

**FUELING AMERICA: ENABLING AND EMPOWERING
SMALL BUSINESSES TO UNLEASH DOMESTIC
PRODUCTION**

HEARING

BEFORE THE

**COMMITTEE ON SMALL BUSINESS
AND ENTREPRENEURSHIP
UNITED STATES SENATE**

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

JANUARY 21, 2014

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TUESDAY, JANUARY 21, 2014

UNITED STATES SENATE,
COMMITTEE ON SMALL BUSINESS
AND ENTREPRENEURSHIP,
Lafayette, LA.

The Committee met, pursuant to notice, at 3:00 p.m., in the Picard Center—Rockhold Learning Center, University of Louisiana, Lafayette, LA, Hon. Mary L. Landrieu, Chair of the Committee, presiding.

Present: Senator Landrieu.

**OPENING STATEMENT OF HON. MARY L. LANDRIEU, CHAIR,
AND A U.S. SENATOR FROM LOUISIANA**

Chair LANDRIEU. Good afternoon, everyone. I'd like to call this field hearing of the Small Business Committee of the United States Senate to order. Let me welcome all of you for this very important—and I think it's going to be very productive—discussion. I thank our witnesses for being available today.

I want to begin by thanking the University of Louisiana at Lafayette and particularly the Picard Center for allowing us to host our field hearing here. It's the first time for me in this center. Of course, I've heard a great deal about it. I knew Cecil Picard personally, and I'm just so overwhelmed to be in his presence and the family and what they have meant to Louisiana, not in the field of energy but in education as one of our great leaders of early childhood education.

So this center is just really a wonderful blessing to this university and to our state. I thank them for allowing us to hold our hearing.

I also want to thank a few special guests from the university. Mark Zappi, the Dean of Engineering, is here. Randy McCollum, the Chair of the Chamber Energy Committee; Jerry Luke LeBlanc, former elected official; and Bruce Conque from the Lafayette Chamber are here. Thank you all for being here and others that have joined us.

I want to begin by saying how pleased I am that we could have this hearing in Lafayette, Louisiana, today's hearing. It's timely and important on the subject of job creation, of independent energy gas producers, and their job creation prowess.

It's only appropriate that we have this hearing in Lafayette. This region of Louisiana and the Gulf Coast is home to 1,300 companies operating in the oil and gas sector and host to the second largest oil and gas exposition in the nation, the Louisiana Gulf Coast Oil Exposition. I'd particularly like to thank, of course, Jason El Koubi of the Lafayette Chamber, who couldn't be with us today, and, of course, the president of the university, Dr. Savoie, and others that I had mentioned earlier today.

In virtually every recent public poll that asked respondents to name the most important issues Congress is facing today, jobs, the economy, and expanding opportunities for the middle class come out as the number one issues. Partisan bickering is slowing things down, but the congressional dysfunction should not stand in the way of efforts to create the kinds of high-skilled, high-wage jobs that will move our economy forward and provide the high-paying jobs that the middle class needs and relies on and our country relies on for energy self-reliance.

According to the Independent Petroleum Association of America, as oil and natural gas jobs continue to grow, incomes associated with this industry are also rising in contrast to the national average of stagnant wages of the past decade. According to a recent paper by the Economic Policy Institute, the vast majority of U.S. workers, including white collar and blue collar and those with or without a college degree, have endured a decade of wage stagnation. However, the average hourly pay for upstream oil and gas is about \$34.50 an hour or nearly 50 percent higher than the national average.

Here in Louisiana, the annual wage is about \$57,000, but the average wage of direct jobs in the unconventional oil and gas industry is almost double that at \$108,000. The facts are that jobs in this particular industry pay more than four times the minimum wage, which has been pegged at \$7.25 for a couple of years now. Of course, it's being debated to increase, but has not yet.

These jobs pay the kind of wages and salaries, in my view—and I know it's shared by many here—that allow families to invest in homes, in their education, and in their futures. If Congress can take the steps to increase domestic energy production, we not only increase America's energy independence, but we also create the kinds of jobs that will grow the middle class and have a major impact on reducing income inequality in our country, which is a goal I believe that we all share.

The focus of today's field hearing is to examine the important role of independent oil and gas producers in supporting the small business supply chain and impacting our energy security and some of the challenges that these companies face in their ongoing operations. The facts won't surprise anyone in this room.

But many of my colleagues on Capitol Hill would be surprised to learn that the companies that primarily power our domestic production are not the mammoth, international, integrated companies that we're all proud of and well aware of, but rather the 14,000 independent producers that, on average—this is going to be shocking to some—employ 12 people full time and three part-time. In addition, this industry creates work and jobs for more than 46,000 small businesses that are along the production supply chain.

According to testimony from the Independent Petroleum Association of America, independent producers develop 95 percent of America's oil and gas wells, produce 54 percent of America's oil, and 85 percent of gas. Independent producers are exploration and production companies that participate in only upstream activities. This means they explore for and produce oil and gas, but they do not necessarily transport, refine, or market the product.

They are an integral part, however, of this industry. According to the independent producers, the average independent producer has been in business for 26 years, and, as I said, employs only 12 full time employees and three part-time—quite a contrast, I believe, to the commonly held view.

The small, tight-knit, and in many instances family owned or family like businesses have a mighty impact on America's energy economy across our country. Independent producers support over 4 million direct jobs and indirect jobs onshore and over 200,000 offshore, according to IHS Global Insight. These jobs drive over \$100 billion in total payroll, contributing billions to local tax revenues and economic activity, which, in turn, supports an average of 5.2 jobs for everyone directly employed.

Onshore independent producers contribute \$579 billion to the U.S. economy and, offshore, \$100 billion, again, according to the same study. In 2010, the most recent year for which data is available, independent producers drilled 37,175 wells. These wells represent the vast new reservoirs, if you will, or findings of gas and oil and have driven the expansion of shale gas production.

Combined independent production also drives nearly \$6 billion of the \$11 billion collected each year in rents, royalties, and bonuses by the federal government. I'd like to underscore that just once again. Combined independent production also drives nearly \$6 billion of the \$11 billion that goes to the federal treasury each year in rents and royalties and bonuses. Almost \$6 billion of that comes off the shores of Louisiana and Texas in the Gulf.

Although not all independent producers qualify as small businesses, the ones that do impact our economy in a mighty way. One of our witnesses today representing a larger independent says in her testimony that her company contracts with over 3,500 small businesses from all over the country and paid a total of \$2.7 billion to those businesses over a two-year period.

To give you some perspective of what this means, the entire budget of the Small Business Administration, which I authorize as the chair of the Small Business Committee, is, for the whole nation, \$1 billion a year. So this one company, a large, independent oil and gas, contracts with over 3,500 small businesses. That's how long and powerful this small business supply chain is.

Independent contractors drill the majority of wells associated with new production. As you will hear from the producers today, one of the most significant economic drivers supporting investment by the industry is access to cash flow. Cash flow from operations drives the next investment and helps mitigate some of the industry's real financial risks, especially in the exploration and production stage.

One of the primary cash flow strategies independent producers employ is entering into partnerships with their major industry

counterparts to finance exploration and offset risks with new ventures. For example, in practice, offshore operations often begin with small operators exploring new fields, which are then developed through partnerships with larger operators. Offshore independent producers are the largest shareholders in 66 percent of the 7,521 leases in the entire Gulf of Mexico and 81 percent of the producing leases. They are also partners to major companies on the remaining leases and provide necessary support for offshore development.

In addition to partnering with well-funded investors, independent producers rely on longstanding provisions of the U.S. tax code to facilitate these important cash flow requirements. As every witness here today will tell you, the current tax code includes a number of provisions that independent producers count on to recover substantial investment costs quickly for tax purposes, amounts that are immediately reinvested into additional domestic production, which drives contracts with small business, drives our economy, and drives job creation.

Notwithstanding these obvious and proven benefits, some of these tax provisions have come under fire in recent years as being unnecessary or excessive industry subsidies. As part of this hearing, I would like to enter into the record a 2011 Bloomberg government report entitled "Eliminating Oil and Gas Company Tax Breaks: Independent Producers Face a Funding Gap" that concluded that repeal of these tax provisions would reduce the drilling activity of independent producers.

[The information referred to follows:]

Bloomberg GOVERNMENT

Bloomberg Government Study »

Eliminating Oil and Gas Company Tax Breaks: Independent Producers Face a Funding Gap

» BY TONY COSTELLO
Financial Analyst

JUNE 10, 2011

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Reviewer

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EXECUTIVE SUMMARY

President Barack Obama has called for the repeal of tax preferences designed to encourage oil and natural gas drilling in the U.S. At the same time, the administration wants to expand domestic oil production as part of an effort to reduce U.S. oil imports by one-third over the next decade. This Bloomberg Government Study examines the tension between these conflicting initiatives.

The administration's fiscal year 2012 budget would eliminate eight tax preferences available to all domestic oil and natural gas companies, generating about \$4 billion per year in increased federal government revenue. Separately, the U.S. Senate has considered eliminating certain tax breaks for only the five major oil companies operating in the U.S.: Exxon Mobil Corp., Royal Dutch Shell PLC, BP PLC, Chevron Corp., and ConocoPhillips Co. Congressional Republicans, including House Speaker John Boehner, have said they would consider ending oil industry subsidies as part of a wider reform of corporate tax breaks.

This study provides an analysis of the three largest tax preferences and the potential effects of their repeal on domestic oil and natural gas drilling activity.

This Bloomberg Government Study determines that:

- Elimination of tax breaks would have a negligible effect on the five major oil companies' U.S. drilling activity.
- Repeal would reduce the drilling activity of independent producers — companies that only explore for and produce oil and natural gas. If the tax preferences had not been in place in 2010, independent producers would have spent \$2.1 billion less to drill new wells. As a result of this reduced investment, about 1,558 fewer wells would have been drilled in the U.S., a reduction of 3.7 percent.
- Obama's proposal would have a bigger impact on the natural gas industry than on the oil industry because the U.S. relies more on domestic production to meet natural gas demand (89 percent) than oil demand (48 percent). Also, independents, which will be more affected by the repeals, contribute more to domestic natural gas production (81 percent) than to domestic oil production (51 percent).

INTRODUCTION

The Obama administration's fiscal year 2012 budget called for the elimination of eight tax deductions and credits available to all domestic oil and gas exploration and production companies, including small, independent operators. That February proposal mirrored provisions in budgets Obama sent to Congress for FY 2010 and FY 2011. The eliminations were rejected by Congress in those years.

With the five major oil companies reporting combined first quarter 2011 earnings of nearly \$36 billion¹ and national average gasoline prices nearing \$4 a gallon,² the debate over the tax preferences has intensified.

On May 12, executives from the top five major integrated oil and gas companies were summoned to a hearing on Capitol Hill during which they were criticized for receiving \$2.1 billion a year in tax breaks during a time the country has a deficit that exceeds \$14 trillion.³

The hearing was held in conjunction with New Jersey Democratic Senator Robert Menendez's introduction of S.940, the "Close Big Oil Tax Loopholes Act."⁴ The legislation would deny the tax preferences⁵ only to the five major oil companies, retaining them for smaller independents. On May 17, a Senate procedural vote of 52-48 fell short of the 60 votes needed to end debate and allow the bill to proceed.

In his May 14 weekly address,⁶ Obama cited high gasoline prices as one of the biggest burdens facing U.S. consumers. He laid out a series of steps the government could take in an effort to combat rising prices at the pump. One measure included increasing domestic oil production. To do so, he proposed conducting annual lease sales for drilling in Alaska, making faster evaluations of oil and gas resources in the Atlantic Ocean, and creating new incentives to develop unused leases. These measures followed his previously announced plan to eliminate taxpayer subsidies given to oil and gas companies totaling about \$4 billion per year.

¹ Company 10-Q and Quarterly Report filings for the period ending March 31, 2011. All company data contained in this study from this point forward are contained in company Securities and Exchange filings and company presentations (where noted), or is data compiled by Bloomberg.

² AAA's Daily Fuel Gauge Report. Average national price for a gallon of regular gasoline was \$3.982 as of May 13. Access URL at: <http://fuelgauge.report.aaa.com/?redirectto=http://fuelgauge.report.opisnet.com/index.asp> (May 13, 2011).

³ Senator Max Baucus' opening remarks at Senate Committee on Finance Hearing on Tax Incentives and Rising Energy Prices. Access URL at: <http://finance.senate.gov/hearings/hearing?tid=974701fa-9056-a032-5227-d055ec6b20d1> (May 31, 2011).

⁴ Access URL at: <http://www.govtrack.us/congress/billtext.xpd?bill=s112-940> (May 15, 2011).

⁵ In addition to repealing the tax preferences targeted in the FY 2012 budget proposal, S. 940 would repeal the dual capacity deduction. This deduction generally applies only to majors (see "Background" section below) and the effect of repealing it would mainly be on international production activities. Since the focus of this analysis is on domestic production, analyzing the effect of repealing the dual capacity deduction is outside the scope of this study.

⁶ The White House. Access URL at: <http://www.whitehouse.gov/the-press-office/2011/05/13/weekly-address-president-obama-announces-new-plans-increase-responsible>. (May 19, 2011).

Despite the bill's defeat and the administration's prior failures to eliminate oil and gas company tax breaks, this debate is sure to continue. Democratic leaders have said they will seek to resurrect the tax break eliminations in budget negotiations with Congressional Republicans and the Obama administration. Gasoline prices also may be an issue in the 2012 presidential elections.

Bloomberg Government has developed this study to ground the debate by providing:

1. An explanation and analysis of the three largest tax preferences the Obama administration is seeking to eliminate, specifically:

- How oil and gas exploration companies apply these tax preferences to reduce their tax bills.
- The effect of repeal on the cash flow of two representative companies: one major integrated producer and one independent producer.

2. An overview of domestic oil and natural gas production, including:

- How much of U.S. demand is met by domestic production of oil and natural gas.
- Key characteristics of major and independent producers' business models.
- How much domestic oil and natural gas majors contribute versus independent producers.

3. An analysis of the impact of repeal on wells drilled in the U.S.:

- The one-year dollar impact of repeal on producers' cash flow from operations.
- How much oil and gas companies spent on drilling new wells in 2010.
- The relationship between a decrease in cash flow from operations and new wells drilled.

Background

Independent, Integrated and Major Producers

About 14,000 oil and natural gas exploration and production companies operate in the United States.⁷ As defined under the tax code, there are three types of producers: an independent producer, an integrated producer and a major producer.

An **independent producer** is defined as an exploration and production company that participates only in upstream activities (i.e., exploring for and producing oil or natural gas). Nearly all of the 14,000 domestic operators are independent producers that operate solely in the U.S.

An **integrated producer** sells more than \$5 million of retail product per year or refines more than 75,000 barrels of oil per day, in addition to participating in exploration and production. Houston-based Marathon Oil Corp. is one example of an integrated producer.

The **majors** are a subset of integrated oil companies. In addition to the retail and refining criteria, majors have average daily worldwide production exceeding 500,000 barrels of crude oil, and had gross receipts in excess of \$1 billion in 2005.⁸ Five companies currently meet the criteria to be considered a major: Exxon, Shell, BP, Chevron and ConocoPhillips.

These distinctions are important for two reasons. First, the FY 2012 budget proposal would repeal tax preferences for all domestic oil and gas producers, while Sen. Menendez's "Close Big Oil Tax Loopholes Act" would repeal breaks for the major producers only. Second, as Section 2 of this study will highlight, independent oil companies will see an almost immediate disruption in drilling activity since their typical business model differs from that of a major.

"Subsidies" Versus "Tax Deductions"

In general, a subsidy is a form of financial assistance from the government that is paid directly to a company, whereas deductions are a form of indirect financial assistance that allow a company to retain more cash via decreased tax payments.

For the purpose of this study, there is no economic distinction between the two forms of assistance. Therefore, the terms "subsidies" and "tax deductions" are used interchangeably throughout this study.

⁷ U.S. Energy Information Administration. Top 100 Operators, 2009. Access URL at: http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/crude_oil_natural_gas_reserves/current/bd/top100operators.pdf (May 19, 2011).

⁸ See IRS Code Section 613A(d) and Section 167(h)(5)(B) for definitions of integrateds and majors, respectively.

SECTION 1: OIL AND GAS COMPANY PROPOSED TAX CHANGES

FY 2012 Budget Proposal

Repealing the eight tax provisions that benefit domestic oil and gas exploration companies would generate \$43.6 billion in additional revenue to the Federal government from 2012-2021, or about \$4 billion per year over the 10-year period, according to the Office of Management and Budget. Below, Table 1 details the tax provisions being targeted and the corresponding revenue estimates as a result of repeal.

Table 1: FY 2012 Obama Administration Budget Proposal, Oil and Gas Company Tax Preference Terminations⁹

	Revenue impact (\$ in millions)		
	2012	2012-2021	2012-2021 Percent of Total
Repeal enhanced oil recovery credit	\$0	\$0	0%
Repeal credit for oil and gas produced from marginal wells	\$0	\$0	0%
Repeal expensing of intangible drilling costs	\$1,875	\$12,447	29%
Repeal deduction for tertiary injections	\$6	\$92	0%
Repeal exception to passive loss limitations	\$23	\$203	0%
Repeal percentage depletion	\$607	\$11,202	26%
Repeal domestic manufacturing tax deduction	\$902	\$18,260	42%
Increase geological and geophysical amortization period for independent producers	\$59	\$1,408	3%
Total	\$3,472	\$43,612	100%

As Table 1 shows, three proposed repeals — expensing intangible drilling costs, the domestic manufacturing deduction and percentage depletion — account for about \$42 billion, or 96 percent, of the \$43.6 billion in estimated increased revenue through 2021. As such, this study will focus on these three provisions.

For the three provisions, this study will provide:

- An explanation of the tax provision targeted for elimination, including the historical background and how the tax treatment may differ for major producers versus independent producers.

⁹ Obama administration's FY 2012 Budget Proposal, Page 52. Access URL at: <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/trs.pdf> (May 19, 2011).

- A hypothetical example to illustrate how the preferential tax treatment is applied.
- An analysis of the effect of repeal on operating cash flow for one major integrated producer and one independent producer.

Repeal Expensing of Intangible Drilling Costs

Explanation & Background

Repealing the expensing of intangible drilling costs (IDC), which has been in the tax code since 1913, would have the largest effect on federal tax revenues in 2012 of the eight proposed oil and gas industry tax changes. Repealing this provision is expected to generate \$1.9 billion in government revenue in 2012. Over a 10-year period, 2012-2021, this repeal will have the second-largest effect.¹⁰

For tax accounting¹¹ purposes, drilling costs are categorized in one of two ways:

Intangible Drilling Costs (IDC): “Intangible” is a misnomer. These costs are for products and services that are quite tangible. IDC are defined as any drilling-related expenditure that does not have salvage value.¹² In general, IDC are costs incurred before the well begins producing oil and natural gas. These include building a road to the drilling site and hydraulic fracturing services used to stimulate a well.

Equipment Costs: Equipment costs are incurred in the later stages of the drilling process. Examples include the purchase of well casings and the pipes and valves that control the flow of oil to the wellhead.

The IDC provision allows companies to expense all intangible drilling costs in the year incurred, versus having to capitalize and depreciate them, which is required for equipment costs. Expensing allows for 100 percent of the cost of an asset to be allocated in the year incurred. Depreciation is a means of accounting for the recovery of costs by allocating them over the estimated useful life of the asset. Although IDC are ultimately deducted in both methods, expensing is more desirable because cash tax savings are realized immediately, providing a quicker return of invested funds.

Expensing is advantageous for two reasons. First, it improves the rate of return on the drilling project due to the time value of money.¹³ Second, the cash tax savings can be immediately reinvested in new drilling projects.

¹⁰ Obama administration's FY 2012 Budget Proposal. Page 52. Access URL at: <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/irs.pdf> (May 19, 2011).

¹¹ U.S. publicly traded companies must keep separate records for accounting and tax purposes. The amount of a business's cash taxes paid (tax purposes) and income tax expense (accounting purposes) are almost always different. This study focuses on tax accounting, as the effect on cash taxes paid influences future exploration and production activity.

¹² *Fundamentals of Oil and Gas Accounting*. Gallun et al. 2001. Page 356.

¹³ “Time value of money” is a financial concept used to demonstrate that future cash flows need to be discounted for risk and inflation to get a properly adjusted value in today's dollars. Simply put, a dollar today is worth more than a dollar five or 10 years from now.

Under current law, independent oil and gas producers can expense 100 percent of IDC. Since 1986, integrated oil and gas producers have been able to expense only 70 percent of IDC in the year incurred, while having to capitalize and depreciate the remaining 30 percent over five years.¹⁴

Hypothetical Example

The following hypothetical example illustrates the one-year effect on CFO of expensing IDC compared to capitalizing and depreciating IDC. This example assumes that:

- The company collects \$100 in revenue.
- The company paid \$60 for assets and services that can be classified as IDC.
- The federal tax rate is 35 percent.

	Expensing IDC	Depreciating IDC
Revenue	\$100	\$100
(-) IDC	\$60	\$12
(=) Taxable income	\$40	\$88
(x 35%) Taxes	\$14	\$31

Under the depreciation method, the IDC allowance is calculated by multiplying total IDC costs by 20 percent, reflecting a five-year straight-line depreciation period.

As the example shows, due to the difference in taxes paid (\$31-\$14) the company retains \$17 more in cash if it expenses IDC. Although the difference will be reconciled over the depreciation period, expensing allows the company to immediately reinvest an additional \$17 in new projects.

Effect of Repealing IDC Expensing

This section analyzes actual effects of the tax treatment on two oil and gas producers' operating cash flows (CFO). CFO is calculated by adding depreciation and other noncash expenses to net income. As Section 2 of this study shows, this metric is important because independent producers almost always invest at least 100 percent of CFO in new drilling projects, while majors do not. Cash taxes paid are a component of cash flow from operations.

Disclosure of IDC expensing effects is not required in publicly traded company filings. Therefore, the effect must be estimated.

¹⁴ U.S. Department of Treasury, Internal Revenue Service. Access URL at: http://www.irs.gov/publications/p535/ch07.html#en_US_2010_publink1000208863 (May 19, 2011).

Below, the effect on 2010¹⁵ CFO of repealing IDC expensing is estimated for GMX Resources Inc. (GMXR) and Chevron Corp.

GMXR is an independent exploration and production company based in Oklahoma City. The company:

- Employs 109 individuals.
- Owns 264 producing wells, all of which are located in the U.S.
- Produced 7.98 thousand barrels of oil equivalent per day in 2010,¹⁶ of which 97 percent was natural gas.
- Was the 68th-largest U.S. natural gas operator in 2009, ranked by reserves, according to the Energy Information Administration (EIA).¹⁷

GMXR (\$ in millions)	
2010 Exploration and production drilling capex (100% U.S.)	\$170
(x) 84%, ¹⁸ Intangible cost portion of drilling if expensed	\$143
(x) 20%, Intangible cost portion of drilling if depreciated	\$29
Difference in intangible costs due to different tax treatment	\$114
(x) 35%, Tax rate = increase in cash taxes	\$40 ¹⁹
2010 Cash flow from operations	\$56
Increase in cash taxes as a % of cash flow from operations	72%

Chevron, with refining and retailing segments in addition to its exploration and production activities, is a major integrated oil and gas company. Therefore, the tax code limits Chevron to expensing 70 percent of domestic IDC. The company:

- Employs 62,000 individuals.
- Owns more than 53,000 producing wells.
- Produced 74 percent of its 2010 oil and gas outside the U.S.
- Produced 2,763 thousand barrels of oil equivalent per day, 70 percent of which was oil.

¹⁵ Obviously, if IDC, or any tax preferences are repealed, there would not be an effect on 2010 results. However, since future company results are unknown, this analysis attempts to quantify the effect as if the tax preference were repealed prior to 2010.

¹⁶ One barrel of oil equivalent is equal to 6,000 cubic feet (6 Mcf) of natural gas. Access URL at: <http://www.oilandgasvaluationreport.com/taqs/barrel-of-oil-equivalent/> (May 19, 2011).

¹⁷ U.S. Energy Information Administration. Top 100 Operators, 2009. Access URL at: http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/crude_oil_natural_gas_reserves/current/pdf/top100operators.pdf (May 19, 2011).

¹⁸ Howard Weil, Inc. 37th Annual Energy Conference March 24, 2009 Presentation. Slide 26. Access URL at: <http://gmx.investorroom.com/presentations> (May 18, 2011). Also consistent with source: http://www.qgasoc.com/GGIS/Royale_Tax_Book.pdf (May 18, 2011).

¹⁹ Assumes that not being able to expense IDC would put the company in the top marginal corporate tax bracket. Also assumes the company does not have any tax-loss carry-forwards that could be used to offset the increase in taxable income.

- Was the 3rd-largest U.S. oil operator and 21st-largest U.S. natural gas operator in 2009, ranked by reserves, according to EIA.

Chevron (\$ in millions)	
2010 U.S. exploration and production capex	\$3,400
(x) 84% ²⁰ Intangible cost portion of drilling if expensed	\$2,856
(x) 70% U.S. intangible cost portion of drilling if expensed	\$1,999
(x) 20% Intangible cost portion of drilling if depreciated	\$571
Difference in intangible costs due to different tax treatment	\$1,428
(x) 35% tax rate = Increase in cash taxes	\$500
2010 Cash flow from operations	\$31,359
Increase in cash taxes as a % of cash flow from operations	2%

On an absolute basis, repealing IDC expensing would have had a larger effect on Chevron, with increased cash taxes of \$500 million, compared with GMXR, which would have paid \$40 million more in taxes. Proportionally, however, GMXR is significantly more affected with a 72 percent reduction in cash flow from operations versus a 2 percent reduction for Chevron.

Repeal Domestic Manufacturing Tax Deduction

Explanation & Background

Repealing the domestic manufacturing tax deduction for oil and natural gas companies will have the second-largest effect on federal tax revenues in 2012 and the largest effect over the 10-year period of 2012-2021 of the eight proposed tax changes. Eliminating the deduction is expected to generate \$902 million in revenue in 2012 and \$18.3 billion from 2012-2021.²¹

The manufacturing deduction entered the tax code in 2004 with the American Jobs Creation Act. The deduction is designed to encourage domestic production and employment by supplying an incentive to allocate capital in the U.S. instead of overseas.

For the oil and natural gas industry, the deduction is 6 percent of taxable income. For example, if an oil production company has \$100 in taxable income, and all that income was derived in the U.S., the company can deduct \$6 from taxable income. The deduction cannot exceed taxable income or 50 percent of employee wages.

Although the oil and gas industry is not thought of as a traditional manufacturing industry, many other nontraditional manufacturing companies qualify for the deduction. Companies in the film industry, computer software makers and sound recording companies

²⁰ Chevron does not provide an estimate for IDC as a percent of total drilling costs. Therefore, the same rate used for GMX Resources (see footnote 18) was used for Chevron.

²¹ Obama administration's FY 2012 Budget Proposal, Page 52. Access URL at: <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/irs.pdf> (May 19, 2011).

qualify for the tax break.²² In 2008, Congress capped the rate of the deduction at 6 percent for the oil and natural gas industry, while maintaining a 9 percent rate for all other qualifying industries.

Hypothetical Example

The following hypothetical example illustrates the one-year effect on CFO of repealing the domestic manufacturing tax deduction for an oil producer. This example assumes that:

- The company has \$100 in revenue from domestic activities that qualify for the tax treatment (i.e., oil production).
- Payroll expenses related to the qualified revenue are \$10.
- The effective federal tax rate is 35 percent.

	Domestic Manufacturing Deduction Available	Deduction Not Available
Manufacturing revenue	\$100	\$100
(-) Payroll	\$10	\$10
(-) Manufacturing expenses	\$40	\$40
(=) Taxable income	\$50	\$50
(x 6%) Deduction	\$3	N/A
(-) Taxable income after deduction	\$47	\$50
(x 35%) Taxes	\$16.45	\$17.50

As the example shows, applying the deduction results in \$1.05 (\$17.50-\$16.45) more in cash than if the company had not been able to apply the deduction. Further, the company can apply all \$3 of the calculated deduction because the amount does not exceed taxable income and is below 50 percent of employee wages (\$10 x 50% = \$5).

Effect of Repealing the Domestic Manufacturing Tax Deduction

Disclosure of the manufacturing deduction's effects is not required in a publicly-traded company's filings with the Securities and Exchange Commission. However, some oil and gas producers indirectly disclose the effect in a section of their annual reports that reconciles their effective tax rate and the U.S. federal statutory income tax rate.

Below, the effect of repealing the manufacturing deduction on 2010 operating cash flows is calculated for W&T Offshore, Inc. and ConocoPhillips.

W&T is an independent exploration and production company based in Houston, Texas.

²² U.S. Department of Treasury, Internal Revenue Service. Access URL at: <http://www.irs.gov/businesses/article/0,,id=164979,00.html> (May 20, 2011).

The company:

- Employs 305 individuals.
- Owns 223 producing wells, all of which are located in the U.S.
- Produced 40 thousand barrels of oil equivalent per day in 2010, of which, 51 percent was natural gas.
- Was the 70th-largest U.S. oil operator in 2009, ranked by reserves, according to EIA.

W&T Offshore (\$ in millions)	
2010 Increased taxes if domestic manufacturing deduction was not used	\$3
2010 Cash flow from operations	\$465
% Reduction in 2010 CFO if domestic manufacturing deduction was not used	0.6%

ConocoPhillips is a major integrated oil and gas company. There are no restrictions for applying the manufacturing deduction for majors compared to independent producers. The company:

- Employs 29,700 individuals.
- Owns more than 31,000 producing wells.
- Produced 61 percent of the company's oil and gas in 2010 outside the U.S.
- Produced 1,752 thousand barrels of oil equivalent per day in 2010, 56 percent of which was oil.
- Was the 4th-largest U.S. oil operator and 5th-largest U.S. natural gas operator in 2009, ranked by reserves, according to EIA.

ConocoPhillips (\$ in millions)	
2010 Increased taxes if domestic manufacturing deduction was not used	\$82
2010 Cash flow from operations	\$17,045
% Reduction in 2010 CFO if domestic manufacturing deduction was not used	0.5%

As a percent of each company's CFO, both companies would have been affected by about the same amount if the manufacturing deduction was not available. Further, the one-year effect on CFO is significantly smaller than the one-year effect of repealing IDC expensing.

Repeal Percentage Depletion

Explanation and Background

Repealing percentage depletion for oil and natural gas wells will have the third-largest effect of the eight proposed tax changes on federal tax revenues in both 2012 and over the

next 10 years. Eliminating percentage depletion is expected to generate \$607 million in tax revenue in 2012 and \$11.2 billion from 2012-2021.

Percentage depletion has been in the tax code since 1926. The code allows companies to choose between two methods of depleting²³ costs associated with obtaining mineral and property rights — cost depletion and percentage depletion. The taxpayer selects the method that yields the highest depletion cost figure in order to minimize the tax burden.

The **cost-depletion** method allocates the costs of obtaining mineral and property rights over time. For each year, a cost amount is recorded based on the amount of oil and natural gas produced from the property in that year as a percent of total estimated oil and natural gas that will be recovered from the well over its lifetime. For example, if a driller spent \$100 for property and mineral rights and in its first year produced 20 percent of the estimated total production²⁴ from the well, the company will record \$20 in depletion costs.

Under the **percentage-depletion** method, the deduction is not linked to the costs paid for the mineral and property rights. Rather, depletion costs are linked to revenues generated on the property. Percentage-depletion costs are computed by multiplying the well's revenue by a percentage established by the tax code — currently 15 percent. From the same example above, if \$200 in revenue from oil sales is realized from the well, \$30 (\$200 x 15%) in depletion costs are applied for tax purposes.

Several restrictions are associated with using the percentage-depletion methodology. First, the amount of oil or gas subject to percentage depletion cannot exceed an average daily production amount equal to 1,000 barrels of oil equivalent. Second, the percentage-depletion amount cannot exceed 100 percent of net income from a property. Finally, percentage depletion may not exceed 65 percent of the taxpayer's taxable income before depletion.²⁵

Although the calculated percentage-depletion allowance is higher than the cost-depletion allowance in most cases, those thresholds often prevent larger independent producers from applying the method. Percentage depletion was eliminated for companies categorized as major integrated producers in 1975.²⁶

²³ Depletion represents the same concept as depreciation but is the terminology used for depreciating assets related to mineral resources.

²⁴ This requires companies to estimate how much oil and/or natural gas the well will produce over its lifetime — a concept called Estimated Ultimate Recovery (EUR). Most oil and gas producers hire independent auditors who specialize in reserve estimating to develop the estimates.

²⁵ *Fundamentals of Oil and Gas Accounting*. Gallun et al. 2001. Page 376.

²⁶ Another purpose of this study is to bring clarity to the issue of oil and gas company taxation. The aforementioned "Close Big Oil Tax Loopholes Act" proposed by Senator Menendez targets only the major integrated producers. The act includes repealing percentage depletion even though the tax law had eliminated this tax break for these companies in 1975.

In addition to oil and gas producers, percentage depletion is available to iron ore and coal producers as well as geothermal and timber companies.²⁷

Hypothetical Example

The following hypothetical example illustrates the one-year effect on CFO of using percentage depletion compared to cost depletion. This example, for both percentage depletion and cost depletion, assumes that:

- The company paid \$10,000 for mineral and property rights.
- Three barrels of oil a day were produced in the first year, which represented 20 percent of the estimated amount of recoverable oil from the well.
- The oil was sold at an average price of \$25 per barrel.
- Other expenses were \$5,000.
- The federal tax rate was 35 percent.

	Percentage Depletion	Cost Depletion
Revenue	\$27,375	\$27,375
(-) Other expenses	\$5,000	\$5,000
(-) Depletion expense	\$4,106	\$2,000
(=) Taxable income	\$18,269	\$20,375
(x 35%) Taxes	\$6,394	\$7,131
Net income	\$11,875	\$13,244

In this example, revenue is calculated by multiplying 3 barrels by 365 days by \$25 per barrel. Using percentage depletion, depletion expense of \$4,106 is equal to 15 percent of the revenue generated from the well. This entire amount can be used as depletion expense for tax purposes because none of the aforementioned restriction thresholds have been reached.

Under the cost-depletion method, depletion expense of \$2,000 is equal to 20 percent (realized production during the year as a percent of estimated total production of the well) of the amount paid for the mineral and property rights.

As the example shows, the company will select the percentage-depletion method for calculating depletion expense because it results in \$737 (\$7,131-\$6,394) more in cash than if it had used the cost-depletion method.

Effect of Repealing Percentage Depletion

Disclosure of percentage depletion's effects is not required in a publicly traded company's filings. However, some oil and gas producers indirectly disclose the effect in a section of their annual report that reconciles their effective tax rate and the U.S. statutory income tax rate.

²⁷ U.S. Department of Treasury, Internal Revenue Service. Access URL at: http://www.irs.gov/publications/p535/ch09.html#en_US_2010_publiclink1000209046 (May 20, 2011).

Below, the effect on 2010 operating cash flows of repealing percentage depletion is calculated for Credo Petroleum Corp. and Exxon.

Credo is an independent exploration and production company based in Denver, Colorado. The company:

- Employs 14 individuals.
- Owns 74 producing wells, all of which are located in the U.S.
- Produced 740 barrels of oil equivalent per day in 2010, of which 64 percent was natural gas.
- Was not one of the top 100 domestic oil or natural producers in 2009, ranked by reserves, according to EIA.

Credo Petroleum (\$ in millions)	
2010 Increased taxes if percentage depletion was not used	\$0.5
2010 Cash flow from operations	\$5
% Reduction in 2010 CFO if percentage depletion was not used	11%

Exxon is a major integrated oil and gas company. Therefore, the tax code excludes Exxon from using percentage depletion. The company:

- Employs 83,600 individuals.
- Owns over 45,000 producing wells.
- Produced 81 percent of its oil and gas in 2010 outside the U.S.
- Produced 4,447 thousand barrels of oil equivalent per day, 54 percent of which was oil.

Exxon (\$ in millions)	
2010 Increased taxes if percentage depletion was not used	\$0
2010 Cash flow from operations	\$48,413
% Reduction in 2010 CFO if percentage depletion was not used	0.0%

SECTION 2: RELATIVE EFFECT OF REPEALS ON DOMESTIC PRODUCTION

Section 1 of this study provided an explanation and analysis of the major tax preferences available to oil and natural gas producers being targeted for repeal. This section examines the potential relative impacts of these repeals. Specifically, this section analyzes the relative impact on the domestic oil industry versus the natural gas industry and the relative impact on major integrated companies versus independent producers.

It is important to make a distinction between the impact on the domestic oil industry and natural gas industry because the two energy sources have little overlap in terms of end use. Crude oil's main end use is for transportation, while natural gas's main end use is electricity generation.²⁸ A disproportionate impact on either the domestic oil industry or the domestic natural gas industry will have different implications for different stakeholders. Separating the impact on majors and independents is also helpful. It is possible that the repeals, if implemented, will be structured to target only the majors, as was the intention of the "Close Big Oil Tax Loopholes Act." Additionally, the impact of repeal, if structured to target all producers, will likely be different for majors and independents.

To draw conclusions about the relative impact on different markets and different companies, the following questions are addressed:

- How much of U.S. demand is met by domestic production for oil and natural gas?
- What are some key characteristics of majors and independents' business models?
- How much domestic oil and natural gas do majors contribute versus independents?

Domestic Oil and Natural Gas Production

Given that the tax preferences being considered for repeal benefit activities related to domestic production of oil and natural gas, it is important to understand domestic production's contribution to total U.S. supply for both oil and natural gas.

²⁸ U.S. Energy Information Administration. EIA Annual Energy Outlook 2011. Table C2 - Energy consumption by sector and source. Latest year available. Access URL at: [http://www.eia.gov/forecasts/aeo/pdf/0383\(2011\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2011).pdf) (May 23, 2011).

Table 2 below shows domestic crude oil production's contribution to total U.S. liquid fuel consumption for 2009.²⁹

Table 2: 2009 U.S. Liquid Fuels Supply

	Million Barrels Per Day	Percent of Total
Domestic crude oil production	5.4	29%
Other domestic crude related supply ³⁰	2.9	15%
Domestic crude subtotal	8.3	44%
Non-Crude domestic supply (ethanol)	0.8	4%
Net imports of crude and other products ³¹	9.7	52%
Total	18.8	100%

As the above table shows, liquid fuel consumption in the U.S. averaged 18.8 million barrels per day in 2009. Domestic oil production accounted for 44 percent of consumption, net imports accounted for 52 percent, and noncrude related production accounted for the remaining 4 percent.

Table 3 below shows domestic natural gas production's contribution to total U.S. natural gas supply for 2009.³²

Table 3: 2009 U.S. Natural Gas Supply

	Trillion Cubic Feet	Percent of Total
Domestic production	21.0	89%
Net imports	2.6	11%
Total	23.6	100%

While the U.S. imports more than half of the oil it consumes, domestic production of natural gas accounts for 89 percent of the nation's consumption.

Several reasons exist for the difference in the domestic contribution of oil versus natural gas. One factor relates to the amount of domestic reserves relative to consumption. EIA's estimates of technically recoverable reserves and consumption indicate that total domestic oil reserves will meet about 32 years of U.S. demand while domestic natural gas

²⁹ U.S. Energy Information Administration. EIA Annual Energy Outlook 2011. Table C4 - Liquid fuels supply and disposition. Latest year available. Access URL at: [http://www.eia.gov/forecasts/aec/pdf/0383\(2011\).pdf](http://www.eia.gov/forecasts/aec/pdf/0383(2011).pdf) (May 23, 2011).

³⁰ Includes natural gas plant liquids, which are generally considered crude-related products. Also includes refinery processing gains (i.e., one barrel of crude oil can be refined into greater than one barrel of a refined product such as gasoline).

³¹ Includes net imports of crude oil and net product imports, such as refined gasoline.

³² U.S. Energy Information Administration. EIA Annual Energy Outlook 2011. Table A13 - Natural gas supply, disposition and prices. Latest year available. Access URL at: [http://www.eia.gov/forecasts/aec/pdf/0383\(2011\).pdf](http://www.eia.gov/forecasts/aec/pdf/0383(2011).pdf) (May 23, 2011).

reserves represent 110 years of consumption.³³ Another reason for the domestic production gap is the relative ease with which oil can be transported overseas. While advances in liquefied natural gas (LNG) technologies have made natural gas more transportable, it remains a regional commodity.

Key Characteristics: Majors Versus Independents

Because of differences in the business models of the majors and independents, the tax repeals could have a larger impact on independents' future exploration and development activities.

Below, characteristics of four independent oil companies and four independent natural gas companies³⁴ are compared to those of the five majors. One independent oil company and one natural gas company was selected from each quartile of EIA's 2009 Top 100 Operators report for this analysis. According to this report, more than 14,000 oil and natural gas exploration and production companies operate in the U.S. While the industry is relatively fragmented, the top 100 companies accounted for a majority of domestic production — 81 percent of oil production and 80 percent of natural gas production — in 2009.³⁵ The independents analyzed in this study are in Table 4 below:

Table 4: Domestic Oil and Natural Gas Independents

Oil Independents		
	EIA Oil Quartile	Oil as a Percent of 2010 Oil and Natural Gas Production
Continental Resources	1	75%
ATP Oil & Gas	2	58%
Swift Energy	3	63%
Ram Energy Resources	4	63%

Natural Gas Independents		
	EIA Natural Gas Quartile	Natural Gas as a Percent of 2010 Oil and Natural Gas Production
Chesapeake Energy	1	89%
Cabot Oil & Gas	2	96%
SM Energy	3	65%
Approach Resources	4	67%

³³ U.S. Energy Information Administration. Access URL at: <http://www.eia.gov/tools/faqs/faq.cfm?id=58&t=8> (May 23, 2011).

³⁴ To qualify as an independent "oil company", over 50 percent of 2010 hydrocarbon production must have been crude oil. To qualify as an independent "natural gas company", over 50 percent of 2010 production must have been natural gas.

³⁵ U.S. Energy Information Administration. Top 100 Operators, 2009. Access URL at: http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/crude_oil_natural_gas_reserves/current/pdf/top100operators.pdf (May 19, 2011).

Exploration and Production Capital Expenditures as a Percent of Operating Cash Flow

The exploration and production (E&P) industry is a highly capital intensive industry. Additionally, investors in this segment often place value on a company's ability to grow production year-over-year. Thus independents usually invest at least 100 percent³⁶ of their cash flow from operations (CFO) in exploring for and producing new resources. Table 5 illustrates this characteristic by looking at the independents' 2010 CFO and E&P capital expenditures (Capex):

Table 5: Independents' 2010 CFO and E&P Capex

Oil Independents (\$ in millions)			
	CFO	E&P Capex	E&P Capex as a Percent of CFO
Continental Resources	\$653	\$1,031	158%
ATP Oil & Gas ³⁷	\$160	\$635	398%
Swift Energy	\$259	\$354	137%
Ram Energy Resources	\$38	\$34	89%

Natural Gas Independents (\$ in millions)			
	CFO	E&P Capex	E&P Capex as a Percent of CFO
Chesapeake Energy	\$5,117	\$8,671	169%
Cabot Oil & Gas	\$485	\$848	175%
SM Energy	\$497	\$668	134%
Approach Resources	\$42	\$91	216%

In contrast, the majors do not generally invest 100 percent of cash flow generated from operations in E&P Capex. The next table illustrates this characteristic:

Table 6: 2010 CFO and E&P Capex for Major Oil Companies

Majors (\$ in millions)			
	CFO	E&P Capex	E&P Capex as a Percent of CFO
Exxon	\$48,413	\$26,871	56%
Chevron	\$31,359	\$18,900	60%
Conoco	\$17,045	\$8,493	50%
BP ³⁸	\$27,716	\$14,896	54%
Shell	\$27,350	\$21,222	55%

³⁶ Companies can invest more than 100 percent of operating cash flow in exploration and development by raising new capital. There are many methods by which companies raise new capital, including issuing additional equity or debt.

³⁷ 2009 data. In 2010 ATP had negative net income, the largest component of CFO, which would have made 2010 data meaningless for this study.

³⁸ 2009 data. In 2010 BP had negative net income, the largest component of CFO, due to a large noncash charge related to the Gulf of Mexico oil spill. The 2010 negative net income would have made 2010 data meaningless for this study.

Drilling Decisions in a Reduced Cash Flow Environment

For several reasons, majors display different E&P capital investment behavior when compared to independents. One reason is that majors typically use a portion of CFO to pay dividends or buy back stock. Another reason is that, given their large size, majors can't reinvest 100 percent of CFO in E&P projects. As a result, if CFO is reduced, majors could still maintain E&P Capex at similar levels. Independents, however, would most likely spend less on drilling for new resources.

That is exactly what occurred in 2008 and 2009.

Examining E&P Capex as a percent of CFO yields some interesting observations about differences between majors and independents, but the real issue is whether decreases in CFO will result in decreased drilling for new resources.

Crude oil and natural gas prices all fell sharply in 2009 from record high prices in 2008. On an average annual basis, crude oil prices dropped 37 percent from 2008 and natural gas prices dropped 54 percent.³⁹ As a result, 2009 CFO for almost all major and independent oil and gas producers declined sharply from 2008 levels.

As shown in Table 7, after experiencing a total drop of 28 percent in CFO between 2008 and 2009, the eight independent drillers in the sample reduced the number of wells drilled by 53 percent.

Table 7: Independents' 2008 and 2009 CFO and Wells Drilled

Oil Independents (\$ in millions)						
	2008 CFO	2009 CFO	Percent Change in CFO	2008 Wells Drilled	2009 Wells Drilled	Percent Change in Wells Drilled
Continental Resources	\$720	\$373	-48%	153	68	-56%
ATP Oil & Gas	\$547	\$160	-71%	6	2	-68%
Swift Energy	\$588	\$226	-62%	122	20	-84%
Ram Energy Resources	\$74	\$32	-57%	72	44	-39%
Oil Independents Total	\$1,929	\$791	-59%	353	134	-62%

³⁹ U.S. Energy Information Administration, Performance Profiles of Major Energy Producers 2009. Access URL at: <http://www.eia.doe.gov/finance/performanceprofiles/pdf/020609.pdf> (May 24, 2011).

Natural Gas Independents (\$ in millions)						
	2008 CFO	2009 CFO	Percent Change in CFO	2008 Wells Drilled	2009 Wells Drilled	Percent Change in Wells Drilled
Chesapeake Energy	\$5,357	\$4,356	-19%	1,733	1,003	-42%
Cabot Oil & Gas	\$634	\$614	-3%	349	112	-68%
SM Energy	\$679	\$436	-36%	304	61	-80%
Approach Resources	\$56	\$40	-30%	55	16	-71%
Gas Independents Total	\$6,727	\$5,446	-19%	2,441	1,192	-51%
8 Independents Total	\$8,856	\$6,237	-28%	2,793	1,328	-53%

Meanwhile, as shown in Table 8, in total the majors decreased their drilling by only 7 percent even after seeing CFO drop by 44 percent.

Table 8: Majors' 2008 and 2009 CFO and Wells Drilled

Majors (\$ in millions)						
	2008 CFO	2009 CFO	Percent Change in CFO	2008 Wells Drilled	2009 Wells Drilled	Percent Change in Wells Drilled
Exxon	\$59,725	\$28,438	-52%	763	863	13%
Chevron	\$29,632	\$19,373	-35%	1,676	1,295	-23%
Conoco	\$22,658	\$12,479	-45%	1,632	1,139	-30%
BP	\$38,095	\$27,716	-27%	688	1,022	48%
Shell	\$43,918	\$21,488	-52%	953	992	4%
Total	\$194,028	\$109,494	-44%	5,712	5,311	-7%

This data supports the same conclusion drawn from the capex analysis presented above. In general, the majors are able to overcome a decrease in CFO, with little effect on exploration and production drilling behavior. For example, Exxon was able to drill more wells in 2009 despite lower CFO by reducing share repurchases from \$32.0 billion in 2008 to \$18.0 billion in 2009. Independents' exploration and production activities, on the other hand, were severely restricted by CFO declines.

Percent of Production Sourced in the U.S.

The three tax preferences affect taxes paid related to U.S. activity only. In 2010, all five of the majors derived a majority of their production from outside the U.S.

Table 9: Majors' 2010 U.S. Oil and Natural Gas Production as a Percent of Total Production

	U.S. Production as a Percent of Total Production
Exxon	19%
Chevron	26%
Conoco	39%
BP	25%
Shell	14%

Except for ATP Oil & Gas (93 percent production in the U.S.), all eight independent producers derived 100 percent of their oil and gas production in the U.S.

As was shown in the examples in Section 1 of this study, repealing the three domestic tax preferences will have a greater effect, in percentage terms, on independents than on majors. One of the main reasons is the geographic diversity of the majors' production.

Domestic Production: Majors Versus Independents

To further analyze the relative effects of the repeals, one additional area is useful to examine: how much of domestic oil and natural gas production is sourced from majors versus independents.

Table 10: 2010 U.S. Oil and Natural Gas Supply: Majors and Independents

	Crude Oil (Thousand Barrels per Day)	Natural Gas (Billion Cubic Feet per Day)
Exxon	408	2.6
Chevron	489	1.3
Conoco	390	1.8
BP	594	2.2
Shell	237	1.1
Majors Subtotal	2,118	9.0
Others ⁴⁰	605	2.0
Independents ⁴¹	2,789	48.1
Total Domestic Production	5,512⁴²	59.1⁴³
Independents' Contribution	51%	81%

⁴⁰ Includes nonmajor integrated companies such as Hess, Marathon, Murphy and Occidental as well as foreign-based nonindependent producers such as Total, Statoil, BG, ENI and Repsol. Integrators' business models usually display characteristics that are somewhere between those of majors and independents. These characteristics can be different from integrated to integrated. Since there is not a high level of consistency among integrators, Section 2 of this study does not examine these companies. Since the foreign based non-independent producers do not provide sufficient transparency, Section 2 of this study does not examine these companies. Finally, the non-major integrators and the foreign based non-independents do not account for a material portion of domestic production. Including an analysis of the characteristics of these two groups of producers would not likely have an effect on the conclusions drawn in this study.

⁴¹ Calculated by subtracting "Majors Subtotal" and "Others" from "Total Domestic Production".

⁴² U.S. Energy Information Administration. Crude oil production. Access URL at: http://www.eia.gov/dnav/bet/pet_crd_crdn_adc_mbbldp_a.htm (May 25, 2011).

⁴³ U.S. Energy Information Administration. 2010 annual dry production of gas divided by 365. Access URL at: http://www.eia.gov/dnav/ng_prod_sum_dcw_NUS_a.htm (May 25, 2011).

Summary: Relative Effects

Two conclusions can be drawn regarding the relative effects of repealing the three largest oil and natural gas tax preferences:

- 1. There will be a disproportionately larger effect on independent producers because:**
 - As the examples in Section 1 of this study illustrate, the effect of each of the repeals represents a larger portion of the independent's cash flow from operations than the major's CFO. One reason for this outcome is that the majors derive a majority of their production from outside the U.S. while independents are exclusively reliant on domestic production.
 - Since majors do not typically invest 100 percent of CFO in drilling for new resources, funds can be diverted from other purposes to negate the effect of lower CFO on drilling activity.

- 2. There will be a larger impact on the natural gas industry than on the oil industry because:**
 - The tax preferences apply to domestic production activities. The U.S. relies more on domestic production, in percent terms, to meet natural gas demand than oil demand.
 - Independents, which will be more affected by the repeals, contribute more, in percent terms, to domestic natural gas production than to domestic oil production.

SECTION 3: ABSOLUTE EFFECT OF REPEALS ON WELLS DRILLED

Section 3 of this study examines the hypothetical one-year impact on wells drilled in the U.S if the three largest tax preferences had not been available to oil and gas companies in 2010. Key assumptions for this analysis include:

- Although the five major oil companies' cash flow from operations will be affected by repealing intangible drilling expensing and the domestic manufacturer's deduction, there will be no impact on their drilling behavior. Data in Table 8 shows that, in total, in 2009 the majors decreased their drilling by only 7 percent even after seeing CFO drop by 44 percent from 2008 levels. It is assumed that the majors would have drilled the same number of wells in 2010 if the tax preferences were not available.
- The Congressional Joint Committee on Taxation (JCT) report, "Estimated Budget Effects of the Revenue Provisions Contained in the President's Fiscal Year 2012 Budget," is the source of the one-year dollar impact of repeal on cash flow from operations for all companies, including majors and independents. A second JCT study, "Estimated Revenue Effects of the Close Big Oil Tax Loopholes Act," is the source of the one-year dollar impact of repeal on cash flow from operations for the majors. It is assumed that these one-year dollar value impacts would have been identical in 2010.
- JCT's dollar impact estimates on all companies, including majors and independents, differ from those contained in the President's Fiscal Year 2012 Budget Proposal, which were estimated by The Office of Management and Budget (OMB). JCT's estimates are used in this section of the study because OMB did not provide dollar impact estimates for just the majors.
- A Barclays Capital survey of 197 oil and gas exploration and production companies' spending is the source of 2010 U.S. capital expenditures for drilling. The report excludes capital expenditures for the thousands of smaller, often private, independent producers. However, given that these companies may drill only one well every several years, the total capital expenditures estimated in this report would not likely be materially different if they were included.
- Given their ability to overcome decreasing CFO, it is possible that the majors would make up for the lost drilling from the independents. This analysis assumes that the majors do not increase drilling activity to make up for that lost by independents.

Dollar Impact of Repeals

JCT's analysis of the president's fiscal year 2012 budget proposal⁴⁴ provides the one-year dollar impact on cash flow from operations of repealing intangible drilling cost

⁴⁴ The Joint Committee on Taxation. Access URL at: <http://www.jct.gov/publications.html?func=startdown&id=3773> (June 3, 2011).

expensing, the domestic manufacturer's deduction and percentage depletion for all producers, including majors and independents. JCT also estimated the one-year dollar impact of repealing the same three tax preferences⁴⁵ for just the five majors. Deducting the impact on the majors from the total impact provides an estimated dollar impact on independents.⁴⁶

Table 11: One-year Dollar Impact on Cash Flow from Operations of Repealing the Three Largest Tax Preferences

One-Year Impact ⁴⁷ (\$ in millions)			
	Total (A)	Majors (B)	Independents (= A-B)
Repeal expensing of intangible drilling costs	\$1,355	\$253	\$1,102
Repeal domestic manufacturing tax deduction	\$1,015	\$805	\$210
Repeal percentage depletion	\$806	\$0	\$806
Total	\$3,176	\$1,058	\$2,118

2010 U.S. Drilling Capital Expenditures

Barclays Capital conducted a survey of 197 oil and gas exploration and production companies to estimate 2010 drilling capital expenditures in the U.S.⁴⁸ The survey estimates that total capital expenditures for exploration and production drilling in 2010 were \$79.5 billion. Table 12 breaks out capital expenditures for the five majors, as well as for integrated⁴⁹ and foreign-based nonindependents⁵⁰ (collectively referred to as "Others"). Deducting these companies' capital expenditures from total capital expenditures provides 2010 capital expenditures for independents.

Table 12: 2010 U.S. Drilling Capital Expenditures (\$ in millions)

	Total (A)	Majors (B)	Others (C)	Independents (= A-B-C)
2010 Capex	\$79,495	\$18,600	\$8,400	\$52,495

⁴⁵ While the JCT report is not available to the public, a May 2011, Joint Economic Committee report discloses JCT's estimated impacts on the majors. Access URL at: http://jec.senate.gov/public/?a=Files.Serve&File_id=def3390e-c933-4420-a076-19f786cd3a10 (June 1, 2011).

⁴⁶ A portion of this figure presumably represents the dollar impact on non-major integrateds, such as Marathon. However, data were not available to estimate the impact on this category.

⁴⁷ JCT estimates the FY 2012 impact. Since the assumed effective date of the repeals is 12/31/11, the FY 2012 impact is for only 75 percent of the fiscal year, which ends on Sept. 30, 2012. Therefore, the figures in table 12 are equal to JCT's estimates divided by 0.75 in order to capture the effect of the repeals for an entire 12 months.

⁴⁸ Barclays Capital. The Original Spending Survey. Access URL at: http://www.oilandgasinvestor.com/Files/The_Original_E_P_Spending_Survey_Analysis_of_Worldwide_E_P_Expenditures.pdf (June 1, 2011).

⁴⁹ Includes Hess Corporation, Marathon and Occidental Petroleum Corp.

⁵⁰ Includes Repsol, Statoil and Total.

Relationship Between Decreases in CFO and Wells Drilled

As Table 8 shows, a decrease in cash flow from operations does not result in materially decreased drilling activity by the majors. This analysis assumes that, despite the repeals' one-year impact of lowering CFO by \$1.1 billion, majors and others (see footnotes 49 and 50) would not have reduced the number of wells they drilled in 2010.

In contrast, in a decreasing cash-flow environment, independents typically reduce drilling activity.

The Independent Petroleum Association of America states that there would be a 1-to-1 relationship between lower cash flow as a result of the tax breaks being repealed and reduced drilling investment.⁵¹ Therefore, the following analysis assumes that there is a 1-percent-to-1-percent relationship between reduced CFO and reduced drilling activity.⁵²

2010 U.S. Wells Drilled

There were 42,330 oil and natural gas wells drilled in the U.S. in 2010 according to the Energy Information Administration.⁵³ Table 13 breaks out the number of wells drilled by the five majors, as well as for other nonindependent producers (see footnotes 49 and 50). Deducting these companies' wells drilled from total wells drilled provides the number of wells drilled by independents in 2010.

Table 13: 2010 U.S. Wells Drilled

	Total (A)	Majors (B)	Others (C)	Independents (= A-B-C)
2010 Wells Drilled	42,330	2,665	1,057	38,608

Summary: Effect on 2010 Wells Drilled

Of the 42,330 oil and natural gas wells drilled in the U.S. in 2010, 3,722 were drilled by majors and other nonindependent producers. Even if the three largest tax preferences would have not been available in 2010, it is assumed that these wells would have still been drilled.

A portion of the remaining 38,608 wells drilled by independents would not have been drilled. To calculate how many wells would not have been drilled, the first step is to estimate, in percentage terms, the decrease in independents' drilling expenditures if the tax preferences were not in place.

⁵¹ Independent Petroleum Association of America. Access URL at: http://www.ipaa.org/news/docs/Tax_Issue_Talking_Points_02-2011.pdf (June 1, 2011).

⁵² Table 7 shows that, in total, for every 1 percent reduction in CFO there was nearly a 2 percent reduction in wells drilled for the eight independents examined. However, for the four oil independents this relationship is about 1-to-1. Given that the eight companies represent only a small fraction of the thousands of independent U.S. producers, and in an effort to be conservative, a 1-to-1 relationship is used.

⁵³ U.S. Energy Information Administration. Access URL at: http://www.eia.gov/dnav/pet/PET_CRD_WELLENL_S1_A.htm (June 9, 2011).

Table 14: 2010 Decrease in Independents' Drilling Expenditures

Independents' Capital Expenditures Impact (\$ in Millions)		
One-Year Impact of Repeals on Cash Flow From Operations (A) (Table 11)	2010 U.S. Drilling Capex (B) (Table 12)	Percent Decrease in Capex (= A/B)
\$2,118	\$52,495	4.0%

Next, as shown in Table 15, the number of wells that would not have been drilled can be calculated, holding all other factors constant.

Table 15: 2010 Decrease in Number of Wells Drilled

Percent Decrease in Number of Wells Drilled by Independents (A) (Table 14)	2010 Number of Wells Drilled by Independents (B) (Table 13)	Number of Wells That Would Not Have Been Drilled (= A x B)
4.0%	38,608	1,558

As Table 15 shows, 1,558 fewer wells would have been drilled in the U.S. in 2010 had the three largest tax preferences for oil and natural gas producers not been in place. This amounts to a 3.7 percent reduction total wells drilled in the U.S. in 2010.

CONCLUSION

This study examined the effects on drilling for new oil and gas resources in the U.S. if the tax breaks available to oil and natural gas producers are repealed, with particular examination of the three largest subsidies. Together, expensing intangible drilling costs, the domestic manufacturing deduction and percentage depletion are projected to cost the U.S. federal government \$42 billion in lost revenue in the next 10 years, according to the Office of Management and Budget.

Elimination of these three tax preferences would not likely affect the U.S. drilling habits of the five major oil companies — Exxon, Royal Dutch Shell, BP, Chevron and ConocoPhillips. While repeal would reduce these companies' cash flow from operations, their geographic and financially diverse business models will allow them to maintain drilling activity in the U.S.

The story is far different for the 14,000 independent producers, nearly all of which operate exclusively in the U.S. Those companies are likely to reduce drilling activity in the absence of the tax preferences since they typically invest 100 percent of their cash generated from operating activities to explore for and produce new resources. Eliminating the tax preferences will reduce operating cash, leaving fewer funds for drilling new wells.

This study concludes that if the three largest tax preferences were not in place in 2010, independent producers would have spent \$2.1 billion less to drill new wells. This would have translated into 1,558 fewer wells drilled in the U.S. in 2010, reducing the total number of wells drilled by 3.7 percent.

Because independents supply more than 70 percent of the natural gas consumed in the U.S., eliminating the tax preferences for independents could put upward pressure on natural gas prices.

Thus, a policy that eliminates these three tax preferences for all oil and natural gas producers could undercut President Obama's effort to increase domestic energy exploration. A bill that repeals the same tax breaks for major oil companies is likely to have a negligible impact on drilling activity.

APPENDIX: EFFECT ON PRODUCTION NOT ESTIMATED

It would be ideal to measure the absolute effects of the tax repeals on production of oil and natural gas (i.e., measuring the difference between future annual domestic production of crude oil if the repeals are implemented compared to production if they are not). However, measuring the effect on production under a scenario where the tax preferences are eliminated for all oil and gas producers is extremely difficult for the following reasons:

- Repeals will affect the drilling of new wells, which can produce materially different amounts of oil and natural gas than old wells, particularly those that have been producing oil and natural gas for decades. A well does not typically produce the same amount of oil or natural gas every year — a concept called the decline rate. For example, a horizontal natural gas well in the Haynesville Shale produces about 85 percent of its ultimate recoverable natural gas in the first year.⁵⁴ A distribution based on the ages of U.S. wells is not available.
- Even if a distribution of well vintages were available, wells targeting different geologic formations exhibit different decline rates. For example, compared to a Haynesville Shale well, a horizontal natural gas well in the Marcellus Shale produces about 63 percent of its ultimate recoverable natural gas in the first year.⁵⁵ Well characteristics for all geologic formations are not available.
- While logical conclusions can be drawn about immediate reductions in drilling activity, it is much harder to quantify immediate production declines. An immediate decline in drilling may not result in an immediate decline in production. For example, even though Continental Resources drilled 56 percent fewer wells in 2009 than in 2008, production increased 13 percent. Production declines are likely to be observable in the distant future, as the life of a well can span over several decades.

⁵⁴ Chesapeake Energy investor presentation, Slide 54. Access URL at: <http://tbx.corporate-ir.net/External.File?item=UGFYZW50SUQ9NYwMTd8Q2hpbGRJRQ0tMKxUeXBIPTM=&=1> (May 25, 2011).

⁵⁵ *Ibid.*

Chair LANDRIEU. If these beneficial tax provisions had not been included in the current code, independent producers would have spent \$2.1 billion less to drill new wells. About 1,558 fewer wells would have been drilled in the United States at a time when we're trying to increase domestic production for obvious reasons. Revenue loss and job loss would have resulted.

So I would like this hearing to be an opportunity to set the record straight, to hear from independent producers here today how proposals to eliminate these longstanding provisions in the tax code would impact their operations and ability to fund new projects and the ability to expand their operations. We have an impressive list of panelists today. They each bring with them their own individual experiences.

I'd like to first start with Stephen Comstock. I'm going to introduce all of them for a five-minute opening, and then we'll go to some questions to the panel.

First, we have Stephen Comstock, who is the Director of Tax and Accounting for the API, formerly the Chair of the Energy and Environmental Tax Committee for the American Bar Association.

Stephen, thank you for being here and for your testimony.

Next we'll hear from Lee Jackson, who is a majority shareholder of Jackson Offshore and an offshore services operator with more than 20 years in the maritime industry. Mr. Jackson is a former river boat pilot, and has been appointed to the Louisiana River Pilot Oversight and Review Board.

Thank you, Mr. Jackson, for your attendance.

Joe LeBlanc is Co-Founder and Senior Managing Partner of PerPetro Energy, LLC, which is a privately held independent oil and gas company headquartered right here in Lafayette. Formed in 2011, it has a plan to maximize the value of Gulf Coast Basin legacy properties. Joe has more than 30 years of experience in the industry.

Joe, thank you very much for being here.

Jennifer Stewart is Vice President of Tax of Southwestern Energy. She is also here in her capacity as the Chair of the Tax Committee of the American Exploration and Production Council.

And, finally, Stephen Landry, who is a Tax Partner with Ernst and Young. From 2007 to 2013, Steve served as VP of Tax for Marathon Oil.

And, Gigi, I didn't want to pass you up.

Gigi Lazenby is Managing Director and CEO of Bretagne, an independent oil and gas company with properties in the Big Sinking Field of Kentucky that she founded in 1988. She is formerly the Chair of the Independent Oil and Gas Producers. I had the pleasure of hosting Gigi in my home, I think, in Washington.

So it's wonderful to see all of you here.

Stephen, why don't we start with you. I think the staff has directed a five-minute introduction, and then we'll go into a series of questions.

STATEMENT OF STEPHEN COMSTOCK, DIRECTOR OF TAX AND ACCOUNTING POLICY, AMERICAN PETROLEUM INSTITUTE

Mr. COMSTOCK. Thank you, Senator Landrieu, for the opportunity to testify today. I'm Stephen Comstock, Director of Tax and

Accounting Policy at the American Petroleum Institute. API is the national trade association representing over 550 member companies of every size and representing every segment of the U.S. oil and natural gas industry.

America's oil and natural gas industry has been a bright spot in our economy, as you said, with benefits felt across the country. Innovation, many times spurred by small businesses and entrepreneurs, has helped generate a domestic energy revolution through the development of hydraulic fracturing and horizontal drilling techniques. This revolution, in turn, has sparked new life into domestic manufacturing, is supporting 2.1 million jobs, and has raised the average household's disposable income by \$1,200 a year.

Large and small companies work together to meet America's energy demand. According to the recent census data, there are over 46,000 small businesses supporting the production of oil and natural gas in the United States and directly employ over 300,000 workers. Every day, they provide a vital aspect to the generation of America's energy.

One area where this is clearly seen is something familiar, as you noted, offshore development. Due to the cost involved in offshore energy exploration production, larger companies are more likely to develop these areas. But to make those investments work, larger companies must rely upon a vast nationwide supply chain that includes and supports countless small businesses.

As an example, opening up the Atlantic Outer Continental Shelf to oil and natural gas development could create 280,000 new jobs along the East Coast and across the country and contribute up to \$23.5 billion per year to the U.S. economy, according to a just-released study by Quest Offshore Resources. Many of those jobs would be directly in the oil and natural gas industry, but the impact would extend to a wide range of businesses in our robust supply chain to provide food, transportation, retail, healthcare, and other services to our employees and their families.

Of course, small businesses are also involved in finding and producing oil and natural gas. This has always been and will continue to be a risky, time consuming, and expensive process. Industry operators must spend significant time and money before generating a return on their investments. Therefore, the ability to generate and preserve cash flow is vitally important to the industry.

The current tax code allows exploration and production companies to recover costs quickly so that investment profile is maintained. Specifically, ordinary costs involved in drilling a well which have no salvage value, such as wages, fuel, and maintenance, can be deducted when incurred. The resulting improvement in cash flow means operators have more money to invest and can perform more exploration and drilling, produce more energy, and create more jobs. All of that helps grow our economy.

Changes to cost recovery would force small producers to shut down older domestic oil and natural gas wells and cut back on drilling new ones. These economic changes would impact larger companies as well. Accordingly, the result would be reduced domestic oil and natural gas production and fewer U.S. jobs. The economic ripple would adversely impact the job growth and revenues

of many small businesses in our domestic supply chain and those that depend on a secure energy supply.

In short, changes to the tax code in cost recovery could unintentionally hit the brakes on America's energy and manufacturing renaissance and have a devastating effect on jobs, the economy, and revenue to the government. The domestic oil and natural gas industry, both large and small, supports 9.8 million jobs in the United States. Manufacturing jobs are coming back to the U.S. in droves thanks to the abundance of affordable U.S. energy.

Just by allowing our industry to do what we do best, the federal government collects revenues averaging \$85 million a day in taxes, rents, royalties, and bonuses. In short, energy is working in America.

Thank you, and I welcome your questions.

[The prepared statement of Mr. Comstock follows:]

TESTIMONY OF
Stephen Comstock
Director of Tax & Accounting Policy Department
American Petroleum Institute
Washington, DC

BEFORE THE
Committee on Small Business & Entrepreneurship
United States Senate

HEARING ON
Fueling America: Enabling and Empowering Small Business to Unleash Domestic Production

January 21, 2014

Senator Landrieu and members of the Committee, thank you for the opportunity to testify at today's hearing focusing on enabling and empowering small business to unleash domestic production. I am Stephen Comstock, director of tax and accounting policy at The American Petroleum Institute. API is the national trade association representing over 550 member companies of every size and representing every segment of the U.S. oil and natural gas industry.

America's oil and natural gas industry has been a bright spot in our economy, with benefits felt across the country. Innovation, many times spurred by small businesses and entrepreneurs, has helped generated a domestic energy revolution through the development of hydraulic fracturing and horizontal drilling techniques. This revolution in turn has sparked new life into domestic manufacturing, is supporting 2.1 million jobs and has raised the average household's disposable income by \$1,200 last year, according to a recent study by IHS Global Insight.

Large and small companies work together to meet America's energy demand. According to recent census data, there are over 46,000 small businesses supporting the production of oil and gas in the United States and employing over 300,000 workers. Every day they provide a vital aspect to the generation of America's energy. One area where this is clearly seen is something familiar to Louisiana - offshore development. Due to the costs involved in offshore energy exploration and production, larger companies are more likely to invest and develop these areas. But to make those investments work, larger companies must rely on the work of a vast, nationwide supply chain that includes and supports countless small businesses.

As an example, opening the Atlantic OCS to oil and natural gas development could create 280,000 new jobs along the East Coast and across the country and contribute up to \$23.5 billion per year to the U.S. economy, according to a just-released study conducted by Quest Offshore Resources. Many of these jobs would be directly in the oil and natural gas industry, but the

impact also extends to a wide range of businesses in our robust supply chain that provide food, transportation, retail, health care, and other services to our employees and their families.

Of course, finding and producing oil and natural gas has always been and will continue to be a risky, time consuming and expensive process. Industry operators must spend significant time and money before generating a return on their investments. Therefore, the ability to generate and preserve cash flow is vitally important to the industry.

The current tax code allows exploration and production companies to recover costs quickly so that investment profile is maintained. Specifically, ordinary business costs which have no salvage value associated with wages, fuel and maintenance involved in drilling a well can be deducted when incurred. The resulting improvement in cash flow means operators have more money to invest and can perform more exploration and drilling, produce more energy, and create more jobs. All of that helps to grow our economy, which creates a larger tax base that can generate more revenue for the government without actually raising taxes.

Changes to cost recovery could force small producers to shut down older, domestic oil and natural gas wells and cut back on drilling new ones. These economic changes would impact larger companies as well. Accordingly, the result would be reduced domestic oil and gas production and fewer U.S. jobs. The economic ripple would adversely impact the job growth and revenues of many small businesses in the domestic supply chain and those that depend upon a secure energy supply. In short, changes in the tax code to cost recovery could unintentionally hit the brakes on America's energy and manufacturing renaissance and have a devastating effect on jobs, the economy, and revenue to the government.

The domestic oil and natural gas industry - both large and small - supports 9.8 million jobs in the United States. Manufacturing jobs are coming back to the U.S. in droves thanks to the abundance of affordable energy our industry provides. And just by allowing our industry to do what we do best, the federal government collects revenues averaging \$85 million a day. Energy is working in America.

Stephen is currently the Director of Tax & Accounting Policy for the American Petroleum Institute. His responsibilities cover coordination and managing issues impacting the industry arising from federal, state income, excise and indirect taxes. In addition, he has responsibilities for developing and working API's policy on accounting and cyber issues. Prior to joining API, Stephen was a tax attorney with ExxonMobil in their Tax Department and provided planning advice for various projects in their Upstream, Downstream and Chemical operations. He is formerly chair of the Energy and Environmental Taxes Committee of the American Bar Association's Tax Section. He received a BA from the University of Texas and a JD from George Washington University.

Chair LANDRIEU. Thank you very much.
Mr. Jackson.

**STATEMENT OF LEE JACKSON, CHAIRMAN AND CEO, JACKSON
OFFSHORE OPERATORS, LLC**

Mr. JACKSON. Thank you, Senator Landrieu. And one clarification: I'm still a very active and proud river boat pilot.

Thank you for this opportunity today to discuss how we can work together to improve the commercial environment for small businesses and entrepreneurs in Louisiana through the growth of domestic energy production. Obviously, I'm no expert when it comes to tax law, but, surely, I can testify to the trickle down effect of such incentives and the effect on companies such as mine.

Jackson Offshore Operators supplies fast crew supply boats and platform supply vessels to the offshore oil and gas industry in the Gulf of Mexico. We currently have two 175-foot fast crew supply vessels in operation under long-term contracts with super majors. In addition, we have two 210-foot fast supply crew boats under construction at a shipyard in Harvey, Louisiana, and four 252-foot platform supply vessels under construction at a shipyard in Florida.

The fast crew supply vessels are utilized to carry industrial workers and general oil field cargoes between shore based locations and the drilling rigs and production installations offshore. The four platform supply vessels are much larger vessels that are specifically built to support deep water drilling, development, and production. These four vessels are also on long-term contracts with super majors as well.

Jackson Offshore Operators was formed in 2011 when I purchased two fast crew boats which had previously been built in Louisiana two years earlier. By this time next year, Jackson Offshore's employment will grow to approximately 136 personnel once our expanding effort reaches its peak, and that represents eight ships in operation with an annual payroll and benefit costs of about \$30 million.

While Jackson Offshore Operators is a young company, we have been blessed to have loyal support from our customers, the domestic and international oil and gas companies. Without these large companies being active in Louisiana and the Gulf of Mexico, my company and its growth would simply not be possible.

Jackson Offshore is involved a capital-intensive industry. We have to build state-of-the-art vessels to support deep water drilling, and these ships are very costly. Currently, the six ships under construction will cost in excess of \$180 million. Without the long-term contracts issued to Jackson Offshore by the majors, I would not be able to secure the equity capital which is over \$35 million and obtain the necessary debt financing to build these ships contracted by the offshore oil and gas companies.

The major oil and gas companies find investments in the United States to be attractive for several reasons. The U.S. is a stable country. It is a country with fair and well-established laws and tax regulations that make drilling, development, and production for oil and gas in the U.S. economically attractive.

In addition, the U.S. has been blessed that oil and gas has been found here in abundance. However, there are many other countries around the world where oil and gas has been found and that also offer attractive alternatives for the investments of capital dollars to the oil and gas industry. As a result, it is of critical importance that the environmental laws and the tax regime in the U.S. remain competitive with those found in other countries around the globe.

I'm not suggesting that we should reduce our commitment to having high environmental protection for our country, but that the environmental laws and the regulations sometimes represent a less transparent and a less fair and balanced way. Using environmental laws and regulations and with new and more punitive interpretations to punish the oil and gas companies will unnecessarily raise the cost of safe and clean drilling, and development and production of oil and gas will certainly result in the capital of these companies moving to other countries.

While our tax laws are and have been used to incentivize and direct investments of capital throughout the history of our country, I would argue that they are not giveaways. And changing existing tax laws and regulations for the oil and gas industry at this time would have a very detrimental effect on the future growth of Jackson Offshore and the oil and gas industry in general.

The administration proclaims it wants an all-of-the-above approach to energy policy in the U.S., and it has taken many actions to encourage production of renewable energy. I believe that the focus on renewable energy is good for our country. But an all-of-the-above approach to energy policy in the U.S. should not include any changes in the current tax laws and regulations that discourage oil and gas exploration, development, and production.

Changing the existing tax laws and regulations to increase taxes and fees and create high costs to the detriment of the oil and gas industry in the U.S. will only cause the oil and gas companies to move their future capital spending to other countries that provide a better economic return to the investors. We should all remember that investment capital always flows to the venue where it is best treated.

Raising the cost of drilling, developing, and producing oil and gas in the U.S. will only result in reduced capital dollars being invested here at home. Without the commitments from the oil and gas companies to the deep water of the U.S., Jackson Offshore would not exist today. Without those continued investments by the oil and gas industry in the U.S., our future growth will be ended.

We must all realize that the U.S. is in a competition with other countries for investment dollars. We need to encourage and not discourage additional investments in the U.S. by both domestic and international oil and gas companies.

Thank you for this opportunity to provide you with my views on this topic that is critical to my company, Louisiana, and, frankly, the U.S.

[The prepared statement of Mr. Jackson follows:]

**Field Hearing on Fueling America – Enabling and
Empowering Small Businesses to Unleash Domestic Production**

STATEMENT BY LEE JACKSON
CHAIRMAN AND CHIEF EXECUTIVE OFFICER
JACKSON OFFSHORE OPERATORS, LLC
BEFORE THE COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP (SBC) FIELD
HEARING
UNITED STATES SENATE
LAFAYETTE, LOUISIANA
January 21, 2014

Oral Statement by Lee Jackson, Chairman and CEO of Jackson Offshore Operators, LLC

Thank you, Chairman Landrieu, and fellow Senators for the opportunity to appear before you today to discuss how we can work together to improve the commercial environment for small businesses and entrepreneurs in Louisiana through the growth of domestic energy production. Obviously I'm no expert when it comes to tax law but surely I can testify to the trickle down effect of such incentives and it's effect on companies such as mine.

Jackson Offshore Operators, LLC operates fast crew supply vessels and platform supply vessels to the offshore oil and gas industry in the Gulf of Mexico. We currently have two (2) 175-foot fast crew supply vessels in operation under long-term contract with a super major oil and gas company. In addition, we have two (2) additional 210-foot fast crew supply vessels under construction at a shipyard in Harvey, LA and four (4) 252-foot platform supply vessels under construction at a shipyard in Florida.

The fast crew supply vessels are utilized to carry industrial workers and general oil field cargos between shorebased locations and the drilling rigs, and production installations offshore. The four (4) platform supply vessels are much larger vessels that are specifically built to support deepwater drilling, development and production. These four (4) vessels are also on long-term charter contracts with super major oil and gas companies.

Jackson Offshore Operators, LLC was formed in May 2011 when I purchased two (2) fast crew supply vessels that had been built in Louisiana two years earlier. By this time next year Jackson Offshore employment will grow to approximately One hundred Thirty-Six (136) personnel once our expanding efforts reach it's peak of all eight (8) ships in operation with our annual payroll and benefit costs exceeding \$30 million on an annual basis.

While Jackson Offshore Operators is young company, we have been blessed to have loyal support from our customers, the Domestic and International Oil and Gas companies. Without the large oil and gas companies being active in Louisiana and the Gulf of Mexico, my company and its growth would simply not be possible. Jackson Offshore is in a capital-

intensive industry and we have to build state of the art vessels to support deepwater drilling and these ships are very costly. Currently the six (6) ships under construction will cost in excess of \$180 million.

Without the long-term contracts issued to Jackson Offshore Operators, LLC by the major oil and gas companies, I would not have been able to secure the equity capital of over \$35 million dollars and obtain the necessary debt financing to build the ships contracted by the offshore oil and gas companies.

The major oil and gas companies find investment in the United States to be attractive for several reasons. The USA is a stable country; it is a country with fair and well-established laws and tax regulations that make drilling, development and production of oil and gas in the USA economically attractive. In addition, the USA has been blessed that oil and gas has been found here in abundance.

However, there are many other countries around the world where oil and gas has been found and that offer attractive alternatives for the investment of the capital dollars to the oil and gas industry. As a result, it is of critical importance that the environmental laws and the tax regime in the USA remain competitive with those found in other countries around the globe.

I am not suggesting that we should reduce our commitment to having high environmental protections for our country, but that the environmental laws and regulations should be enforced in a transparent, fair and balanced way. Using environmental laws and regulations and with new and more punitive interpretations to punish the oil and gas companies will unnecessarily raise the costs for safe and clean drilling, development and production of oil and gas will certainly result in the capital of these companies moving to other countries.

While our tax laws are and have been used to incentivize and direct investment of capital throughout the history of the Country, I would argue that they are not giveaways and by changing the existing tax laws and regulations for the oil and gas industry at this time would have a very detrimental effect on the future growth of Jackson Offshore and the oil and gas industry in general. The Administration proclaims it wants an "all of the above approach" to energy policy in the USA and it has taken many actions to encourage production of renewable energy. I believe this focus on renewable energy is good for our Country. But an "all of the above" approach to energy policy in the USA should not include any changes in the current tax laws and regulations that discourage oil and gas exploration, development and production in our Country. Changing the existing tax laws and regulations to increase taxes, fees and create higher costs to the detriment of oil and gas industry in the USA will only cause the oil and gas companies to move their future capital spending to other countries that provide a better economic return to the investor.

We should all remember that investment capital always flows to the venue where it is best treated. Raising the costs of drilling, developing and producing oil and gas in the USA will only result in reduced capital dollars being invested here at home. Without the commitments by the oil and gas companies to the deepwater of the USA, Jackson Offshore

Operations, LLC would not exist today. Without the continued investment by the oil and gas industry in the USA our future growth will be ended.

We must all realize that the USA is in competition with other countries for investment dollars. We need to encourage, not discourage, additional investment in the USA by both Domestic and International Oil and Gas companies.

Thank you for this opportunity to provide you with my views on this topic that is critical to my Company, Louisiana and frankly the US.

I yield back for any questions



Key Personnel Profile

Lee Jackson

Chief Executive Officer, Jackson Offshore Operators



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1217 MacArthur Ave.
Harvey, LA 70058

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HIGHLIGHTS:

Over 22 years of experience in the Maritime Industry and holder of an unlimited Gross Tonnage License from the United States Coast Guard. Recent achievements include an appointment by the Governor of Louisiana to oversee the regulatory compliance of Pilots along the Mississippi River.

CURRENT EMPLOYMENT:

- ▶ **Jackson Offshore Operators LLC** (New Orleans)
President, CEO and majority owner
- ▶ **Jackson Offshore Holdings, LLC** (New Orleans, LA)
Chairman and CEO
- ▶ **Louisiana River Pilot Oversight/Review Board**
Board Member
- ▶ **New Orleans – Baton Rouge Steamship Pilots Association**
State River Pilot

EDUCATION:

- ▶ **Kellogg's Advanced Management Program**
at Northwestern University (Chicago, IL)
Advanced Business Management Curriculum
- ▶ **New York Maritime** (New York, NY)
Maritime Science
- ▶ **Maritime Institute of Technology** (Baltimore, MD)
Advanced Ship-handling

LICENSE:

- ▶ **Unlimited Master/First Class Pilot**
Mississippi River 88.0 AHP to 234.0 AHP

PRIOR EMPLOYMENT:

- ▶ **Jackson Offshore LLC** (New Orleans, LA)
President, CEO and majority owner

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Chair LANDRIEU. Thank you, Mr. Jackson.
Mr. Landry.

**STATEMENT OF STEPHEN J. LANDRY, PARTNER, NATIONAL
TAX PRACTICE, ERNST AND YOUNG, LLP**

Mr. LANDRY. Senator Landrieu, thank you for inviting me to testify in today's hearing. My name is Stephen Landry. I am a partner in the National Tax Practice at EY. I serve in the oil and gas industry group, and the opinions I express are my own and not those of the firm.

Growth in domestic production of oil and gas in the last five years has been well documented. The production growth is a direct result of increased capital spending. A recent American Petroleum Institute publication indicates that capital spending for U.S. projects in 2013 was approximately \$350 billion.

This capital spending was by businesses of all sizes. And according to the Independent Petroleum Association of America, the overwhelming majority of wells drilled in the U.S. were drilled by independent producers, most of which qualify as small businesses.

Current law allows a deduction for independent producers of 100 percent of intangible drilling costs. These costs, though labeled with the term, intangible, are clearly not. These costs are for wages, fuel, repairs, hauling, supplies, and similar expenses without salvage value that are incident to and necessary for the drilling of oil and gas wells.

Having these deductions allows for rates of return that have created the capital spending we discussed. Changes on these rates of return for oil and gas wells will be directly influenced by changes in the tax law. It has been estimated that a change to amortization of IDCs over five years could change the rate of return by as much as 8 percent for independent oil and gas producers and their wells.

This reduction in the cost recovery value of IDCs, using conservative discount rates, will raise the cost of capital for investments in oil and gas. A change in the expected return of this magnitude is significant enough to change investment decisions and could make investments in some oil and gas wells uneconomical.

Large integrated producers that are choosing among alternative investments might simply allocate their capital to other projects and jurisdictions that offer better rates of return. Small companies, for whom cost of capital is a larger barrier to entry, might not enter at all or be forced to grow at a slower rate.

Because more than 60 percent of IDCs are wages, such a reduction in the rate of return on investments in oil and gas wells could have an immediate impact on workers in oil producing states. IDCs relate to jobs because the ability to deduct these expenses in the year in which they occur provides the capital used by independent producers to drill the next well. The negative economic impact of their repeal could be substantial. States may see a decline in the creation of new jobs and could experience a lower wage base for existing jobs.

Over the next 10 years, the industry could also experience significant job loss relative to what would occur under present law. The effect will be felt eventually by the entire economy, given the

importance of low cost energy throughout the country, especially at this point in the country's economic recovery.

There are other provisions in the tax code that also affect the cost of developing oil and gas. The industry already has a reduced percentage in the deduction for domestic manufacturing activity costs. Depletion and amortization of geological and geophysical costs, like IDCs, are also capital cost recovery allowances. Depletion is simply a form of depreciation for oil and gas and mineral resources that allows for a deduction from taxable income to reflect the declining production of reserves over time.

Tax policy reforms that increase the cost of capital for America's oil and gas could have several negative effects for the overall economy. Fewer wells drilled and decreased energy investment will cause domestic oil and gas production, one of the bright spots in our economy over the last several years, to fall significantly below current projections, making the goal of attaining U.S. energy independence over the next decade much more difficult to reach.

Taxes paid by the industry to the federal government could fall significantly. In addition, the effects would include lower earnings and fewer jobs for America's small businesses and oil field laborers.

[The prepared statement of Mr. Landry follows:]

TESTIMONY OF

Stephen J. Landry

Partner, EY National Tax

Houston, TX

Before The

Committee on Small Business & Entrepreneurship

"Fueling America: Enabling and Empowering Small Business to Unleash Domestic Production"

United States Senate

January 21, 2014

Senator Landrieu and members of the Committee, thank you for inviting me to testify at today's hearing. My name is Stephen Landry I am a partner in the National Tax Practice at Ernst & Young, LLP (EY). I serve in the Oil & Gas industry group. From 2007 through April 2013, I was the Vice President of Tax at Marathon Oil. The views expressed in this testimony are my own and not those of EY.

Growth in domestic production of oil and gas in the last five years has been well documented. This production growth is the direct result of increased capital spending. A recent American Petroleum Institute (API) publication indicates that capital spending for U.S. projects in 2013 was approximately \$350 billion. This capital spending was by businesses of all sizes. According to the Independent Petroleum Association of America (IPAA), the overwhelming majority of wells drilled in the US are drilled by independent producers, most of which are small businesses.

One of the general principles underlying our tax laws for the last century has been that in order to determine taxable income for the year, businesses are allowed to deduct 100% of the ordinary and necessary business expenses they've paid or incurred during the year. Intangible drilling costs (IDCs) are the ordinary and necessary business expenses of the oil and gas industry. IDCs are certainly not "intangible", although they've been called that in the tax code for the past 100 years. IDCs include all expenditures for wages, fuel, repairs, hauling, supplies, and similar expenses without salvage value that are incident to and necessary for the drilling of wells and the preparation of wells for production. The deduction for IDCs has also often been analogized to the deduction (under Code section 174) for the

costs for developing new drugs incurred by pharmaceutical companies. Pharmaceutical companies are permitted to deduct 100% of these costs in the year incurred, even though, like an oil well, the new drug may generate a stream of income for a number of years.

Current law allows an election for independent producers to deduct 100% of these costs in the year incurred (integrated producers are permitted to deduct 70% in year one, with the remaining 30% capitalized and amortized over five years).

Rates of return on oil and gas wells are directly influenced by the timing of cash outflows and inflows related to the project. Therefore, any significant delay of the timing of the tax deductibility of drilling costs will reduce the discounted cash flow and rates of return that such projects will generate. A requirement that all oil and gas producers recover their IDCs over five years, as has been proposed in the Senate Finance Committee Cost Recovery and Accounting Tax Reform Discussion Draft, would reduce the capital cost recovery value of IDCs incurred by independent producers by as much as 8%.¹

This reduction in cost recovery value occurs using a real discount rate of only 3.5%.² The cost of capital for small businesses is often much higher than this conservative discount rate. A higher discount rate will make the negative impact on the cost of capital for small independent producers even more pronounced.

This reduction in the cost recovery value of IDCs (using the conservative rates discussed above) will raise the cost of capital for investments in oil and gas wells by more than 3%. A change in expected returns of this magnitude is significant enough to change investment decisions and could make investments in some oil and gas wells uneconomic. Large integrated producers that are choosing among alternative investments might simply allocate their capital to other projects and jurisdictions that offer better rates of return. Small companies for whom cost of capital is a large barrier to entry into a business might not enter at all or might be forced to grow at a slower rate. Because more than 60% of IDCs are wages, such a reduction in the rate of return on investments in oil and gas wells could have an immediate impact on workers in oil producing states. IDCs relate to jobs because the ability to deduct these expenses in the year in which they are incurred provides the capital used by independent producers to drill the next well. The negative economic impact of their repeal could be substantial. States may see a decline in the creation of new jobs, and could experience a lower wage base for existing jobs. Over the next ten years, the industry could also experience significant job losses relative to what would occur under present law. The effect might be felt, eventually, by the entire economy given the importance of low-cost energy throughout the country, especially at this point in the country's economic recovery.

Other provisions in the tax code also affect the cost of developing oil and gas. The industry already has a reduced percentage for the Section deduction for 199 domestic manufacturing activity costs versus other manufacturers. Depletion and the amortization of geological and geophysical (G&G) costs, like IDCs, are capital cost recovery allowances. Depletion is a form of depreciation for oil and gas and

¹ Stephen J. Entin, "The Tax Treatment of Capital Assets on Growth, Expensing, Depreciation, and the Cost Recovery in the Tax System", *A tax foundation background paper*, No. 67 (April 2013)

² *Ibid*

mineral resources that allows for a deduction from taxable income to reflect the declining production of reserves over time. G&G costs are expenses incurred in connection with tests done to identify oil and gas prospects and independent producers are currently allowed to deduct these costs over two years. Several recent proposals would repeal percentage depletion and require independent producers to capitalize G&G expenses and deduct them over five years. These changes will further reduce the rates of return for drilling oil and gas wells in the US.

In closing, tax policy reforms that increase the cost of capital for America's oil and gas industry could have several negative effects for the overall economy. Fewer wells drilled and decreased energy investment would cause domestic oil and natural gas production – one of the bright spots in our economy over the past several years – to fall significantly below current projections, making the goal of attaining US energy independence over the next decade more difficult to reach. Taxes paid by the industry to the federal government could fall significantly. In addition, the effects could include lower earnings and fewer jobs for America's small businesses and oil field laborers.



Role

- ▶ Ernst & Young's Americas tax leader for oil and gas, delivering tax subject matter/thought leadership

Relevant experience

- ▶ Stephen Landry originally joined Ernst & Young in 1985 in the New Orleans office after Graduating from Loyola University of New Orleans. Steve began his career working in a variety of industries and notably serviced the oil field clients in the area from his first days with the firm.
- ▶ In May 2000, Steve ran a practice group in several cities and served as a tax account leader on several multi-national Energy Related companies.
- ▶ From January 2007 till April 2013, Steve joined Marathon Oil Company as Director of Tax Compliance and Accounting and later was appointed Vice President of Tax for Marathon Oil Company with primary responsibility for all taxes on a worldwide basis.
- ▶ In April of 2013 Steve returned to Ernst & Young in National Tax to serve as the Energy Sector Tax Leader for Oil & Gas.
- ▶ Steve is a member of the AICPA and the Texas Society of CPA's. He is on the board of Make A Wish of the Texas/Louisiana Gulf Coast and served as the Tax Committee chair for API for two years.

Chair LANDRIEU. Thank you. Very well said, Mr. Landry.
Ms. Lazenby.

**STATEMENT OF VIRGINIA LAZENBY, MANAGING MEMBER AND
CEO, BRETAGNE, LLC**

Ms. LAZENBY. Chairman Landrieu, thank you so much for inviting me to testify and to participate in this very important hearing on independent producers and oil and natural gas provisions. My name is Gigi Lazenby. I am the Managing Member and Chief Executive Officer and 100 percent shareholder of Bretagne, LLC, an oil and gas production company that I founded in 1988.

Bretagne's properties are in the Big Sinking Field of Kentucky which produced over 100 million barrels since it was found in about 1917. Unfortunately, I didn't produce all those barrels, but there are still a lot left. My company's operations include primary and enhanced recovery operations as well as development and field extension drilling.

I am also the immediate past chair of the Independent Petroleum Association of America. IPAA represents, as you quoted earlier, thousands of independent oil and natural gas explorers and producers as well as the service and supply industries that support their efforts. These would be significantly affected by changes to the tax code.

Independent producers develop 95 percent of American oil and natural gas wells, produce 54 percent of American oil, and produce 85 percent of American natural gas. The average independent has been in business for 26 years and employs 12 full time employees and three part-time employees. Additionally, IPAA is the primary national trade association representing smaller independent natural gas and oil producers, many of which are marginal operators, like myself.

Since independent producers' revenues are derived from the selling of produced natural gas and oil, federal government actions that reduce this revenue thereby reduce the investment capital independents can make in production activities which would result in significant reduction in American energy production and the economic machine it fuels. Tax reform proposals being contemplated in Congress pose serious risks to independent producers' ability to develop oil and natural gas in Louisiana and across the United States.

Much of the discussion surrounding tax reform in Congress has involved eliminating business deductions in order to lower marginal rates. While there has been talk of comprehensive tax reform, reforming both the individual and corporate sections of the tax code, nearly all of the congressional focus has been on corporate taxation and the need to lower corporate marginal rates. Tax reform along these lines poses big risks for independent producers.

First, independent oil and natural gas producers are not tax rate driven. Instead, independent producers are concerned with the need to generate capital and recover costs to reinvest in American operations.

Second, a substantial majority of IPAA's producer members are not organized as C-Corporations. As such, these businesses would see no benefit to only lowering corporate tax rates.

Three key issues that affect independent producers are the expensing of intangible drilling costs, IDCs; the percentage depletion deduction; and the passive loss exception for working interests in oil and gas operations. IDCs generally include any costs incurred that have no salvage value and are necessary for the drilling of wells or the preparation of wells for the production of natural gas or oil.

Information provided to IPAA by its members indicates that drilling budgets would be cut by 25 percent to 40 percent if the ability to expense IDCs was eliminated by Congress. This could result in nearly one-quarter fewer wells being drilled per year.

The percentage depletion deduction is truly a small producer issue. While percentage depletion is available to all extractive industries—that's all mining, coal, gravel, gold mining—it is highly limited for oil and natural gas and is only available to independent producers and only on the first 1,000 barrels per day of production. Percentage depletion is critical for smaller independent producers' ability to maintain existing production and to finance drilling operations from cash flow.

Finally, the passive loss exception for working interests in oil and gas properties is also an important smaller independent producer issue. The Tax Reform Act of 1986 provided an exception for working interests in natural gas and oil from being part of the passive income basket, and if a loss resulted from expenditures for drilling wells, it was deemed to be an active loss that could be used to offset active income as long as the investor's liabilities were not limited. That's an important point—not limited.

Most American wells today are drilled by small and independent companies, many of which depend on individual investors. So far, only the administration has formally proposed eliminating all oil and natural gas provisions for all producers.

Recently, Senate Finance Committee chairman, Max Baucus from Montana, released a discussion draft regarding cost recovery provisions in the tax code. The Baucus draft proposes substantial changes to IDC and percentage depletion to the detriment of American oil and natural gas production.

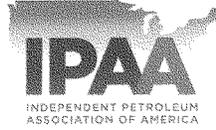
Further, the Baucus draft only proposes changing cost recovery tax provisions. There is no discussion of rate reduction or impacts to individual filers. To date, there has not been a proposed tax reform formulation that would not result in a tax increase for independent producers.

In summary, independent producers invest their American cash flow back into new American production projects. Reinvestment is essential to maintain and grow U.S. production. Without it, U.S. production would decline rapidly because wells deplete as they are produced.

If the United States wants to continue to increase national energy security and further the economy, more drilling will be required, not less. I would urge Congress to support those actions that enhance the future and reject the ill advised calls for adverse restrictions to capital.

I look forward to further questions.

[The prepared statement of Ms. Lazenby follows:]



TESTIMONY
OF
VIRGINIA LAZENBY

President and Chief Executive Officer, Bretagne, LLC
Immediate Past Chairman, Independent Petroleum Association of American

To

Senate Committee on Small Business
Hearing on “Fueling America – Enabling and Empowering Small Businesses to Unleash
Domestic Production”

Lafayette, Louisiana

January 21, 2014

Chairman Landrieu, thank you for inviting me to testify and participate in this very important hearing on independent producers and oil and natural gas tax provisions. My name is Gigi Lazenby. I am the managing member, chief executive officer and 100 percent shareholder of Bretagne LLC, an oil and gas production company that I founded in 1988. Bretagne's properties are in the Big Sinking Field of Kentucky. My company's operations include primary and enhanced recovery operations as well as development and field extension drilling.

I am the immediate past Chair of the Independent Petroleum Association of America (IPAA). IPAA represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts, which will be significantly affected by changes to the tax code. Independent producers develop 95 percent of American oil and natural gas wells, produce 54 percent of American oil and produce 85 percent of American natural gas. The average independent has been in business for 26 years and employs 12 full-time and three part-time employees.

Additionally, IPAA is the primary national Trade Association representing smaller independent natural gas and oil producers, many of which are marginal well operators. Marginal wells are those with average production of not more than 15 barrels of oil or 90 Million cubic feet (Mcf) of natural gas, per day. However, in reality, an average marginal oil well in the United States produces about 2 barrels/day. Approximately eighty percent of all American oil wells are marginal wells, but they provide about twenty percent of American oil production. More than two-thirds of all American natural gas wells are marginal wells, providing twelve percent of American natural gas production.

According to a recent study by IHS Global Insight, onshore independents supported 2.1 million jobs in 2010, making one out of every 62 jobs in the U.S. attributable to the independents' upstream activities. Independents contributed over \$320 billion of U.S. GDP in 2010, a figure that will rise to over \$466 billion by 2020. This figure could be even greater if Congress does not inhibit capital growth. If just the onshore independents' economic activity were a state, it would rank 15th in value creation for that same period.

Individual states are realizing similar impacts. In Louisiana, for example, IHS determined that unconventional gas activity contributed value-added economic impact of \$10.7 billion in 2012. Also noteworthy is the fact that the annual average wage in the State of Louisiana is \$57,600 compared to the average wage of direct jobs in unconventional gas activity, which is \$108,700. Unconventional gas employment generated over \$1.2 billion in state and local government taxes in Louisiana in 2012, which is equivalent to fourteen percent of the state's total budget.

Since independent producers' revenues are derived from selling produced natural gas and oil, federal government actions that reduce the amount of this revenue thereby reduces the investment capital independents can make in production activities will result in

significant reduction in American energy production and the economic machine it fuels. Tax reform proposals being contemplated in Congress pose serious risks to independent producers' ability to produce oil and natural gas in Louisiana and across the United States.

Much of the discussion surrounding tax reform in Congress has involved eliminating business deductions and in order to lower marginal rates. While there has been talk of comprehensive tax reform – reforming both the individual and corporate sections of the tax code - nearly all of the congressional focus has been on corporate taxation and the need to lower corporate marginal rates. Tax reform along these lines poses big risks for independent producers.

First, independent oil and natural gas producers are not tax rate driven. Instead, independent producers are concerned with the need to generate capital and recover costs to reinvest in American operations. Independent producers historically have reinvested as much as 150 percent of their American cash flow back into new American projects. Changes that limit this capital will affect the millions of jobs associated with just America's independent onshore investments.

Second, a significant majority of IPAA's producer members are not organized as C-Corporations. As such, these businesses would see no benefit to only lowering the corporate tax rate. In fact, if deductions are eliminated to pay for a reduction in the corporate tax rate, then these small businesses would realize a tax increase.

Political rhetoric describes tax provisions related to oil and natural gas production as “loopholes” or “subsidies.” Three key issues that affect independent producers are the expensing of intangible drilling costs (IDC), the percentage depletion deduction and the passive loss exception for working interest in oil and gas operations. These are neither loopholes nor subsidies. They are mechanisms – like depreciation – that provide for capital recovery; they are normal business deductions.

Expensing IDC has been part of the tax code since 1913. IDC generally include any cost incurred that has no salvage value and is necessary for the drilling of wells or the preparation of wells for the production of natural gas or oil. Only independent producers can fully expense IDC on American production. Loss of IDC for independent producers will have significant effects on their capital development budgets. Information provided to IPAA by its members indicated that drilling budgets would be cut by 25 to 40 percent if the ability to expense IDC were eliminated by Congress. This could result in nearly one-quarter fewer wells drilled per year.

Additionally, changes to IDC expensing could be perilous for smaller independent producers. Unlike larger oil and natural gas companies, most smaller independent producers are unable to attract financing from institutional investors or even community banks. The advent of Dodd-Frank has increasingly made lending to smaller producers insignificant. As such, smaller producers must finance their drilling operations with cash

flow generated from the wellhead or from private investors. Changing the ability to immediately expense IDC will drastically curtail drilling budgets for all independent producers and will be especially impactful for smaller producers.

The percentage depletion deduction is truly a small producer issue. All natural resources minerals are eligible for a percentage depletion income tax deduction. Percentage depletion for natural gas and oil has been in the tax code since 1926 after Congress determined that relying solely on cost depletion was leading to the loss of important American mineral resources. Unlike percentage depletion for all other resources, natural gas and oil percentage depletion is highly limited. It is available only for American production, only available to independent producers and for royalty owners, only available for the first 1000 barrels per day (6000 mcf of natural gas) of production, limited to the net income of a property and limited to 65 percent of the taxpayer's net income.

Therefore, as with IDC expensing, percentage depletion is critical for smaller independent producer's ability to maintain existing production and to finance drilling operations from cash flow. Percentage depletion provides capital primarily for smaller independents and is particularly important for marginal well operators. Input to IPAA from its operators who take percentage depletion indicates that the combined effect of eliminating IDC and percentage depletion would reduce drilling budgets in half. At this lower rate, new production will not offset the natural decline in production from existing wells. For example, if a producer now drills ten wells per year, without IDC and percentage depletion, this producer could only drill five wells per year. A five well program will not replace declining production in existing wells and the small business company will have to shutdown.

Finally the passive loss exception for working interests in oil and gas properties is also an important smaller independent producer issue. The Tax Reform Act of 1986 divided investment income/expense into two baskets – active and passive. The Tax Reform Act provided an exception for working interests in natural gas and oil from being part of the passive income basket and, if a loss resulted (from expenditures for drilling wells), it was deemed to be an active loss that could be used to offset active income as long as the investor's liabilities were not limited. Natural gas and oil development require large sums of capital and producers frequently join together to diversify risk. Additionally, natural gas and oil operators have sought individual investors to contribute capital and share the risk of drilling wells.

Most American wells today are drilled by small and independent companies, many of which depend on individual investors. There is no sound reason for Congress to enact tax rules that would discourage individual investors from continuing to participate in this system. Moreover, Congress applied the passive loss rules only to individuals and not to corporations. The repeal of the working interest rule, therefore, would senselessly drive natural gas and oil investments away from individuals and toward corporations. There is no apparent reason why Congress would or should favor corporate ownership over

individual ownership of working interests. As mentioned, in today's banking climate, smaller producers find banks uninterested or incapable of providing capital; taking private investors away will further exacerbate the challenge of raising capital to sustain American marginal well production.

So far, only the Administration has formally proposed eliminating all oil and natural gas tax provisions for all producers. The Obama Administration's budget request – and recurring advocacy statements on an almost daily basis – would strip essential capital from new American natural gas and oil investment by radically raising taxes on American production. American natural gas and oil production would be reduced.

Senate Finance Committee Chairman Max Baucus (D-MT) recently released a discussion draft regarding cost-recovery provisions in the tax code. The Baucus draft proposes substantial changes to IDC and percentage depletion – to the detriment of American oil and natural gas production. Further, the Baucus draft only proposes changing cost-recovery tax provisions – there is no discussion of rate reduction or impacts to individual filers.

To date, there has not been a proposed tax reform formulation that would not result in a tax increase for independent producers.

In summary, independent producers invest their American cash flow back into new American production projects. Reinvestment is essential to maintain and grow U.S. production; without it, U.S. production would decline rapidly because wells deplete as they are produced. If the United States wants to continue to increase national energy security and further the economy, more drilling will be required, not less. I would urge Congress support those actions that enhance that future and reject the ill-advised calls for adverse restrictions to capital. I look forward to your questions.

Chair LANDRIEU. Thank you very much.
Mr. LeBlanc.

**STATEMENT OF JOSEPH LEBLANC, CO-FOUNDER AND SENIOR
MANAGING DIRECTOR, PERPETRO ENERGY, LLC**

Mr. LEBLANC. Thank you, Senator Landrieu, for allowing me the opportunity to speak to you today. I know that I had some prepared notes, but what I've heard is a great dissertation by all the previous members on the tax law, and I'm not going to talk about it.

But I do feel that when they mentioned the concept of an independent producer in Louisiana, they're talking about me. My name is Joe LeBlanc. I am the Co-Founder and actually the CFO of PerPetro Energy, which is a startup independent oil and gas company headquartered in Lafayette, Louisiana.

We started the company in 2011 as a company that was focused on going back out into the Gulf of Mexico. It should be no surprise that most of the companies that are currently operating in the Gulf Coast, shallow Gulf of Mexico, in this region are seeking an exit. They're seeking an exit because there are better rates of return and regulatory environments in other areas of the U.S. and around the world.

One of the things that you should know is I've been in the independent Louisiana-based world for most of my career. I was recently the Associate Director of the Tulane Energy Institute and Clinical Professor at the A.B. Freeman School of Business at Tulane University.

Prior to joining Tulane, I served as the Principal Financial Officer, Treasurer, Planning and Marketing Director of EPL. I was the Manager of Finance and Business Development at McMoRan, Exploration Company, a derivatives trader of Shell Oil products.

And I've worked for, I feel like, most of my career now at the Louisiana Land and Exploration Company as their Planning Coordinator, Derivatives Trader, Audit Coordinator, et cetera. So I'm very familiar with what it's like to be an independent producer. I am also a CPA, but I'm not going to talk too much about taxes.

But where we are right now is we have been working extensively on a number of transactions. We're negotiating to actually acquire the properties of people who are exiting. We have spent a tremendous amount of time trying to find the contrarian capital that was interested in investing when everyone else was leaving.

So where we are right now is we've arranged a \$500 million commitment to come back into the Gulf of Mexico. And you wouldn't believe that the comments and the questions that I'm getting as we're finalizing all these negotiations to buy these properties are: I think I may need to raise your cost of capital because there's talk in Washington about changing the rules.

What you're effectively talking about is changing the law so that I need to start capitalizing my payroll. That's not creating jobs. That's actually impacting us.

When we went around the Gulf Coast, looking at arranging a new model, a new way of going back into the Gulf of Mexico, we went around to the different service companies, the companies you're talking about up and down the corridor here in Louisiana

that would be our service providers. What we found was that these companies were sitting on about 40 percent to 70 percent of their fleets here in the Gulf Coast idle.

These are large independent service companies that have grown up in this area. They love their people. They love their business. They want to stay, and they're looking for creative ways to stay. We've created partnerships with them to put those people and that equipment to work in this region, and they're willing to put their capital at risk. If we start changing the tax laws, will it affect all of those decisions?

So as we're going into this venture, the next consideration is that in order to go back into this region you need to be able to post collateral with the BOEM and all the other players to be able to handle the abandonment liability. Of a typical transaction, it's probably 80 percent of the capital that's required. So we need to post capital that says we have the capacity to handle the abandonment.

The interesting component about it is that it's probably one of the few, if only, places that all the capital is required to be placed up front with no tax basis. I will have no basis for that liability that I'm having to fund in advance. It is causing this region to be completely noncompetitive with the rest, and that's really one of the other reasons people are exiting.

So as we talk about these issues, they're affecting us. We're trying to bring capital back in. Right now, we have it to where we'll be creating and/or retaining jobs right here in this area of 100 people within probably the next 30 to 60 days, plus all the other transactions that we have. The changes that we're talking about, the ones that are proposed, would dramatically affect us.

[The prepared statement of Mr. LeBlanc follows:]

**Written Testimony
Of
Mr. Joseph Leblanc
Co-Founder and Senior Managing Director
PerPetro Energy, LLC**

Before the
U.S. Senate Committee on Small Business and Entrepreneurship
Friday, December 13, 2013

Madam Chairperson, members of the committee, thank you for the opportunity to speak with you today about capital strategies that independent producers employ as small business owners and their overall role in contributing to our energy economy. My name is Joe LeBlanc and I am a co-founder and Senior Managing Director of PerPetro Energy, LLC.

PerPetro Energy, L.L.C. is a start-up independent oil and gas company headquartered in Lafayette, Louisiana. The Company was formed in 2011 with the goal of maximizing the value of Gulf Coast Basin legacy properties as an aggressive consolidator, renovator and developer of producing assets with attractive exploitation, exploration and development opportunities.

Prior to founding PerPetro Energy, I served as Associate Director of the Tulane Energy Institute and as a Clinical Professor at the A. B. Freeman School of Business at Tulane University. Prior to joining Tulane, I served as Principle Financial Officer, Treasurer, Planning and Marketing Director of Energy Partners, Ltd (EPL) and as Manager of Finance & Business Development with McMoRan Exploration Company, Derivatives Trader with Shell Oil Products, Equiva, Motiva, and Equillon companies. In addition, I have worked as a Commodities Risk Manager, Planning Coordinator, and Audit Coordinator with the Louisiana Land and Exploration Company and I am a Certified Public Accountant.

As a co-founder of new independent oil and gas company headquartered in Lafayette, Louisiana, I would like to describe how current and proposed tax and BOEM regulations have

increased the difficulty of attracting investment capital into the Gulf Coast region which increased the barriers to entry for new companies and increased our cost of capital. It should come to no surprise that the larger E&P companies are seeking to exit the shallow waters of the Gulf of Mexico, primarily as a result of increased regulations and more favorable economics in other basins around the world. As such, the majority of capital providers, including the public equity markets, do not look favorably to the gulf coast region as the basin is relatively mature with extensive abandonment liabilities and a higher-cost operating environment.

To give the Committee perspective on how this issue impacts PerPetro Energy's access to capital, it is important for you to know that our company is finalizing commitments from outside investors for approximately \$500 million. However, our capital providers are very concerned about the uncertainty related to proposed changes in the tax code and the inconsistency between the IRS and BOEM regulations. However, if these issues are resolved, our company will be positioned to aggressively move forward with executing its strategic vision to revitalize the shallow Gulf which would directly and indirectly employ over 100 high quality new jobs next year in this immediate area.

1. The current inconsistency:

- A. BOEM requires companies to provide financial assurances that oil & gas abandonment liabilities will be performed
- B. Surety providers AND the BOEM are currently requiring 50% to 100% of such liabilities to be funded, in cash, immediately upon the acquisition of any oil & gas property.

- C. The IRS deems oil & gas abandonment liabilities to be considered as “contingent liabilities” and that the deductibility of such liabilities are only allowed when such abandonment work is actually performed and such costs are expended.

As such, companies are required to PAY to the BOEM for all future abandonment liabilities without ANY tax relief or any tax basis in the “liability” assumed.

Example: PerPetro purchases an oil & gas property for \$100 cash that has \$25 of future abandonment liability. BOEM requires that \$25 be secured via a bond or cash in an escrow immediately upon acquisition of the property. IRS regulations allow only a \$100 basis in the property for depreciation vs. a \$125 basis since the IRS deems abandonment liabilities to be “contingent liabilities”. Repayment of the \$25 escrow funding, PerPetro must earn \$35 to generate \$25 after tax proceeds. Then, at the end of the field’s life, PerPetro must have earned an ADDITIONAL \$35 of net income to generate ANOTHER \$25 of after tax proceeds to pay for the actual abandonment expenditures. ONLY AFTER such abandonment expenditures are completed will the BOEM release the cash held in escrow and are any deductions provided for the abandonment expenses provided. The mining industry is provided with a tax basis for all abandonment liabilities assumed. Not the oil industry.

2. The Proposed Regulation Change – Capitalizing IDC:

- A. A major component of Intangible Drilling Costs represents the salaries and wages of my employees (or the employees of service companies) working to develop oil and gas reserves. We are actively looking at acquiring several service companies as part of our renovation strategy. As such, such a proposal would be asking me to CAPITALIZE my payroll expenses and depreciate such costs over 5 years.

- B. The simple mention of such a regulatory change causes most capital sources to negatively react towards such investments increasing the risk of their investment and accordingly, increasing my cost of capital to compensate for such risks.
- C. Let's repeat this out loud: "There is a proposal to require Louisiana energy companies to capitalize it payroll expenses"

If the question is "How can we create jobs in Louisiana?" then the answer is "Create an environment that encourages capital investment here." The energy industry has always been a very capital intensive industry needing to continuously re-invest all of its free cash flow back into the ground in order to replace and grow the rapidly depleting reserve base, particularly in this region. Most other basins around the world have regulatory environments that provide for the complete capital recovery PLUS a minimum rate of return BEFORE royalties and taxes are imposed. In this region, we have a mature asset base and a regulatory structure that provides no incentive for cost recovery BEFORE royalties and taxes are imposed AND a provision to require that funding be posted for abandonment liabilities without any tax relief.

Correcting these inconsistent and overly burdensome matters will lower the entry barrier to oil & gas investments and should help to re-vitalize the Louisiana oil & gas industry resulting in the creation of numerous new jobs for our State.

Chair LANDRIEU. Thank you, Mr. LeBlanc. I'm trying to help you, too. So thank you very much.

Ms. Stewart.

STATEMENT OF JENNIFER STEWART, VICE PRESIDENT TAX, SOUTHWESTERN ENERGY COMPANY, AND CHAIR OF THE TAX COMMITTEE OF THE AMERICAN EXPLORATION AND PRODUCTION COUNCIL

Ms. STEWART. Thank you. Senator Landrieu, thank you very much for the opportunity to testify today. I'm Jennifer Stewart. I'm the Vice President Tax of Southwestern Energy, an independent energy company primarily engaged in the exploration of natural gas and crude oil. I'm also here in my capacity as the Chair of the Tax Committee of the American Exploration and Production Council, which represents 32 of the nation's leading independent natural gas and oil exploration companies.

I trust you'll agree with me that the domestic oil and natural gas industry has been one of the few business sectors instrumental in providing new jobs and spurring growth in all sectors of our economy. The contributions of the industry during the recent recession demonstrate that current tax policy has proven ties to developing a stronger economy.

But how does that work? One of the most significant economic drivers supporting investment in our industry is access to cash. Cash flow from operations drives the next investment and helps mitigate some of our industry's real risks in the exploration and production stage where upfront investment is extremely large. The key component in this cash flow model is the ability to recover these large investment costs quickly for tax purposes, and the tax code has a number of provisions currently reflecting this policy.

For example, as many of my colleagues have attested to, independent energy companies are currently permitted to deduct their business expenses as they are incurred. These expenses are primarily wages, fuel, transportation, repairs, and other costs necessary to construct a well pad, drill a well, and complete a well.

To limit the ability of these companies to deduct these expenses as they are incurred is to limit cash flow from operations, which limits capital investment, which we have all spoken to this afternoon, and to limit or even eliminate jobs.

Southwestern Energy is actively exploring now in northern Louisiana, and we have a very large position in our sister state to the north, Arkansas. So I want to share with you some data from a 2012 study conducted by the University of Arkansas. It concluded that for every direct job created by the oil and natural gas industry, an additional two jobs are created in the energy services sector and in the industries that support them.

I can illustrate this further using 2012 data of my own company, Southwestern Energy. Based on the university's study, every well we drill creates about 20 direct and indirect jobs. If current expensing of our ordinary and necessary business expenses was no longer permitted, we estimated that 243 wells would have been eliminated from our drilling program in 2012.

This would have translated into 4,900 jobs lost in Arkansas, 1,700 direct jobs and 3,200 indirect jobs. The negative impact on

any local economy, not just the Arkansas economy, of 5,000 jobs cannot be overstated.

But what are these jobs? As you mentioned in your opening remarks, they are high paying. Based on a University of Arkansas study, the average annual pay in Arkansas in the oil and gas industry is \$75,000, twice the average salary in that state.

Then there are the indirect jobs that follow the supply chain, of which most are generated by small business. Think of the contractor that hauls gravel to the well pad construction site. Someone has to sell him—and then I added, or her—diesel, sell him or her tires, repair his trucks, provide his insurance, clean his office, and prepare and sell him food when he stops for lunch.

But why am I testifying today? Southwestern Energy and most of the AXPC membership are not small businesses. To answer that, permit me to provide one last statistic. In the years 2012 and through this year to date, my company contracted with 3,532 small businesses from all over the United States and paid a total of \$2.7 billion to these small businesses over this brief time. And we are just one energy company out of the thousands across the United States.

I would like to share with you a remarkable conversation that I learned of recently as I was preparing my testimony. This represents the perspective of one small business owner in the energy sector that, in my view, in very few words, speaks volumes.

The small business owner started his business in 1985 with one bulldozer. In 2005, he approached Southwestern Energy to do well pad construction work for us. We granted him a contract to do so, and in that same year, he went from 10 employees to 100 employees.

Before his work with the oil and gas industry, he was digging ponds for farmers and, in his words, struggled to make ends meet. And, in his words, and I quote, “My company has grown. We have a stop light, a Sonic, and a Subway, and these wouldn’t be here if it wasn’t for the gas companies.”

In closing, our nation needs a strong domestic energy policy, and I am confident that a change in tax policy would only weaken the industry at a time when we can ill afford it. The American energy renaissance was created as a result of development of our domestic resources. Anti-growth tax policies will only weaken our domestic energy industry and inflict harm on small business by limiting economic growth and the advantages that come with ample supplies of secure domestic energy.

Thank you very much.

[The prepared statement of Ms. Stewart follows:]

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Jennifer Stewart is Vice President Tax of Southwestern Energy Company, a S&P 500 independent energy company engaged in natural gas and oil exploration and production. She specializes in energy taxation, with an emphasis on tax planning and policy matters. She joined Southwestern Energy in 2010.

Mrs. Stewart is an attorney licensed to practice in the state of Texas and is admitted to practice before the U.S. Tax Court. Prior to joining the Southwestern Energy, Mrs. Stewart practiced at Andrews & Kurth, LLP, Ernst & Young LLP's National Tax Practice, Shell Oil Company and the Internal Revenue Service.

Mrs. Stewart received her Bachelor of Arts degree, *cum laude*, in Business Administration from the University of South Florida. She received her J.D., *magna cum laude*, from the University of Houston Law Center, where she was a member of the Order of the Coif and was an editor of the *Houston Journal of International Law*.

Mrs. Stewart currently serves as the Chair of the American Exploration and Production Counsel ("AXPC") Tax Committee, the Chair of the Marcellus Shale Coalition Tax Committee; and is on the Tax Steering Committee of Independent Petroleum Association of America ("IPAA"). She is a regular instructor and presenter and has spoken at conferences such as the Tax Executive Institute Tax School, The Texas A&M Annual Federal Tax Update, the KPMG Global Energy Conference, the American Bar Association Section of Taxation Committee Meeting, the State Bar of Texas Annual Tax Update, and the Council for International Tax Education (CITE).

Senator Landrieu and Committee members, thank you for the opportunity to testify at today's hearing regarding how independent oil and gas producers contribute to our energy economy, and in particular, how current tax policy encourages domestic energy production which in turn impacts small business. I am Jennifer Stewart and I am the Vice President Tax of Southwestern Energy Company, an independent energy company primarily engaged in natural gas and crude oil exploration, development and production. I am also here in my capacity as the Chair of the Tax Committee of the American Exploration and Production Council, which represents 32 of the nation's leading independent natural gas and oil exploration companies.

I trust you will agree with me that the domestic oil and natural gas industry has been one of the few business sectors instrumental in providing new jobs and spurring growth in all sectors of our economy. The contributions of the industry during the recent recession demonstrate that current tax policy has proven ties towards developing a stronger economy.

How? One of the most significant economic drivers supporting investment by our industry is access to cash. Cash flow from operations drives the next investment and helps mitigate some of the industry's real risk – especially in the exploration and production stage – where upfront investment is extremely large, usually in the billions. The key component in the cash flow model is the ability to recover these large investment costs quickly for tax purposes. The current tax code has a number of provisions reflecting this policy.

For example, independent energy companies are currently permitted to deduct their business expenses as they are incurred. These expenses are primarily wages, fuel, transportation, repairs, and other costs necessary to construct a well pad, drill a well, and complete a well. To limit the ability of these companies to deduct these expenses as they are incurred is to limit cash flow from operations, which limits capital investment, which then limits or even eliminates jobs. For example, a recent study conducted by Wood Mackenzie found that eliminating the immediate deductibility of these business expenses would have a dramatic and negative impact on our nation's economy, resulting in an almost immediate reduction in domestic capital investment of \$33 billion and a loss of 190,000 jobs within a year.

To get closer to home, a 2012 study conducted by University of Arkansas concluded that for every direct job created by the oil and natural gas industry, an additional two jobs are created in the energy services sector and in the industries that support them. I can illustrate further using 2012 data of my company, Southwestern Energy. Based on the University's study, every well drilled creates about 20 direct and indirect jobs. If the current expensing of our ordinary and necessary business expenses was no longer permitted, we estimated that 243 wells would have been eliminated from our drilling program. That would have translated into 4,900 jobs lost – 1,700 direct jobs and 3,200 indirect jobs. The negative impact to any local economy of the loss of almost 5,000 jobs cannot be overstated.

What are these jobs? They are high paying - based on the University of Arkansas study, the average annual pay in Arkansas in the oil and natural gas industry is \$75,000, twice the average pay of all industries in the state. Then there are the indirect jobs that follow the supply chain, of

which most are generated by small businesses. Think of the contractor that hauls gravel to the well pad construction site. Someone has to sell him diesel, sell him tires, repair his trucks, provide his insurance, cleans his office, and prepare and sell him food when he stops for lunch.

Some of you may ask - why am I testifying today? Southwestern Energy and most of the AXP membership are not small businesses. To answer that, permit me to provide one last statistic. In the years 2012 and through this year to date, my company, Southwestern Energy, contracted with 3,532 small businesses from all over the United States, and paid a total 2.7 billion, that's billion, dollars to those small businesses over this brief time. And we are just one energy company out of hundreds across the United States.

Last, I will share a remarkable conversation that I learned of recently – this presents the perspective of one small business in the energy sector that in few words speaks volumes. He started his business in 1985 with one bulldozer. In 2005 he approached Southwestern Energy to do construction work for us, was granted a contract to do so, and in that same year he went from 10 employees to 100 employees. Before his work with the oil and gas industry, he was digging ponds for farmers and struggled to make ends meet. In his words (I quote): “my company has grown, we have a stoplight, a Sonic, and a Subway, and these wouldn’t be here if it wasn’t for the gas companies.”

In close, our nation needs a strong domestic energy industry and I am confident that a change in tax policy would only weaken the industry at a time when we can ill afford it. The American energy renaissance was created as a result of the development of domestic resources. Anti-growth tax policies will only weaken our domestic energy industry, and inflict harm on small business by limiting economic growth and the advantages that come with ample supplies of secure domestic energy. Thank you.

Chair LANDRIEU. Excellent. Thank you all for that excellent testimony. And, as you know, this is the Small Business Committee, but the intersection of tax policy, business, and energy is clear. I've had the pleasure to serve not on the Finance Committee, but on the Energy Committee for many years now and, hopefully, in the next few weeks, will actually assume the chairmanship of that committee. So I'm excited about that.

I am very pleased to be holding what probably will be—I didn't realize this when we scheduled it—but the last field hearing that I'm going to conduct as the chair of the Small Business Committee on this subject. That's how important it is, I think, not only to our region, but to the nation. I think your testimony that will be submitted and filed in the congressional record will be extremely helpful in this debate that will occur in the Finance Committee and then in Congress.

Ms. Stewart, I was really struck by the tremendous impact that just your one company has had—business with 3,500 small businesses. And I know that you work with or are knowledgeable of other companies similarly situated as yours.

Could you give one or two other examples of other companies that you know? Do they do the same kind of work with small business, or do you think you are in a unique situation? Or do you think the kind of work that you do is done by other companies of similar size, whether in this region or somewhere else in the country?

Ms. STEWART. I think for any domestic producer—and not necessarily for domestic independent producers, but your majors as well that have large plays in the United States—the trickle-down effect is the same. So, you know, I can't speak for any other producer, but to me, when I think about our guys that are working on the rig, working 12-hour, seven-week shifts, you know, they have to eat lunch.

So someone in the local community has to prepare the food and sell them the food. And someone sells to the person who is preparing the food the ingredients to cook the food. And then someone else sells them their napkins, and someone else sells them cleaning supplies. That's all local business.

So I think what I was trying to impress with my testimony is, as you mentioned, the supply chain implications. It's not just the direct jobs. You know, my statistic of, basically, three jobs for—or 20 jobs for every well—that's just within the energy sector. That's not including all the periphery that goes into supporting the energy sector.

Chair LANDRIEU. I think the reason that that's important—and I'd like some of you to comment if you want to on that particular question—is that I think in Washington, you always hear the phrase, big oil, big businesses. I think people get a little disconnected in their thinking about what is actually happening on the ground in places like Lafayette, the Gulf Coast, Arkansas, North Dakota, Pennsylvania, Texas.

With the opening up of so many basins in the energy renaissance that we're—you know, there's something big about it, all right. It's moving this economy in a big way. But there are very small parts that make up that big punch, and I think that's what we're trying

to communicate. At least, that's what I'm going to try to do, to use this field hearing to communicate to my colleagues and to inform this debate as it moves forward to push back against this idea that these tax breaks are special interest. They really are broadly used and strongly used to create the kinds of jobs that I think we want in our economy.

Stephen, did you want to add anything to that?

Mr. COMSTOCK. Yes. There was a report that API did in 2011 looking at the economic impacts associated with offshore development. As part of that, we did an informal survey of the members and people who gave information to that study and found that there were 2,500 contractors that were associated with just—like I said, an informal analysis of people who help support the operations offshore.

Chair LANDRIEU. Does anybody else want to comment on that question to Ms. Stewart? I have a few others.

[No verbal response.]

Ms. Lazenby, your testimony states that independent producers are not tax rate driven. Instead, independent producers are concerned with the need to generate capital, recover costs, reinvest in their operations. Independent producers historically have reinvested as much as 150 percent of the American cash flow back into projects right here in America.

Supporters of proposals to eliminate the current oil and gas tax provisions claim that any tax increase from the elimination of these provisions will ultimately be offset by lower tax rates. You hit that in your testimony, but can you underscore or explain why lowering tax rates, once again for the record, does not necessarily help the kind of reinvestment and capital reinvestment that is so important and critical to the expansion of this industry and to the creation of jobs?

Ms. LAZENBY. Well, I think—and you all can help me on this. But I think the proposals are to try to get the tax rate down to approximately 25 percent, something like that. For the oil and gas industry, you start with a tax rate of 39 percent or something, and you deduct your intangible drilling costs, your percentage depletion. You come down with an effective tax rate lower than 25 percent—10, 15. You pay that tax, and you take the additional cash flow between the 35 percent tax rate and the 10 percent or 15 percent tax rate that you have, and you reinvest it in drilling.

If you were not able to take those deductions and got a 25 percent tax rate, flat, you would be paying more tax and wouldn't have the cash flow to invest back in the oil and gas. So it's not a benefit. There is no proposal that proposes to reduce the tax rate lower than about 25 percent.

And when you have tax policies that were put in place for the express purpose of encouraging capital formation to develop industrial products and industries in this country—and that's why those deductions were allowed, to reduce the rate so that you could put your money in. But if there are no deductions allowed and they reduce it down to 25 percent, then there's no encouragement to form capital. You've lost that 10 to 15 percent of additional rate that you would have available to invest.

Chair LANDRIEU. Does anybody else—Mr. Landry?

Mr. LANDRY. Congress has recognized several times over the last 10 years the importance of economic stimulus of accelerated cost recovery. The 2012—I think it was called the American Taxpayer Relief Act, which was the last big tax act in the summer of 2012. It included an extension of bonus depreciation of 50 percent for all asset acquisitions in 2013. That’s been extended several times. We’ve had the GO zone credits as part of the help for Katrina back—it’s in several relief areas.

If you liken that policy which says if we take capital cost recovery maybe quicker, that’s an economic stimulus—50 percent bonus depreciation with a seven-year MACRS in the first year results in about a 64 percent write-off. The integrated oil companies right now get 70 percent for IDC and some might get 100. So what we’re talking about here is to simply finance a reduction in rate by increasing recovery and allowances can have an adverse impact on the economy.

One of the things that several studies have mentioned is if we look to some of the major jurisdictions in the world that have lowered their tax rate, much like we’re talking to, like the U.K. and Canada, those tax rates don’t have to be lowered in one fell swoop. The tax rates can come down over a period of three to five years, which is what Canada and the U.K. have successfully done in the last decade. If we do that, then you don’t have to hit capital cost recovery allowances so quickly to get there and do the type of damage we’ve talked about and Ms. Lazenby talked about.

Mr. LEBLANC. Could I add a comment to it?

Chair LANDRIEU. Yes.

Mr. LEBLANC. There’s a precedent in a large number of the other countries that are trying to attract capital, which has been going on for about the last 15 or 20 years. An oil company looks and says, “I’ve got a certain amount of money. I’ve got all of these particular options around the globe. Where would I like to invest?”

When you look around the globe, you’ve got to be able to say, “Well, in this country I might be faced with 1,000 percent inflation. I might need to look at all of the different particular items.”

But there’s a structure that people are using called a production sharing contract. And, basically, other countries are saying, “Come in and invest, and before we impose a tax structure on you, we’ll allow you to get all your money back and a rate of return before we come in with a tax structure.”

Here’s what occurs: The actual decision making that occurs at the E&P level is we would rather continue to reinvest than get exposed to the tax implications of taking the money out. So while you’re there, you are generating a very large economic engine for those countries by doing that.

Chair LANDRIEU. So they lure you in.

[Laughter.]

Mr. LEBLANC. They lure you in. But what I’m saying is—

Chair LANDRIEU. And then they make you so happy you don’t want to leave.

Mr. LEBLANC. Well, that’s right. But what we’re talking about here is if you contrast that to ours—they don’t ask for any royalties, nothing, until you get your money back.

But what the U.S. does is on day one, you get a royalty check. I haven't collected all my money back yet. And then as I go to reinvest, now you're telling me that I don't get a deduction for it. So you're actually making it currently very noncompetitive with other basins.

If we want to attract the capital here, that's a model that's out there. It's not a new model. It's very creative, and it's what we're looking at. If you've got access to international investments, those are very attractive.

Chair LANDRIEU. And let me ask you this, Mr. LeBlanc. Is there anything that you've testified today that has a bearing on either pre-Macondo or post-Macondo? What you referred to as having to put up 100 percent of your liability—was that always the case, or is that just post-Macondo?

Mr. LEBLANC. It's a new factor, basically because—what the government requires is that you either put up money directly with them, or you post capital to a surety company, and then they issue a bond. Because of the people that are exiting, the sureties are asking for—what used to be 20 percent to 30 percent capital to be able to post this bond is now 70 percent to 100 percent. I've even heard some companies faced with 125.

There are current discussions right now where most independents were exempt from supplemental bonding, that there's talk in the industry right now by the BOEM that they're looking at changing the rules so that 85 percent of the current independents will lose their exempt status and would have to start posting bonds. That means that a lot of the companies we're talking about have \$2 million, \$3 million, \$5 million, \$100 million of abandonment liability—that that would be capital coming out of the engine and sitting in a trust somewhere for the benefit of the government without any tax breaks on it at all.

Chair LANDRIEU. It doesn't sound like a good idea to me.

Mr. LEBLANC. It's not. So I'm just sharing those different models.

Chair LANDRIEU. Mr. Jackson, do you have anything to add, or Mr. Landry?

Mr. JACKSON. Well, one of the things that we were talking about is the large super majors. Another part of that trickle-down effect is that these larger companies—they divest these assets. And when they divest these assets, they're not economically feasible anymore for these large organizations. Then you see those properties tend to venture off into places like your small independents.

So it's always—it's an engine that keeps on going. So I think, you know, those tax breaks are all—they just don't represent those big companies. I think they're incentives for the smaller ones as well, when those divestments happen, when these things occur, when these larger companies are no longer seeing the economic model making sense anymore in these particular properties.

Chair LANDRIEU. Let me ask this. I think you all have hit this, generally. But if you could be a little bit more specific—and maybe some of the CPAs could—when I hear in Washington—now, I do not agree with this, but I hear, again, this is just special interest for the industry, et cetera, et cetera.

How do some of these intangible drilling costs or tax treatments correspond to similar industries that are either extractive in nature

or important in terms of building jobs, et cetera, so that we can do a better job of advocating for why these provisions—they've been longstanding, they've been helpful, they should not be changed. I don't know who wants to take that question.

Gigi.

Ms. LAZENBY. I'll start. We just made some comments to Senator Baucus as they requested that we do. This was basically about percentage depletion. That's one example. Here are the people that signed on for us: American Institute of Iron and Steel, Building Stone Institute, Indiana Limestone, IPAA, Iron Ore Association, Lime, National Stone, Portland Cement, Fertilizer.

So, basically, what's happening is that the cost recovery—this is percentage depletion, which I'd like to say a little bit about in a minute. But, basically, the provisions that they're talking about changing are really anti-manufacturing. It's not just oil and gas.

We have formed associations and gotten together with a lot of manufacturing companies. And they're taking away deductions for actual expenditures, which those companies are all using to create jobs, and you're not able to have the cost recovery, all for reducing the rate on maybe some finance companies or something. And it doesn't make sense because they aren't creating jobs. They're not adding payroll, et cetera.

Chair LANDRIEU. It just doesn't make sense.

Ms. LAZENBY. In terms of percentage depletion, which all of these companies, extractive industries that I talked about—they all get percentage depletion. It was put in the code because it was recognized that depletion—the limitations on cost depletion led to the early closure of these resources and they needed to be protected.

In terms of oil and gas, it's really become a small producer issue, a marginal well producer issue, of which I am a good example. But the significance—it's not just me as a producer. Marginal production reflects 20 percent of all the oil and gas produced in this country, and it is a lot of little biddy wells.

Now, that is a massive base of the oil and gas production in this country, and it is blessed with a low decline rate. If you take away the ability of the marginal producer to create cash flow to keep drilling the marginal wells and keep the wells producing or reworking them, you're going to have a larger decline rate in that base. There's already a big decline rate in the newer big wells being built.

So I'm not just one marginal producer. We're 20 percent of the base, and it's very important. We don't have access to capital like the larger companies do. No community bank is going to loan a marginal small producer money anymore on a bunch of little biddy strip oil reserves. We have to rely mostly on our own internal cash flow and some outside investors, and that's why that is so imperatively important.

Chair LANDRIEU. That was beautifully said. I'm going to get Mr. Landry and then Mr. LeBlanc.

Mr. LANDRY. Senator, you asked for some of the other provisions related to other industries. First of all, let's talk about Section 199, which is a manufacturing deduction that Ms. Lazenby referred to a little bit.

Right now, the manufacturing deduction for the oil and gas industry is one-third less than it is for other manufacturers. That's one-third less—some companies creating big jobs like movie producers and newspaper publishers are still getting a 9 percent number and it's 6 percent for the oil and gas industry. So the oil and gas industry already has a reduced, vis-à-vis, other industries that are providing jobs in manufacturing. It's Section 199.

For intangible drilling costs, which is probably the single biggest indication, the closest analogy that I've heard is that new drug companies under Section 174 write off the cost of discovering a new drug. Again, this is something that's wages, science, and something without salvage value if that drug ends up not being permitted. Well, that's much the same as drilling an oil and gas well. If you get a dry hole, there's nothing there. As a matter of fact, there's cost. There's a negative impact to that, to remove the cost of that dry hole.

So there are other industries and there are things analogous. And as I mentioned earlier, bonus depreciation is capital cost recovery. That, again, is very much—

Chair LANDRIEU. I think people would be surprised in our state to understand that in the current tax code drug companies get 100 percent write-off for their costs. And if they produce a drug that has absolutely no value or effect, they just move on, because they've written it off, to try something new.

But the same benefit does not hold for the oil and gas industry that, obviously, has a huge impact on the small business supply chain, which is a very important principle of our economy—small business and entrepreneurship—and has such a dynamic impact on energy security, and then manufacturing renaissance. I mean, those are three really powerful reasons.

You could probably think of others, but, immediately to mind, the positive impact on small business and entrepreneurship, the independence of energy, self-reliance of the U.S. or at least North America, and then the manufacturing renaissance. You would think that this would be more easily understood in Washington.

Joe, let me get to you.

Mr. LEBLANC. I just wanted to add a little color to what they're talking about here. If you just think about a company, and it has a certain amount of production, which is important to all of us to—when you hear about the availability of production, it helps stabilize prices and everything else associated with that.

The contrast—just a point about the decline. In this region here, in the Gulf Coast, we're talking about 40 to 70 percent decline. So if I bring on a new well, a new strong gas well, I'm anticipating a 70 percent decline rate. That means that in order for me to stabilize production for my company and continue just staying flat, if I don't reinvest those dollars (and we saw that post-Macondo), most oil companies started to have a really hard time because they weren't able to reinvest at the rate that they needed to because there was a pause in permitting.

That cost companies—and in some ways, if you drop very low or drop very quickly, you may never get back up to the level that you had. It's going to create risk with your credit facilities and et cetera, and you may lose your access to capital. So what you're

talking about is taking money out of that reinvestment engine needed to be able to continue to keep production flat.

And just as another note, those other countries that we're talking about allow you to recoup even your dry hole cost against that mix. So it's actually a big ring fence around the entire investment window.

Chair LANDRIEU. Stephen?

Mr. COMSTOCK. I really don't have anything to add. We've done a lot of research into the intangible drilling cost discussion—

Chair LANDRIEU. Can you speak up a little bit?

Mr. COMSTOCK. I'm sorry. We've done a lot of work in the intangible drilling cost deduction, the history of it, where it came from, just to make sure that we provide education to the policy makers as to why it's there. Back in 1954, when it was put into the code, it was originally put in as an R&D deduction. It was part of the R&D. Then through the committee action, it was taken out and given its own section.

So in many respects, the policy makers, when they codified it, actually were thinking of it as an R&D deduction, that we need to do this, that this represents a huge capital investment that's at risk that needs to continue on a current basis in order to continue to produce either a drug or a new technology or whatever, but, in this case, energy. So the analogy that Steve drew was actually pretty apt. It was, in fact, what happened back in 1954.

Chair LANDRIEU. Ms. Stewart.

Ms. STEWART. Senator, I'd like to add—I'll play devil's advocate to Stephen. In my role with AXPC and on behalf of my own company, I've made some Capitol Hill visits, and I've heard from some contrarians that say, "Well, really, you're saying this is equivalent to a research and development expense, but you guys—this isn't experimental. This is a manufacturing operation. There's no risk anymore. You go, you stamp a hole in the ground, the hydrocarbons come out. Where's your risk? So why should we incent you for this risk? So put that argument aside. It's not valid. This is not a risky exploration."

My counter to that would be, well, let's not call it intangible drilling cost anymore. Let's call it—how about wages. Are wages deductible? Is interest—are rents deductible? Is transportation of crushed concrete deductible for everyone else? Well, yes, it is. So why shouldn't it be for us or for the industry?

I think part of the problem is this misnomer with intangible drilling cost, that it's some secret special thing that no one understands when it's just the cost to do business.

Chair LANDRIEU. Which every other business gets to do.

Ms. STEWART. Right. So going to your point, if you're saying we're not at risk anymore, then how are we different than any other company doing business in the United States.

Chair LANDRIEU. And for states like Louisiana and Texas, where a great percentage of our economy is based on energy and energy related, this is a huge issue for us to make Congress understand. That's part of why this hearing—this isn't the only hearing that's occurred, but it's the most recent. It's very, very important to get this testimony to Washington.

Gigi.

Ms. LAZENBY. The other argument you hear sometimes, especially from the renewable fuel people is, first of all, they call it subsidies. But the point is that they say, "You've had these deductions for years, and, therefore, it's our turn to have them. You don't need them anymore, because it's a fully developed—you know, you've developed your thing." It's like you created a medicine, and you've gotten deductions for it.

Well, we create a medicine every day—a new well, at risk, every time we drill a new well. And we produce in this country out of fossil fuels about 70 to 77 percent of our energy needs. For the foreseeable future, we're going to still be relying on fossil fuels for those energy needs. Renewables and wind and air and solar—that's fine, and they need to grow also. But to say, "You've already done yours and you don't need deductions anymore"—we need those deductions in order to keep doing what we're doing so we can grow at the rate we need to grow to provide energy for this country. So that's chimerical argument as far as I'm concerned.

Chair LANDRIEU. Excellent. Anyone else? Let me check with the staff. I think we've gotten all the questions on the record.

To get a little bit more on the record, if each of you could just take a minute—in your experience—and some of you said this in your opening statement—how would these proposals affect not only our ability in this region, but in America—what impact would it have if these proposals went into effect, which I'm going to fight and others will as well—some of the things that have been suggested by the administration and members of Congress.

But if they did go into effect, what impact would it have on small business in terms of the wages that are paid? I'd like for you all to underscore a little bit about the industry and the kinds of wages that are paid.

I think, Jennifer, you talked about that.

Ms. STEWART. Yes.

Chair LANDRIEU. You know, these are just not any jobs. These are not minimum wage jobs. They're not low paying jobs. This is about entrepreneurship, business ownership, and wages that are—how much above the average? Could you all put a little bit more of that on the record?

Ms. STEWART. Yes. I mentioned that briefly, that the average oil and gas wage in Arkansas is \$75,000. And, actually, we were having this discussion at lunch today. A young man—and I will say man because it's 99.9 percent men who work in the field—without even a high school diploma, as long as he can pass a drug test, can go right now in my company and be a roughneck or a roustabout on a rig and easily make over \$100,000.

It's hard work. He would earn every dime that he gets. But these are the jobs that would be lost. So, yes, we employ physicists with Ph.D.s and geologists and reservoir engineers, people with very advanced degrees from the top technical schools in the country. But we also employ those with just a high-school education, and even less, that are making wages, like I said, close to and even over \$100,000.

You can't replace that anywhere. I've been to Capitol Hill, and they've told me, "Well, if you look at the efficient allocation of capital within the United States, if we change the tax law with respect

to the oil and gas industry, and your capital dries up, that capital will be efficiently allocated over here.” And my argument is, “Really? What’s that guy in Conway, Arkansas, who is now making \$100,000 a year”——

Chair LANDRIEU. Where is he going to go to work?

Ms. STEWART. With a high school education, where is he going to go? And then I get angry and we stop talking.

[Laughter.]

Chair LANDRIEU. Don’t stop talking, Jennifer. You’re doing very, very well. You’ve got to keep going.

Joe, do you want to add anything to that?

Mr. LEBLANC. Well, I think what you’re talking about is these changes would raise the cost of capital and reduce the availability of capital available for companies to invest. It will lower the value of the properties that are out there to companies that are holding them which might end up in tripping some financial covenants and put those companies and jobs at risk.

It will have the same impact when you start to pull capital out. Let’s talk about what we felt during the moratorium, when everyone started talking about, “My jobs are leaving the country. My equipment is leaving the country.” That’s going to be the impact. So what that will do is destroy companies and jobs.

Chair LANDRIEU. So if we keep the capital flowing, the jobs will be flowing, and they’ll be jobs that are \$50,000, \$60,000, \$75,000, \$100,000, \$150,000 a year jobs.

Mr. LEBLANC. Yes. I would agree with what she’s saying, that the guys out in the field have an opportunity to make quite a bit of money, in the six figure range.

Chair LANDRIEU. Gigi.

Ms. LAZENBY. I’m probably the third largest employer in the county—Lee County, Appalachian, a very rural Appalachian area. And if you took away my ability to have percentage depletion and intangible drilling costs and the deductions for capital—because I have my own drilling rigs and drill my own wells, shallow wells—I would have maybe a 25 or 30 percent reduction in my drilling program.

The guys that work for me—I have 40 employees. I have my own rigs. We do everything ourselves, except for fracking. We don’t do that. But, basically—and logging. But we do it all ourselves. We’ve trained these people. A lot of the people, just like you said, can’t read and write. But they know how to use an iPad now. We’re up to snuff on high technology, and even these guys are learning how to do these things.

They have healthcare, premium healthcare. One of the policies I’ve put in place over the years—I’ve probably paid almost 100 percent of their healthcare insurance. I know larger companies can’t do that, but that’s the way my small company went on. I just decided that it was more important, really, for them to have a higher raise. I provide healthcare, dental care, eyeglasses care, whatever.

And because we’ve been able to drill these wells and have had success, and they’ve worked very hard, we have a bonus program. We have a nice 401(k) for these guys, and they’re all into their 401(k). We have cash bonuses for them.

And just to top it off, this Christmas, I must have gotten 15 personal Christmas cards back from these guys and their wives, and they said, "We can't tell you how important it is that you have this company and that we can work for you." I mean, it made me cry. It did, you know, for them to write that and say, "We really appreciate your company and what you're doing."

Chair LANDRIEU. Because it's not just a minimum wage. It's a living wage, a saving wage, and something they can build a future on.

Ms. LAZENBY. Right. And, you know, you have a company picnic and all the kids come, and you look at it and say, "Look, this industry created this." And I'm going to go down fighting before I let somebody take away the ability for an industry such as ours to create jobs so much across the board for good, good workers.

Chair LANDRIEU. Thank you.

Mr. Landry.

Mr. LANDRY. To expand a little bit on the wage impact, not only are these good paying jobs, as has been testified, but what we're looking at is an increase in the number of jobs in the industry and a trajectory that's going forward. Many of these jobs are math, science, and engineering. Petroleum engineers in this country when they walk out of school have high demand.

And the communities that—if you look at the Eagle Ford area in Texas, the Bakken area in North Dakota, and you look at those communities, not only are all the people that have been there employed, but into those areas you're bringing a lot of highly educated people to help develop those reservoirs. That also has resulted in new roads, new schools, and those schools—some of them may have been in impoverished areas. They're building new schools with highly educated people and their children in those schools and raising the school districts in those areas.

So not only do we take the impact of a local wage and bring it up, we bring in new people that help grow the community in the right way. And not only is the production in wages, but it's the ability to grow those wages and to maybe give some hope to communities beyond.

Chair LANDRIEU. My friends, Heidi Heitkamp and Senator Hoeven, Senator Heitkamp, would be happy to hear that testimony. I'll be talking with them shortly.

Mr. Jackson.

Mr. JACKSON. Basically, what everyone said—it's no different in the vessel business. It's all centered around supply and demand. I think mariners today do very well. For example, a captain on one of my vessels probably makes about \$200,000 a year. Now, contrast that to a not so busy industry. That same guy was probably making about \$90,000 a year. So it's incumbent that we stress that when oil and gas does well, everyone does well.

We've seen where mariners—they're doing things they haven't been able to do in many, many years, and they have a comfort level. They're buying homes, and as she spoke to—bonuses. We're getting to a point now it's becoming a very competitive marketplace to attract employees, but that's a good thing. That's a good, healthy thing, and we're doing incentive programs like bonuses and things

like that, tangible things that families can grab ahold of and say, "This industry is where I really want to be."

For so many years, the oil and gas industry as a whole has had its peaks and its valleys for many, many years. Some mariners, particularly, have been burned. And, unfortunately, when the business isn't well, the first thing—you have to go where your biggest cost is, and, for me, it's my salaries. It's an unfortunate thing that happens, but those mariners, once they're burned they go to other industries, they're not coming back.

So we've got to continue to focus on that to allow them to see that this is a very stable place to work. And the thing that makes that happen is very simple. We've got to create an environment where my clients, the oil and gas companies, are willing to reinvest those dollars, as was spoken of here, and to continue that process. So that, in turn, enables us to continue to pay a great wage.

Chair LANDRIEU. Mr. Comstock, last word. You had the first word, so we'll give you the last word.

Mr. COMSTOCK. I'll be very quick.

I was going to say was that the oil industry is in a period of changeover. A number of the people who are operating in some of these high-paying jobs are going to be facing retirement soon. So there's going to be a lot of opportunity for the young to come in and participate in the oil and gas industry and partake of these wages, and not only for just sort of the traditional.

But, also, we've done some reports with respect to minorities and the potential for jobs there in that community and to have these high-paying, good, stable work environments as well and take advantage of that. So I think that across the board—as you sort of alluded to, the high wages, the school benefits, the potential for new jobs coming forward—there's a lot there to really sort of take in and to realize that it's not just the large businesses.

It's really the small businesses as well. It's felt all the way down the supply chain. And the jobs are there, and they'll be there as long as we have good policies to support it.

Chair LANDRIEU. I couldn't think of a better way to conclude. So this meeting will adjourn. The record is going to stay open for two weeks. Anyone can submit testimony for this hearing.

I thank you again for your really very well prepared statements and also for your very off-the-cuff and sincere comments about the industry that you all have helped to build. And you've got my commitment. Whatever committee I land on or am running will have my strong support in the future, because it's important to this state, but it's very, very important to our country.

Thank you all. The meeting is adjourned.

[Whereupon, at 4:20 p.m., the hearing was adjourned.]

APPENDIX MATERIAL SUBMITTED

An Ethical Approach to Shale Resource Development

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Senior Project

David Yu

November 25, 2013

Abstract

The purpose of this research project was to discover how the petroleum community could present itself to the public in an ethical manner while conducting shale resource development activities. A qualitative research method designed to analyze semi-structured interviews with 11 participants imparted perceptions on the topic of ethics related to shale resource development activities. The findings revealed that shale resource development activities have improved economic conditions, disrupted and inconvenienced impacted communities, established a need for courtesy and communication, left room for improvement of business practices, reflected governmental concerns, exposed elements of insecurity, increased 'coffee shop talk,' affected media perceptions, and evidenced the importance of ethics to the participants. It was concluded that the petroleum community has contributed greatly to society and has room for improvement. It was implied that the research project was a micro-study of the Fayetteville Shale Play, and similar research should be conducted in other shale resource development plays.

Key Words: Shale Resource Development Activities, Petroleum Community, Operators, Contractors, Perceptions, Media, Fracking, Trucking, Ethical Dilemma Landowners, Public, Community, Communication

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Introduction

Overview of the Topic

Rapid advances in shale resource development have occurred over the past 10 years due to the success of Mitchell Energy and Development Corporation's experiments with combining horizontal drilling and hydraulic fracturing in the Barnett Shale in Texas (World Shale Gas, 2012). This success has resulted in a shale gas and oil boom across America. According to the U.S. Energy Information Administration (EIA) in the United States shale resource development has increased shale gas production from 1.0 trillion cubic feet in 2006 to 4.8 trillion cubic feet in 2010 (Review of Emerging Resources, 2011, para. 3). It is estimated that in America undeveloped shale plays may be able to produce as much as 750 trillion cubic feet of gas and 24 billion barrels of oil ("Review of Emerging Resources," 2011, table 1).

Some people may wonder how much energy the average American consumes in one year. According to the EIA it is "...difficult to add up or compare the total energy we use because each energy source is typically measured in a different unit: gasoline is usually measured in gallons, electricity in kilowatthours, and natural gas in cubic feet" ("How Can We Compare," 2013, p. 1). Each of these would need to be converted to the British Thermal Unit (Btu) to establish a common unit for comparison purposes. The best example of how the conversions can be calculated follows in Table 1. Still, the conversions alone are hard to understand and Table 2 provides further context by providing the assumptions for energy conversions that are easily related to. Both tables are adapted from EIA's online article "How can we compare or add up our energy consumption?" last updated March 15, 2013.

Table 1

Conversion Table of Common Energy Sources to Btu

Energy Source	Physical Units and Btu Equivalents
Gasoline	1 gallon = 124,000 Btu
Diesel Fuel	1 gallon = 139,000 Btu
Heating Oil	1 gallon = 139,000 Btu
Electricity	1 kilowatthour (kWh) = 3,412 Btu (but on average, it takes about 3 times the Btu of primary energy to generate the electricity)
Natural Gas	1 cubic foot (ft ³) = 1,022 Btu 1 cubic foot = 0.01 therms

Note. Adapted from Energy In Brief article "How can we compare or add up our energy consumption?" last updated March 15, 2013 by the U.S. Energy Information Administration.

Table 2

Sample Btu Conversions

Total energy used by one average U.S. light-duty vehicle per year...



Driven 11,493 miles per year at 21.5 miles per gallon equals 535 gallons of gasoline at 124,000 Btu per Gallon = 66 million Btu

Total electricity used by one average U.S. household in 2009...



Total U.S. residential electricity used is 1,364 billion kWh divided by 114 million Households at 3,412 Btu per kWh = 41 million Btu

Total primary energy used to provide the electricity used by one average U.S. household per year...



Total energy input to electricity production is 40.2 quadrillion Btu times the residential share Of electricity use of 37% divided by 114 million households = 130 million Btu

Note. Adapted from Energy In Brief article "How can we compare or add up our energy consumption?" last updated March 15, 2013 by the U.S. Energy Information Administration.

More importantly, in the EIA's *Annual Energy Outlook 2013* it is estimated that from 2011 through 2040 there will be a 44% increase in natural gas production, with shale gas

contributing 113% growth during this period of time see Figure 1 (U.S. Energy Information Administration [EIA], 2013, p. 79).

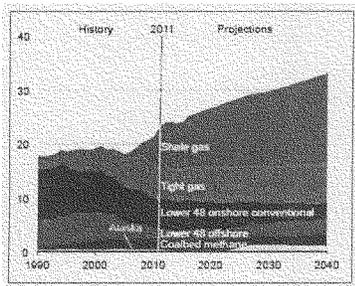


Figure 1. Natural gas projections 1990-2040. Adapted from "Annual Energy Outlook 2013" by the U.S. Energy Information Administration, p. 79.

The EIA recently reported in their *Today in Energy* blog that in the United States crude oil is projected under a reference case scenario to range "from 6 to 8 million barrels per day (bbl/d) over the next 30 years...and under a high resource case scenario crude oil could reach ...about 10 million bbl/d between 2020 and 2040" as depicted in Figure 2 (U.S. Energy Information Administration, 2013, para. 1). As the figure shows, nearly 50% of the estimated volume is derived from tight oil (also known as shale oil).

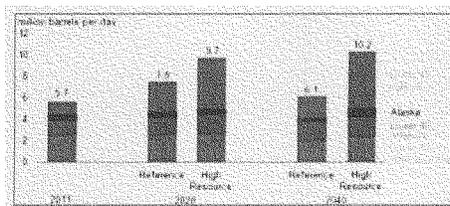


Figure 2. Crude oil projections in the United States under reference and high resource case scenarios 2011- 2040. Adapted from "Today in Energy" blog article by the U.S. Energy Information Administration dated June 14, 2013.

Since 2005, America's dependence on imported foreign oil has steadily declined due to "the financial crisis of 2008, improvements in efficiency, changes in consumer behavior, and patterns of economic growth" (U.S. Energy Information Administration, 2013, para. 7). Another contributing factor of the decline is increased shale resource development and supply. As of April 2013 it was reported by the EIA that the U.S. produced 60% of its petroleum supply and "relied on net imports (imports minus exports) for about 40% of the petroleum products (crude oil and petroleum products) that we consumed in 2012" (U.S. Energy Information Administration, 2013, para. 1).

The impact of these projections on Americans is hard to understand based on these data alone. The purpose of Figure 3 is to provide visual context and illustrate that several landowners and communities across 31 states will be directly impacted by future shale resource development.

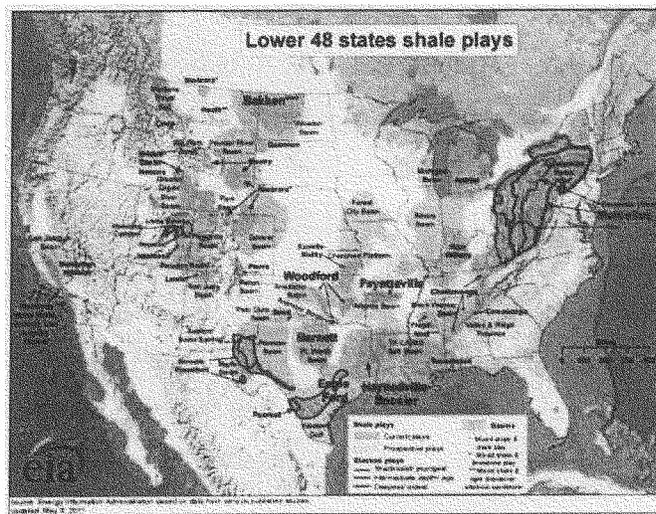


Figure 3. Lower 48 states shale plays ("Review of Emerging Resources," 2011, figure 1).

The ethical concerns associated with shale resource development vary from state to state. From a public standpoint, the most pressing dilemmas are related to the integrity of water supply (groundwater and surface water), methane gas migration, air quality, potential devaluation of property, and potential liability related to hydraulic fracturing (Beinecke, 2013).

From an agency and industry standpoint, the most pressing dilemmas are comprehensive requirements related to public safety, trust, and environmental protection to include: well construction and integrity; reporting and disclosure of types and amounts of chemicals used in the hydraulic fracturing fluid; disposal of flowback fluid and/or unused hydraulic fracturing fluid via disposal pits, or reinjection through disposal wells; water recycling and reuse technology to minimize fresh water usage throughout the life of a shale play; and blowout prevention during hydraulic fracturing operations (Andrews et al., 2009).

Americans are being directly affected by shale resource development, and it is natural that questions and concerns are raised. Over the past three years the rhetoric around shale resource development has reached a fevered pitch. Most notably, private and public airings of the films *GasLand*, *TruthLand*, *Promised Land* and *FrackNation* have served as effective media to influence perceptions and misconceptions about hydraulic fracturing and shale resource development. Both the public and industry have responded by forming non-governmental organizations (NGOs) backed by private foundations and industry associations by participating in forms of social media such as blogs, Facebook postings and "likes," online comments, and demonstrations. When taking an objective approach to understanding the various forms of communications often times it is hard to discern if this participation is reflective of "...good soldiers...expected to question an order they believe to be illegal or morally wrong" or if it is

reflective of "...grenades...because their activities can blow up suddenly and severely damage..." (Trevino & Nelson, 2011, p. 218).

Statement of the Problem

Over the past seven years shale resource development has become a whirlpool of divisive interests, and is a growing vortex of lost time and opportunity fueled by public perception, and rhetoric regarding current shale resource development practices. In the eye of this controversial vortex are thousands of service companies that operate in an environment of tension between operators and concerned stakeholders comprised of landowners, state and federal agencies, local communities and the public at large. Contractors are in a position to provide meaningful insight based on their experiences servicing the petroleum community. How can the petroleum community present itself to the public in an ethical manner while conducting shale resource development activities? A qualitative research method of conducting in-depth individual interviews of contractors participating in shale resource development will be used to gather, categorize, and discover objective data. Through this method I hope to reveal thick, rich, meaningful data, resulting in themes and categories for future clarification and research.

Significance of the Research Project

American consumers are in the unique position to foster a paradigm shift in the supply and management of safe, quality energy for America, and perhaps provide a framework for future shale resource development throughout the world. The research from this project should not add to the rhetoric, it must be designed to reveal themes of understanding based on contractors perceptions. These themes and categories can help to identify common ground that can nurture an environment of appreciative understanding. Through this understanding, I hope to identify opportunities that can be integrated into future shale resource development activities that

can promote communication and presentation of shale resource development in an ethical manner to the public. By reducing the tension, sharing observations, and exploring opportunities, operators, contractors and stakeholders can work together to lay a strong foundation that will promote safe and efficient energy resource development.

Purpose of the Research and Research Question

By understanding the perspectives and values of contractors participating in shale resource development, we can begin to develop ethical common ground that can facilitate meaningful dialogue that is not dominated by rhetoric. For authentic understanding and momentum to occur, qualitative research methods that are "focused on discovery, insight and understanding from the perspectives of those being studied" must be attained (Merriam, 2009, p. 1). This discovery and insight can be achieved by asking contractors: How can the petroleum community present itself to the public in an ethical manner while conducting shale resource development activities?

Review of Related Literature

For the purposes of completing this research project, literature has been organized into three main categories: Shale Resource Development, Hydraulic Fracturing, and Studies on Public Perception. Research for applicable discourse literature has been conducted online and collected from the University of Alaska Anchorage / Alaska Pacific University Consortium Library, federal and state governmental agency websites, and other news, industry, and organization websites, publications and books.

Shale Resource Development

What is shale resource development? How does the petroleum industry extract these resources, and what are their impact to America's economy? In the report "The Economic and

Employment Contributions of Shale in the United States" prepared in 2011 by IHS Global Insight (USA) Inc. (IHS) for America's Natural Gas Alliance (ANGA), shale resources are petroleum resources "...contained in low permeability shale rock" (IHS Global Insight (USA) Inc. [IHS], 2011, p. 7). The density of the rock determines what drilling technique is used to exploit (extract) the resource from the shale. Historically conventional vertical wells have been drilled to a reservoir that had trapped the resource between layers of rock. Over the past 10 years the use of unconventional horizontal (lateral) drilling in combination with hydraulic fracturing (a well completion technique) has produced greater volumes of recoverable resources, thus, economically superior wells. Figure 4 provides visual context contrasting conventional and unconventional drilling techniques and associated geologic formations (IHS, 2011, p. 7).

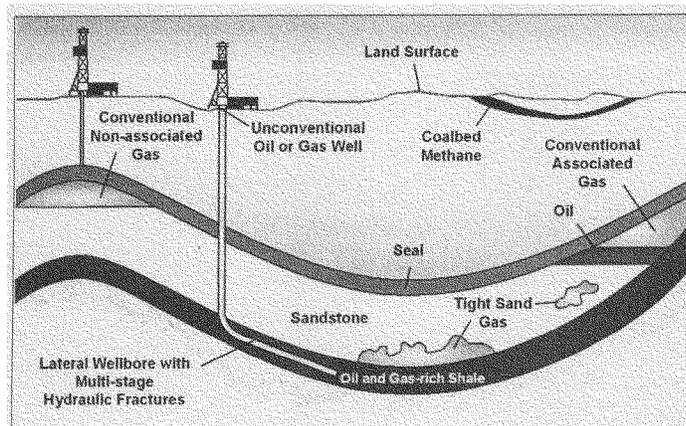


Figure 4. The geology of conventional and unconventional resources. Adapted from "The Economic and Employment Contributions of Shale Gas in the United States" by IHS Global Insight (USA), Inc., p. 7.

In the report, "The Shale Gas Shock" prepared by Matt Ridley for the Global Warming Policy Foundation it is explained shale is a fine-grained sedimentary rock and black shale is

sedimentary rock that has settled in low oxygen conditions "...on the floors of stagnant seas and is rich in organic compounds derived from bacterial, plant and animal matter" (Ridley, 2011, p. 6). Ridley explains that through seismic exploration, potential shale resources are "...mapped using sound waves and 3D (3-dimensional) reconstruction to identify the depth and thickness of appropriate shales" (Ridley, 2011, p. 6).

A better explanation of seismology can be found in the report, "An Emerging Giant: Prospects and Economic Impacts of Developing the Marcellus Shale Natural Gas Play" (Considine, Watson, Entler, & Sparks, 2009). The report further explains that the sound waves "...are then recorded over a predetermined time period (called the record length). The reflected signals are stored on magnetic tape...then can be processed using specialized software from which seismic profiles can be produced" (Considine et al., 2009, p. 4). Potential shale resources are identified when the data is interpreted using computers to "...construct 3-dimensional images of subsurface structures" (Considine et al., 2009, p. 4). This report also explains that the Marcellus shale is "...a black, low density organically rich shale" (Considine et al., 2009, p. 6), similar to the description provided by Matt Ridley in his report "The Shale Gas Shock."

A thorough explanation of the drilling and completion process and related equipment to facilitate exploration and production of petroleum resources is "The Primer of Oilwell Drilling a Basic Text of Oil and Gas Drilling" written by Ron Baker (Baker, 2001). This book was first published in 1940 and is regarded as "...a first reader of the oilwell drilling business" (Baker, 2001, p. xiii). Chapter 12, titled "Completing the Well," covers three processes that enhance recovery of resources: perforating, acidizing and fracturing. Perforating occurs when a perforating gun loaded with perforating charges is lowered into the well at a desired depth and is fired. The charges "...pierce the casing or liner and cement around the casing or liner..." (Baker,

2001, p. 153) and allow the resource to "...flow through these perforations and into the well" (Baker, 2001, p. 153) as illustrated in Figure 5.

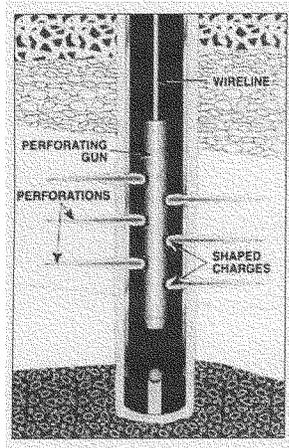


Figure 5. Perforation illustration. Adapted from "A Primer of Oilwell Drilling" by Ron Baker, p. 153.

Acidizing is a process used to enhance resource recovery in low permeability wells. Thousands of gallons of acid is pumped into the well and is used to erode channels in the perforated formation (Baker, 2001, p. 156).

Fracturing occurs when a blend of fluids and sand (proppant) is pumped down the well in high volumes creating pressure and fissures in the formation to release the resource. As the fluid is pumped back to the surface, the proppant holds the fissure open and enhances resource recovery (Baker, 2001, p. 156), and is illustrated in Figure 6. Matt Ridley shares "The effectiveness of fracking is rising, as 12-stage fracking replaces 5-stage fracking" (Ridley, 2011, p. 7). The fracturing process is wrought with controversy; research on this topic is covered in greater detail in the following sections on public perception and controversy.

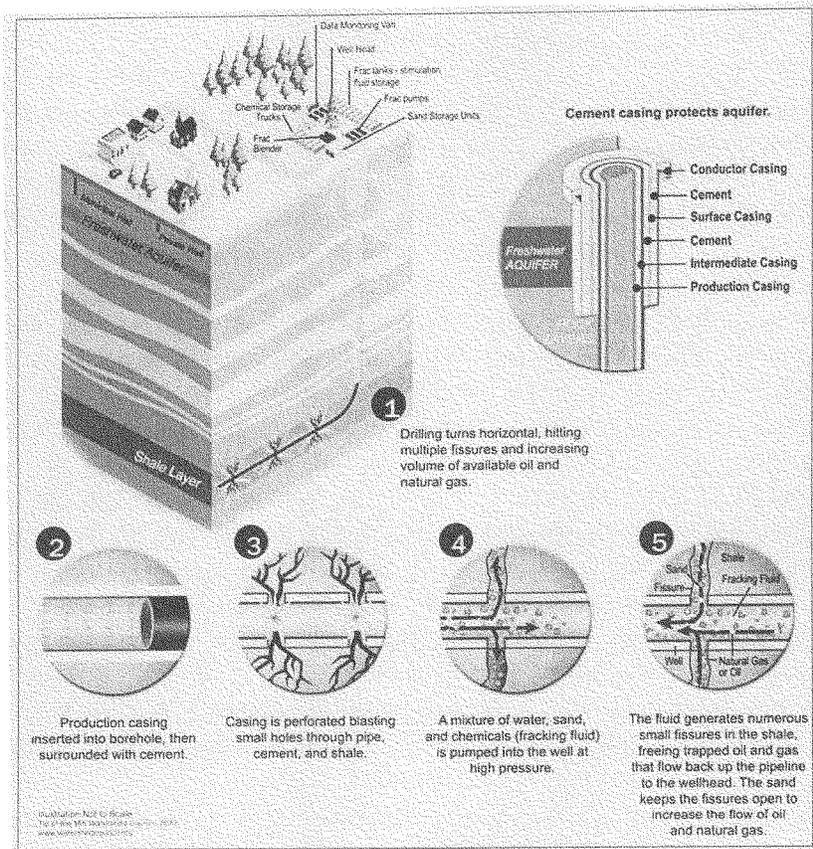


Figure 6. Fracturing process illustration. Obtained from "Tip of the Mitt Watershed Council" website (Tip of the Mitt Watershed Council, 2013).

America's economy has been positively impacted by shale resource development. In the report "The Economic and Employment Contributions of Shale in the United States" (IHS, 2011) it was estimated that in 2010 more than 600,000 jobs could be attributed to shale gas development. Their modeling further projects that by 2035 an estimated 1.66 million jobs may be

estimated to support shale resource development (IHS, 2011, p. 20). The report further explains that the value added impact to the gross domestic product (GDP) was estimated to be \$76 billion in 2010 and is estimated to be \$118 billion by 2015 and \$231 billion by 2035 (IHS, 2011, p. 20). The report also finds that "On a cumulative basis, the shale industry will generate more than \$933 billion in federal, state, and local tax and royalties over the next 25 years" (IHS, 2011, p. v). Howard Rogers explains in the paper, "Shale Gas - The Unfolding Story" how the dynamic evolution of natural gas exploration and production technologies have reduced the need for liquefied natural gas (LNG) imports (Rogers, 2011). This article, published by the *Oxford Review of Economic Policy*, explains that increased availability of LNG in Europe has reduced the need for natural gas imports from Russia. In turn, increased competition for skilled service companies to support natural gas exploration and production in the U.S. and Europe may impact future natural gas and LNG market performance (Rogers, 2011).

Freeman Dyson contributed the Foreword to the report "The Shale Gas Shock" by Matt Ridley and reflected on his childhood in England where coal was the fuel of choice, and his Grandmother's appreciation for wax candles in place of tallow, because wax lasted longer. He goes on to state that "Shale gas is like wax candles. It is not a perfect solution to our economic and environmental problems, but it is here when it is needed, and it makes an enormous difference to the human condition" (Ridley, 2011, p. 3). Ridley shares a set of interesting "counter-arguments" regarding the promise of shale resources.

Consequently, in the rush to develop shale gas wells and demonstrate high volumes of production to shareholders, most companies are spending 200-400% of cashflow on drilling and are creating only negative shareholder value as they accumulate debt. As volumes depress prices, this becomes a self-fulfilling prophecy, exacerbated by the 'use-it-or-lose-it' character of 5-year drilling leases. However great the resource proves to be, companies will go bust trying to develop it. This is a pattern familiar to historians of early railways and dot-com companies. In short, there is a speculative bubble in shale gas. (Ridley, 2011, p. 13).

In contrast to these reports Seamus McGraw's *The End of Country* is a first-hand account of the impact of shale resource development in his community located in the Marcellus Shale in northeastern Pennsylvania. Since the 17th century, people of the Appalachia have been aware of the natural gas seeping and sometimes burning from the cracks and fissures of their mountains. America's first oil well, gas well and pipeline were drilled and developed in the Appalachia (McGraw, 2011). In 2008, Professor Terry Engelder, a geologist with Penn State University, publically corrected his estimates of the Marcellus potential from the initial estimate of 50 trillion cubic feet to 400 trillion cubic feet (McGraw, 2011, p. 178) and "...opened a Pandora's box..." (McGraw, 2011, p. 179). This resulted in McGraw's family and his community being overwhelmed by industry landmen. For community landowners, the competitive and secretive nature of negotiating land lease acreage rates and rights reached "...the point where people who had always stoically shared the hardships of rural life seemed no longer willing to share anything at all" (McGraw, 2011, p. 131). As a result, acreage lease rates swung from \$25.00 to \$5,750.00 an acre. Chesapeake Energy landman, Marshall Casale, expressed concern that "the mad rush to pump money into the place was starting to poison the community" (McGraw, 2011, p. 141).

Parallels to these events are evident in the Bakken Shale located in North Dakota as evidenced in Edwin Dobb's article "The New Oil Landscape" published by National Geographic, March 2013. This article captures a full realm of perspectives regarding the impact of shale resource development activities in North Dakota. Dobb's follows Susan Connell, who is an employee of a service company that transports produced water to disposal facilities. Dobb's documents the impact of Connell having this work on her personal life, and the impact of the shale resource development activities on the town of Watford City. For Connell "her pay jumped from \$600 a week to \$2,000" (Dobb & Richards, 2013, p. 51). From the perspective of the

Mayor of Watford City shale resource development activities do bring challenges but the long term benefits outweigh the challenges. "Already the elementary school has been expanded. A new recreation center, a public housing and daycare complex, and a hospital will soon be built. Roads are being repaired, upgraded, widened" (Dobb & Richards, 2013, p. 45). In contrast "...more crime, more highway accidents, more medical emergencies. People on fixed incomes forced to move because they can't afford steep rent hikes. Overtaxed water and sewer systems. Prostitution. Registered sex offenders at large in the community" (Dobb & Richards, 2013, p. 45).

After speaking with the Jorgensons, Dobb's learns of the stark contrast between land surface rights and mineral rights.

Richard's father had purchased a thousand acres from someone who didn't tell him he had sold the mineral rights — in five-acre parcels — to people all over the country. Further complicating the picture, the rights have since been bequeathed many times. After poring over records at the county courthouse, Brenda discovered to her horror that 110 strangers owned the minerals beneath the 40 acres surrounding her house. If a petroleum company can persuade 51 percent of mineral rights owners to agree — and given that they will make money, perhaps lots of it, without taking any risk, they usually do — it can drill on land that doesn't belong to them (Dobb & Richards, 2013, p. 56).

Both McGraw and Dobb elevate a level of consciousness and ethical concern related to shale resource development, leaving McGraw "...wondering what karmic lessons..." were approaching he and his community (McGraw, 2011, p. 241), and Dobb's asking "Can the inestimable values of the prairie— silence, solitude, serenity— be preserved in the face of full-throttle development of extracting as much oil as possible as fast as possible?"

Public Perception

In 2010, Josh Fox released *GasLand*, his documentary to investigate the human health and environmental hazards and effects of hydraulic fracturing. Fox was inspired to conduct his own investigation of the resource development practices across the United States after being

approached to lease family property for exploration purposes (Gasland The Movie website, n.d.). The movie has been impactful and stirs emotions and feelings of doubt and concern for the future safety of groundwater supplies. Robert Koehler with Variety published a review of *Gasland* and compared it to Rachael Carson's book *Silent Spring* (Koehler, 2010). *Silent Spring* was published in 1962 and has been credited for being instrumental in banning DDT in 1972 (Griswold, 2012).

TruthLand was a documentary released in response to *GasLand* meant to separate fact from fiction. The core character is Shelly Depue, who documents her own research to better understand the potential threats to the wellbeing of her family and land (TruthLand Movie website, n.d.). The website provides sources of information and interviews that were included in the movie. What should be noted though, is that this was not an independent effort by Shelly Depue. The movie was produced and copyrighted by Energy In Depth (EID) in conjunction with the Independent Petroleum Association of America (IPPA). Warren R. True shares an interesting review in a July 2012 issue of Oil & Gas Journal and writes "not to lose sight of what "TruthLand" is: industry propoganda. Its narrative is contrived and stiff, its softball questions to the experts are obvious, and it conclusions never in doubt" (True, 2012, p. 16).

What followed *TruthLand* was the movie *Promised Land*. The movie covers land leasing and resource development, raising the ethical issues related to pitting money against morals. The movie was supported by a coalition of Hollywood artists that form the organization Artists Against Fracking. It was shared on *The Foundry*, a blog for The Heritage Network that *Promised Land* was "produced 'in association with' Imag Media Abu Dhabi, a subsidiary of Abu Dhabi Media...wholly owned by the government of UAE" (Markay, 2012, para. 3). The blog posting goes on to share the speculation that there is "a direct financial interest on the UAE's part in slowing down the development of America's natural gas industry" (Markay, 2012, para. 8).

Most recently, *FrackNation* a documentary by Phelim McAleer and Ann McElhinney, looks at the fracking process and include interviews with scholars and scientists who attempt to clarify misinformation. Interestingly, *FrackNation* was not funded by the energy industry, instead it was funded by the online funding platform called Kickstarter. Through Kickstarter, McAleer and McElhinney rallied 3,305 private donations raising a total of \$212,265.00 (Kickstarter, n.d.).

New York and several other states across America are working through their decisions to stay or lift moratoriums on hydraulic fracturing. Since the *FrackNation* aired and as a prelude to *Gasland II*, Josh Fox has released an 18 minute film named *The Sky is Pink* that is intended to persuade New York's Governor Andrew Cuomo to keep the moratorium on fracking. In a *Rolling Stone Politics Daily* piece, Jeff Goodell reveals several ethical concerns, and even writes "When it comes to fracking, there isn't much 'science' to follow - yet there's mostly just industry-funded propaganda" (Goodell, 2012, para. 5).

Gasland II a second documentary by Josh Fox aired on HBO July 8, 2013, and a grassroots tour is ongoing with private viewings of the documentary taking place across the country. In response to the HBO airing of *Gasland II*, *FrackNation* was re-aired on AXS TV July 9, 2013. According to a May 2013 blog posting by EID, the Park Foundation has granted \$100,000 to International WOW Company to produce *Gasland III* (Krohn & Shepston, 2013).

Another measure of public perception is the increased growth and funding of NGOs focusing on shale resource development. The Park Foundation was formed in 1966 by the late Roy Park, CEO of Park Communication, Inc., and in 2011 the Foundation committed 100% of its portfolio to socially responsible investing with resolution topics including "hydraulic fracturing, gas drilling, factory farming, consumer nutrition, and media" (Park Foundation website, 2012). This specific blog posting also makes reference to a February 2013 survey titled

Fracking Survey 2012 that was conducted by the Health & Environmental Funders Network (HEFN). HEFN "is a network of grantmakers investing at the intersections of health and the environment. HEFN's mission is to maximize the impact of philanthropy on environmental health and environmental justice" (Cracknell, 2013, p. 4). The purpose of the survey "was to compile an initial snapshot of activities and needs emerging in response to the spread..." of hydraulic fracturing (Cracknell, 2013, p. 1). Eighty-one (81) NGOs and 33 foundations participated in the survey and reported "...spending a total of \$17.4 million in 2012...investing a combined total \$18.3 million in fracking-related grants in 2012" (Cracknell, 2013, p. 1) respectively. Nearly \$36 million was invested in 2012 and it is anticipated that these investments may double through 2013.

An interesting parallel can be drawn in that these media, NGOs, and foundations illustrate the rudimentary purpose of hydraulic fracturing - to prop and stimulate the flow of resources. A December 2012 Bloomberg National Poll "...found that 66 percent of Americans want more government oversight of the process, known as fracking...an increase from 56 percent in a September poll..." and "...18 percent favored less regulation, down from 29 percent three months ago" (Drajem, 2012, para. 2).

The varying standpoints from the widespread practice of hydraulic fracturing have come to the forefront of ethical awareness because "...peers will consider it to be ethically problematic; ethical language is used to present the situation to the decision maker; and the decision is seen as having the potential to produce serious harm to others" (Trevino & Nelson, 2011, p. 73).

Controversy

Based upon public perception and media, hydraulic fracturing is a controversial topic that is integral to shale resource development. In recent testimony by Frances Beinecke, President of

the Natural Resources Defense Council (NRDC) for the Hearing on "Opportunities and Challenges for Natural Gas" before the U.S. Senate Committee on Energy and Natural Resources, Beinecke calls upon Congress, the Bureau of Land Management (BLM), and the Environmental Protection Agency to provide leadership (Beinecke, 2013). She asks Congress to "...protect the environment and health, including by requiring full disclosure of fracking chemicals and closing loopholes in existing environmental statutes." Beinecke follows by asking the BLM to "...issue rules properly governing fracking on public lands." Lastly she suggests to the EPA to "...use its existing authority to the fullest extent possible to address the impacts and risks of fracking" (Beinecke, 2013, p. 29-30). The full testimony and statements demonstrate a purposeful consequentialist approach "...to maximize benefits to society and minimize harms" (Trevino & Nelson, 2011, p. 40).

This concern has been acknowledged by the petroleum industry and is evidenced by the combined efforts of industry and agencies through FracFocus.Org. On a voluntary basis, industry reports hydraulic fracturing fluid composition to the "Frac Focus Chemical Registry" maintained by the Groundwater Protection Council and the Interstate Oil and Gas Compact Commission. According to their website as of May 29, 2013 "...there are 427 participating companies reporting chemical data for nearly 43,000 wells across the country" (Fracfocus website, 2013). By working together, it may be possible that these organizations and companies are demonstrating a high internal locus of control and are "...more likely to take responsibility for the consequences of their actions" (Trevino & Nelson, 2011, p. 85).

In addition to hydraulic fracturing the petroleum industry disposes waste fluid from drilling, completion and production operations, and improper handling of this waste may result in environmental incidents. As recently as January 31, 2013 a caller reported to the federal

National Response Center that in Youngstown, Ohio "an unknown amount of crude oil and brine were intentionally dumped into a storm drain..." (Cocklin, 2013, para. 5). Later it was revealed that "as much as 20,000 gallons of the substance made its way through the drain and into a tributary that fed the Mahoning River..." (Cocklin, 2013, para. 6). This demonstrates criminal negligence, and demonstrates some level of moral disengagement by one or more people through displacement of responsibility (Trevino & Nelson, 2011, p. 87).

The ethical controversy that surrounds hydraulic fracturing and shale resource development are complicated and emotional because they go to our core of moral values. Ultimately, the resolution of ethical controversy related to shale resource development takes commitment, listening, and the most careful choice of words in our communication - reminding me of a poignant quote of Mark Twain. "The difference between the almost right word and the right word is really a large matter - it's the difference between the lightning bug and the lightning" (Twain Quotes website, n.d.).

Methodology

Introduction

Contractors are in the unique position of being exposed to the viewpoints of many stakeholders affected by shale resource development. Contractors are in effect a natural bridge between industry operators and the communities impacted by shale resource development. However, very little is known about their experiences and perceptions on the topic of ethics with respect to the shale resource development. By conducting in-depth individual interviews, I hope to gain from their shared experiences greater understanding of how the petroleum community can demonstrate an ethical approach to shale resource development. This insight and data can help to reveal categories and trends of understanding that will help me build theories and

concepts that will help to promote meaningful dialogue, and additional research on shale resource development ethics.

This section describes the research design methodology used to conduct the project, to include the chosen research method, approach, data collection, participant selection, research instruments, the setting, and confidentiality of participant data in accordance with guidelines posted by Alaska Pacific University's Institutional Review Board (IRB).

Method

A qualitative research method is best suited to gather, categorize and discover meaningful data to better understand the participating contractors' perceptions on shale resource development ethics based on their shared experiences. In contrast to positivist/postpositivist (quantitative) methods focused on testing the cause and effect (why) of a phenomenon, qualitative research methods are "focused on discovery, insight and understanding from the perspectives of those being studied" (Merriam, 2009, p. 1).

Qualitative methods seek to answer the questions "that begin with how or what" (Imel et al., 2002, p. 3). Though this helps to distinguish qualitative research from quantitative research, there are three characteristics that help to define the nature and practice of qualitative research. According to Merriam, the primary purpose of qualitative research is to understand "how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences" (Merriam, 2009, p. 14). Taking the time to interpret the perspective of the person(s) being studied will add new understanding to specific questions related to the phenomenon.

Research Approach

Researchers are the ideal instrument for data collection and analysis. Researchers have the flexibility to broaden their understanding through their observation and clarification of data and communication, and can "...explore unusual or unanticipated responses" (Merriam, 2009, p. 15). The convenience approach will be used to select interview participants. This strategy was chosen because of the timely availability of the contractors participating in shale resource development. This allows me to "...select a sample based on time, money, location, availability of site respondents..." to successfully meet the research project specifications (Merriam, 2009, p. 79).

In contrast to quantitative research where the researcher deductively tests hypotheses, qualitative researchers "...gather data to build concepts, hypotheses, or theories...from observations and intuitive understanding" obtained through their research (Merriam, 2009, p. 15). The inductive process adds depth of knowledge that may be presented in the "form of themes, categories, typologies, concepts, tentative hypotheses, and even theory about a particular aspect of practice" (Merriam, 2009, p. 16). The researcher seeks to present "...a holistic picture" of the study of a phenomenon in its natural setting (Imel et al., 2002, p. 1). The discussion of findings are presented in great detail, and provide "...full and rich descriptions of studies that enable them to be replicated" (Imel et al., 2002, p. 5). Participants journals, interviews, quotes, and researchers notes comprise the voice of the study.

Research Design

According to Merriam, when developing a study design, the researcher "should also consider whether the design is a comfortable match with your worldview, personality, and skills" (Merriam, 2009, p. 1). The qualitative researcher is innovative, exploratory, and inquisitive by nature. The researcher has a clear understanding of why they are conducting their research, they

demonstrate tolerance and flexibility, and are "...comfortable with the ebb and flow" of the qualitative research process (Merriam, 2009, p. 17). The researcher is skilled in conducting observations through a systematic process, and has strong interviewing techniques. According to Merriam, acquiring good interview data is "...dependent on your asking well-chosen open-ended questions that can be followed up with probes and requests for more detail" (Merriam, 2009, p. 17). Most importantly, the researcher should be comfortable with writing richly and descriptively, and must be able to "think inductively, moving from specific raw data to abstract categories and concepts" (Merriam, 2009, p. 17).

My personal inquisitive nature, and interest in individual insights and experiences is well suited to a basic interpretive approach using data and findings collected from individual participant interviews. Ultimately, "the quality of the research is paramount if the findings are to be credible and usable" (Imel et al., 2002, p. 2).

Population. Selection criteria to participate in the research require the participants to be independent contractors that own and operate a company participating in shale resource development. These requirements will allow me to assure proper permission is given by the business owner, and that the owner is given the opportunity to share their unique perspectives.

Instruments. Two instruments have been chosen to support the individual participant interviews: a demographic survey and an interview schedule.

The purpose of the demographic survey is to gather relevant demographic information to establish participant profiles and to meet the objectives of the research project. The survey may help to identify any potential trends among the participants related to the research project, or follow-on research questions to support this research project. The questions asked will reveal the participants age, level of education, the number of years the participant has owned and operated

a business participating in shale resource development, if they have faced what they consider to be an ethical dilemma in providing their service, and how they handled the ethical dilemma. Answers to these questions will be incorporated in my research findings. The Demographic Survey that will be sent to the participants is attached in Appendix A.

The purpose of the interview schedule is to elicit the information needed to support the purpose of the Shale Resource Development Ethics research project. This will be achieved by asking questions that are "...open-ended and yield descriptive data..." (Merriam, 2009, p. 99). Seven questions are proposed, and are prioritized to facilitate a natural and rich revelation of experiences and perceptions. The Interview Schedule that will be used in the individual participant interviews is attached in Appendix B.

Individual interview setting and data collection. Ten individual semi-structured interviews will be conducted to support the research project. This approach was chosen because it "allows the researcher to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic" (Merriam, 2009, p. 90). This approach is well suited for the purpose of this research project, and should elicit insights and perceptions that will build new themes and categories for additional research. Individual interview participation criteria will be comprised of: independent contractors that own and operate a company participating in shale resource development. Each participant will be called and invited to participate in the research project. The purpose of the research project will be explained to each interviewee, and if the participant agrees to participate, the Demographic Survey (Appendix A) and Informed Consent Form (Appendix C) will be distributed via email for completion and signature. In addition during this conversation the individual interview will be scheduled and conducted at a time and place

that is comfortable and secure for the participant. Only upon receipt of the signed Informed Consent Form and Demographic Survey will the interview be conducted.

Each interview will be recorded and transcribed; thoughts and reactions believed to be relevant to the project will be recorded in my field notes. These interviews are anticipated to last from 30 minutes to one hour. Through the individual interviews the goal is to facilitate "a process of co construction, where teller and listener create meaning collaboratively" (Lewis-Beck, Bryman, & Futing Liao, 2004, p. 707).

Confidentiality. To preserve the confidentiality and identity of the individual interview participants, a naming convention (Participant A, Participant B, etc.) in the form of a pseudonym will be used to define and protect their identity. The interview will take place at a time and location of their choice where the participant feels the most comfortable and secure. Each participant will be reassured that they are free to share only what they are comfortable sharing, and they may stop the interview at anytime. A copy of the fully executed Informed Consent Forms will be returned to the participants for their reference should they believe confidentiality has been breached. The Informed Consent Form for the individual interviews are provided in Appendix C. Data collected during the interviews comprised of the Demographic Surveys, audio recordings, transcriptions, and field notes will be held confidential as the researchers property and will be destroyed upon final submittal of the research findings. The final paper documenting the research findings will be held in my possession, and the Alaska Pacific University business office, located in Anchorage, Alaska.

Researcher Statement

When I reflect on the evolution of energy a movie strip runs through my mind. I think of the Bible and the book of Genesis in contrast to the Big Bang scientific theory; just how did the

Earth and mankind come to be? I often shake my head in uncertainty and drift to visions of erupting volcanoes, marveling at the power of the energy at Earth's core. I visualize a formidable and desolate place where cavemen are sparking their first flame, feeling shock and awe, powerful and enlightened.

Then I fast forward to the early 1970's as a child living in Gakona, Alaska. Our family, like many others throughout the state, benefited from the construction, operation and maintenance of the 800 mile Trans Alaska Pipeline. Skipping ahead to 2007, my family and I are living in central Arkansas, location of a shale gas boom known as the Fayetteville Shale. Nearly 30 years of my personal economic support and well-being can be attributed to the petroleum community, and most likely, this will be the case until I retire.

I do feel thankful and blessed to be part of these opportunities, I have been able to provide well for my family, and I have had opportunities to help influence my peers to leave a positive legacy. It is this sincere desire to leave a positive legacy that drives my intent to conduct this research project. I care very much about the safety and well-being of people and earth's future. This means we need a healthy environment and economy. Shale resource development can support a strong economic future, and natural gas is considered a clean "bridge fuel" until other sources of energy are viable in terms of availability and economics. Until that viability is our reality I believe we need to stop wasting time, energy, and emotions on divisive interests and focus on our legacy. We can make choices today that will set the example for future generations on how to build a strong economy, support our families and protect our environment. Without clean reliable energy our economy will suffer; so today, I believe now is the time that we must set the example for building and gifting a positive legacy for mankind and earth's future. This is why I have chosen to research the insights and perceptions of contractors that participate in shale

resource development activities. Based on my research and literature reviews, data collected from this sample population may unveil themes and categories that will identify opportunities that can be integrated into future shale resource development activities. It is my personal hope that this research project can promote communication and presentation of shale resource development in an ethical manner to the public.

Data Analysis Process

The process of data analysis is complex and "involves moving back and forth between concrete bits of data and abstract concepts, between inductive and deductive reasoning, between description and interpretation" (Merriam, 2009, p. 176). The analysis of the project research data will be an inductive process to add depth of knowledge that may be presented in the "form of themes, categories, typologies, concepts, tentative hypotheses, and even theory about a particular aspect of practice" (Merriam, 2009, p. 16). This process is well suited for this research project because it allows me to "build toward theory from observations and intuitive understandings gleaned from being in the field" (Merriam, 2009, p. 15) where I will be collecting information from participants during their individual interviews.

Each interview will be recorded, and will be transcribed, and is supported with field notes. Data from the individual interviews will be used to "strengthen the sense of the experience rather than rationalise it" (Bond, 2002, p. 138). Data collected from the individual interviews, demographic surveys and field notes will be coded and sorted to identify categories of data most relevant to this project.

Segment identification. The first step of data analysis will be to identify segments of data that "reveal information relevant to the study and stimulate the reader to think beyond the particular bit of information" (Merriam, 2009, p. 177). The interview transcripts will be read

several times to identify segments of data that may be potentially relevant to the research project will be noted in the margins of the transcript. "This process of making notations next to bits of data that strike you as potentially relevant for answering your research questions is also called *coding*" (Merriam, 2009, p. 178). Additionally, field notes comprised of personal reactions to the individual interviews will be coded to reveal any other relevant segments of data. "Assigning codes to pieces of data is the way you begin to construct categories" (Merriam, 2009, p. 179).

Category creation. The purpose of segment identification is to develop emerging categories and themes. Upon review of the transcript and field notes from the individual interviews, several categories will be identified, coded, and organized in a list. "This master list constitutes a primitive outline, or classification system reflecting the recurring regularities or patterns in your study" (Merriam, 2009, p. 180). The list will later be reviewed, and reoccurring and overlapping categories and themes will be identified. As the categories are narrowed down, Merriam notes that categories should, "*be responsive to the research, be exhaustive, be mutually exclusive, be sensitizing and be conceptually congruent*" (Merriam, 2009, p. 185-186). With these criteria in mind, it is possible that some segments of data will be sorted further, and subcategorized under primary categories of data, and as Thomas notes, "one segment of text may be coded into more than one category" (Thomas, 2003, p. 5). "When categories and their properties are reduced, refined and then linked together, the analysis is moving toward the development of a mode or theory to explain the data's meaning" (Merriam, 2009, p. 192). This *meaning* represents the findings of the research project, and it is "good practice to include suitable quotes in the text to illustrate the meanings of the categories" (Thomas, 2003, p. 8).

Validity and Reliability

"To have any effect on either the practice or the theory of a field, research studies must be rigorously conducted; they need to present insights and conclusions that ring true to readers, practitioners and other researchers" (Merriam, 2009, p. 210).

To promote validity and reliability in this research project, transcripts of individual participant interviews, and associated field notes and interpretations will be returned to each participant for review. According to Merriam, the member check serves to validate the plausibility of the data (Merriam, 2009, p. 229).

As Merriam notes, the strategy for transferability "refers to a description of the setting and participants of the study, as well as a detailed description of the findings with adequate evidence presented in the form of quotes from participant interviews, field notes, and documents" (Merriam, 2009, p. 227). For this research project only independent owner-operated contractors participating in shale resource development activities were selected to participate in the individual interviews, and this sampling approach can be replicated. Each participant will complete a demographic survey and participate in a semi-structured interview. Participant data from the demographic survey, individual interview, and field notes will be gathered, analyzed and presented at the conclusion of the research.

As noted in my Researcher Statement I feel fortunate and thankful to be part of the petroleum community. I also care very much about the well being of this earth, and my personal hope is that this research serves to set the example for building and gifting a positive legacy for mankind's future.

Findings

Participant Demographic Survey

The purpose of this research was to seek insight from contractors participating in shale resource development activities to discover how the petroleum community can present itself to the public in an ethical manner while conducting shale resource development activities. To some degree this research project should be considered a micro-study of a region affected by shale resource development activities. Contractors providing services in the Fayetteville Shale Play were chosen to participate in this research project because of their proximity to my home in central Arkansas. A total of 15 participants were contacted and invited to participate in this research project; 11 of which consented to participate by completing a Demographic Survey (Appendix A), answering the questions outlined in the Semi-structured Interview Schedule (Appendix B), and by completing the Letter of Consent to Participate (Appendix C). To accommodate the schedules of the participants, the interviews were conducted over a period of five weeks. Resources used to conduct this research project were comprised of 30 hours of labor that was comprised of 21 hours of participant interviews and nine hours of driving 540 miles of interstate and state highways and county roads. Twenty-seven of those hours were made up of vacation time to accommodate the work/life schedules of the participants. In addition, two tanks of gas were consumed at \$58.00 per tank. This approach allowed me to "...select a sample based on time, money, location, availability of site respondents..." and to successfully meet the research project specifications (Merriam, 2009, p. 79). Responses to the demographic survey are summarized in Table 3.

Table 3

Demographic Survey Results

Participant Identification	Age	Gender	Education	Years in Business Supporting Industry	Faced Ethical Dilemma (Y/N)	Ethical Dilemma Description
A	48	M	High School Grad / Some College	2 Yr 6 Mo	No	NR
B	49	M	High School Grad / Some College	5 Yr 8 Mo	NR	NR
C	55	M	High School Grad / Some College	6 Yr	No	NR
D	38	M	High School Grad	5 Yr	No	NR
E	37	M	High School Grad / Some College	3 Yr	No	NR
F	54	M	High School Grad / Some College	8 Yr	No	NR
G	41	M	High School Grad	4 Yr	Yes	Turned over to Operator's Auditing Department. They handled it.
H	32	F	High School Grad / Bachelors Degree	5 Yr	Yes	I have seen and heard things.
I	56	M	High School Grad / Some College	7 Yr	No	NR
J	NR	F	High School Grad	2 Yr	NR	NR
K	NR	F	High School Grad / Associates Degree	2 Yr	NR	NR

NR = No Response

Statistical Review of Demographic Survey Results

The demographic profile of the research group is made up of 11 participants, of which 72.73% (8:11) are men and 27.37% (3:11) are women. With regard to the age of the participants, two of the 11 participants did not provide their age, and the age of the remaining nine participants ranged from 32 years of age to 56 years of age, with the mean age being 45.56 years. The number of years of business experience for the 11 participants participating in shale resource development activities ranged from two years to eight years, with the mean being 4.58 years.

One hundred percent of the research group participants identified themselves as high school graduates; 63.64% (7:11) participants indicated completing some college; 9.09% (1:11) participants have been awarded an Associate's Degree, and 9.09% (1:11) participants have been awarded a Bachelor's Degree. It is interesting to note that 100% of the advanced education degrees were obtained by women, and that approximately 75% (6:8) of the men indicated having completed some college.

The research group participants were asked if they have faced what they considered to be an ethical dilemma while participating in shale resource development activities; 45.45% (5:11) of the participants indicated that they have not faced an ethical dilemma, 18.18% (2:11) of the participants indicated that they have faced an ethical dilemma, and 36.36% (4:11) of the participants did not provide a response. It is interesting to note that of the 18.18% (2:11) of the participants that indicated that they have faced an ethical dilemma, 50% (1:2) were men and 50% (1:2) were women. When asked to describe in their own words how they handled the ethical dilemma each provided brief responses on the demographic survey. During the individual participant interviews, each of these two participants described in more detail the ethical

dilemma that they have faced. Each expressed a need for confidentiality, and asked that the details of the ethical dilemma were not referred to in the findings of this paper.

Participant Profiles

Each participant is identified by a pseudonym (letter), and the following profiles are based upon the participants responses to the demographic survey and individual interview.

Participant A identified himself as 48 years of age, a high school graduate with some college education in drafting, surveying and welding. He has six years experience managing a business participating in shale resource development activities, and for the past two and one half years he has owned his own business providing pipeline construction services. He indicated that he has not faced an ethical dilemma over the past two and one half years. The interview was conducted at his place of business. During our interview he expressed that he was proud of his business. He was grateful for the opportunity to provide well for his family and to be perceived as adding value to local community by providing good paying jobs.

Participant B identified himself as 49 years of age, a high school graduate with some college and vocational education. He has been in business for several years, and for the past five years and eight months his business has provided construction, erosion control and dirt work services to support shale resource development activities. He did not provide a response when asked if he had faced an ethical dilemma while providing his services to the petroleum community. The interview was conducted at his place of business. During our interview he expressed his frustration with Federal, State and County politics, and frustration with the operators, some of their representatives and how they manage work. He shared that the business has been difficult, but that it has also been good for him and his family.

Participant C identified himself as 55 years of age, a high school graduate with some college. He has owned and operated his own business for several years, and moved to central Arkansas to provide machine shop services in support of shale resource development activities over the past six year. He indicated that he has not faced an ethical dilemma while providing his services to the petroleum community. The interview was conducted at his place of business. During our interview he expressed frustration, and shared that through personal observations he perceives that the operators allow work to be bought by the contractors.

Participant D identified himself as 38 years of age, and a high school graduate. For the past five years he has owned and operated a service company that provides casing cleaning and other services to the operators. He indicated that he has not faced an ethical dilemma while providing his services to the petroleum community. The interview was conducted at a restaurant of his choosing. He expressed his appreciation and gratitude for the opportunities he has been given and that he doesn't take anything for granted.

Participant E identified himself as 37 years of age, a high school graduate with some college. He has owned and operated his own business providing oilfield construction services for well pads and water impoundments for the past three years in support of shale resource development activities. He indicated that he has not faced an ethical dilemma while providing his services to the petroleum community. The interview was conducted at his place of business. For he and his family the work has been a blessing, and he would have never thought about running his own business until this opportunity came along.

Participant F identified himself as 54 years of age, a high school graduate with some college. He has owned and operated his own business since 1985, and for the past eight years has provided rock crushing, hauling and construction services in support of shale resource

development activities. He indicated that he has not faced an ethical dilemma while providing his services to the petroleum community. The interview was conducted at his place of business. For he and his family the work has been a blessing, and he perceives that the community looks upon the petroleum community and his company favorably.

Participant G identified himself as 41 years of age, and a high school graduate. For the past four years he has owned and operated a service company that trucks oilfield waste from the rig locations to disposal facilities. He indicated that he had faced an ethical dilemma while providing his services to the petroleum community, and that the operator's audit department handled the dilemma. The interview was conducted over the phone to alleviate travel constraints for us both. He has worked hard for several years to get to where he is, and he wants to be respected, and for business to be conducted in a professional manner. Based on his experiences throughout different shale plays, safe and responsible trucking and truck operation is a priority of the communities affected by shale resource development activities, and a growing priority of the operators.

Participant H identified herself as 32 years of age, a high school graduate with an advanced education in the form of a Bachelor's Degree in Business Administration. For the past five years she has owned and operated a poly pipeline construction services company. She indicated that she has faced various types of ethical dilemmas while providing her services to the petroleum community. The interview was conducted at a restaurant of her choosing. She has worked very hard for several years to grow her business and make a home for her family. She believes shale resource development activities have been a blessing to her and her family, and have had a positive domino effect on the community.

Participant I identified himself as 56 years of age, a high school graduate with some college. He has owned and operated his own business since 1991, and for the past seven years has provided construction, trucking and other oilfield related services in support of shale resource development activities. He indicated that he has not faced an ethical dilemma while providing his services to the petroleum community. The interview was conducted at his place of business. For him this work has been great, it has kept him off the road and out of hotels, and from a family standpoint he thinks this is really good for him and his employees.

Participant J identified herself as a high school graduate. She is a co-owner of a construction services business. During the interview she indicated that she had not faced an ethical dilemma while providing her services to the petroleum community. The interview was conducted at her place of business. She believes this work has been a blessing to her and her family, the people that work for her and the community. She believes the operators need to educate people more.

Participant K identified herself as a high school graduate, with an advanced education in the form of an Associate's Degree. She has partial ownership of a construction services business. During the interview she indicated that she had not faced an ethical dilemma while providing her services to the petroleum community. The interview was conducted at her place of business. She believes this work has been good for community and that people make a lot of assumptions about the contractors and operators.

Themes

The majority of the participants were not prepared, or comfortable with an audio recording of the interview, therefore extensive field notes were taken during each interview. These field notes were then transcribed while the experience was fresh, in order to maintain

integrity of the information that was shared, and in preparation for future review and coding. A positive effect of this process is that each of the individual interviews lasted on average a little more than 2 hours and an extensive amount of valuable insight was shared by the participants.

While coding the field notes from the participant interviews several themes emerged from the data. The coding process is labor intensive and requires a substantial amount of time to "...reach a sense of saturation, that is, when nothing new is coming forth, you will be in a deductive mode" (Merriam, 2009, p. 183). Of the emerging categories, ten were further evaluated, sorted and defined, and are summarized in Table 4.

Table 4

<i>Theme Summary</i>	
Theme	Description
Improved Economic Conditions	Shale resource development activities have improved personal and community economic conditions, adding value to the Nation.
Inconvenience and Envy	Shale resource development activities have inconvenienced the public through increased traffic, noise, pollution, property damages, and are perceived to have modified local land use activities. Envy of landowner lease and mineral rights results in attempts to exploit the petroleum community for personal gain.
Courtesy and Communication	Operators and contractors need to demonstrate courtesy, and put more effort into communicating with landowners and the communities affected by shale resource development activities.
Room for Improvement of Business Practices	Contractors hold the perception that business is being bought from the operators, and that some contractors objectify women to enhance sales and relationships with operators. Other observations have left contractors with the perception that some operator representatives are arrogant and untrustworthy.
Governmental Concerns	Regulatory oversight has increased making business administration and management challenging. Concerns that tax revenue may be misappropriated and perception of unfair fines.
Elements of Insecurity	Contractors are skeptical that operators follow up on all hotline complaints and wonder if they really want to know the truth and fear retaliation. Operators fear loss of work if they do not comply with operators requests of sponsorships and contributions of various nature.
Coffee Shop Talk	Coffee shop talk is a way of life, and the coffee shop is a place for the community to share experiences that affect perceptions of shale resource development activities.
Media Perceptions	Perception that media is negative and one-sided; and belief that perceptions are formed through lived experiences. There is a strong desire for media to report on the good resulting from shale resource development activities.
Suggestions for Improving Perceptions	Contractors suggestions to improve perceptions about the petroleum community through ongoing communication.
Ethics Matter	Contractors thoughts and feelings about an ethical approach to shale resource development.

Improved economic conditions. Shale resource development activities have improved personal and community economic conditions, adding value to the Nation.

This theme emerged after asking the 11 participants how they thought or felt their business activities were perceived by their community. Participant A's response to this question supports this finding.

I believe our community sees us as something that is of value to the community. One day I was at Subway and a fellow customer said 'oh you're one of those guys—that group that pays really well in town.' He didn't know who I was and that made me feel really good and proud of my business.

Before I started, this was an educational thing I didn't really know what it meant. I didn't understand what it took to get the resource to sales. It takes a lot of training and education, and I am proud to be a part of it. I don't want us to depend on foreign oil, we need more energy independence. Coming from working with nuclear and coal—to natural gas that is being a big player with cross country pipelines I know we are making an impact on supporting our country.

Natural gas has fired up small business. Before the Fayetteville Shale Play old farmers didn't have a pot to pee in and now they have new John Deer tractors. Before the Fayetteville Shale Play there was an economic slowdown and some of the farmers would go out of business. My Grandpa told me that you gotta know how to ride the peaks and valleys and understand the big picture.

This sentiment was shared by several of the participants; Participant E shared:

For my family this has been the biggest blessing financially. I would have never dreamed of having my own company. I lived here about 6-7 years before the gas companies showed up. Because of the gas companies this area in Arkansas the wages and benefits are up to what the rest of the country had. This industry brought the common man work and the pay and benefits that they should have—this has really helped the blue-collar guy.

Participant H echoed this insight, and shared:

This has been a blessing to me and my family. This industry has provided work, and it is paying the bills for me and my family and all the guys that work for me. This was new to me and it is good for the economy. It has had a domino effect, and affected restaurants, hotels and the community in a positive way.

Participant F explains how work in his community was sparse, and how his business grew as a result of shale resource development activities.

I started my business back in 1985 with one dozer I ran myself, and by 2005 I had 10 employees and knew all the other contractors in the area. Then in 2005 I noticed more new contractors and more new equipment in the area. I approached a gas company and got a MSA (master service agreement) and went from 10 employees to about 100. Most of the guys are from surrounding areas. I have a favorable perception of the gas companies, and right now I have about 75 employees. Before the gas companies I was digging ponds for the farmers, and work was so sporadic—took it a day at a time. I used to haul horse trailers to Denver, and we struggled to make ends meet.

For the most part I believe our business is looked at favorably, we hire locals and they have jobs at home and don't have to travel. People have more money, and businesses have more jobs and revenue and this helps people. The schools are better off than they were before the industry because they have more money to spend. My community has grown, we have a stoplight, a Sonic and a Subway, and these wouldn't be here if it wasn't for the gas companies. The farmers are better off and there is more money for people who have lived here and struggled.

Participant I shared that prior to shale resource development activities, life on the road was his reality and the only way to make a living.

This has been great it has kept me out of motels. I live 10-12 years on the road and was hardly home throughout the week. Some guys have been with me for 15 years. They like staying home; this is really good from the family standpoint. Only have to drive a few miles to and from work. I don't like motels anymore.

This insight mirrors the feelings shared by Participant F as he was being hugged by his Grandson:

I get to stay home now—when my kids were growing up I had to go to different communities to work. The last 8 years I have stayed home. I get an opportunity to see my Grandson every day and that is a big deal. We have lunch together every day as a family to visit.

Another interesting observation shared by Participant C is how shale resource development activities have created new habitats and job opportunities.

From the outside looking in the industry does a good job of not destroying the environment and keeping the pads (well and compression) neat and clean. What people don't realize is that the process of destroying one habitat creates another. For the

fishermen they (the Operators) have created so many wonderful places—ponds and lakes. The Fayetteville Shale Play is good. The standard of living has been elevated for nearly everyone and certainly for anyone who would want to partake. If you want a job you can get one.

Participant B shared "I provide a tax base for the Counties and the State. The business has been good to me and my family but it is hard." This expression of difficulty and thankfulness was shared by Participant G who explained, "I've learned from ground zero to where I am today, and it has taken 10 years to get there. I feel thankful and want to do a good job and keep the customer happy."

Participant D shared personal experiences that contrasted his lifestyle prior to his involvement in shale resource development activities.

My personal experiences have been nothing but great. Until I stepped foot on a rig I never thought anything about the industry—I love it. Before the industry I worked in a dental lab and cut trees. My roommate told me to come and work, he thought I'd like the roughneck atmosphere. So I got in my truck with my hardhat and my first job was at 2:00AM on a rig as a roughneck. I love this type of work—it isn't a pretty boy job—in a redneck kind of way. I didn't want to go home; it felt like a traveling carnival. You know, the carnival comes to town and makes a lot of noise (loud motors and generators) and light. Then when they get done they pack up and roll out to the next job.

I went from eating ramen noodles to making a good living that I was proud of. I almost went into a depression, I was 33 years old, nothing was working and I couldn't get financially ahead for me and my girlfriend. The Christmas before I started my business we had \$20 of Christmas presents from the local Dollar Tree to give our two children and I felt like a failure—our kids were 5 and 3. Makes you very humble to look back on that now and we don't take anything for granted. Living in this community is a great place to live and raise a family but a terrible place to make money. I've not had an easy life; I've chopped cotton and pitched watermelons and cantaloupe. After half a day of pitchin', my t-shirt was brown from the blood, dirt and thorns. I'll make my kids work, but I'm not going to make them pitch watermelons.

For me it is cut and dried. There are more jobs, and these jobs pay better than the average job. There is more bread on the table. The operators have been more than fair and they contribute to the community and help grow and support a community through their donations and sponsorships.

The voice and insight from the experiences of these participants reveals how the lives of individuals, families, and communities have been positively affected by improved economic conditions resulting from shale resource development activities. "This has been a blessing to this area..." said Participant K, "...it has brought more money into the community and helps families be better off. People here see how it really works and it is good for the community." Participant J added by saying "People assume everyone makes a lot of money, but really, everyone is just doing a good job and taking advantage of the opportunity."

Disruption, inconvenience and envy. Shale resource development activities have inconvenienced the public through increased traffic, noise, pollution, property damages, and are perceived to have modified local land use activities. Envy of landowner lease and mineral rights results in attempts to exploit the petroleum community for personal gain.

This contrasting theme emerged from asking the participants the same question that revealed the improvement of economic conditions and value to the community. Participant I's responses to this question supports this finding.

We are going on somebody's property and some people see nothing but surface damages because they don't have the mineral rights. But we are happy to see the landowners and try to accommodate them as much as possible. We are only allowed to do so much and sometimes we have to draw the line. The landowners want more because they don't have the mineral rights, so they try to go through us to get more, but we can't do that and we have to play by the rules.

Trucking has impacted the community; we have everyone coming by wantin' a new windshield. People everywhere drive too fast and we get blamed for things we didn't do because we are seen as part of the trucking and the industry. People are glad to get their royalty checks but the trucking and the amount of road damage due to heavy loads gives a negative perception. Sometimes when you meet someone on a small road when you have a wide load sign on your truck you know they're inconvenienced by it.

Participant B simply stated "Now days people with no stake complain about the water trucks - since there is no check in it for them they complain and make us out to be evil people. Some people just won't listen."

Participant D went on to explain the perception that land use restrictions are being imposed as a result of the resource development activities.

If they (land or mineral rights owner) get a check they love it, if they don't get a check they could care less because they see the traffic, noise, and that we pollute more than we help. For the locals they lost the enjoyment at local recreation areas. A lot of pads used to be dirt roads and you could 4-wheel now there are roads and no more 4-wheel trails, it used to be the locals could unload and ride all day and night long. Now days Game and Fish will write you a ticket if they see you driving around. In the community the rumor is that this happened because the big companies came in and shut it down. They (the local community) is asking if the drilling rigs have anything to do with people shutting down the local recreation area because it didn't happen until they (drilling rig operators) came along.

Participant E shared his perception that "...a lot of landowners wish the work wasn't being done on their property, but do it to get the royalties. A lot of them don't want the well on their property but it is a necessary evil."

Participant G shared and compared his observations from trucking waste fluids to disposal facilities in support of shale resource development activities occurring in Arkansas and Texas.

Over four years the Fayetteville Shale Play community has adapted, but trucking is perceived negatively by some communities outside of Arkansas. In Texas a lot of problems with waste being spilled on highways and the demand for trucks is outweighing what the operator needs. Communities want spills eliminated, and now the operators need trucks from contractors who won't spill waste.

When the participants were asked what types of shale resource development activities influence perceptions about the petroleum community several of the participants briefly responded that the genesis of negative perceptions was caused by traffic, spills and concerns about fracking.

Participant A echoed earlier perceptions that shale resource development activities disrupted and inconvenienced the community.

A bad perception is caused by the increase in the volume of traffic—a necessary evil. Farmers without land or mineral rights see traffic and dust. One of the operators has a "StreetSmart" program and it teaches us that we're all ambassadors of the roadway. The community doesn't differentiate contractors from operators—they're all oil and gas.

This perception of disruption to the community was shared by Participant F who stated:

About 20% probably don't like what I do because the trucks take up too much space on the roads. For the most part 80% like what we do and we help the community schools and churches. Some people don't like the dust or blasting from the quarries, and about 1% of the people live near the quarries.

Participant D described events that have influenced a less favorable perception of shale resource development activities in his community; in his words, leaving people to think "...that the oilfield can weasel their way out of things." He went on to explain:

I believe the oilfield is more frowned upon now because they (the public) have a better idea of what is going in the ground. I know a Congressman that has a house on a mountain with a freshwater well. When an operator drilled on the other side of the mountain he lost his water well, and now he has to pump water up the mountain to his house. He didn't have this problem until the gas well affected his water well. Other people on the mountain have had troubles with their water wells as well.

Participant E shared that the drilling process can overwhelm the senses.

The entire drilling process is a very visual process and the noise of the drilling rig is a concern of the community. You also have these big rigs, water trucks and other haul trucks with big loads. The industry seems to have grown leaps and bounds with safety procedures. The roads around here were not built for the amount of traffic in the rural areas.

Participant E's perception was echoed earlier by Participant D who acknowledged the noise by saying "...it felt like a traveling carnival. You know, the carnival comes to town and makes a lot of noise (loud motors and generators) and light. Then when they are done they pack up and roll out to the next job."

Courtesy and communication. Operators and contractors need to demonstrate courtesy, and put more effort into communicating with landowners and the local communities affected by shale resource development activities.

This theme emerged after asking the participants what types of shale resource development activities influence perceptions about the petroleum community, and what were those perceptions about the activities.

Hydraulic fracturing was identified as an activity that caused concern, and Participant E shared “From national publicity fracking [sic] is a large concern of the community—they don’t understand the concept.” Participant B expressed a level of frustration with regard to the topic of the chemicals used in hydraulic fracturing fluids.

People are apprehensive so there needs to be more communication with the landowners. You know those chemicals in the frac [sic] water are nothing more than muriatic acid that you put in your swimming pool and lime that you put in your fields. How far do you go to educate the people? I can show you tap water that can light up and there isn’t a gas well within hundreds of miles. You can float down the Red River and see methane bubbles float up.

Along the theme of communication Participant A confided that “Based on my own experiences it is surprising how landowners are left out of communication regarding the start-up and completion of a project. The operators are not communicating enough.” He felt strongly that commitment to landowner communication was imperative to the success of his business.

I have taken it upon myself to call the landowner and explain the project plan. Some contractors show up and start work, but the landowners feel like they are left in the dark. You have to keep the lifeline going, it is critical. Knowing gives them (the landowners) a peace of mind that they are not forgotten. Landowners call me and I keep them in the loop.

The operators calculation of landowner royalty checks is complicated, oftentimes leaving landowners confused and frustrated. Participant I shared how the operators lack of communication with landowners has affected his relationships.

All the Operators have a different format for their royalty checks. One operator changed the format of their royalty check and coded it with an explanation for each block of information on the check and that makes it easier to read and understand. Most of the time you call the phone number on the check and get a recording and the operator may or may not call back. Every Operator has a different way of calculating their royalties and it is hard to understand. In some ways it is similar to an insurance company, you feel like they have a license to steal. This is a real problem, I hear it from people all the time, and get calls from neighbors to help them, but I can't talk business with them. They think I want to be all hush-hush or that I'm a greedy villain, but I have to protect my reputation. People are happy when they get their checks, but when it dries up they will be the same people they were originally.

Respect for the landowners property, safety, common courtesy and communication were very important to Participant H who asked "For the landowners are we all being respectful, being safe and not having a blow-out?" She went on to explain:

As a landowner with pipelines on our property everything has been fine. If there is a problem I call it in. If we have an area that needed grass we let them know and the operator took care of it. As a contractor working with landowners, if we see trash we pick it up and leave a good impression—it is up to us to make the impression.

Participant A echoed this value by stating:

All contractors need to police the area and keep it clean. While they are on a landowners property they need to take ownership and go above and beyond and eliminate problems and trash, that way nobody will think it is our (petroleum community) trash. We all need to have an ownership in the housekeeping in the area.

Room for improvement of business practices. Contractors hold the perception that business is being bought from the operators, and that some contractors objectify women to enhance sales and relationships with operators. Other observations have left contractors with the perception that some operator representatives are arrogant and untrustworthy.

This theme emerged after asking the participants to describe their personal experiences participating in shale resource development, and how those experiences have affected their perceptions about the petroleum community. Some shared insight indicating that there was considerable room for improvement of business practices.

Participant B explained “I spend a lot of time and money bidding on small jobs and I think the Operators could manage their business more efficiently.” He went on to share that landowners and contractors alike have the perception that “Some of the operators have rogue agents—they get a fat check, company truck and all the beer they can drink.”

Participant I echoed this experience and provided some suggestions to improve business practices:

I think the operators need to standardize their work orders, and work with the contractors to get it right. Everyone wants different information displayed differently, and things handled differently, we spend a lot of time doing paperwork differently for different services and operators. Make sure that everyone that is qualified to work is treated the same. There is too much risk associated with the work, and operators can do a better job monitoring how information is communicated and shared.

The perception that business could be bought was held by more than one participant, and Participant C confided a high level of angst and frustration.

Based on my own experiences it is my perception that business is being bought. The operators don't always use the locals or practice what they preach. It is frustrating that you can find a way to save money; tell your customer, and you get patted on the butt and told to run along. I don't buy business—I'm just looking for a fair opportunity. I've heard story after story of bad business.

Participant I expressed a similar type of frustration:

You gotta use judgment wisely—if you don't it will come back and bite you on the butt. The operators have gone a step too far in the buddy system. This is a crooked business to get into as a contractor—as time goes along you can step out of bounds if you don't be careful. There are management issues, and the operators need to get people to help the contractors and follow up and resolve the problems—close the loop.

Participant G echoed similar negative experiences while providing his services in the Fayetteville Shale Play, and went on to share the observation of the objectification of women by the petroleum community.

It seems that who you knew and took out to lunch determined if you got the work or the job. There needs to be more level decision making, it needs to be more fair. The operators highest management level should be making the decision, the field level has no say in Texas, the corporate level makes the decisions, and authority needs to be taken out of the

well site supervisor. My perception in the beginning of the Fayetteville Shale Play was there was a lot of decision making made based on if one company's sales woman was prettier than the other companies. People need to do things right. The contractor with the sales woman with the biggest set—can steal my work in the blink of an eye. I want operators to bring us on because they need us and they respect us.

He later went on to say "...this operator has too many trucks on the road, and some of the employees seem to have a sense of entitlement and are abusive. Things like this have affected community perceptions of the operator and not in a positive way."

He contrasted these experiences by comparing them to his personal experiences with what he perceived to be an operator upholding good business practices.

Another operator that I work for makes it clear that the contractor cannot build relationships by buying relationships—you can't buy them anything. We love working for this operator, they don't extort things from you so you can get their business—there are no gifts, not even a business card—this is a top notch operator.

After asking the participants if they had any insights or experiences related to shale resource development activities that we had not discussed that they would like to share,

Participant H commented:

So do you call sleeping with an inspector unethical? I've heard that some of the contractors allow their people do that to secure work and jobs. I've also heard that some contractors bring in women to service the men at some of the tournament fundraising events—I don't know if it is true because I don't go to those. So is this where the 'Oilfield Trash' term comes from?

Governmental concerns. Governmental regulatory oversight has increased and makes business administration and management challenging. Concern that tax revenues may be misappropriated, and a perception of unfair fines.

This theme first emerged when the participants were asked to describe their personal experiences participating in shale resource development, and how those experiences have affected their perceptions about the petroleum community. Participant I described his experiences related to increased regulatory oversight:

Prior to this in our business we had to deal with clean water and we already had to follow the federal and state regulations. It does seem to be a little more strict now with so much going on in a confined area. There are more people with the ADEQ (Arkansas Department of Environmental Quality) and insurance requirements are tougher, and we have more OSHA (Occupational Safety and Health Administration) inspections, and the IRS (Internal Revenue Service) have people checking fuel in trucks. So the work is harder to manage nowadays and cell phones are a great thing. I don't have to be around here all the time to get it all done. Me and a fellow were talking one day and he said the biggest innovation in the last few years is a 30-pak. Used to just them in 24s!

Participant B shared insight similar to the experiences of Participant I.

The quality of the work that gets done is overkill, lots of times the erosion control costs more than the construction of the drilling pad. I think the Government (Federal and State) is holding people's feet to the fire. I see a lot of overkill, and the landowner wants and wants and wants. What they don't seem to realize is that everything they want ends up coming out of their royalty check.

Participant I later went on to explain his frustration and perception that tax revenue dollars were being misappropriated undermining the principle of the risk and reward system.

I didn't think it (business related to the resource development in the Fayetteville Shale Play) would be this big. This has kept the community going; it has been good for schools and has provided tax revenue. But, if you don't live in these counties (those being developed in the Fayetteville Shale Play) you don't get to see the benefit and they (other communities) want a piece of the pie. In some ways they (other communities) are affected but they don't get their roads fixed. From a millage standpoint we don't receive as much as Pulaski County (location of Arkansas' state capital, Little Rock). It (tax revenue) is being generated here and it should be utilized here, these counties should receive a larger percentage. You work every day in a dangerous environment and you should get more. Some of these little schools finally get to have a football team and if the state can give to these communities they should. So many people want something but don't do any work to get it.

This observation and frustration was echoed by Participant B who expressed it in these words.

I still have bent axels on trucks due to narrow and poorly maintained roads. Now a lot has been done to improve the roads since the beginning. The State is wanting a lot of money up from through the severance tax, and you have to ask yourself why would you want to run them (the operators) out of town? They (the politicians) see an opportunity to want something for nothing. Now a lot of the county schools in the Fayetteville Shale Play are turning money back and the politicians are sending it to the Delta. My family has been here since the 1820's and I've seen a lot of changes. These days the sales tax and property

tax on my equipment is really high, and weight restrictions on the roads are set to where you have to pay more to run your trucks with special permits—it wasn't that way before the Fayetteville Shale Play and the loads were as heavy or heavier then.

He then went on to share a story where he is questioning the timing and logic related to regulatory fines.

Now here's a real life story for you about the Red River watershed. A farmer was fined \$750K because his cows have been going through the creek, his cows have been doing it for years, and he's getting this fine because of the one-eyed salamander and he can't run his cows through this creek. How will the fine bring it back—the salamander? There just seems to be a lack of common sense on a whole lot of stuff.

Participant C simply stated "If petroleum was gone people have no idea how their lives would change overnight."

Elements of insecurity. Contractors have reduced confidence in the operators commitment to review hotline complaints, resulting in fear of operator retaliation, retribution, and skepticism that the operators really want to know the truth.

The theme of fear and skepticism emerged after asking the participants how the petroleum community could present itself to the public in an ethical manner while conducting shale resource activities. The theme originated from the participants perception of operators being nonresponsive to hotline complaints and feeling pressured to sponsor operator events and other activities. Participant I explained how the pressure exists along with the skepticism, and fear of losing work.

These days I'm afraid to see friends because of what people "say." I feel like I have a bulls eye on my back. I used to be friends with a lot of people, but after this gas field came along, I had to back away because people form false perceptions. Sort of like my Mama. She was my 4th grade teacher and she was harder on me than anyone in the class. In my company we treat people the way we expect to be treated. A lot of the operators have a hotline to report ethical problems. These are a joke, people report things and they don't get followed up on, the operators lose credibility when they don't follow up on these reports. Now people are just afraid to say anything to anybody, and you either just get mad and quit, get corrupt and join, or look the other way and keep on going. When the

operators get these reports it seems they are asking themselves can you prove it or do you want to prove it?

Lots of times the operators ask you to sponsor all these things and I'm afraid not to do it because I feel obligated, I have a fear of losing the work. There are more politics in it than meets the eye and people don't like to talk about it. The perception is—be good to us and we'll be good to you.

This perception was echoed by Participant H who commented:

Sometimes we think we have the right people but we can't be there to hold the bottle in their mouth. I know the Operators have hotlines for ethical issues, but a lot of people won't call in or nark because they are afraid they will lose work. Our name means so much to us, to get to where we are we sacrificed we didn't screw anybody. I hear stuff, so I try to do what is right and answer to God. I worry about me and if I am doing right. If more people had Godly morals we wouldn't have to talk about this.

I had one operator ask me if I could help out with their Christmas party by donating money. I did not say no because I wanted to keep our work, but I couldn't believe it. I just wanted to keep the peace, so I donated some money, but I didn't think it was right. We were also asked to make donations to support United Way, so I made a donation directly to United Way. I don't want to feel like we are being watched or the amount was being watched.

Coffee shop talk. Coffee shop talk is a way of life, and the coffee shop is a place for the community to share experiences that affect perceptions of shale resource development activities.

In small towns and communities landowners and residents will meet up with their buddy or neighbor at their favorite restaurant or gas stop and partake in a little coffee shop talk. The topics vary, and as Participant B shares—people talk.

There are a lot of coffee shop rumors and the fact is some people are just against everything and can't stand prosperity. People talk about all the guys in the white trucks that don't seem to do anything. There is a perception that some operators have too many people hired and not getting anything done—too many Chiefs and not enough Indians.

The perception is that the coffee shop talk has picked up and the flavor of the month is land lease rates. When asked how the petroleum community could present itself to the public in an ethical manner while conducting their activities, Participant F shared insight that further supports this finding.

The coffee shop talk is worse, and they need to treat the landowners the same. If they treat everyone the same on the land leases, and everyone gets the same rate that would calm the coffee shop talk, and no one gets mad or feels like they have been taken advantage of because that undermines trust. Treating all the landowners the same helps trust.

When people first started leasing land in central Arkansas the leases were low and gradually increased to a point to where the disparity in lease rates caused hard feelings and distrust. Participant E shares his observations:

Out here when they first started leasing it leases were going about \$25 an acre then when others came in the leases started going up to about \$1,500 to \$2,000 an acre. What people need to understand is that the initial lease is OK money, but it is the royalties that really matter. I think all landowners should be paid the same lease rate per acre and the operators should stick with that, so everyone has the same rate, and the coffee shop talk is curbed. Because of the different lease rates there is a negative perception before the well is drilled, somebody already thinks they got screwed.

Media perceptions. Perception that media is negative and one-sided; and perceptions are formed through lived experiences. There is a strong desire for media to report on the good resulting from shale resource development activities.

This theme emerged after asking the participants how media (television, newspapers, movies and social media) about shale resource development activities have affected their perceptions with regard to the manner in which the petroleum community conducts shale resource development activities. The feeling that media is generally negative was shared by many participants; Participant G's insights substantiate this finding.

In my 10 years doing this only in the last six months have I seen a commercial saying what natural gas does for the community. Operators need to get the message out publicly. Town halls won't cut it. Look at jobs, look at the footprint, and have an exit strategy before you enter into the pit—people watch TV so use it. Some operators use TV to discuss the footprint and the job, the more messages the merrier.

You have to be strategic in what you do. One operator pushed their contractors to come off of their pricing, and then in a newsletter they have a story about how they gave 25 CNG vehicles away to their employees. That left a sour taste in the vendors mouth—it was a real hornet nest—the vendors were infuriated.

Media is designed to tell the bad, they don't tell the good. Media are messengers of bad news unless it is the 4-H club down the road.

Participant A shared:

In the local community there really isn't a lot of media, and what media there has been has slowed down, we could use more media. Need to spin off a good positive message through advertising to keep the public informed. I've heard about some movies and stuff about fracking [sic], earthquakes and injection wells, but I've never watched them.

Participant C tied the concept of media to education by sharing:

People who get the negative perception from media are the ones who get their education from the media. Media is not an educator, media is supposed to be a news provider. I have found some of the media amusing, disheartening and disgusting. Some of what is being shown is possible, but it isn't due to gas wells. Think about it, gas goes into pipelines so the operators can get the money.

So often people express that only the bad things get noticed instead of the good things and Participant D's perception lends credence to this expression.

I can't say that anything in the media has affected my perception. The way life is—is that you do all the good you want to, but you do a little bit of bad, and that is all that is seen. One bad job and that is all they (the public and media) want to talk about.

My business is good for the community, and I let everyone know that I'm doing what I can for the environment, do it cleaner and safer, yet efficient and cost effective. When you are out there doing it yourself, you put more thought into your work. This has been a blessing to me because I love it.

The independent formation of perceptions through lived experiences was clearly articulated by two of the participants. Participant F stated:

None of what I have seen has affected my perceptions. I form my opinions by what I have seen in the field, I go by the actual facts. I live it 12-14 hours a day, I'm in the middle of it and I form my own opinions. They (the media) need to tell it like it is. I'm glad they (operators) are here it has been good for us. I think the operators are doing a good job. They have explained more about what is going on, and doing a good job with the people. They also help communities when tornadoes have struck. My community sees the operators in a positive way.

Participant H stated:

I have seen some commercials that have tried to give a positive perception—but really it is about the chain effect. On Facebook you see good things and you can see crap. I'm hands-on and I know a lot of people see things different because they haven't been there. I'm a business owner and I know because I have been there. The media get everyone talkin', but I am personally involved so I know what to judge. The media can be one-side sometimes.

Good deeds and caring for the needs of community are a part of business for many of the participants, and Participant I went on to explain how public recognition was good for the petroleum community.

We sponsor football, basketball, baseball, karate, ballet, dance and even haul gravel for the local churches. Everyone comes to us wanting help. It trickles down and we try to help. All of the sponsorships that we do give us some recognition and appreciation in a public manner and shows we are professional and I think this helps improve the perception of the petroleum community. So where do you draw the line? I had to learn to say no every now and then. But the industry has given a trickle-down effect to the community. I believe in investing in the future of the children and I enjoy getting the cards of support and appreciation. I'm a big softy on the inside.

Participant J explained her perception and observations about movies and stated "Movies don't present the full picture, they present the negative side. That movie with Matt Damon (*Promised Land*) didn't sit well, and it could have made people more leery and on guard and aware."

Suggestions for improving perceptions. Contractors suggestions to improve perceptions about the petroleum community through ongoing communication.

This theme and the following theme related to ethics goes to the heart of the purpose of the research project. Each participant was asked how the petroleum community could present itself to the public in an ethical manner while conducting shale resource development activities and how these suggestions should be prioritized. Several suggestions and observations were shared to improve communication with landowners and the community affected by shale resource development activities, with communication being the highest priority.

Participants believe that communication with landowners and the community could be improved through various forms of publicity. Participant A explains:

Communication is the first priority, and safety. Communication is improving through operator published newsletters that covers industry events, health and safety incidents, near misses and accident investigations. This is good information that we can all learn from. For the longest time it felt the communication was one-way, but now it is becoming two-way. It is also really important to spread around the work because so many folks are indirectly involved in the work.

Some operators do a better job with media and publications than others. Some operators have good programs with their contractors, but they don't reach the community as much. There needs to be more advertising about what is going on, there is not a lot of advertising and the community wants to understand what they are seeing and what it means.

A well organized public relations program that is executed and delivered by people who understand the process was perceived to be a priority by Participant B.

Might have been better for the operators to have a proactive public relations man. They need to have this man knock on doors and check with the landowners to see if all is fine and they could probably hold more local Town Hall meetings. People are apprehensive so there needs to be more communication with the landowners.

As this discussion progressed he expressed:

There does need to be more knowledge of chemicals going down and the operators need to have the right person to talk about it. They need to talk to them (the public) not down to them or over them. The operators need to knock on doors and check and see how they (the landowners) are doing. Let them know that you (the operator) gives a flip.

He further expressed empathy and concern for the landowners by stating:

The operators need to first address the fears of the landowners, and help them understand that it isn't old school old oilfield drilling anymore. The operators need to answer the question 'what's in it for me' and the lack of knowledge. It seems that the people who complain the most gain the least.

Participant B frequently referred to the use of "layman's terms" when talking with people of the community.

There needs to be more community involvement somehow, and not with the Mayor or County Judge. The operators need to talk to the people of the community—more one on

one and use down to earth layman's terms. People are afraid of the unknown but nobody cares until it impacts them. Layman's terms needs to be said when communicating to the public and government.

The use of community meetings or forums to stay in touch with landowners was identified by Participant E, who echoed Participant B's perception that the person talking about the process needs to understand the process. Participant E stated:

The operators need to have touch base community meetings. A forum or forums to touch base with local landowners or farmers to educate on the drilling process properly. Sometimes people get their education from the landman or worker who may not know the process themselves, so you end up with misguided information. There needs to be more community forums. This has been going on for 7-8 years and people still don't have a clue about the process. The communication needs to come from a personable person that knows the process. It can't just be a landman making a deal—a lot of the landman don't know the process.

Participant E was sensitive to the need for improved communication based on earlier experiences in his life. In his words:

I lived in Louisiana in the 80's when the oil boom crashed. I lived in a neighborhood of 200 homes in South Bossier and half of the high school football team didn't show up for practice because the families had to find work and there were about 80-90 homes for sale. That really made an impression on me.

After sharing that experience he circled back to reinforce his perception that community forums should be a priority and offered other suggestions with consideration given to operator leasing strategy. Participant E shared:

They need to have community forums. They also need a letter program with weekly or monthly updates. A lot of people don't have a computer or email. TV would be good too, it is better than it used to be and you don't have to twist the rabbit ears to get the TV to work. I know the operators have to be careful with their strategy when they're just coming into a play because of the follower companies that may compete and drive up the leases. So they need to lease the land first, then educate the landowners and communities through forums.

When asked the question how the petroleum community could present itself to the public in an ethical manner while conducting shale resource development activities and how these

suggestions should be prioritized Participant G expressed his belief and observation that there was a need for advertising. He stated "Through advertising the operators need to brag on what they have done so the public can hear more about the good. For everything that the operators proclaim the public should be able to see and hear the fruits and be given the fruits."

Helping people in need throughout the communities affected by shale resource development was identified by Participant H as a key priority.

Some operators do a lot for the communities, and when another Operator doesn't, people talk about it in the community. It is important to help the hungry kids in the community—help with what is actually needed to show they are caring. Doing a little gets your name out there and makes a better perception in the community. Help with a worthy cause like a Christmas Angle Tree at the local school. A kid is innocent and can't help their situation—so if you can help that is worthy.

She further stated "Look out for the poor people and kids, help the people who try to help themselves but don't have the means. Do this through actions. People don't always have money but you do have time. If I want people to do what I am doing then I need to do what is right."

Participant F shared an approach that focuses on increased communication after leasing activities are completed.

When the operators get started they need to have a meeting to explain what they are doing and how they will go about it. Tell them (landowners and community) so they are not worried, and you are not coming in and running over them, and that you are there for the community. Seems like the operators have done something right to get to where they are. They need to stick with the Town Hall meetings and local radio and Q & A meetings at community centers in the counties that they work in. More mad people will show up and some can't be pleased, but you can persuade the rest of them that you are not the bad guy. Some just won't listen.

Participant J believes "The operators need to educate people more—and the operators need to be safe." She also asked the rhetorical question "Are people just too busy to try and understand, or are people just negative?"

Perceptions of Environmental concerns shared by communities can be addressed through improved communication. "The operators need to share more of the good things because of all the bad things like pollution, noise and traffic. It will help to balance perceptions" stated Participant D.

This suggestion was shared by Participant I who stated:

I think that the since the big BP oil spill in the Gulf everyone perceives gas and oil as oil. When it comes to the environment people are a lot more savvy to pollution. There's this saying in the sewer/septic business—dilution is not the solution to pollution. They (the petroleum community) wants to come across as environmentally friendly and if you can do that, the road out here is a lot more easily traveled.

Ethics matter. Contractors thoughts and feelings about an ethical approach to shale resource development.

After asking the participants how important it was for the petroleum community to present itself to the public in an ethical manner while conducting shale resource development activities the resounding response was that ethics matter.

"This is huge—perception, and how you are perceived, you have to keep everything top notch. Image is important, you only have one chance to make a first impression on the landowners and the community. You have to get off on the right foot through the community" stated Participant A.

The belief that perceptions are important was also shared by Participant I, who included several rhetorical questions related to integrity in his response.

So important. Who wants to go through life telling so many lies that you can't remember what you said? It's real important—do you want to be perceived as the good guy or the bad guy? You can't be perceived as the bad guy and don't care? I never new anybody that wanted to be perceived as less than honorable and ethical. Everyone wants to be the good guy—nobody wants to be bad guy. It's a death wish.

"My philosophy is that you do what is right. Lying, cheating, stealing doesn't benefit anyone for long. You need to have a good rapport with the community" stated Participant B.

"It is really important" stated Participant C. "Read the formula and apply it—operators need to practice what they preach" said Participant C.

This was echoed by Participant D who said "Ethics are everything—you have to do things right." He went on to explain how he had observed a potentially deadly risk in his business operation, and that it "chilled him to the bone." He has since modified the operation to assure that none of his staff are within 30' of a roll off box that holds drilling operation waste to remove the potential danger of being crushed.

Both participants E and K stated in their individual interviews "It's very important, we have to do things right." While Participant J shared "Ethics are so important." She then followed up with the rhetorical question "Are we in a time when nobody trusts anybody, or could it be that what they don't understand they still have their doubts? It seems when money goes into play some people become dishonest."

Consideration to the landowner, their rights, and the public was part of Participant F's response who stated:

Real important—if you don't do it people won't let you on their land. If you don't care about the public it won't last. I do the right thing all the time every time no matter who I work for. I give 100% every time. At the end of the day I have nothing to worry about. There are rules, and a line, and we go to it, and won't cross it. It's real important to get the public on your side. It is their land, their surface and mineral rights.

Taking care of the landowner was an ethical priority for Participant H who stated:

Very important. If you have a landowner and you crap on them they won't want you back. You scratch my back and I'll scratch yours. If you are perceived by the public in a bad way you will have to condemn the land, and create worse feelings and more difficulty. If the landowners are mad before the contractor gets there then that makes things even worse. It falls to everyone to do their part. It will be hard to get to that because people will focus on only money or safety. The morals just are not there.

Going to bed at night with a clear conscious and trying to continuously improve as a person were also ethical priorities for Participant H. She shared:

I ask myself if I can lay down tonight knowing what I did was right? I want to keep the peace, to keep a certain level, but you have to stand your ground and pee in their Wheaties sometimes. Sometimes I have trouble sleeping at night knowing that I made some guy mad, but if he has to be corrected, he has to be corrected.

People treat me like I am somebody because I pay my bills. But a lot of people take care of themselves first. I'm not perfect by no means, but I thank God for the person I am. I know I have some things to work on, and I thank God that I don't have those other desires (drugs, alcohol, and getting money by any means).

Participant G's conviction while referring to his self esteem impressed upon me the personal value that he placed upon ethics and integrity.

It is important to present ourselves as ethical. The industry has a bad rap from the old school days. The industry is made up of all walks of life—you hear that saying 'I'm oilfield trash and proud of it.' I want to be a legitimate business owner—be professional. Some people want to be trashy—they proclaim it. I even saw this on a bumper sticker on an Operators company truck about three years ago. Some people want to be trashy and want that perception. I want to be seen as legitimate. The man and beast in me says I don't care what other people think, but really I do—*that kid is top notch and I want to be respected*. I sunk my life savings into my business, and I don't want to be kicked because the cheeseburger isn't big or good enough.

Limitations of Research

This research was purposely limited to participants who are independent contractors who own and operate a company participating in shale resource development activities. This allowed me to assure proper permission was given by the business owner, and that the owner was given the opportunity to share their unique perspectives. This specific group was chosen because it was my perception that contractors are the natural bridge between industry operators and the communities impacted by shale resource development.

Another limitation was the number of participants. Fifteen participants were contacted to participate, and 11 returned calls and agreed to participate. Given the time constraints of this

project I am pleased with the response. However, in a perfect world with unlimited time and resources the research could benefit by expanding the participants to 20 each of the following participant categories: independent contractors; landowners with only land surface rights, landowners with land surface and mineral rights, landowners with only mineral rights, industry operator representatives, random individuals living within impacted communities, random individuals living outside of the impacted communities, governmental representatives, NGOs. This volume of data would go a great distance to further validate findings and understand emerging themes, and set a strong baseline for proving or disproving hypotheses.

Another limitation of the study could be that it was conducted at time in which resource development activities are beginning to slowly shift into the production and maintenance lifecycle of gas field development. Reduced drilling and construction activities are evident on the roadways throughout the Fayetteville Shale Play, this is in part due to the oversupply and price of natural gas, making it more economical for operators to modify their investment in the play.

A counter argument to this potential limitation is that the timing is good and could be considered a positive factor of this research. I state this because this was a wonderful opportunity to learn from the participants experiences over the past several years. This begs the question if research projects such as this one should be conducted at milestone intervals during play development?

The final limitation of this research is my weak technical knowledge with respect to shale resource development activities. I know just enough to know when to consult an expert, and if I could have had an expert to help me with this research project I would have in a heartbeat. Therefore, any expansion of this study would also require an expansion of the literature review. This review should be conducted through the assistance by a person(s) with extensive shale

resourced development knowledge from a technical and regulatory standpoint. After living and working here in central Arkansas for nearly seven years I am still learning something new every day.

Conclusions

From my discussions with the participants there is overwhelming evidence that shale resource development activities have been a "blessing," providing stability in the form of income, employment and time with their families. In addition, they have been able to share the fruits of their labor with their communities, and in return, the communities have expressed their appreciation. Throughout the findings several testimonies were shared by the participants, and their happiness and joy was contagious. I believe strongly that testimonies like these should be communicated by the petroleum community to the public. They bring hope, and fulfill the promise that America is a place where dreams can come true. They are also reflective of values that are common across America. With each interview, it became clear to me that the participants care very much about how they are personally perceived by the petroleum community and the public. The findings indicate that the participants are demonstrating a high internal locus of control and "...see the relationship between their behavior and its outcomes more clearly..." (Trevino & Nelson, 2011, p. 85). Again, I believe excerpts of these discussions should be used with the permission of the participants to communicate their collective conscious of ethical values, and the trickle-down effect that demonstration of such values is having upon local communities.

Reference was frequently made to landowners with the distinction being those with surface rights, those with mineral rights, those with both rights, and those who have land that is not located within the exploration and production perimeters of the Fayetteville Shale Play. This

is reflective of the condition widely known as 'the have's and—and the have not's.' I believe this condition needs to be better understood by the petroleum community so they may find a better way of addressing it through community relations and governmental affair initiatives. This could help to demonstrate to the public a greater understanding of the consequences related to shale resource development activities "...to account for the fact that decisions are not isolated choices, but often become part of a series of choices within the context of a larger decision or project" (Trevino & Nelson, 2011, p. 91).

'Coffee shop talk' is a reality of the petroleum community, and my personal belief is that this is no different than the old telephone party line. One disturbing side-effect of this form of communication is how some of the participants have had to modify their personal behavior simply because of perceptions, rather than facts. As sad as this reality may be, my heart is warmed knowing that they have modified their behavior because they have had experiences that have forced them to "...recognize that others would see an action as ethically problematic" (Trevino & Nelson, 2011, p. 97). From my point of view this is evidence of the bittersweet reality of what lies within the development of a shale resource. Operators and contractors see one another at their best and their worst, leaving room for improvement. From my discussions with the participants there were descriptions of "...individuals who act in self-interested, opportunistic, deceptive, and manipulative ways" (Trevino & Nelson, 2011, p. 85). Through our conversations many of the participants had observed *Machiavellian* tendencies from members of the petroleum community who have engaged "in unethical action such as lying, cheating, and accepting kickbacks" (Trevino & Nelson, 2011, p. 86). *Machiavellian* tendencies occur in all forms of business and communities, however, it is my perception that both the public and the petroleum community desire, and to some degree expect shale resource development activities to be

conducted at the highest level of moral standards. Ideally everyone wants to make the right decision and do the right things, the challenge is that the petroleum community is large and facilitating the demonstration of this alignment of values will require extensive public relations and media.

My literature review on public perception provides ample evidence of several organizations investing in media projects that are perceived to protect the environment. From the perception of the Participants, there is a desire to see these same organizations make an effort to understand the good. In addition, the participants expressed frustration with the petroleum communities lack of advertising and willingness to publicly communicate the good that results from shale resource development activities. The participants are proud of their work, and they are excited and thankful to be part of bringing energy independence and an improved economy to their community and America.

Understanding what comprises an ethical approach to shale resource development is a massive undertaking. This research has scratched the surface, and the voices of the participants have proclaimed that the petroleum community has work to do. Prioritizing this work and finding a starting point may not be as hard as it appears on the surface. The petroleum community needs to take care in their efforts. With convenience driving the lifestyle of many American's choices, does the petroleum community need to provide factual education and information that is convenient and easy to digest? The evolution in the application of technology has changed the rules of business. Media has not traditionally been part of the core business model for the petroleum community. However, with media technology evolving so quickly the petroleum community should consider accepting it as a necessary part of their future. They should consult with the best technology innovators, and develop a public relations plan that will

deliver quick meaningful messages that are methodical and serve a purpose to educate and alleviate the doubt and fears of the public, while promoting healthy dialogue that is representative of an ethical approach to shale resource development.

Lastly, throughout this project I have asked myself how do you find the "right people" to deliver the important messages? Who is qualified and understands the shale resource development process and can also speak in layman's terms to the landowners and affected communities objectively without being accused of having a special interest or being conflicted? To some degree I believe the shale boom happened before the petroleum community was ready and prepared to explain in understandable terms the process, benefits, and costs of shale resource development activities. No one industry is perfect and above reproach, ethical issues exist from the Catholic Church, to schools, to relationships—unfortunately, it would seem that the petroleum community is synonymous with an apocalyptic Babylon.

I believe the petroleum community has contributed greatly to society, and though there is room for improvement, demonization of the petroleum community through divisive tactics serves no measureable purpose. I believe now is the time for American consumers and the petroleum community to recognize that they are in the unique position to foster a paradigm shift in the supply and management of safe, quality energy for America, and perhaps provide a framework for future shale resource development activities throughout the world.

Implications for Further Research

Each of the themes lend themselves to further research. I feel as if the research project is riddled with rabbit holes; all you need to do it pick which hole you want to jump down. The first and most important implication is that I consider this research to be a micro-study of shale resource development activities. All of this research was conducted within the Fayetteville Shale

Play. Similar studies should be conducted in other shale plays and compared to the findings found within this report.

Some of the themes clearly were outliers based on my literature reviews presented in this paper. The objectification of women by the petroleum community was found in this research, but my preliminary literature reviews were not focused on topics of this nature; therefore it does lend itself to further research. It may be possible that that some research has already been conducted through other women's research studies. The other outlier would be the elements of insecurity. This does warrant further research to determine if this is widespread in the petroleum community, or if this is region specific. An atmosphere of distrust is not a sound foundation for healthy business practices. All of the participants agreed that the operators were doing a pretty good job and usually appeared to be trying to do the right thing, however, some of the participants insights suggest that some operator employees and some contractors are not sharing the same ethical values.

With regard to media perceptions I believe part of the problem is that people are frustrated with media because the media doesn't care what people think. Why should the media care what people think, they are in the driver's seat and they control the airways. It is virtually impossible for media providers to be affected by the everyday person. This is a very preliminary thought, but this topic alone leaves room for further research, and oddly enough at that ethical level it parallels the perceived ethical issues within the petroleum community.

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Appendix A
Demographic Survey

1. Age _____
2. Gender _____
3. Education (*check all that apply*)
High School Graduate GED Some College Associates Degree
Bachelors Degree Masters Degree Doctorate Degree Other Training/Education
(*describe here*) _____

4. How long have you owned and operated a business participating in shale resource development field operational activities? _____
5. Have you faced what you consider to be an ethical dilemma while participating in shale resource development field operational activities? Yes No If yes, in your own words please describe how you handled the ethical dilemma. (*describe here - if additional room is needed please continue on the back of this survey*) _____

Thank you for your participation in this research project.

Appendix B

Semi-structured Interview Schedule

1. How does your business participate in shale resource development activities? How do you think or feel your business activities are perceived by your community?
2. How would you describe your personal experience(s) participating in shale resource development activities? Have your personal experiences affected your perceptions about the petroleum community? If so, how?
3. From your experience, what types of shale resource development activities influence perceptions about the petroleum community?
4. From your insight and experience, what are the perceptions about those types of shale resource development activities?
5. How can the petroleum community present itself to the public in an ethical manner while conducting shale resource development activities?
6. How would you prioritize these ideas or suggestions?
7. How would you communicate or disseminate these ideas or suggestions to the public?
8. How important is it for the petroleum community to present itself to the public in an ethical manner while conducting shale resource development activities? Why do you believe this? Can you provide examples?
9. How has media (television, newspapers, movies, and social media) about shale resource development activities affected your perceptions with regard to the manner in which the petroleum community conducts shale resource development activities? Can you provide examples or references to media that have affected your perceptions?
10. Do you have any insights or experiences related to shale resource development activities that we have not discussed that you would like to share as part of this research project?

Appendix C

LETTER OF CONSENT TO PARTICIPATE
AN ETHICAL APPROACH TO SHALE RESOURCE DEVELOPMENT

I am a student at Alaska Pacific University (APU) conducting a Senior Project over the coming three weeks. I am requesting your voluntary participation in my research. I am no longer working in Contracts Management at Southwestern Energy Company (SWN); I have transferred to SWN's Health Safety & Environmental Department effective July 15, 2013. I am conducting this research project in my capacity as a student of Alaska Pacific University and not as an employee of SWN. You may choose to stop your participation at any time without penalty. I expect that your participation will take approximately one hour to complete. You will be asked to complete a demographic survey and participate in an individual interview.

I am seeking insight from contractors participating in shale resource development activities to discover how the petroleum industry can present itself to the public in an ethical manner while conducting shale resource development activities. A qualitative research method that focuses on your insights and experiences will be used. Your participation will provide the volume and quality of data that is necessary to provide meaningful insight to this topic. With your permission, an audio recording of your interview will be transcribed and coded to present themes that may lend themselves to meaningful dialogue and additional research that could be integrated into future activities that promote improved communication and presentation of shale resource development in an ethical manner to the public. The interview may last from 30 minutes to one hour, and will be conducted at a time and location that you have chosen to be comfortable and secure for you.

A naming convention (Participant A, Participant B, etc.) in the form of a pseudonym will be used to preserve your confidentiality and identity. During the investigation I will have sole possession and access to your audio recording, interview transcript and my field notes. Upon final submittal of the research findings all research data, audio recordings, transcriptions, and field notes will be immediately destroyed. The final paper documenting the research findings will be held in my possession, and the Alaska Pacific University Business Office, located in Anchorage, Alaska.

This project has been reviewed and approved by APU's Institutional Review Board.

A copy of this letter is yours to keep. If you have any questions about how this investigation is to be conducted please contact me at: Deanna L. Gamble, 501-581-0262, dgamble@alaskapacific.edu. You may also contact my Faculty Advisor: Stephanie Morgan, 907-564-8303, smorgan@alaskapacific.edu and Department of Business Administration, Alaska Pacific University, 4101 University Drive, Anchorage, Alaska 99508-3051.

Investigator (print and sign) _____ Date _____

I agree to participate in the project as described above.

Participant (print and sign) _____ Date _____

Acknowledgements

As I write this, my heart is overflowing with gratitude to each person that has helped me to reach this point in my life. I feel peace now knowing that the completion of this research project signifies the completion of my degree.

To the 11 participants of this research project; because of your willingness to candidly share your personal experiences and observations, was I able to conduct this research and complete this meaningful project. Each of your voices, as they have been transcribed and shared throughout this paper are the basis for the integrity and credibility of this research. Each of you have bestowed a lifelong gift to me and to the people who wish to understand the experiences that you have shared with regard to shale resource development - thank you.

To my loving husband, Greg, who has coached and cheered me to the top of this mountain and so many others, and has provided stability to our family for nearly 25 years when my time between work, school and family was spread too thin. I will be eternally thankful to you for your strength and caring; I feel I am so blessed to have you in my life.

To my amazing, caring and joyful daughter, Audrey, who for the past two years has given up too many hours of our time together. Instead, she has looked over my shoulder, sharing little snippets of my online time with APU, and silently supporting my goal by keeping my closet clean and organized; thank you Audrey - I am proud of you and I love you so much!

To my parents, in-laws, brothers and extended family for their ongoing support, encouragement, and willingness to sacrifice much of our family time over the past two years - we did this together!

To Carole Lund, Beverly Dennis, Stephanie Morgan, and David Yu; research does speak for itself. The integrity of the education that you are fostering at APU is priceless - thank you.



Rebecca Rosen
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December 11, 2013

Senator Mary Landrieu
Chairman, U.S. Senate Small Business Committee
703 Hart Senate Office Building
Washington, DC 20510

Senator Jim Risch
Ranking Member, U.S. Senate Small Business Committee
483 Russell Senate Office Building
Washington, DC 20510

U.S. Senate Small Business Committee Field Hearing
"Fueling America – Enabling and Empowering Small Businesses to Unleash Domestic Production"
Lafayette Economic Development Authority
Testimony for the Record

Dear Chairman Landrieu and Ranking Member Risch:

As one of North America's largest independent oil and natural gas exploration and production (E&P) companies, Devon Energy Corporation ("Devon") appreciates the opportunity to provide testimony on tax issues of importance to our industry and to the country's economy.

As support for comprehensive reform of the federal tax system grows, Devon believes that the following principles should guide reform efforts:

- Tax reform is an opportunity to simplify and improve the federal tax system. Overall, reform measures should both promote investment in the U.S. and increase our nation's global competitiveness.
- All industries should be placed on equal ground. Government should not choose winners and losers across or within industries.
- Restrictive and lengthy depreciation and amortization periods should be reduced or eliminated.
- When a new tax system is adopted, fair and equitable transition rules should be implemented to assure taxpayer protection.
- Even prior to complete and comprehensive tax reform that would include a territorial approach to taxing international investment earnings, a logical first step would be an immediate adoption of a competitive tax rate for funds earned overseas and repatriated for investment in the United States.

As it relates to the oil and natural gas industry, current tax treatment for intangible drilling costs (IDCs) — as currently deductible business expenses — is vitally important to the day-to-day operations of all oil and natural gas extraction. This is because of the cash flow model of our business that has led to striking advances toward energy independence: we routinely invest more than the cash we take in from our oil and gas operations, in order to find, develop and produce the energy our nation needs.

Large independent producers routinely reinvest more than 100 percent of cash flow received from sales of oil and natural gas production. In Devon's case, the elimination of the immediate expensing of IDCs would cause cash

outlays for income taxes to increase by around \$1 billion in the first year alone. In order to balance its budget in light of such a change, Devon would need to cut approximately 25 percent of its entire U.S. exploration and production budget in 2014.

As a result, any attempts to eliminate or reduce IDC deductions in the year that these costs are incurred should be opposed. As the government has recognized from the beginning of the income tax code, such costs do not "...necessarily enter into and form a part of the capital invested." Hence, IDCs are properly treated as all other operating costs are treated: as deductible business expenses in the year of the expenditure. Far from being "special" tax treatment, current expensing is the correct treatment of IDCs.

This tax treatment is also consistent with sound domestic energy policy as it promotes investment and innovation that is necessary to meet domestic energy demand. Any proposals to eliminate or reduce the IDC deduction would not only jeopardize the advances that are responsible for some of the country's most important oil and natural gas plays, but also lead to reduced domestic E&P investment, less domestic drilling and supply, reduced employment and higher prices for American consumers.

In fact, a study conducted by Wood Mackenzie found that repealing the IDC deduction would have a dramatically negative impact on the American economy, including the loss of 190,000 jobs within the next year and 233,000 jobs by 2019. The study also found that repealing the IDC deduction would force U.S. oil and gas producers to reduce their investment spending by \$407 billion between 2014 and 2023 and would reduce their production by 15 to 20 percent annually.

Moreover, a recent survey of American Exploration and Production Council (AXPC) members — large independent E&P companies that are the most active in the U.S. drilling for oil and natural gas — estimates that the first year impact from a loss of the IDC deduction would force just the 32 AXPC member companies alone to drill 4,000 fewer wells.

Devon appreciates the opportunity to comment on issues of concern to the oil and natural gas industry. We look forward to working with you as Congress undertakes this important effort to promote investment in the United States and to increase our nation's global competitiveness.

Respectfully,

Rebecca Rosen
Vice President, Federal Government Affairs
Devon Energy