	\$26	\$30	\$42	\$214
<b>Total</b>	<b>\$2,383,711</b>	<b>\$2,205,796</b>	<b>\$976,011</b>	<b>\$1,310,563</b>	<b>\$1,481,717</b>	<b>\$2,007,271</b>	<b>\$10,365,068</b>

**Table 40: Estimated Historical and Projected Construction Employment by State  
(2008-2013)**

**(In Jobs)**

	2008	2009	2010	2011	2012	2013
Louisiana	20,590	19,436	8,409	10,667	12,262	16,923
Texas	13,599	11,850	5,494	8,197	8,983	11,684
Alabama	9,373	8,597	3,813	5,148	5,806	7,833
Mississippi	292	286	124	160	184	257
Oklahoma	1,444	1,415	616	791	911	1,270
California	1,350	1,323	575	739	851	1,187
New Mexico	999	979	426	547	630	879
Colorado	963	943	410	527	607	847
Arkansas	316	310	135	173	199	278
Alaska	226	222	96	124	143	199
Ohio	226	221	96	124	143	199
Kansas	165	162	70	90	104	145
Wyoming	147	144	63	80	93	129
Pennsylvania	106	104	45	58	67	93
West Virginia	102	100	43	56	64	89
Utah	102	99	43	56	64	89
Virginia	60	59	26	33	38	53
Kentucky	41	40	18	23	26	36
Michigan	31	31	13	17	20	27
Illinois	29	28	12	16	18	26
Florida	25	24	11	14	16	22
Montana	14	13	6	8	9	12
North Dakota	9	9	4	5	6	8
Tennessee	9	8	4	5	5	8
Nebraska	6	5	2	3	3	5
New York	5	5	2	3	3	4
Indiana	3	3	1	2	2	3
South Dakota	3	3	1	2	2	2
Idaho	2	2	1	1	1	1
Other States	3	3	1	2	2	3
<b>Total</b>	<b>50,237</b>	<b>46,426</b>	<b>20,561</b>	<b>27,670</b>	<b>31,262</b>	<b>42,312</b>

# **Appendix 6: Employment Summary Table**

**Table 41: Estimated Historical and Projected Employment Associated with GoM Oil and Natural Gas Industry Operations Summary Table (2008-2013)**

*(In Jobs)*

	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
AL Direct	11,851	10,134	7,186	9,959	11,312	14,338
AL Indirect	24,275	22,158	18,635	24,606	29,354	34,456
LA Direct	30,301	26,385	18,110	23,804	27,326	36,469
LA Indirect	67,947	62,798	52,363	64,943	76,814	92,638
MS Direct	648	640	531	685	759	929
MS Indirect	1,629	1,658	1,529	1,889	2,162	2,431
TX Direct	24,619	20,717	16,524	22,760	25,201	32,060
TX Indirect	76,189	70,066	62,751	79,818	92,443	108,152
<i>Total Gulf Direct</i>	67,419	57,876	42,351	57,208	64,598	83,796
<i>Total Gulf Indirect</i>	170,040	156,680	135,278	171,256	200,773	237,677
<i>Total Gulf Jobs</i>	237,459	214,556	177,629	228,464	265,371	321,473
<i>Total Non- Gulf Direct</i>	20,421	19,439	18,048	23,877	25,193	32,008
<i>Total Non- Gulf Indirect</i>	48,990	48,920	46,640	58,682	65,610	75,727
<i>Total Non- Gulf Jobs</i>	69,410	68,359	64,689	82,560	90,803	107,736
<b>Total Direct</b>	87,840	77,315	60,399	81,085	89,791	115,804
<b>Total Indirect</b>	219,030	205,600	181,918	229,938	266,383	313,404
<b>Total Jobs</b>	306,870	282,915	242,317	311,023	356,174	429,208

# **Appendix 7: Selected Gulf of Mexico Oil and Natural Gas Industry Suppliers**

### Index: Number of Companies per State, Not All Inclusive

State	Number of Companies	State	Number of Companies
Alabama	34	Nebraska	4
Alaska	4	Nevada	5
Arizona	12	New Hampshire	4
Arkansas	7	New Jersey	39
California	120	New Mexico	2
Colorado	12	New York	45
Connecticut	21	North Carolina	22
Delaware	3	North Dakota	1
Florida	38	Ohio	88
Georgia	42	Oklahoma	52
Hawaii	1	Oregon	13
Illinois	77	Pennsylvania	102
Indiana	13	Rhode Island	6
Iowa	3	South Carolina	11
Kansas	4	South Dakota	1
Kentucky	6	Tennessee	7
Louisiana	342	Texas	1,113
Maine	4	Utah	14
Maryland	11	Vermont	1
Massachusetts	34	Virginia	33
Michigan	15	Washington	24
Minnesota	33	Wisconsin	32
Mississippi	19	Wyoming	1
Missouri	21	<b>Total Companies</b>	<b>2,496</b>

**Table 42: Selected Gulf of Mexico Oil and Natural Gas Industry Suppliers**

<b>ALABAMA</b>	<b>ARIZONA Cont.</b>
Aaron Oil Company	DH Instruments Pressure Products
ABC Applicators, Inc.	EMMEGI Heat Exchangers Inc.
ABS Americas	HDA/SMC
Advanced Heat Treat Corp.	Healthy BACS LLC
Aggreko LLC	Ballast Technologies, Inc.
Airgas	Tomar Electronics
Alabama Drydock & Shipping Company	Valley Forge & Bolt Mfg. Co.
Alabama Laser	Westcoast B.O.P. Products US, Inc
Alabama Metal Industries	<b>ARKANSAS</b>
Atlantic Marine, Inc. (Mobile)	AmerCable Holdings LLC
BAE Systems	Applied Technology Group, Inc.
BAE Systems Southeast Shipyards Alabama	Baldor Electric Company
Barry Graham Oil Service Llc	Bekaert Corporation
Bay Area Screw & Supply Co., Inc	Crow-Burlingame Company
Consolidated Pipe & Supply Company	Triangle Engineering
Delta Rigging & Tools, Inc	United Spectrographics, LLC
DK Tech Corporation	<b>CALIFORNIA</b>
Gulf Coast Air & Hydraulics, Inc.	3M
Hill Marine Refrigeration, Inc.	Advanced Joining Technologies, Inc.
Ideal Technical Services	Aerospace & Marine International
Industrial Training Consultants Inc	Ametek HCC
Intergraph Corporation	Ametek Programmable Power
Lott Ship Agency, Inc.	Amron International Diving Supply Inc.
Martin Energy Services	Analysts, Inc.
Master Boat Builders, Inc.	Anixter Inc
Metals Usa Plates And Shapes	Anritsu Company
Midstream Fuel Service, LLC	Applied Physics Systems
Motion Industries	Autodesk, Inc.
NOV	Baker Tanks Gulf South
Nudraulix, Inc.	Bal Seal Engineering Inc.
Offshore Inland Marine & Oilfield	Barksdale Control Products
S&K Machineworks and Fabrication, Inc.	Behrens and Associates Inc
ShipConstructor Software Inc.	BEI Sensors
Technical Specialties, Inc.	Berry Plastics
<b>ALASKA</b>	BG System Inc
Alaska Instrument Company, Llc	Blacoh Fluid Control, Inc.
Alaska Valve And Fitting Company	Capstone Turbine Corporation
MRO Sales, Inc.	Cavins Oil Well Tools
RJE International Inc	Celesco Transducer Products
<b>ARIZONA</b>	Ceradyne PetroCeram® Systems
AT&T	ChemEOR
Phoenix Digital Corporation	Clayton Industries
Certex USA, Inc.	Compass Water Solutions
Choice First Aid & Safety Inc.	ConGlobal Industries Inc.
	Control Panel
	Corpro Companies Inc.



<b>COLORADO</b>	<b>FLORIDA Cont.</b>
Atlas Copco	American Welding Society
BAND-IT IDEX, Inc.	Artmark Products Corporation
BVM Corporation	BAE Systems Southeast Shipyards Florida
CoorsTek Technical Ceramics	BellowsTech, LLC
Decision Point Associates, Inc	Belzona
Freewave Technologies Inc.	Citrix Systems, Inc.
Gates Corporation	CSX Transportation
Micro Motion	Eastern Shipbuilding Group, Inc.
PTI Group USA LLC	Enviro Voraxial Technology
Quadco Inc.	Global Satellite USA
Society for Mining, Metallurgy & Exploration	Gosan Crane Components
Sundyne Corporation	Governor Control Systems, Inc
<b>CONNECTICUT</b>	H G Harders & Sons, Inc.
Advanced Testing Systems, Inc.	Hercules Sealing Products
APS Technology	Hoerbiger Compression Technology
Ashcroft Inc.	KE Marine Inc/Worldwide Diesel Power
Baumer Ltd	Manown Engineering Co., Inc.
CS Unitec	Marine Rescue Technologies
Flygt	Maritech Machine Inc.
Global Dynamix Inc	Miami Diver, Inc.
Lee Company	Neptune Research, Inc.
Oceanweather Inc.	Numara Software, Inc.
OFS Fitel LLC	Ocean Motions Company
Omega Engineering Inc	Oceaneering
Point Lighting Corporation	Pensacola Testing Laboratories, Inc.
Process Measurement & Controls	Quality Plus Services, Inc.
Pro-Lock USA LLC	Southern Spring & Stamping Inc
Remote Automation Solutions	Stainless Structurals LLC
RSCC (Rockbestos-Surprenant Cable Corp)	Survival Systems International, Inc., SSI Service Base Florida
Softex	Teledyne ODI Inc.
Solidification Products International Inc	Tiger Direct, Inc.
TUV Rheinland of North America	Virtual Media Integration, Ltd
Walz & Krenzer, Inc.	W. W. Grainger, Inc.
Ward Leonard Electric Company, Inc	World Fuel Services, Inc.
<b>DELAWARE</b>	Worldwide Drilling Resource
C. Foster Usa, Inc.	<b>GEORGIA</b>
DuPont	Adobe Equipment Houston, LLC
Pole Star Space Applications Llc	Amerair Industries, Inc
<b>District of Columbia</b>	American Boa, Inc.
Schagrin Associates	AT&T
Maritime Administration	BASF Corporation
<b>FLORIDA</b>	C C Jensen Inc
A&E Systems LLC	Crane Control Systems Llc
American Industrial Plastics, Inc.	DCL Mooring & Rigging
American Steel Products	Dell Marketing L.P.

<b>GEORGIA</b>	<b>ILLINOIS Cont.</b>
Delta / KLM / Air France / Alitalia	Bosch Rexroth Corporation
Det Norske Veritas	Burlington Northern And
Deutz Corporation	Cat Engine
Donovan Marine, Inc.	Caterpillar
Executrain	CDW Computer Centers Inc.
Filowire, Inc.	CDW Direct
Hope Industrial Systems Inc	CEJN Industrial
ICE - Italian Trade Commission	Cintas Corporation LOC 543
Imes Inc	Clements National
Jas Worldwide Management	Clifford-Jacobs Forging
JIT Warehousing & Logistics LLC	Clyde Union, Inc.
Kongsberg	Coleman Cable Inc
M.C. Electric, LLC	Cortland Cable Co.
MacDermid Offshore Solutions LLC	Davis Instruments
Metals Usa	Dexter Magnetic Technologies, Inc.
MOOG	Dynapar
Mustang Computers & Supplies Inc.	Eaton Corporation
MyCelx Technologies Corporation	Energy Alloys Inc
Nexeo Solutions, LLC	Federal Signal Corporation
Nivis	Flodraulic Group, Inc.
OBL	Groves Industrial Supply
PC Weather Products	Honeywell Analytics
Rolls-Royce Commercial Marine	Howco Metals Management Llc
Ronson Technical Products	Hydratight, Inc
Sigma Thermal Inc.	IFS
Sikora International Corp	Industrial Air Solutions,
SOTEC, LLC	Integrated Project Resou
Specialty Application Services, Inc.	ITH Engineering
STW Technic LP	Joliet Equipment Corporation
Teledyne D.G. O'Brien, Inc.	Joliet Technologies L.L.C.
UPS Capital	Legrand
Weg Electric Corp. U.S. Headquarters	Lillbacka USA Inc.
WIKA Instrument Corporation	Magnetrol International
<b>HAWAII</b>	Magnet-Schultz
Structural Solutions	Martin Engineering
<b>ILLINOIS</b>	Mcmaster-Carr Supply Company
Ace Transportation Inc	Metropolitan Life Insurance
AFL Telecommunications, LLC	Mijno Precision Gearing
Air Cycle Corporation	Mittal Steel
Apex Engineering Products Corporation	Morgan Bronze Products, Inc.
Appleton (EGS Electrical Group - Appleton, Nutsteel, Nelson, SolaHD)	MSC Industrial Supply Co.
Applied Industrial Technologies	Nitto Kohki USA Inc
AT&T Mobility II, LLC	Nord-Lock Inc.
Autodesk Inc.	Norman Filter Company, LLC
B & B Electronics Mfg., Co.	Partex Marking Systems Inc

<b>LOUISIANA</b>	Dolphin Energy Equipment, Inc
Bis Salamis Inc	Don Abney, Inc.
BNA Marine Services, LLC	Donnie Williams Tool Co., Inc
Bollinger Shipyards Lockport, LLC	Downey Engineering Corp.
Bourque Sales & Service, Inc	Dryden Supply, Inc.
Brand Energy Solutions Llc	Ductz Of South Louisiana
Bristow U.S. LLC	Dynamic Industries Inc.
Broussard Brothers, Inc.	E. L. I., Inc.
Burner Fire Control	E.P.I. / A.P.P.
C & C Technologies, Inc.	Ed Roe's Welding Inc.
Cad Oilfield Specialties	Edison Chouest Offshore LLC
Capital Valve & Fitting Co., Inc.	Elliott Technical Controls, Inc.
Central Boat Rentals	Ene Consultants Llc
Central Dispatch, Inc.	Energy Pipe & Supply Inc.
CETCO Oilfield Services	Energy Technology/Technical Industries
Charter Supply Company	Engineering Dynamics, Inc.
Checkpoint Process Pumps & Systems	Envirochem
Chem Spray South	Environmental Drilling Solutions
Chet Morrison Contractors	Enviro-Tech Systems L.L.C.
C-Innovations LLC	Era Helicopters, Llc
Cleanblast, Llc	Ess Support Services
Coastal Fire Protection Llc	Essi Corporation
Coastal Risk Services, Llc	Expeditors & Production
Coastal Safety Management LLC	Expert E&P Consultants Llc
Cochrane Technologies, Inc.	Expert Riser Solutions, Llc
Commercial Diving Supply, LLC	Express Printing & Forms Inc
Connector Specialists, Inc.	Falck Alford
CORTEC Fluid Control	Federal Flange/A&B
C-Port, LLC	Fire & Safety Specialists, Inc.
Creative Manufacturing Services LLC	Fire Boss of Louisiana, Inc.
Crosby Tugs, Llc	Fitzgerald Inspection Inc
Cross Logistics, Inc.	Force Power Systems, LLC
Cross Services, Inc.	Fourchon Heavy Lift, LLC
Cutting Underwater Technologies	Francis Torque Service
D & D Machine Works, Inc.	Frank's Casing Crew & Rental Tools, Inc.
Danos & Curole Marine	Fugro
Data Technology Solutions	G T Michelli Company Inc
Datacom	Gachassin, Inc.
DCL Mooring And Rigging	Gaffey, Inc.
Delmar Systems, Inc.	Galvotec Corrosion Services
Delta Bolt Llc	Gator Tank Rentals, Inc.
Delta's Missy's Supermarket, LLC	Gauthiers Oilfield Rental, LLC
Digital And Electronic Resources	General Marine Leasing
Diversified Well Logging Inc	Global Industries Offshore, L.L.C.
Doerle Food Service	Global Manufacturing Inc
Dolphin	Global X-Ray

<b>LOUISIANA</b>	K-Tek
Grand Isle Shipyard	L & L Oil And Gas Services
Green Marine & Industrial Equipment Co. Inc.	Lafayette Electrical & Marine Supply Inc
Greene's Energy Group	Lafayette Power Sports
Gulf Coast International, LLC	Lafayette Steel Erector, Inc.
Gulf Coast Marine Associates, Inc.	Lapeyre Stair, Inc
Gulf Coast Monitoring	LeBlanc & Associates, Inc.
Gulf Coast Training Technologies	Lighthouse Lodge, Llc
Gulf Engine & Equipment, Inc.	Lirette Ford Lincoln Mercury, Inc.
Gulf Island Fabricators	Living Quarter Technology, Inc.
Gulf Offshore Logistics, LLC	Loadmaster Derrick & Equipment, Inc
Gulf South Marine	Louisiana Crane & Electrical
Gulf States Engr. Co.	Louisiana Economic Development
Gulfstream Services Inc	Louisiana Environmental Monitoring
H & E Equipment Services, Inc	Louisiana International Marine LLC
Hadco Services, Inc	Louisiana Machinery Company, L.L.C.
Halo Branded Solutions Inc	Louisiana Valve Source Inc
HanagriffS Machine Shop, Inc.	M & M International, LLC.
Harvey Gulf International Marine	M.C. Electric, Inc.
HB Rentals	M.C. Forklift & Truck Service, Inc.
Herbert Crappell Construction	M.H Reeves Consulting
Hidalgo Ouellet Holdings Llc	Magnum Mud Equipment Co Inc
HLR Controls, Inc.	Major Equipment & Remediation Services,
Hornbeck Offshore Services, Inc	Marine Systems, Inc
Hose Specialty & Supply Co.	Marine Technologies, LLC
Houma Armature Works & Supply, Inc.	Mark Tool Co.
Huber, Inc.	Martin Holdings Llc
Hydradyne Hydraulics, LLC	Martin Terminal
Industrial Instrument Works, Inc.	Max Welders, Inc.
Industrial Screw & Supply Company	Maxim Evaporators Of America Llc
Industrial Solutions Group, Llc	MB Industries, LLC
IntegriCert	McDaniel Controls, Inc.
J & J Metalworks, Inc.	McDermott
J. H. Menge & Company, Inc.	Medi-Chest, Inc.
Jack Vilas & Associates, Inc.	Metallurgical & Materials Technologies, Inc
John H. Carter	MM Plastics Mfg., Inc.
John W Stone Oil Distributor Llc	MMR Group, Inc.
John W. Fisk Company	MMR International Ltd
Jotun Paints Inc	Modern Engineered Products
K & B Machine Works, Inc.	Moody International Inc
Kevin Gros Consulting & Marine	Moody Price
Keystone Machine Works, Inc.	Morgan City Rentals
Kidder, Inc.	NDT Repair Service & Supply, Inc.
Knight	New Century Fabricators
Knight Manufacturing	New Industries, Inc.
Knight Oil Tools	Newpark Environmental

<b>MICHIGAN</b>	<b>MISSISSIPPI</b>
King Engineering Corporation	Bosarge Diving Inc
Martin Fluid Power	Colle Towing Co., Inc.
MTU	Daily Equipment Company
NLB Corp	Dixie Glass & Trim Inc.
Northwest Michigan Tooling Coalition	Gibson Electric Motor
QVS Inc.	Gulf Sales & Supply, Inc.
RF System Lab	Heatcraft/Luvata
Rolled Alloys	Industrial Maint & Machine Inc
Spiralock	Ingalls Shipbuilding
<b>MINNESOTA</b>	Jerry Pittman And Associates, Inc
3M Corporation	Millennium Industrial And Marine
Boerger LLC	NNW Inc.
Camden Wire Co, Inc	Pascagoula Bar Pilots
Capital Safety	Signal International Inc
Cat Pumps	Southern Inspection Services
Control Panel	The Anchor Works
Cortec Corporation	Tube-Mac Industries (Services), Inc
Detector Electronics (Det-Tronics)	Utility Optimization Group Llc
Drill Pipe International LL	Vmi - Vicksburg Marine
Eaton Corporation	<b>MISSOURI</b>
Emerson Process Management, Asset Optimization	Continental Disc Corporation
Gemstar Manufacturing	EaglePicher Technologies LLC
General Pump	Emerson Electric
Holt Power Systems	Fike Corporation
Honeywell (Sensing & Control)	Grainger
Infor Global Solutions, Inc.	Heat Transfer Systems
Iracore International Inc	Holland
Kato Engineering	Keegan Adams Executive Search Llc
Kato Generator	Killark
L&M Radiator Inc	LaBarge, Inc.
Mattracks, Inc.	PAS Technologies Inc
Northern Technologies International Corporation	Shaughnessy
Precision Powered Products	St Louis Metallizing
Red Wing Shoe Company	St. Louis Pipe & Supply Inc.
Rosemount	Stoody Company
Rotary Systems, Inc.	The Bayou Companies, Inc.
Solar Turbines	Titanova Inc
Stratasys	Tnemec Company, Inc.
Super Radiator Coils	Tubular Steel, Inc.
Thern, Incorporated	Wal-Mart Stores, Inc
TURCK Inc.	Wireco WorldGroup
Wanner Engineering Hydra-Cell Pumps	<b>NEBRASKA</b>
Xiotech Corporation	Heritage Manufacturing Co Inc
	Lincoln Composites
	PayFlex Systems USA, Inc.
	Pieter Kiewit and Sons

<b>NEVADA</b>	<b>NEW JERSEY Cont.</b>
American Grating Llc	Titanium Industries
Click Bond, Inc.	United Arab Emirates Meeting Point
GE Energy	Vass Pipe
Microsoft Licensing, Gp	Versa Products Company, Inc.
RICE Hydro, Inc.	Vita Motivator Company Inc.
<b>NEW HAMPSHIRE</b>	Westfalia Separator Inc
Bortech Corp	<b>NEW MEXICO</b>
Citadel Computer Corporation	Flow Science Inc
Skeie Industrial Equipment & services, LLC	Murchison Drilling Schools
Sponge-Jet, Inc.	<b>NEW YORK</b>
<b>NEW JERSEY</b>	AICHe S
Custom Alloys	Amphenol Industrial
Dialight Corporation	Asiamet Inc 6
EMD Chemicals, Inc.	ATA New York Inc.
Evonik Degussa Corporation	Automated Dynamics
Felman Trading	Bamberger Polymers, Inc.
Gaffney-Kroese Supply Corporation	BFG Marine Inc
General Magnaplate Corporation	Blume Worldwide Services
GGB Bearing Technology	Busby Metals, Inc.
Godwin Pumps	Canty Inc.
Grignard Company, LLC	CD-adapco
Helidex Offshore LLC	China Huayu Pipe Fitting Co
Hilman Inc	Columbus McKinnon Corporation
Hilman Rollers Incorporated	CWorks Systems Inc
Honeywell	Daikin America Inc
Hytorc, A Division of Unex	DSR Corp / DSR Wire Corp
Identropy, Inc.	East Hills Instruments, Inc.
IEEE/Oceanic Engineering Society	Elsevier-Gulf Professional Publishing
ISP	Enecon Corp
ISS Machinery Services	Esm Group Inc
John Wiley & Sons	Fiber Instrument Sales, Inc.
Kallman Worldwide, Inc.	Flexim Americas Corp
Kiswire Trading Inc.	G Bopp USA
Kulite Semiconductor Products, Inc.	G.W. Lisk Company
Leistritz Corporation USA	Global Strategic Communications,
Mimeo.Com, Inc.	GP:50
Mistras Group Inc	Knovel
Panasonic Solutions Company	KRACHT CORP.
RathGibson LLC	LIGHTNIN, An SPX Brand
RIA Connect	Linuo Valve
Ringfeder Corporation	Medima
Seals Eastern Inc.	Metro Marine Design Associates Inc.
Society of Naval Architects and Marine Engrs.	National Response Corp
T & T Marketing, Inc.	Plenty Mixers, An SPX Brand
TDK-Lambda Americas	Rotork Controls, Inc.

<b>NEW YORK</b>	<b>OHIO Cont.</b>
SPX Process Equipment - Lightnin	Avtron Industrial Automation
Stellar Technology Inc.	Battelle
Stemcor Usa Inc.	Bearing Distributors
Sumitomo	Bearing Engineered Solut
Tech Products	Bronx International Inc.
Tel-Tru Manufacturing Co.	Brush Wellman Inc.
Temper Companies	C & K Industrial Svcs Inc
Timco, Inc.	Carboline Company
Viatran Corporation	CAS Dataloggers
VJ Technologies, Inc.	Cincinnati Gearing Systems Inc.
<b>NORTH CAROLINA</b>	Clark-Reliance
Best Pump Works	Cognis Corporation
Bucci Industries USA, Inc.	Compass Systems & Sales,
Cavotec USA Inc.	Connell Inc.
Dimension Data North America, Inc.	Control Transformer, Inc.
Doosan Infracore Portable Power	CSA International
Electroswitch	Cubbison Company
Global Knowledge Intermediate	Curtiss-Wright Flow Control, Sprague Division
HAWE Hydraulics	De Mitta Iron & Metal
Hoffer Flow Controls Inc.	Dilworth Machine
ITT Corporation	Expo Technologies, Inc.
James Tool, Machine & Engineering, Inc.	Farris Engineering, a business unit of Curtiss-Wright Flow Control
KRAL-USA, Inc.	Ferrotrade Corporation
Leser GmbH & Co KG	Ferry Cap & Set Screw
Lord Corp.	Giant Industries Inc.
Mackay Marine, Division of Mackay Communications	Glunt Industries Inc
MTS Sensors	H&S Tool, Inc.
Saft America Inc.	Hammelmann Corp.
Scott Safety	Honeywell Sensotec
SOS Global Express	HydraTech Engineered Products
Tandemloc, Inc.	Industrial Mill Maintena
The International Society of Automation	Interstate Shredding, Llc
Toromont Energy	Ken Greco, Inc
<b>NORTH DAKOTA</b>	Kenexis Consulting
Revel Digital	Konecranes, Inc.
<b>OHIO</b>	Lincoln Electric Company
Adalet	Lyden Oil Co.
Advantech	MAR-TEST/Frismuth Consulting
Akron Electric, Inc.	Metalico Youngstown Inc.
American Augers, Inc.	Middough Consulting Inc
American Waste Mgt Svcs	Middough Inc
Ametek Solid State Controls	Midwest Industrial Contr
Amg Resources Corpotion	Milliron Iron & Metal In
Ashtabula Iron & Metal	Nelson Fastener Systems
Aubert & Duval	Nelson Stud Welding, Inc.



<b>OHIO</b>	<b>OKLAHOMA Cont.</b>
Network Technologies Inc.	Conley Corporation
Niles Iron & Metal Compa	Continental Wire Cloth
Norbar Torque Tools, Inc.	Den-Con Companies
Noshok, Inc.	Double Life Corporation
Ohio Edison	Engatech Inc
P M C Industries Corp	GEFCO
Parker Hannifin Corporation	Geophysical Research Co., LLC
Pepperl+Fuchs	Gunnebo Johnson Corp
Pipe Line Development Company - PLIDCO	Hetronic USA
Presrite Corporation	Hilti, Inc.
Protrade Steel Co Ltd	John M. Campbell & Co./PetroSkills
PSC Metals Inc.	Kimray, Inc.
Puffer Sweiven	King Oil Tools
Republic Engineered Products	Lee C. Moore, A Woolslayer Company
RFD Beaufort Inc.	Mad, Ltd.
Richards Industries	Mathey Dearman, Inc.
Rittal Corporation	Oilfield Improvements, Inc.
Rockwell Automation	Oiltizer Inc.
Safeguard Technology Inc.	Oklahoma Forge, Inc.
Scrap Dynamics Corporati	Petroleum Abstracts/The University of Tulsa
Sherwin-Williams	Piper Valve Systems
Snap-tite Inc.	Primenergy Production Equipment, LLC
Solon Manufacturing Co	Reel-O-Matic
Sprague Products	Roxtec Inc.
SSP	Service Pump & Compressor
Swagelok	Shumate Energy Technologies, Inc.
Technical Translation Services	Society of Exploration Geophysicists
The David J Joseph Co	Specific Systems, Inc.
Timcal America	Spentex® FR
TPC Wire & Cable Corp	Technical Control System
Tylok International, Inc.	Teledrift, Inc.
Vogelsang USA	The Crosby Group
Wooster Products Inc	Thompson Pump Company
Youngstown Water Dept	Toromont Energy
<b>OKLAHOMA</b>	Tulsa heaters
AAPG	Tulsa Power, Inc.
Aceco Valve Inc.	TWG
American Foundry Group	U S Safety Sign & Decal
Bertrem Products, Inc	Webco Industries, Inc.
Best Pump Works	Whitco Supply
Bronco Manufacturing Llc	Woolslayer Companies, Inc
BS&B Safety Systems, L.L.C.	ZEECO
C&C Equipment Specialists Inc.	<b>OREGON</b>
Callidus Technologies by Honeywell	Allied Systems Company
CESI Chemical - Flotek Company	Columbia Industrial Products



<b>OREGON</b>	<b>PENNSYLVANIA Cont.</b>
Columbia Industries LLC	Ellwood Group, Inc.
Equipmentland	Ensinger Inc
FLIR Systems	EST Group, Curtiss-Wright Flow Control Company
GasGun, Inc.	Femco Machine Company
Greenberry Industrial	Fiber-Line, Inc
Skookum	FORTA Corporation - Drilling Prod. Div.
Sulzer Pumps	GAI-Tronics
Technical Marine Service, Inc.	Gamajet Cleaning Systems Inc
The Ulven Companies	GDF Suez Energy Resources NA
Tinitron, Inc.	GE Energy Inspection Technologies
Ulven Forging, Inc.	GEA PHE Systems North America
Wolf Steel Foundry	General Dynamics
<b>PENNSYLVANIA</b>	Gottlieb Inc
Affival Inc	Haskel International, Inc.
AGC Chemicals Americas, Inc.	High Pressure Equipment Company
Aker Construction, Inc.	HYDAC Technology Corporation
Alfa Laval	Ice Qube Inc.
AMETEK	Ims Systems Inc
Ametek Drexelbrook	Innovative Pressure Technologies
Amg Resources Corp.	International Sos Assistance, Inc
Anker Industries	IPT
ANSYS, Inc.	ITT Neodyne/Conoflow/Enedine
Arkema, Inc.	Key Belleilles, Inc.
ASTM International	Kroff Chemical Company,
Autoclave Engineers Fluid Components Div of Snap-tite	Latrobe Specialty Steel - SPD Products
Azcon Corporation	Liberty Iron & Metal
Bedford Reinforced Plastics	Linc Milton Roy
Billet Industries, Inc.	Linde, Inc.
Bodine Business Products	LMI / Milton Roy
Bolttech Mannings	LTC, Inc.
Bridon American Corporation	Maxpro Technologies, Inc.
C/G Electrodes, Llc	Mecco Marking & Traceability
Carpenter Technology Corporation	Mercer Company
Chromalox	Mercer Lime & Stone Co
Converteam, Inc.	Metalico Assad Iron & Me
Copes-Vulcan, An SPX Brand	Metalico Neville Recycli
Core Furnace Systems Corp	Milton Roy Company
CP Industries	Oceaneering International Inc
Daisy Data Displays Inc.	Oil & Gas Online
Dell Marketing L.P.	PBM Inc Valve Solutions
Dominion	PEI-Genesis
Durameter Milton Roy	Penn United Technologies, Inc.
EBC Industries	Phoenix Contact
Elizabeth Carbide Components	PNC Bank, National Association
Elliott Group	Pressure Products Industries, Milton Roy

<b>PENNSYLVANIA</b>	<b>TENNESSEE</b>
Rajant Corporation	Acme Truck Line Inc
Sap America, Inc.	Bailey Parks Urethane, Inc.
Schramm, Inc.	Control Panel
Schroeder Industries, LLC	Heatec, Inc.
Science Application Int'l Corp	Thomas & Betts Corporation
Silcotek Corporation	Tradequip International
SKF USA, Inc.	TS3 Technology, Inc.
Snap-tite Inc.	<b>TEXAS</b>
Snap-tite Quick Disconnect & Valve Div.	2H Offshore, Inc.
Software House International	3M Oil and Gas Business
Specialty Bar Products	3Ps, Inc.
Strongarm Designs	A&B Valve
Superbolt, Inc.	A.Hak
TE Connectivity	A/M Air Starters
TMS (The Minerals, Metals & Materials Society)	AADE
Torcup Inc	AAR Incorporated
Tube City, Llc	ABB
Universal Refractories	ABCO Products, Inc.
Usx Corportation	Able Infosat Communications, Inc
Van Gas Technologies	ABS Consulting
Victrex USA	ABS Nautical Systems
VideoRay LLC	ABSG Consulting Inc.
Voith Turbo, Inc.	Accudata Systems, Inc
Whitehill Manufacturing	Accuturn Manufacturing, Inc.
Williams Milton Roy	Acme Cleaning Equipment Inc
<b>RHODE ISLAND</b>	Acumen International, Inc
Alloy Wire International	Acute Technological Services, Inc.
Bad Dog Tools	Admiralty Marine And Structural
Dellner Brakes AB	Adobe Equipment
igus, Inc.	Advanced Welding Services, Inc.
igus, Inc.	AER Supply Ltd.
KVH Industries, Inc.	Agar Corporation
<b>SOUTH CAROLINA</b>	Aggreko, Llc.
AFL	AgilityDocs
Chicago Pneumatic Tool Co	Agr Subsea Inc
CIRCOR Instrumentation Technologies, Inc.	AIMS International
Grace Distributing	Air Comfort Incorporated
InsulFab	Air Starter Components, Inc.
Life Cycle Engineering	Airdyne Inc
Staubli Corporation	Airgas Southwest
Tobul Accumulator, Inc.	Aker Kvaerner Subsea Inc
WEC Equipment & Machining Solutions	Aker Solutions
Zapp Precision Wire, Inc.	Alamo Iron Works
Zeus Inc.	Alamo Transformer Supply Company
<b>SOUTH DAKOTA</b>	Alan C. McClure Associates, Inc.
Sioux Corporation	Alatas Americas Inc.

<b>TEXAS</b>	
	APS Hydraulic Services
Alco Valves (US), Inc.	Aqua-Chem, Inc.
Alexander/Ryan Marine & Safety Co.	Arc Specialties, Inc.
Alimak Hek Inc	Arecco Seals, Inc.
All Points Equipment Co., Llc	Argo International Corporation
Allamon Tool	Argus Subsea
Allendorph Specialties Inc	ASME International Petroleum Technology Institute
Allesco	AssetNation Inc
Allied Alloys	Astro Controls, Inc
Allied Electronics, Inc	ATCOM
Alloy Machine Works	Athens Group Austin Lp
Alloy Metals & Tubes International, Inc.	Athens Group Holdings Llc
Alloy Products Corp.	Atlas Incinerator A/S
All-Pro Fasteners	Atsco
Alltrans Port Trucking	Audubon
Alpha Slip Rings, Inc.	Automatic Power, Inc.
Altex Electronics, Ltd.	Autronica
Ambox Limited	Aveva, Inc
AMEC Paragon	Axiom Process Llc
AmerCable Incorporated	Axon Energy Products
American Alloy Steel	Aztec Manufacturing/Houst
American Block	B & W Pipe Inc.
American Clutch & Equipment Co	Baker Hughes
American Completion Tools Inc.	Baker Oil Tools
American Connectors	Ball & Seat Specialties Co.
American Red Cross	Balmoral Offshore Engineering
American Shipping & Chartering	Bardex Corporation
American Solutions For Business	Bardot Group Sa
AmeriMex Motor & Controls, Inc.	Bastion Technologies, Inc
Amerjin Co., LLC.	Bates Reliable Solutions Llc
Ameron International	Bauer-Pileco Inc
AmerRig Services	Beacon Maritime Inc
Amosco	Bechtel Oil Gas Chemicals
Amtex Machine Products	Beeco Motors & Controls, Inc
Analytical Systems Intl./Keco R&D	Bel Valves
AnchorPipe International, Inc.	Belgian Pavilion - Belgian Trade Commission
Andon Specialties	Bell Engineering, Inc.
Ani Direct Lp	Belven, Inc.
Anixter, Inc.	Bemex International
Anson Flowline Equipment Inc	Bench Tree
Antares Datensysteme GmbH	Bennex Subsea Houston, Inc.
Anthelion Systems, Inc.	Bernard Controls Inc
Anti-Stall Technology (A Tomax Company)	Best Pump Works
Applied Energy Company, Inc.	Bestolife Corporation
Applied Industrial Technologies Inc	Beta International
Applus RTD	Billy Pugh Co., Inc.

<b>TEXAS</b>	Centerpoint Energy Gas R
Bishop Lifting Products, Inc.	Cen-Tex Marine Fabricators, Inc.
Black Angus Steel & Suppl	Central Bolt & Industrial Supplies,
Blackwell Plastics	Certex Usa, Inc
Blohm + Voss Oiltools LLC	Ceva
Bluewater Solutions, Inc.	CGG Veritas Services (Us) Inc
BMT Reliability Consultants Ltd	Champion Technologies Inc
BMT Scientific Marine Services Inc.	Champions Pipe & Supply, Inc
Bob Herbert Drilling Equipment	Chapel Steel Company
Bodycote	Chase Controls, Inc.
Bolton Alloys LC	Check 6 Training Systems
Bop Controls	Chem Oil Products UVI
BOXX Modular/Nortex Modular Space	Chickasaw Distributors, Inc.
Brandt	China Petroleum Technology & Development Corp.
Brasilamarras	Citic Group - Xin Yegang Steel
Bredero Shaw	ClampOn
Bring Cargo, Offshore and Energy Logistics	Clearstream Wastewater Systems Inc.
Brown Book Shop	Clover Tool Co.
Brown Corrosion Services, Inc.	Clutchco International Inc
BTI Services	Clydeunion
Burintekh USA LLC	C-Mar America, Inc.
Burrow Global LLC	CMP Products
Bush Hydraulics	Coade, Inc
Business Security Solutions Llc	Coastal Power Systems
Butcher Fabricators	Coastal Switchgear & Controls, Inc
Butler Business Products, Llc	Cobore
Buxton Interests, Inc	Cobra Rig Products
C.A. Richards & Associates, Inc.	Coflexip Drilling & Refining Div
C.C. Gasket & Fastener,Lt	Commvault Systems, Inc
C.W. Rod Tool Co., Inc.	Comptroller Of Public Ac
Cameron	Constellation Newenergy
Cameron Measurement	Construction Technical Svc Inc
Cam-Tech Products, Inc.	Containerhouse International
Canrig Drilling Technology Ltd.	Continental Airlines, Inc.
Canyon Manufacturing Services Inc	Continental ContiTech
Capital Process Management, Inc.	Continental Valve & Fittings, Llc
CapRock Communications	Contitech Beattie Corporation
Castrol Offshore	Control Automation Services, Llc
Catapult Systems Inc	Control Flow, Inc.
Cavo Drilling Motors	Control Panel
C-B Gear & Machine Inc.	Controlled Fluids
CCC Group, Inc.	Cool-A-Zone
CDL	Cooper Industries
CDQ International, Llc.	Copper State Rubber
CDR Strainers & Filters, Inc.	Core Labs
Genergy International Services Llc	Cornerstone and WOM
Centerline Manufacturing	Cornerstone Valve

<b>TEXAS</b>	DiaPac LLC
Cor-Pro Systems Operating, LTD	Distribution Internatl
Corrosion Resistant Alloys	Dixie Pipe Sales L.P.
Cortland Companies	DNP-Americas
Covalent	Dockwise
COSCO Shipping Company Ltd.	Donovan Law Office
Cotech Irm Services Inc	Dooley Tackaberry, Inc.
CPSI Production Co., Lp	Doris Inc.
Crane Pro Parts	Dox Steel
Crawford Electric Supply	Doyles
Craymond Nigeria Limited	DPS Offshore, Inc.
Crispin Energy Inc	Draco Spring Mfg. Co.
CS&P Technologies	Draeger Safety, Inc.
CT Gasket & Polymer	Dragados Offshore, S.A.
C'Treat Offshore Inc.	Drago Supply Co.
Cubility	Dragon Products/Tiger Offshore
Cudd Energy Services	Draka Offshore
Custom Power	DrawWorks L.P.
Custom Safety Products, Inc.	Dreco (National Oilwell)
Cutting Tools, Inc.	Drew Marine Usa, Inc
Cyclone Steel Services, Inc.	Drilling & Production Resources
D Reynolds Company Llc	Drilling Controls, Inc.
D&S Machine Works, Inc.	Drillmec Inc.
Da Mid South	Drilltec Technologies Corporation
Daniel Measurement and Control, Inc.	Dril-Quip, Inc.
Dan-Loc Bolt & Gasket	DTC International
Danmar Industries, Inc	DTI
Daryl Flood Warehouse & Movers	Duramast Industries, Inc.
Daytech Instruments	Durmat Inc.
Deansteel Manufacturing Co.	Dutton'S Navigation Inc
Deco Plastics, Inc.	DWD International, LTD
Deep Sea Development Services Inc	DXP Enterprises, Inc.
Deep Sea Quality Consulting, Inc	DXP Sepco
Deep Trend Inc	Dyna Torque Technologies, Inc.
Deepwater Corrosion Services Inc.	Dynacon
Dell Marketing L.P.	E. J. Reynolds Company
Delta Centrifugal Corporation	Eagle Electronics Resources Inc
Delta Steel, L.P.	Eastham Forge, Inc.
Denso	Ecad, Inc.
Derrick Equipment Company	Ecaregroup, Pllc
Design Staff, Inc.	Echometer Company
Det Norske Veritas (DNV)	Eckel International Inc
Devon Industries, Inc	Ecodyne MRM, Inc.
DHL Global Forwarding	Ecom Instruments Inc.
DIAB Sales, Inc.	Edgen Murray Corp.
Diamond Offshore Company	Eew Steel Trading Llc
Diamond Wire Spring Company	Efird Corrosion International

<b>TEXAS</b>	Fire Protection Service, Inc
EGS Systems Inc.	Fishbone Safety Solutions Ltd
Electro Mechanical Industries, Inc.	Fisher Controls c/o Puffer Sweiven
Electronic Power Design, Inc.	Five Star Metals, Inc.
Electronic Technical Services Corporation	Flare Industries, Inc.
Eletec Global Offshore Ltd.	Flexible Lifeline Systems, Inc
Elite Precision Fabricators, Inc.	Flo Trend Systems
Ellington & Associates	FloaTEC, LLC
Emd Services International (Emsdi)	Flodraulic Group Inc
Emerson Process Management Co.	Fluid Systems, Inc.
Enduro	Fluor Offshore Solutions
Enerflex Energy Systems, Inc	FMC Technologies
Energy Aviation LLC	Forge USA
Energy Valve And Supply Company Llc	Forged Components, Inc.
Enertech Services International Inc	Forged Vessel Connections, Inc.
Engineered Packaged Systems Inc	Forrester Research, Inc
Engineered Spring Products	Fort Bend County/Chamber Of Commerc
Enventure Global Technology	Forum Energy Technologies
Ep-Hvac Us Inc.	Forum Oilfield Technologies
EPI Materials Testing Group	Forum Services
Epilogue Systems, Llc	Foster Wheeler
Equipment Management Services LLC	Franklin Offshore Americas, Inc.
Equipment Resources	Freeman & Curiel Engineers, LLP
Equipment Valve & Supply	Friede & Goldman, Ltd.
ES&H Consulting Services, Inc.	Frisa Forjadss S.A. De C.V.
Esco Products, Inc	Fugro Chance Inc
Eutex International, Inc	Fugro Global Environ.& Ocean Sciences
Ex One / ProMetal RCT	Fugro Global Environmental & Ocean
Excel Engineering, Inc.	Furmanite America, Inc.
Excell Battery Corporation	Fusion Inc
Exmar Marine NV	G A S Unlimited Inc
Exmar Offshore Company	G.A.M. RecuHeat, Inc.
Expedited Logistics and Freight Services	GAC Group
Expeditors International	Gagemaker LP
Expro Americas, Llc	Gai-Tronics
Exterran	Galvotec Alloys, Inc.
E-Z Line, Inc.	Galvotec Companies
F.W. Gartner	Gardner Denver Inc.
Fann Instrument Company	Gartner Coatings, Inc.
Farmers Copper Ltd.	Gateway International Transport, Inc
Fastenal	Gaus Anodes International
Fastorq	GB TUBULARS
FBV Inc	GBA-Corona
FCI	GD Engineering, An SPX Brand
Federal Flange/A&B	GE Oil & Gas
Fibergrate Composite Structures	Gearench
Fielder Electric Supply Co, Inc	General Monitors Systems

<b>TEXAS</b>	Harris CapRock Communications
General Plastics Mfg., Co.	Hart Energy
Generon IGS	Hart Heat Transfer Products
Geoforce, Inc.	Hastik-Baymont, Inc.
Geophysical Pursuit Inc	Hatfield and Company, Inc.
Geoscience Earth & Marine	Hawke International
GE-Sensing	Hayata
GHX, Ind.	Hayes Industries
Gill Services, Inc.	Haynes Wire Rope
Gilmore Valve Company	HCL Clamping Solutions
GL Noble Denton, Inc.	HDI Instruments, Inc.
Global Fabrication Services, Inc.	Hempel (USA) Inc.
Global Industries, Ltd.	Hi-Cad America
Global Maritime Inc.	High Performance Cables, Inc.
Global Oil Corporation	Hiller Offshore Services, Inc
Global Shop Solutions	Hilti, Inc.
Global Thermoelectric Corp.	Holloway-Houston, Inc.
Globaltech Motor & Controls, Inc	Holt Power Systems
Goodwin International	Honeywell Process Solutions
Gotco International	Honghua America
GPS Integrated Systems, Inc.	HongHua Group Ltd
Grant Prideco, Lp	Hoover Materials Handling Group
Graybar Electric Co., Inc	Hose & Fittings, Inc
Grayloc Products Llc	Hot-Hed Inc.
Griffin Americas	Houghton Offshore
GS-Hydro US, Inc.	Houston Blow Pipe a Division of AGI
GSM, Inc.	Houston Center Valve & Fitting, Lp
Gulf Coast Downhole Technologies	Houston Motor & Control, Inc
Gulf Coast Engineered Solutions	Houston Offshore Engineering
Gulf Copper & Manufacturing	Houston Pipe Benders
Gulf Electroquip	Houston Steel Equipment Co.
Gulf Marine Fabricators	HS Energy LLC
Gulf Publishing Company	Hufco
Gulfex	Huisman-Intrepid Services, Llc.
Gulfmark Americas Inc	Hunt Engine, Inc
GX Technology Corp	Hydradyne Hydraulics
Hacker International	Hydraquip Distribution, Inc.
Hagemeyer North America, Inc	Hydratight-Cortland
Hahn Equipment Co. Inc.	Hydraulic Equipment Service, Inc.
Halliburton Energy Services	Hydril Company
Hallmark Office Products, Inc.	Hydril Pressure Control
Hamanaka Chain USA, Inc.	Hydrological Solutions, Inc.
Hamilton Metals	Hy-Lok USA
Ham-Let Advanced Control Technology	Hytorc Of Texas
Hampco	I.T.S.
Hamworthy Inc.	ladc Publications
Hannon Hydraulics	ICS Triplex, Inc



<b>TEXAS</b>	K & K Insulation, Inc
IEC Systems, Llc	Kalsi Bearings
IHS Energy Group Log Services	Kalsi Engineering, Inc.
Impac Systems Engineering	Kalsi Seals
Impact Fluid Solutions, LLC	Kana Energy Services Inc
Impact Selector, Inc.	KBR
ImpactWeather, Inc.	Kefco Offshore, Inc
Independent Propane Company	Kemlon Products & Development
InduMar Products, Inc.	KEM-TRON Technologies, Inc.
Industrial Air Tool, Lp, Llp	Kennametal
Industrial Piping Special	Kennedy Wire Rope & Sling
Industrial Scale Co. Inc.	Kentec Composites
Industrial Solutions & Innovations LLC	Keppel Offshore & Marine Usa, Inc
Infinity Marine Offshore, Inc	Kerger Marine Electric, Inc.
Inman Texas Company	KIDD PipeLine & Specialties
Innovative Electronics	Kinder Morgan Bulk Termi
Insite Objects, Inc	KLT Carbide Co., Ltd.
Institute of Marine Engineering, Science and Technology (IMarEST)	KnightHawk Engineering Incorporated
INTECSEA/WorleyParsons	Kobelco EDTI Compressors, Inc.
Integrated Applications Engineering Inc	Koch Heat Transfer Company LPFM
Integrated Drive Systems LLC	Kodiak-Terra USA Inc
InterLink Controls	Kongsberg Oil & Gas Technologies
InterMoor	L & L oil and Gas Services, LLC
International Clamps, Inc	L & S Cryogenics, Inc.
International Paint LLC	L D Systems, Lp
Intertek Group plc	L.C. Eldridge Sales Company, Inc.
Intervale Capital	L/K Oil Field Products, Inc.
Intsel Steel Distributors	LA Recruitment Ltd.
Intsel Steel/Triple-S Steel	Lamons Gasket Company
IWS Gas & Supply of Texas	Lancaster Flow Automation
J & J Technical Services, LLC	Landscape Images Of Texas
J D Marine Llc	Landy Energy Services, Inc.
J P Kenny, Inc.	Laser Welding Solutions
J. D. Fields & Co., Inc.	Laversab, Inc.
J.Ray McDermott	Lawson Products Inc
Jackup Structures Alliance, Inc	LBO Inc
JAS Distributing LLC	Lebus International Inc
JDR Cable Systems Inc.	Leecyn
Jelec Usa, Inc.	LeTourneau Technologies, Inc
Jet Machine Works, Inc.	Lewis-Goetz And Company, Inc.
Jet-Lube, Inc.	LHR Services and Equipment, Inc.
Jhump & Associates, Llc	Linco-Electromatic
Jireh Consulting Llc	Lincoln Manufacturing, Inc.
Joda Transportation	Lloyd's Register Americas
Johnny'S Gauge & Meter Repairs	Loadcraft Industries, Ltd.
Journal of Petroleum Technology (JPT)	Loadmaster Universal Rigs, Inc.
JT Oilfield Mfg. Co., Inc.	Logan Industries International, Inc.



<b>TEXAS</b>	
	MCM Oiltools
Logan International Inc.	McNichols Company
Logik Precision, Inc.	MCS Kenny
Lone Star Companies	MCT Brattberg
Lone Star Diving, Inc.	Mechtec Corporation
Lone Star Fasteners, LP.	Meridian Equipment, Inc.
Lone Star Heat Treating Corp.	Merpro Americas, Inc.
Lonestar Deepwater Llc	Merrick Systems, Inc.
LoneStar Forklift, Inc.	Merrimac Manufacturing, Inc.
Longwood Elastomers	Metal Coatings Corp.
Loran International Sales, Inc.	Metco-Materials Evaluations
Louisiana Electric Rig Service, Inc	M-I SWACO
LSI Interest, Ltd	Micron Eagle Hydraulics Inc
LSPHE(US), Inc.	Micro-Smart Systems, Inc.
LTS, Inc.	MicroTesla Magnetic Field Effects
Lufthansa German Airlines	Mid-West Electric Co., Inc.
M & F Gauge	Midwest Hose & Specialty Inc.
M & H Engineering	Mitsubishi Forklift Trucks of Houston
M D Cowan Inc	MLC Cad Systems
M G Maher & Co Inc	MODEC-SOFEC
M&I Electric Industries Inc, an AETI Company	Moduspec Usa Inc.
M&J Valve, An SPX Brand	Mohr Engineering Division
MacArtney Offshore, Inc	Monarch Stainless, Ltd.
Macdermid Offshore Solutions	Montgomery Westland Bunker - Data Center
Mackay Communications, Inc.	Moody International, Inc
Magtech	Morris Metals Service, Inc.
Malin International Ship Repair & Drydock,	Moss Seal Company
Mammoet	Motion Industries, Inc
MAN Diesel & Turbo North America Inc.	Moulding Specialists, Inc.
Manifold Valve Service	MSI Kenny
Marine Aluminium	MSO Seals & Gaskets
Marine Chemists, Inc. Of Texas	MTS Threaded Products Co
Marine Computation Services Kenny ltd	Mud Technology International, Inc.
Marine Equipment, Inc.	Mustang Engineering
Marine Medical, Inc.	Mustang Power Systems
Marine Salvage & Services, Inc	Myrex Industries
Marshall Machine, LLC	Nalco
Marubeni-Itochu Tubulars American, Inc.	Namasco
Martin Midstream Partners , Lp	Nance International
Master Flo Valve (USA), Inc.	NASA Johnson Space Center
MasterWord Services, Inc.	NATCO
Matthews-Daniel Company	National Bronze & Metals, Inc.
Maxim Silencers Inc	National Coupling Co., Inc.
McDermott International	National Instruments
Mcdonough Marine Service	National K Works
McElroy Translation Company	National Oilwell Varco
Mcjunkin Red Man Corporation	National Service Alliance
Mckenzie Equipment Company, Inc.	National Specialty Alloys, LLC

<b>TEXAS</b>	Onsite Treatment Technologies Inc. AKA OTT A/S
Nedschroef Corporation	Open & Close Equipment
Neptune	OTC Brasil
Net Safety Monitoring Inc.	Outernet Management, Lp
New Century Fabricators	Oxifree Metal Protection
New Millennium Group Ltd	PAC Stainless, Ltd.
New Orleans to Houston Oil Directory	Packard International Inc.
New Tech Systems	Panolin
Neway Valve Inc.	Parker Cabbet Subsea
Newpark Drilling Fluids	Parker Seal
Nick'Sfastener & Industrial Supply	Partin Ltd. Partnership
Nigerian Pavilion	Pason Offshore Corp.
NMA Maritime & Offshore Contractors	Path Consulting, Ltd.
Noble Denton Marine, Inc.	PDS Bartech
Noble Drilling (U S) Inc	Pegasus International, Inc.
Norriseal	Pem-Tech, Inc.
Norson Services Llc	PennWell
North Shore Supply Co., Inc.	Pentagon Freight Services
Nova Forge Corp.	Perkins Drilling Tools, Inc.
Oceaneering International, Inc.	Permenter Controls Service, Inc
OceanWorks International Inc.	Petresco
OCS Group	Petro Amigos
O-D Rentals, Inc.	PetroMaterials USA Inc.
Odessa Pumps & Equipment Company	Petron Industries, Inc
O'DRILL/MCM, Inc.	Phase Dynamics, Inc.
Ods International Inc.	Pileco, Inc
ODS-Petrodata	Pipe Distributors Inc
OEM Components, Inc.	Pipeco Service Lp
OEMic Inc.	Pipeline Pigging Products, Inc.
OES Oilfield Services (USA), Inc.	Pivot City Corporation
OET Global, Inc.	Plusco, Inc.
Office Depot Inc	Port-A-Cool, L.L.C.
Offshore Commissioning Solutions	Powell Electronics Inc.
Offshore Marine Cable Specialists	Powell Industries
Offshore Oil Services, Inc	Precise Steel, Inc.
Offshore Rig Movers International	Precision Flamecutting and Steel, L.P.
Oglaend System	Precision Powered Products
Oil Guide Online Inc.	Premium Welding, Inc.
Oil States Industries, Inc.	Premsol Specialized Services
OilCareers.com	PressureLinks LP
Oildata Logging Services Limited	Prime Electrical Services, Llc
Oilfield Equipment Marketing, Inc.	Pro Box, Inc.
Oilfield Motor And Control, Inc	Probe
Oilstates	Process Level Technology Ltd
Oilwell Tubular Consultants, Inc	Process Solutions
Okonite Company	Production Management
Oliver Valves Ltd.	Proserv Offshore, Inc
Omron Oilfield & Marine	Pro-Tech Welding

<b>TEXAS</b>	Rongsheng Machinery Manufacture Ltd.
PSI Automation	Rosemount Analytical
Process Safety & Reliability Group	Rotech Subsea
Puffer Sweiven	Rowan Companies
Pulsar Process Measurement Ltd.	RPS Solutions
QA Bearing Technologies Ltd.	RR Valve Inc.
QCI Marine Offshore, Llc	RTI Energy Systems
Quality Bit & Supply	RYCO Hydraulics, Inc.
Quality Connector Systems,LLC	S & N Pump Company Inc
Quest Integrity Group, LLC	Sabine Pilots
Quest Offshore Resources Inc.	Sabine Universal Products, Inc
Quietaire	Safety Engineering Services PLLC
R R Williams & Associates	Safety Rx
R&M Energy Systems	Safety Savings & Environmental LLC
Racor Division/Parker Filtration	Samson
Radio Holland Usa, Inc	Santini Export Packing Corp.
Radoil, Inc.	SAS USA
Ram Winch & Hoist, Ltd	Saudi Aramco
Ramtech Building Systems, Inc.	SBM Atlantia
Ranger Steel Supply Corp.	SC Pipe Services Inc
RAPID-TORC Inc.	Scana Offshore Services
Rawson	Scan-Pac Mfg., Inc.
RBG Usa, Inc	Schlumberger
Recruitment Partners Lp	Scorpion Oil Tools, Inc.
Redding Communications	SEA CON
Redman Pipe & Supply	Sea Technology Ltd
Reed-Hycalog Lp	Seacoast Electric
Reliable Pumps Consultants	Seals & Packings, Inc.
Remora ASA	Seamar Divers, Inc.
Research Partnership to Secure Energy for America	Seaquest Diving Llc
Retsco	Seatrax Marine Cranes
Rexel	Seatrax, Inc.
RG Petro-Machinery Group	Seaward Safety, Inc
Rice Electronics Lp	Sellers Sales Company, Inc. Pumps & Equipment
Rickmers-Linie	Semco Maritime US
Rig-A-Lite AZZ/RAL	SENSEAR Texas
Right Angle Gear	Sepam Group
Rignet, Inc	Sercel
RigStat, L.P.	Severn Trent DeNora
Rigzone.com	Shanco Equipment Specialists
Ringers Gloves	Shaw Pipeline Services
Riversand Technologies, Inc.	Shea Writing and Training Solutions
Roberts Production Tools	Shell Offshore Inc
Robsco, Inc.	Shermco Industries, Inc.
Rock-Oilfield Group Lp	Sigma Solutions, Inc.
Rolls-Royce Commercial Marine, Inc	Simmons & Company International

<b>TEXAS</b>	Stratos
SINOPEC Petroleum & Chemical Corporation	Stress Engineering Services, Inc.
SIPCO Mechanical Linkage Solutions	Stress Subsea, Inc.
Smith & Associates	STS Products, Inc.
Smith International Inc	STVA Scaffolding & Shoring
SMU Cox School of Business Executive Education	STX US Marine
Society for Underwater Technology	Sub-Atlantic
Society of Petroleum Engineers	Subsea Solutions Llc
Sodexo Remote Sites Partnership	Subsea Systems, Inc.
SOFEC	Subsea Technologies, Inc.
Solar Turbines	SunSource
Sonardyne Inc	Superior Drillpipe Mfg, Inc.
Sonica Supply Co	Superior Threaded Products, Lp
Sooner Pipe, LP	SURF Subsea, Inc.
Source IEC	Surface Techniques, Inc.
South Coast Technology, Inc.	Suzhou Viza Valve Co. Ltd.
Southern California Valve	Swds Slc, Llc
Southwest Electric Supply Inc	Swift Technical Services, Llc
Southwest Electronic Energy Group	System Inc
Southwest Materials Handling Co	T H Hill Associates Inc
Southwest Ocean Services, Inc.	T Rex Engineering & Construction Lc
Southwest Oilfield Products, Inc	T.S. Moly-Lubricants, Inc
Southwest Research Institute	T3 Energy Services, A Unit of Robbins & Myers Inc.
Southwest Stainless, L.P.	Tailwind Air Charters
Southwest Wire Rope Lp	TALON Technical Sales, Inc.
Sparrows Offshore Llc	TAM International, Inc.
Spartek Systems	TCR Inc.
Spears Mfg Co	Technical & Scientific Application
Specialties Co/Copper State Rubber	Technip
Specialties Company	Technogenia, Inc
Specialty Rental Tools and Supply (STS)	Technology And Calibration, Inc.
Specialty Steel Supply, Inc.	TechTrans International, Inc.
Specific Equipment Company	TEEX
Spectra Sensors	Tejas Completion Solutions
Spectrex, Inc.	Tejas Tubular Products, Inc.
Spectrum Batteries Inc.	Teledyne TSS Limited
SPET, Inc.	Tenaris
SPIR STAR	Tesco Corporation
Spir Star, Ltd.	Tetra Technologies, Inc.
Spitzer	Texas A&M at Galveston
Spring Bolt & Nut MFG	Texas A&M University Energy Engineering Institute
SPT Group, Inc.	Texas Bolt & Nut Company Ltd
STAHL	Texas Engineering Experiment
Stainless Steel Custom	Texas First Industrial Corp., Inc.
Stallion Offshore Quarters Inc	Texas Institute Of Science, Inc
Stallion Oilfield Services Ltd	Texas Nameplate Company, Inc.
Stewart & Stevenson	Texas Pipe &Supply Co Inc
StormGeo, Inc.	Texas Pipe Works, Inc.

<b>TEXAS</b>	Tubular Perforating Manufacturing, Ltd.
Texas Steel	Turbofab
Texma Petroleum Machinery	Turner Oilfield Services
TFE Company Inc.	TXY-Tech Inc.
TFT-Pneumatic/Safety Tools Allmet	Tyco Valves & Controls LP
TGS	Type B Solutions, Llc
The Artex Group, LLC	U.S. Bolt Manufacturing & TSP Inc
The Eads Company	U-Bolt-It, Inc.
The Harding Group, Inc.	Ultra Deep, LLC
The Nut Place, Inc.	Unitech International
The Rochester Corporation	United Laboratories
The Subsea Company LLC	Univar Usa, Inc
The University Of Texas At Austin	Universal Bacteria Specialist, Inc.
The Watermaker Co., Inc	Universal Steel America, Inc.
Thrustmaster of Texas, Inc.	Universe Technical Translation, Inc.
Tideland Signal Limited Houston	University of Houston - College of Technology
Tiger Tanks	University of Houston Energy Research Park and College of Engineering
Titan Specialties, Ltd.	University of Phoenix
Titanium Engineers, Inc.	Upstream, The International Oil & Gas Newspaper
Tiw Corporation	Usx Corporation
Toolmen Corporation	UTC Overseas
Toro Downhole Tools	Utex Industries, Inc.
Toromont Energy	V & M Tube-Alloy Lp
Torq/Lite - Div. Francis Services, Inc.	ValTek Industries
Torque Tools Inc	Valwu International Inc
Total Instrumentation & Controls Inc.	Vam Drilling Usa, Inc
Total Safety	Van Beest
Trademarks Promotional Products, Lp	Vanco Ring Gasket Specialty, Inc
Translation Source Ltd.	Vantran / Bolin Industrial
TransPerfect Translations	Varel International Energy Services
Tranter	Velosi
Tranter, Inc.	Versabar, Inc.
Trelleborg Offshore US, Inc.	Vetco Gray Inc.
Trendsetter Electronics	Vicinay Cadenas, S.A.
Trendsetter Engineering, Inc	VIKING Life-Saving Equipment
Tri Wave, LLC.	Vimarc Inc.
Tri-Elements Petroleum Products, Inc.	VME Process Inc.
Trionics, Inc	VN & Unique Solutions, Inc
Tristar Electronics Corporation	Voith Turbo
TSC Offshore Group, Ltd.	Volga Dnepr - Unique Air Cargo,
TTGM	Vortex Ventures Inc.
Tube Supply Inc.	VRcontext
Tuboscope Vetco International	W & O Supply Inc
Tuboscope/Vetco	Wach Subsea
Tubular Instrumentation And	Wagner Plate Works

<b>TEXAS</b>	<b>TEXAS Cont.</b>
Warner & Hughes Corp.	WPT Power Corporation
Warrior Rig USA	WT Well Testing
Washing Equipment of Texas	Xodus Group Inc
Waters International, Inc.	Yellow Freight System, Inc.
Watkins & Associates Executive Search C	Yida Special Steel Ltd Corp
Weatherford	YZ Systems / Milton Roy
Weiler Pipe, Llc	Zaetric Business Solutions, LLC
Weir SPM	Zentech, Inc
Welbor Technology, Inc.	Zep Incorporated
Weldinghouse, Inc.	Zerl's Welding and Fabrication Inc.
Wellodynamics Inc	<b>UTAH</b>
Wellhead Distributors International	Automation Products Group, Inc.
Welltec A/S	Beijer Electronics, Inc.
West Engineering Services	Ceramatec, Inc.
West Houston Valve & Fitting	Chromalox
Western Data Systems	ITT Acoustic Systems
Western Rubber & Mfg.	Pepcon Systems
Westerngeco Llc	Power Innovations International Inc.
Westney Consulting Group, Inc.	Quartzdyne
WGIM	Quartzdyne Electronics
Whitco Supply	Rhotheta USA Inc
Whitefield Plastics	Tanklogix
Wholesale Electric Supply Co.	Trans-System Logistics LLC
Wild Well Control, Inc.	US Synthetic Bearings
Wilkens Weather Technologies	Weather Hawk
Wilson Industries Inc	<b>VERMONT</b>
Wilson Supply	Superior Technical Ceramics Corp.
Windlass Engineers	<b>VIRGINIA</b>
W-Industries	Aerial Machine and Tool Corp.
Winston / Royal Guard	Alfa Laval Inc
Winters Instruments	American Heavy Industries
Wireline Technologies Inc.	American Society of Civil Engineer
WM Healthcare Solutions, Inc	Anton Paar USA
WMCO Brandt Instruments, Inc.	Approva Corporation
WMG Enterprises li, Inc	Bauer Compressors, Inc.
WOM	Blue Ridge Partners Management Consulting
Womack Machine Supply Co.	Coastal Training Technologies Corp
Wood Group Kenny	DSM Dyneema
Woodco Usa DbA	Focal
World Supply Inc	Independent Project Analysis, Inc. / IPA Institute
Worldwide Oilfield Machine, Inc	Inst. Air Receiver
WorleyParsons	Katec Inc.
Wozair (USA) Limited	Liberian Int'L Ship & Corp Registry
WPI Wellkin Inc.	Liebherr Nenzing Crane Co.

<b>VIRGINIA</b>	<b>WISCONSIN</b>
Marine Spill Response Corp.	A&A Manufacturing Co
Mobil Industrial Lubricants	Appleton Marine, Inc.
MOOG	APV, An SPX Brand
NBB Controls, Inc.	Bran+Luebbe, An SPX Brand
Optical Cable Corporation	Cordstrap USA
Par Marine Services	Diesel & Gas Turbine Worldwide
Rosetta Stone Ltd.	Durst Power Transmission Products
SAIC	Dynex/Rivett Inc.
SF Marina Systems USA	Ellsworth Corporation
Software Ag Usa, Inc	Enerpac
Strongwell	Fairbanks Morse Engine
Syntech Technology, Inc.	Frentzel Products, Inc.
The Rochester Corporation	Gleason Reel Corp
Triple Canopy, Inc.	Hy-Safe Technology
U.S. - Saudi Arabian Business Council	Inductotherm Group
W R Systems	Johnson Pump, An SPX Brand
Weidmuller	Kabelschlepp America Inc.
<b>WASHINGTON</b>	Marathon Electric Generators
Columbia Analytical Services Inc.	Marking Services, Inc.
Custom Sensor Design, Inc.	Mastergear USA
Elliott Bay Design Group	Meltric Corporation
Fluke Corporation	NOV
Guido Perla & Associates, Inc.	Petersen Products
Markey Machinery Company, Inc.	Plenty Mirrless Pumps, An SPX Brand
Measurement Technology NW	Safway Services
Mustang Survival	SPX Flow Technology
PACCAR International	Team Industries, Inc.
Paine Electronics, LLC	Thermal Transfer Products
Paroscientific Inc.	Twin Disc Incorporated
Rapp Hydema AS	Veolia VES Special Servies
Rasmussen Equipment Company	WAGO Corporation
Safeworks, Llc	Waukesha Cherry
Samson	<b>WYOMING</b>
Schweitzer Engineering Laboratories	Grainger
SkoFlo Industries, Inc.	
Smith Berger Marine, Inc.	
Winshuttle, Inc	
<b>WEST VIRGINIA</b>	
Laser Processing	
Marsh Bellofram Group of Companies	
Mustang Sampling	
PCC Energy Group	

