

**PATHWAYS TO ENERGY INDEPENDENCE:
HYDRAULIC FRACTURING AND OTHER NEW
TECHNOLOGIES**

HEARING

BEFORE THE

**COMMITTEE ON OVERSIGHT
AND GOVERNMENT REFORM**

HOUSE OF REPRESENTATIVES

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PATHWAYS TO ENERGY INDEPENDENCE: HYDRAULIC FRACTURING AND OTHER NEW TECHNOLOGIES

FRIDAY, MAY 6, 2011

HOUSE OF REPRESENTATIVES,
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM,
Bakersfield, CA.

The committee met, pursuant to notice, at 10 a.m., at the Kern County Board of Supervisors Chamber, 1st Floor, 1115 Truxtun Avenue, Bakersfield, CA, Hon. Darrell E. Issa (chairman of the committee) presiding.

Present: Representatives Issa, Farenthold, and McCarthy.

Staff present: Lawrence J. Brady, staff director; Kristina M. Moore, senior counsel; Ali Ahmad, deputy press secretary; and Michael R. Bebeau, assistant clerk.

Chairman ISSA. Full committee will come to order.

This field hearing is on Pathways to Energy Independence and, particularly, on Hydraulic Fracturing and Other New Technologies.

The Oversight Committee mission: We exist to secure two fundamental principles. First, Americans have a right to know the money Washington takes from them is well spent; and second, Americans deserve an efficient, effective government that works for them.

Our duty on the Oversight Government Reform Committee is to protect these rights. Our solemn responsibility is to hold government accountable to taxpayers because taxpayers have a right to know what they get from their government. We will work tirelessly in partnership with citizen watchdogs to deliver the facts to the American people and bring genuine reform to the Federal bureaucracy. This is our mission, and this is what we are here for today.

This weekend, national gas prices surpassed \$4 a gallon. That's no surprise to the people of California, who are tiptoeing, on high steps, toward \$5. A number of factors are included in this. Our committee will, in fact, look at all of them.

Let there be no mistake. Today is not about only one part of the cost of natural gas, oil, and other sources of energy. Consumption from China and India are rising, thus stressing a world that had a norm of supplying mostly Europe and the United States with its fuel. Many of the wells that produce oil and natural gas have been operating for decades or even, here, a hundred years.

Here in Bakersfield, we discover an early set of wells that still produce and can produce much more. We're here today to talk about—sorry—to talk and listen to experts who can help us under-

stand how we can safely extract more, not less energy from this region. It is very clear that America suffers from a willingness to buy, a willingness to consume, but not nearly enough willingness to produce domestically.

Hydraulic fracturing or “fracking” is largely responsible for the increase in natural gas production. The proven technology has revolutionized the extraction business, particularly in natural gas. But let us make it very clear. Hydraulic fracturing or “fracking” is not new. It is the improvements in a 60-year-old technology that we are so interested in.

In North Dakota, we have a stunning example, where horizontal fracking for oil production has increased 7,500 percent in just 5 years. Pennsylvania, one of the areas first used for oil, has the same potential, as does California. But to recognize that potential, we are going to have to listen to all the concerned citizens; we are going to have to recognize that in America today, there are safe ways to do things and then there are shortcuts.

Our committee is interested in making sure that no industry ever again takes shortcuts, as we believe occurred in the Gulf. At the same time, oil and natural gas will be produced somewhere in the world to meet our consumption needs. Our goal is to make sure that the safest possible activity goes on in the United States and the maximum amount that can be extracted is extracted safely.

America has the highest standards for drinking water. EPA is to be commended for what they’ve done. At the same time, clean water without, in fact, an economy operating are mutually exclusive. Most of what we do in the way of clean air, clean water are the result of a vibrant economy that is able to support technologies that make these—clean air and clean water more available and more abundant, not just here but around the world.

So as we look at this issue today, let me make it clear. We will be looking at the entire group of issues, including ways in which we can produce more and consume less.

President Obama has set goals for increased production and increased safety. We, as one-half of one-third of the government, seek to make sure that his goals of clean, safe, and abundance of American fuel is able to be met by his administration through the work of this Congress and Oversight.

Before I recognize other Members for the opening statements, I would like to add one more thing for the record. I’ll be including a comment of the committee on the announcement of the President’s fracking advisory panel. Secretary Chu has appointed a panel. We’ve reviewed it.

I guess I’ll ask. Any of you hear about it in time to be included in that Commission? No.

From what we can find, this is a Commission that lacks operators. It lacks people with the experience in the production and appears to be a combination of, if you will, intellectuals and opponents of all natural gas, oil, and other fossil fuel production.

So we’re hoping, through this letter in the record, and a followup to the administration, that this Commission can be expanded so that its consensus is a consensus of the entire industry and beneficiaries and not simply those who have already decided they don’t want the end product.

And with that, I would recognize the gentleman from Texas, Mr. Farenthold, for his opening statement.

Mr. FARENTHOLD. Thank you, Mr. Chairman. I'm honored to be here today in California, another great oil-producing State. As I drove in last night—

Chairman ISSA. There's another.

Mr. FARENTHOLD. Yes, there is.

As I drove in last night, I looked around and kind of smelled the air and got a feeling of the community. When you go into a town, there's just kind of a vibrancy, a feeling you get. And I was commenting to Jessica Blake, who was with me, a member of my staff, who actually grew up in Midland, Texas—and we both agreed—“Wow, this is West Texas with the mountains in the background and a few degrees cooler.” So I'm honored to be here, and I feel right at home.

We have created a situation in this country where gasoline prices are so high that it's affecting every area of our economy. The food that we eat, every good or service that we purchase is affected by the increasing cost of gasoline and the increasing costs of energy. We are producing—we are importing the bulk of our oil and gas from foreign countries, many of whom are not our friend.

Energy independence, increased domestic oil and gas production is an important economic issue, it's an important jobs issue, and it is also an important national security issue.

So I would like to thank our panel here for taking the time to come talk to us and let us explore and understand better the technologies that have been used—in use for over 60 years—safely for increasing oil and gas production here in California, at home in Texas, and now throughout the United States of America. I look forward to the testimony. I look forward to asking some questions to the witnesses, and would also like to thank Mr. McCarthy and Mr. Issa for having me here. Thank you.

Chairman ISSA. I thank the gentleman. And it now gives me great pleasure to recognize your hometown hero, one of my heroes, someone who I knew when he was in leadership in the statehouse and was pleased when he came to Congress and even pleased when he passed me by to be one of the top-ranking members of Republican leadership.

So I'm the chairman, but Kevin McCarthy is the boss. We now go to the gentleman from California.

Mr. MCCARTHY. That was very kind.

I do want to thank Chairman Issa. He's been going up and down throughout the Nation. Kern County is not new to him; he's been throughout here.

But the work that he's done through his committee—his committee is Government House Oversight. And for too long, government has not had the oversight. We have passed a lot of different pieces of legislation, but we've never gone back and had the accountability. And his is the one committee that brings accountability back to government. And he's done an extraordinary job with it so far. And the one thing I want to thank him for is coming to the 22nd Congressional District.

And when you look at the challenges, when Blake talked about the security of America and jobs from the ability to have energy

independence, there's probably no better district in the Nation than the 22nd District. We go from the Mojave Desert to the Pacific Ocean. We have the fourth largest potential in wind and the Nation's fourth largest in the State for solar. You can go across; you can find a nuclear facility in San Luis Obispo; you can go out to find geothermal in Ridgecrest.

As Kern County knows, we produce more than 70 percent of all the oil in California, 10 percent of the Nation, 1 percent of the world. It's more than a hundred years; so the technology has to be different. But as technology has changed our life, as I look across into this field of individuals, they all have different forms of canvas.

When we landed on the Apollo, with the Apollo landing on moon, there is more technology in my BlackBerry today than there was on the Apollo. It has made our life better. And just as that technology has improved, it has improved our ability to use the resources of America instead of paying someone else for it. When we send our money someplace else, we send our jobs someplace else, but we also constrain our economy.

Now, we are the Saudi Arabia of natural gas, but do we have the ability to bring it up? We've watched fields more than a hundred years old. And there are independent representatives here in the oil business that many have sold them and moved on.

We find in Kern County you have—Oxy is based here. Well, government sold them their field for \$3 billion, and they thought they got a really good deal out of it because they didn't think anything would extract. One of the largest finds undiscovered in the last little bit is out there.

So there's new potential each and every day. Our decision has to be as Americans, do we want to control our own future, do we want to invest in America, and do we want to use that technology to protect our environment at the same time and make it better than we're using it today? And it's almost every week I'm able to go out and see a new form.

In Kern County, our oil happens to be thicker; so we have to enhance it to get it even to come up. But we have now used new technology where we are first in the world putting in solar panels out there to put the steam in. It is a new approach, a new style, and that's what we believe in, America reaching the new opportunities.

Winston Churchill always said about America, "You can always count on them to do what's right after they've exhausted every other option." I think that's right when you look at our energy policies. We put in an energy department because we want to become energy independent. We import more today than when we created that department.

We have to be honest with ourselves. We have the resources in America; we have the ability. If we make the decision that we do not want to utilize our natural resources, that doesn't mean we're not going to get it from somewhere else; it just means we're going to pay somebody else, somebody else is going to have the jobs, and it's going to cost our own economy. And we've watched that, and we watch the world continue to grow.

That's what today's hearing is about. We want to protect our environment; we want to do it in a common sense, sound way that

makes the investment right here, and we want to utilize the technology that allows us to do it.

It's a little ironic that the chairman of this committee probably knows technology better than anybody else inside Congress. He was very successful in business, based upon technology, and he continues to enhance that ability and apply that. But also, he understands accountability, and that's what he wants to apply to government as well. That's why he goes out across the country and has a hearing and goes directly to where it can have an effect.

So I want to thank the chairman, and I want to thank the committee, and I yield back.

Chairman ISSA. I thank the gentleman.

Just another reminder, we've probably got the third highest ranking Republican in half the time that I've been in Congress.

We now recognize our panel of distinguished witnesses.

Assemblywoman Shannon Grove represents the 32nd District of California and is also an entrepreneur and a very successful one at that.

Rock Ziemann—Zierman—sorry about that, Rock—is chief executive officer of the California Independent Petroleum Association.

Dr. William H. Whitsitt—

Mr. WHITSITT. Whitsitt.

Chairman ISSA [continuing]. Whitsitt is executive vice president of Devon Energy, which is the largest U.S.-based independent oil and gas producer. And as I was reminded, both a Californian and an Oklahoman depending, and we miss you here.

Mr. Steve Layton is president of E&B Natural Resource Management Corp. of California, a California-based independent oil and natural gas exploration company. Thank you for being here.

And Mr.—is it Tupper?

Mr. HULL. Yes, it is.

Chairman ISSA [continuing]. Hull is vice president of the Western States Petroleum Association, which represents large and medium oil producers and a frequent testifier on these kinds of important issues.

Pursuant to the committee's rules, I would ask you all to rise to take an oath.

[Witnesses sworn.]

Chairman ISSA. Let the record reflect all witnesses answered in the affirmative.

This is a field hearing. And although many of you, who I've seen in Washington in the past, understand the formality of Washington, it's a little different here. You're not going to see adversarial questions and can we get you in 20 questions and cut you off as you're answering. Anyone that comes to a field hearing, Republican or Democrat, generally comes to listen. So although we would like you to try to stick to more or less 5 minutes because your entire opening statements are going to be placed in the record, as we go through the questioning, don't be surprised if Blake comes in and says a followup to what I say or Kevin comes in.

The idea is we're here to listen, and we're here to learn. At the same time, if one is answering and you want to pipe in, don't wait to be asked. We want to make the record complete with the knowledge that you bring to us to take back to Washington.

And with that, Mrs. Grove or Ms. Grove, I will recognize you first, mostly because you're first on the schedule but also because you're the lady present.

STATEMENTS OF SHANNON GROVE, ASSEMBLYWOMAN, 32ND ASSEMBLY, DISTRICT OF CALIFORNIA; ROCK ZIERMAN, CHIEF EXECUTIVE OFFICER, CALIFORNIA INDEPENDENT PETROLEUM ASSOCIATION; TUPPER HULL, VICE PRESIDENT, STRATEGIC COMMUNICATIONS, WESTERN STATES PETROLEUM ASSOCIATION; WILLIAM WHITSITT, PH.D., EXECUTIVE VICE PRESIDENT, DEVON ENERGY; AND STEVE LAYTON, PRESIDENT, E&B NATURAL RESOURCES MANAGEMENT CORP.

STATEMENT OF SHANNON GROVE

Ms. GROVE. Thank you, Mr. Chairman, and thank you Congressman McCarthy and Members and guests. I'm Assemblywoman Shannon Grove, but before I became elected to serve the people of Kern County, I've been a business owner. And my business is primarily a third- or fourth-tier contractor to the oil, construction, and agricultural industries.

And my hope here today is to bring some common sense regarding our domestic oil production for these two very important reasons: The security of our Nation and jobs. We have a vast supply of fossil fuels, oil, in California, and we barely are tapping into them. Think about this. For every barrel of oil that we cannot produce here we are importing from a volatile foreign nation. Most of it comes from volatile foreign nations. And why are we, as Americans, relying so much on energy from foreign nations when we have the ability, the technology, and the people who need jobs in our own State, our own county, and our own Nation right here able to do it?

For example, I know one smaller, kind of mid-sized producer that has a platform; and, if allowed, this platform can produce an additional 30,000 barrels of oil a day. So if you think about that, and you're conservative, if we were allowed to produce 100,000 barrels of oil a day additional to what we produce now, California could reduce 20 percent—or excuse me—increase 20 percent of its oil production, and you would reduce that from the Middle East countries.

Equally important is our national security or jobs, private sector, non-taxpayer funded jobs. Our Nation has one of the highest unemployment rates ever. And here, in our energy-rich district that I represent, it's at an all-time high of 17½ percent unemployment. Some of our Kern County cities are close to 40 percent unemployment, and that's completely unnecessary. Jobs domestic oil production would produce are great paying, high quality, non-taxpayer funded, much needed jobs.

So with over 2 million people out of work in our great State, more across the Nation, our national security and our economic hope of the future must realize its potential that we are leaving in the ground. Allowing increased domestic oil production begins to solve both of these very important issues, our national security and private-sector jobs that are much needed in our Nation.

Let the people of the United States and California get back to work, reduce our dependency on foreign oil, and make America stronger, and stop this full-out assault that we have on a very prosperous industry that provides jobs in our Nation. It's the No. 1 thing that we need—people need to get back to work. And this industry provides jobs and has provided jobs and technology throughout history.

So thank you for letting me be a part of this today, and I'll keep my opening remarks brief.

Chairman ISSA. That's very un-Washington-like.
[The prepared statement of Ms. Grove follows.]

My name is Shannon Grove and I want to thank Chairman Issa and Congressman McCarthy for holding this hearing in Kern County, the heart of oil country.

I was elected to the California State Assembly last November. Before that, I ran my own business, Continental Labor and Staffing since 1993, focused primarily on providing employees to the oil, agriculture and construction industries. I learned about the oil industry from the ground up to recruit employees for the wide variety of jobs - many highly skilled - that the oil industry needed. Over time, I came to realize the impact that local, state, and federal laws and regulations had on the industry that doubled and tripled costs and caused endless delays in projects due to kit foxes, lizards or other species that showed up on a job site.

From those experiences, and from the past few months working in the state legislature trying to help Kern County with jobs in the energy industry, I am very concerned about how we continue to affordably provide the energy this country needs and grow the jobs associated with this industry while facing a state and federal government virtually at war with domestic oil production.

This great nation was founded on a simple idea. That no one, neither King nor President, should be able to mandate another individual's business. This notion of government was novel at the time America adopted it, and since 1776 it has provided the citizens of America with astonishing growth and prosperity. Individuals transformed America from horse-drawn buggies to satellites and cell phones through intelligence, hard work and energy. Fossil fuels provided the energy.

Today, American policy makers craft legislation that changes the way we interact with energy. They are providing subsidies to some forms of energy, excess taxation and regulation to others. But fossil fuels were not chosen as the primary source of energy in early America on account of a government mandate or subsidy. Fossil fuels are not the primary source of energy around the world by some strange coincidence or fluke. Quite the contrary - intelligent, industrious men and women selected fossil fuels as their energy of choice because of its uniquely irreplaceable properties and its relative abundance. As with all economic decisions, individuals in the past chose fossil fuels as their preferred source of energy because it was the cheapest

and best of all available choices. Today – outside of regulatory mandates – the same logic holds.

If oil and gas are the cheapest and best of all available energy choices, why then does it cost a fortune to fill up my car? What are the facts surrounding other alternative energies? How do State and Local regulations fit into the broader picture of energy prices, security, and independence? These are all complicated and important questions; they are made more complicated by the American media and policy makers who do not use the relevant facts.

The first question and perhaps most important is this: who sets the price of energy? No one person is charged with setting energy prices, but we can infer who is responsible for energy prices by considering who owns most of the energy-related assets. It is a commonly held belief that Chevron, Exxon, and Shell are the masters of the energy universe – this is strictly a myth. Consider that Exxon Mobil, the largest American oil company and the largest publically traded company on the NYSE, controls less than one percent of the world's oil reserves. All American oil companies combined control less than 10%. Whoever can be said to set the price of oil, it is not the American oil companies.

Most of the world's reserves are controlled by governments or government owned entities. I do not mean to belittle the American oil companies by any means – the industry as whole is a great boon to our national and local economy, not to mention our energy security. The oil and gas industry employs 9.2 million people in the United States and accounts for 7.5% of the entire U.S. economy. Here in Kern County there are over 20,000 jobs directly from the petroleum industry and another 52,000 indirect jobs, making 72,000 jobs attributable to oil. Many of these are good high-paying jobs with an average income of almost \$100,000 a year. And in the complexities of the economy the income from these jobs spills over to afford the services of everything from healthcare professionals to mechanics.

It has been estimated that on average the oil and gas industry creates over 4 jobs for every individual they employ. So while American oil and gas companies do not set the price of oil or gasoline, they are providing a great employment opportunity for millions of individuals in Kern County and across the United States.

But we hear every few quarters that some new oil company has made record profits. If we ignore for the moment that American oil companies are so small on the global scale to be insignificant in determining the price of oil and gasoline, we might wonder: do these record profits come at the expense of higher prices? Again, this is a complex issue. But let us examine some facts.

First and foremost, oil and gas profits are indeed impressive when considered as a raw figure. But profit is a tricky term, particularly as it relates to prices. The profit margin is what a seller adds to the price of the good, above his costs of production. In the case of Apple, for instance, the average products were sold at about 25% above the costs of materials, production, marketing, sales, etc., required to bring their products to market in 2011. Exxon's profit margins, by comparison, were 8.7% - hardly a windfall. When taken together, the average margin in the oil industry during 2010 - a year with relatively high oil prices - was 11.5%, making oil and gases the 45th most profitable industry for the year.

If it is not a windfall profit on account of American oil companies that causes high oil prices, what is the root cause? Part of the issue is that getting oil and gas out of the ground is becoming an increasingly costly exercise. These costs are increasing on two fronts – first the 'easy oil' has been found and produced. Deepwater exploration and complex methods like horizontal drilling carry higher risks and greater costs. This upward force on prices can only be overcome by the creation of new techniques and technologies to discover and exploit new reserves and improve oil production from known fields.

Another part of increasing costs is the high level of taxation and regulation applied to American oil and gas companies. As an example – do you know who the major benefactor of Exxon's oil and gas production activities was between 2003 and 2007? Was it big-oil fat cats? Was it Wall Street? No. It was Washington. Exxon paid more in taxes during this period than it made in profit. These taxes ultimately cause Exxon to invest less capital, grow more slowly, produce fewer barrels of oil and provide fewer jobs. Other American oil and gas companies do not fare much better – the industry has an average tax expense of 41.4%, and if California politicians have their way and add a 12.5% oil severance tax, it'll be up to 53.9%. To give this number some perspective, in 2010 Apple paid out only 28% of its profit to the government while it generated more profits than Chevron.

There are those who insist that if oil companies had lower tax rates they would not invest this capital but rather keep it to themselves. An understanding of finance shows that profit cannot be destroyed – any earnings that were not reinvested would have to be used for either stock repurchases or dividends. Since the major holder of all major oil companies are pensions and mutual funds – the same funds that are undoubtedly held in any 401k or IRA account – many of us would be the direct beneficiary of any windfall profit hoarding on account of American oil companies.

So we have determined that American oil companies do not set the price of oil, and they are not gouging us for windfall profits. But the question of high oil and gas prices remains unanswered. What can we do to help ease the burden of such high prices?

Simple economics shows us that when we decrease the supply of something, all else being held equal, prices will rise. Keep this fact in mind as I review a few other interesting facts concerning US policy towards oil and gas production. On a Federal level we have a ban on all drilling in the Gulf Coast, the source of 40% of the United States oil and gas production. The loss of that once very stable supply has been compensated for by the Middle East and other unfriendly sources. Risks associated with these new supplies increase uncertainty and thereby increase prices. More broadly our federal and state regulators have enacted sweeping reforms to increase the burden on the production of oil and gas, in an attempt to accommodate the “green” energy sources they consider more appropriate for your consumption.

It is decidedly un-American to choose for a person what things they should and should not purchase with their own money. But this is precisely what’s happening with American energy policy today. Each person has their own opinions in regards to which energy types they prefer, and – as it always has been in America’s past - it should be left for us to choose between the available alternatives. Would you choose to pay 2.5 times more for your electric bill in order that the energy be generated by wind rather than coal? Some people may accept these higher costs, but no one should be forced to pay more for something they do not desire. Energy policy today does just that: it chooses, on behalf of the consumer, more expensive alternative energies over traditional fossil fuels. In large part it is this policy that is forcing gasoline prices higher through time – as companies are hamstrung

with taxes and regulations fewer assets are exploited, jobs are lost, less oil and gas is produced for the market, and prices move accordingly.

As we move into the next chapter of the American story there is no doubt that this nation and especially this county will display our usual genius and dedication. But what will fuel our progress? I cannot propose an energy solution. I can only suggest that we follow the template that has always served America well; give each individual an unobstructed choice and rely on his or her intelligence, ambition and hard work.

Thank you.

STATEMENT OF ROCK ZIERMAN

Mr. ZIERMAN. Thank you, Mr. Chairman and members of the committee. I'm Rock Zierman, the CEO of the California Independent Petroleum Association.

We're a trade association that represents about 470 companies— independent oil producer companies, royalty owners, and service and supply companies that have operations here in California. About 160 of those are actual oil and gas producers that range in size from small producers, with just a couple of wells; to large, multinational corporations that produce hundreds of thousands. The definition of an independent doesn't have to do with size. It has to do with the fact that they're not an integrated company; they don't refine, market, transport petroleum products at all.

Independent producers produce 70 percent of California's in-state production of oil and 90 percent of its natural gas. As a State, our in-state production represents 38 percent of what we consume—our refineries and our consumers and on the oil side. The rest, as Ms. Grove mentioned, has to be tankered in. And 14 percent comes from Alaska, but they're also declining. And so the rest of the marginal wells have to come from foreign countries, primarily Saudi Arabia, Iraq, and Ecuador.

Independents is the main driving force behind exploring for new oil and natural gas reserves. Over 90 percent of domestic oil and gas wells are drilled by independents in the United States, and their role is increasing.

In 1999, major oil companies invested \$31 billion in drilling programs while independents invested \$18 billion. By 2007, the role had totally reversed. Majors invested \$49 billion and independents, \$77 billion, for a total of \$126 billion. And that was 4 years ago. Obviously, the numbers are quite larger today, which leads us to the next point, which is drilling for oil and natural gas is expensive, and it's getting more expensive. In 1999, it cost \$100 per foot, on average, to drill a well in the United States. By 2008, that had risen sixfold, to \$600 a foot.

A recent study concluded that, on average, independents reinvest 150 percent of their net income back into drilling operations. That means they have to go out and get equity partners for capital or they have to borrow from banks in order to continue their operations.

Capital budgets, by definition, are driven by how much capital is available. And obviously, the market price of oil plays a significant role in determining how much capital is available; but other factors, such as risk and return on investment, also contribute.

Oil and gas operations, as with all mining operations, are producing a finite resource; therefore, producers are basically going out of business every day. So in order to survive, producers have to drill to find new resources or employ new technology to better extract existing oil fields, and that takes money.

So if your goal is to increase domestic oil and gas production, you can't hamper the availability of capital. And unfortunately, that's precisely what the administration has proposed in their last three budgets. The administration claims that Big Oil is receiving subsidies from the U.S. Government, and nothing could be further from the truth.

And I've listed a number, in the record, of these tax treatments. And I'll just mention two: One is intangible drilling costs, which, by the way, are not available to any of the integrated majors, only to independents. And these are expenses, expensing, of non-salvageable items that can be expensed in the current year that they were incurred, just like any other business can. If a shoe salesman buys shoes for \$10 and sells them for \$20, he doesn't depreciate the shoe over 7 years, he expenses it.

So these debates are about the proper accounting method of expensing these things. These are not subsidies that are given, cash payments from the government, for certain activities. And as I mentioned, a lot of the other ones are listed in the record. I'd be happy to address those with any questions.

But the bottom line is it takes a lot of capital to drill for new oil and gas production. So let's not hamper the access to the capital by raising taxes on our domestic independent producers, but let the sector continue to create jobs and meet the energy needs of our citizens. Today, they employ about 4 million people, which represents over 3 percent of our total U.S. workforce. And that's what we need to foster in the future. Thank you.

Chairman ISSA. Thank you.

[The prepared statement of Mr. Zierman follows:]

TESTIMONY BY ROCK ZIERMAN, CEO OF THE CALIFORNIA INDEPENDENT PETROLEUM ASSOCIATION
BEFORE THE HOUSE OVERSIGHT & REFORM COMMITTEE ON MAY 6, 2001 IN BAKERSFIELD, CA

Thank you Mr. Chairman, members of the committee for this opportunity to address the potential of increased domestic production of oil and natural gas in the state of California. My name is Rock Zierman and I am the CEO of the California Independent Petroleum Association. CIPA represents over 470 independent oil and gas producers, royalty owners, and service and supply companies with operations in California. Of those companies, approximately 160 are producers ranging in size from operators of a single well to large multi-national corporations with tens of thousands of barrels of daily production.

An independent producer is not defined by size, but rather the fact that they simply get oil and natural gas out of the ground and do not refine, transport, market, or have retail sales of petroleum products. Independents produce 70% of California's domestic crude and 90% of its natural gas. 38% of what our state's refineries and citizens consume each day is produced in-state. All the rest must be tankered into our ports since there are no interstate crude oil pipelines. 14% is tankered in from Alaska and 48% from foreign countries, mainly Saudi Arabia, Iraq, and Ecuador. The Alaska portion, just like in-state production is declining. Foreign imports are on the rise.

Independents are the main driving force behind exploring for new oil and natural gas reserves. 95% of domestic oil and gas wells are drilled by independents. And their role is increasing. In 1999, major oil companies invested \$31 billion in new drilling programs. Independents invested \$18 billion. By 2007, the role had reversed. Majors invested \$49 billion and independents \$77 billion, for a total of \$126 billion. That was four years ago. Today, those numbers are even larger.

This leads us to another important point. Drilling for oil and natural gas is expensive and getting more expensive every day. In 1999, it cost \$100 per foot on average to drill a well in the U.S. By 2008, that had risen six fold to \$600 per foot. A recent study concluded that on average, independents reinvest 150% of their net revenues each year back into drilling programs. That means they must get equity partners with capital or borrow money to continue to grow their operations.

Capital budgets, by definition, are driven by how much capital is available. Obviously, the market price of oil plays a significant role in determining how much capital is available. But other factors such as risk and return on investment also contribute. Oil and gas operations, as with all mining operations, are producing a finite resource. Therefore, producers are basically going out of business every day. So in order to survive, producers have to drill to find new resources or employ new technology to better extract an existing field. That takes money.

So if your goal is to increase domestic oil and gas production, you can't hamper the availability of capital. Unfortunately, that is precisely what the President has proposed in his last three budgets. The administration claims that "Big Oil" is receiving subsidies from the government. Nothing could be further from the truth.

Intangible Drilling Costs (IDC)—IDCs are non-salvageable items that can be expensed in the year that they were incurred, just like every other business on the face of the earth. If a shoe salesman buys a shoe for \$10 and sells it for \$20, he doesn't depreciate the shoe over 7 years, he expenses it. Similarly, there are a host of temporary, non-salvageable items called IDCs that some oil and gas companies can expense such as drilling services, mud, cement, testing services, things that are done before a well is

completed and producing any oil or gas. A shopping center developer does the exact same thing. He can expense items incurred in the planning and preparing for a shopping mall like grading, planning, etc. This is not a subsidy. It is a tax treatment. Once a well is completed and producing, all the surface equipment associated with that well is capitalized and depreciated as a salvageable item. Furthermore, only independent producers can fully expense IDC on American production. Therefore, if you eliminate IDC expensing, there would be less capital available in the current year to reinvest in new drilling operations. This equals less production, period.

Percentage Depletion—All natural resource 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. Unlike percentage depletion for all other resources, however, oil and gas percentage depletion is highly limited. It is available only for American production, only available to independent producers, and only available for the first 1000 barrels per day of production. Below this level, you can depreciate over a two year period. Again, major oil companies are not eligible for this tax treatment.

Passive Loss Exception for Working Interests in Oil and Gas Properties—The Tax Reform Act of 1986 deemed that a loss incurred by a working interest in natural gas and oil projects to be an active loss that could be offset by other active income. If the income/loss arising from natural gas and oil working interests is treated as passive income/loss, the primary income tax incentive for taxpayers to risk an investment in oil and natural gas development would be significantly diminished, and there would be less capital available. Worse yet, the only way this would lead to a net increase in tax revenue is if people were discouraged from reinvesting in oil and gas projects. If they aren't, then they have the ability to deduct their passive loss against future passive losses, and the government won't realize any additional revenue. New tax revenue is only created if those with a loss DON'T reinvest in oil and gas projects and can't deduct their loss against future gains.

There are five other tax treatments that I will include in the record but for the sake of time won't mention them individually now, but would be happy to answer any questions you may have about them.

The bottom line is it takes capital, a LOT of capital, to drill for new oil and gas production. Let's not hamper the access to that capital by raising taxes on our domestic independent petroleum producers. Independent oil and natural gas producers operating onshore in the U.S. accounted for nearly four million American jobs in 2010, a number that represents more than three percent of the total U.S. workforce. Very few industries have the potential to create as many better than average paying jobs as quickly and effectively as we do. Let's let this sector continue to create jobs and meet the energy needs of our citizens.

Thank You.

Chairman ISSA. Doctor, they've all been running under time; so there's extra time if you need it.

STATEMENT OF WILLIAM WHITSITT

Mr. WHITSITT. Thank you, Mr. Chairman. Thank you to members of the committee for the opportunity today. And I want to thank the local residents with whom I had a great conversation before the meeting today. And they had a number of good questions.

What I'd like to do is chat a little bit with you and discuss what is truly a revolution caused by technology—the chairman alluded to it—and this is the natural gas revolution in the country today. The game has changed, the revolution is here, the paradigm has shifted, and there is no going back.

This is a piece of shale from 8,000 feet below the prairie of Oklahoma. And I'd like to pass this around to the committee. And also, it's fine to pass it around to the audience too. The natural gas is actually trapped in the pores of this core sample, and this is the key to the revolution.

What I'd like to do is start with a little geology lesson here. This is geology for non-geologists. And you can follow either in the printed testimony or on the screen. But traditionally, we were looking for oil and gas that was produced in that lower band, that gray area there, source rocks. These are shales that I'm referring to here. And that oil and gas cooked for 340 million years. The little critters and plants would migrate through porous zones up until they were trapped by an impermeable layer of rock. And you can see that shown there toward the right in the small red area. Well, that led us to find or try to find a number of these little trapped areas. And that's why you had so many wildcat wells that were less successful or more.

And then back in the 1990's, beginning in Texas—and I'll have more to say about that—George Mitchell had the idea that we ought to be able to produce natural gas right from the source rock, and he started drilling vertical wells and fracturing them, and the economics just didn't work out all that well.

So in 2002, Devon Energy that acquired Mitchell, began to marry the technologies of hydraulic fracturing and horizontal drilling to begin to produce gas from the Barnett Shale of Texas. That's the picture of where it is.

And we'll go to the next slide. And you'll see that in the early part of the last decade, the wells were—shown on the black line. Those were vertical wells. You can see production rates and the production tailing off out into the future. And then look what happened, with the blue line there, when we started marrying the hydraulic fracturing and the horizontal drilling to produce this gas, huge initial production rates in these wells in the last 40 or 50 years.

Let's go to the next slide. You can see the history of the shale plays around the country with the use of this marriage of technology. And you can go to the next slide to see the projections that EIA has in the dark blue there for our gas resource production into the future based on this technology. This is a depiction of the areas around the country where we have shale fairways and the ability, potentially, to produce a lot more natural gas for this country.

And if you go to the next slide, you'll see that has already begun to have a very significant positive effect on consumer prices. Those are three different projections by the EIA over the past 3 years, ending up at that red line on the bottom, that show the different price projections based on this increase in supply.

And if you go past this slide to hydraulic fracturing—this is what I'd like to spend a little more time on. Hydraulic fracturing is, of course, the putting of large quantities of water, sand into the ground, pulling the water out of the sand, holding the fractures open. And we have a little bit of animation here that will show you what it is that we're doing.

First of all, we drill the well. And then we're going to re-run it from the beginning here, hopefully. And you'll see that the well is drilled obviously from the surface out into a lateral that can be many thousands of feet long. And then once we complete the drilling of the well—I'll tell you what. I'm not sure if that's going to work so well, but we'll just talk about it from here.

You can see that the drill string is pulled out, and then the well is actually perforated with a perf gun—you see that happening here—into the shale formation. And after the well is perforated—you can see the length of the distance of the perforations—then the sand and water, with some additives, is put in under very high pressure, and we begin to frack the shale formation.

The frack stages can be multiple. Here, we put a plug, and then we'll come back into the well and do the same kind of fracture stimulation treatment along that horizontal part of a well. And then the water is flowed out; the sand stays, holding the fractures open; and the surface equipment is, by in large, removed and only a small amount remaining; and the gas is produced. So that's basically the hydraulic fracturing process.

If we go to the next slide, you'll see that one of the big concerns about hydraulic fracturing is addressed here by our well construction. We, under State regulation throughout the country, put pipe or what we call "casing" through any freshwater zones that usually occur hundreds of feet below the surface. And we may be fracking as much as 15,000 feet below the surface. But we seal off the water zones before we start the operation. And you can see that depicted here.

If you go to the next slide, you'll see just a depiction of the equipment that's used on the site. That equipment virtually all goes away after the frack job. And you see some numbers there with regard to the amount of water we use. We can talk about that later.

If you look at the frack fluid components that have gotten a lot of attention recently, the bottom line is that 99½ percent of what goes into these wells is basically sand and water. And, of course, most of that, obviously, being water. And the fluids are not all that mysterious. In fact, there's a very robust Web site that has been in operation now for a little over a month called "FracFocus" that was actually created and is operated by State regulators under the Groundwater Protection Council and the IOGCC on which producers are beginning to post what goes into every well that's hydraulically fractured.

This is a shot of the actual screen, the forum that you can call up. You can search this by well location, by company, by coordi-

nates, by API well number—lots of different ways—and find out what's in any well that's hydraulically fractured once this site is fully operational and all postings are on it.

The site is also extremely good—and I'll say this to the residents in the audience and to others—because it actually has wonderful explanations, in a very robust way, about what I've talked about in terms of why we hydraulically fracture wells, how it's done, what the additives are, what they're used for, and a lot of other information that I think takes some of the mystery about hydraulic fracturing away.

So we conclude by saying that hydraulic fracturing has been, as the chairman pointed out, in use for many decades. Our first well in Oklahoma was fracked in March 1949. We've done 100,000 of them and well-regulated by States. FracFocus is up for fluid disclosures. And we are continually improving our industry practices, and the States are continuing to work to make sure that they have the right regulatory framework for all of us.

So with that, I'll conclude. And I'll be happy to answer questions.

Chairman ISSA. Thank you. You've answered many questions by your presentation.

[The prepared statement of Mr. Whitsitt follows:]

**Statement of Dr. William F. Whitsitt
Executive Vice President
Devon Energy Corporation**

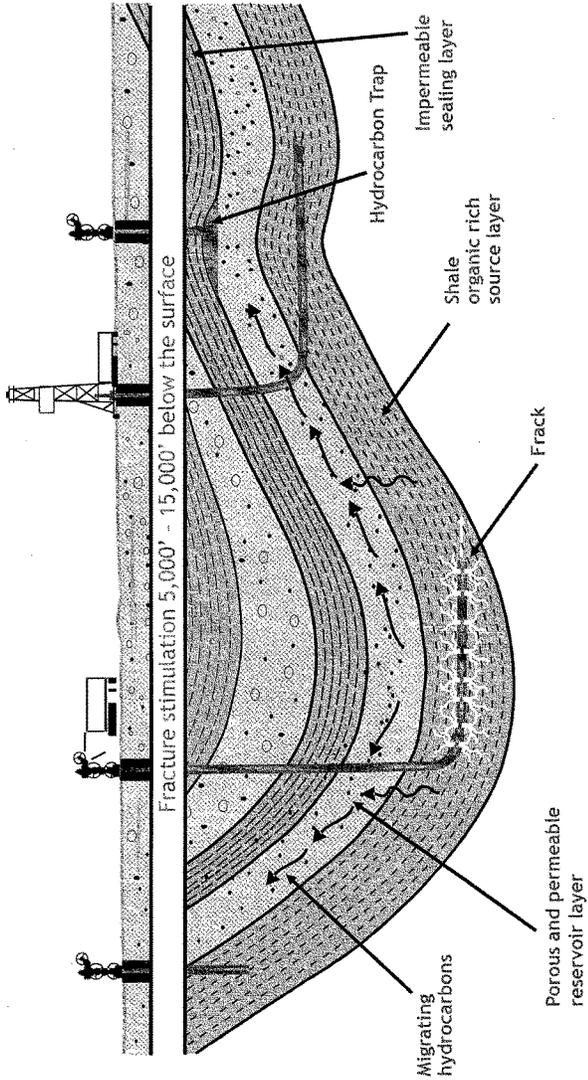
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**Committee on Oversight and Government Reform
U.S. House of Representatives**

**Bakersfield, Calif.
May 6, 2011**

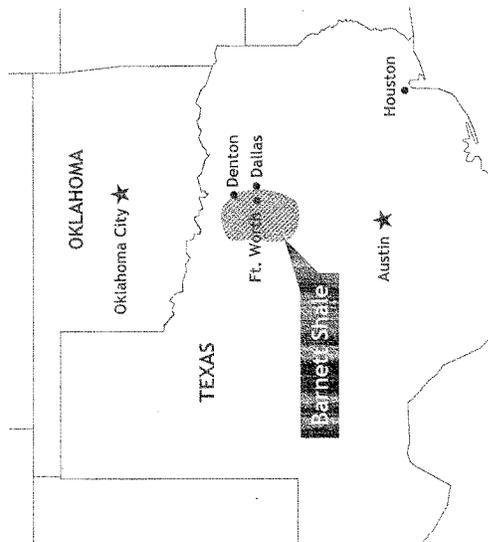
Technology's role in the revolution

Oil traps vs. shale



Birthplace of shale natural gas The Barnett Shale

Largest natural gas field in the U.S.



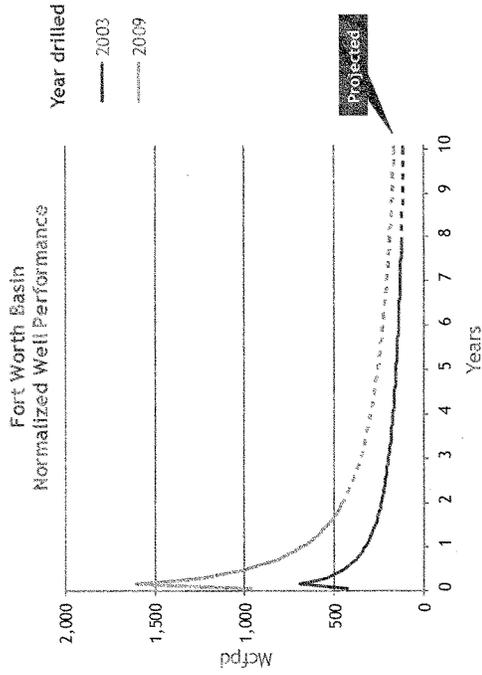
Covers more than 20 counties

Play-wide production: > 5 BCFD

15,000 producing wells

Fort Worth Basin performance Industry well performance over time

- 2003-88% of wells drilled in Barnett Play were vertical
- 2009-91% of wells drilled in Barnett Play were horizontal



NYSE: DVN

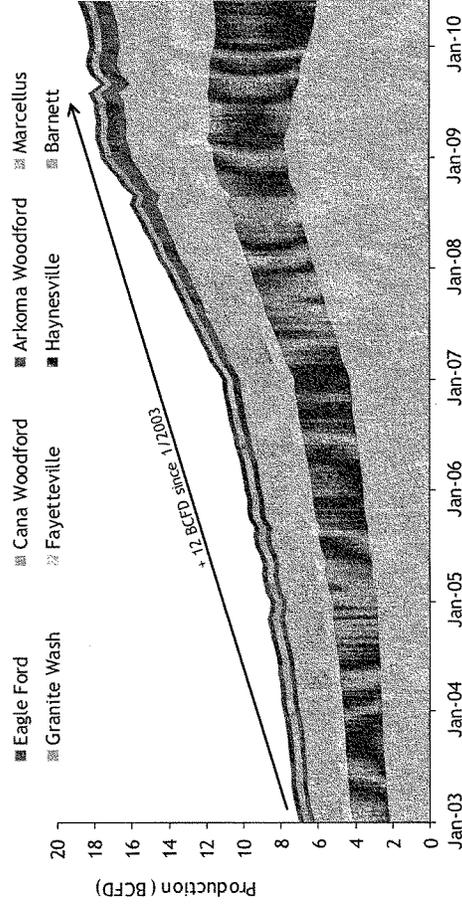
www.devonenergy.com

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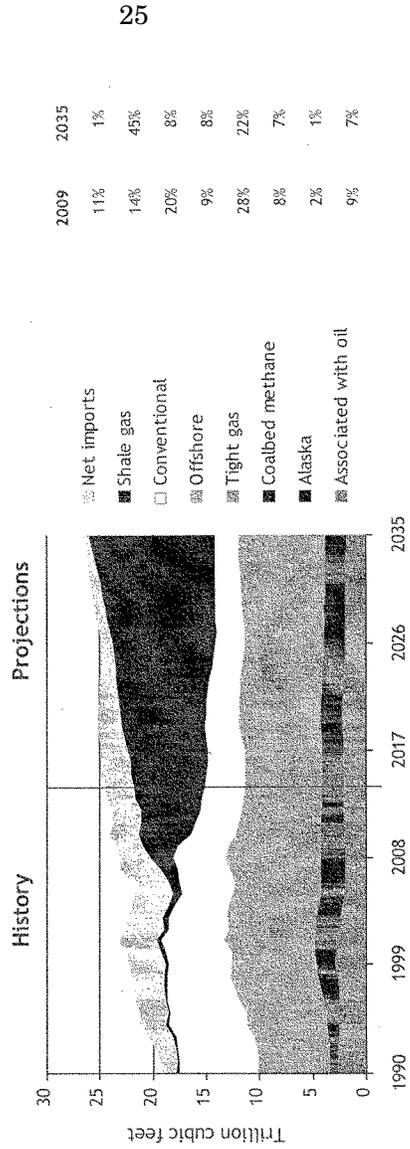
Industry growth - select plays

Existing plays have upside - additional plays to be developed?



Projecting natural gas sources Shale to provide growing share of U.S. supply

- Shale gas offsets declines in other U.S. supplies to meet consumption growth and lower import need



Source: EIA, Annual Energy Outlook 2011

NYSE: DVN

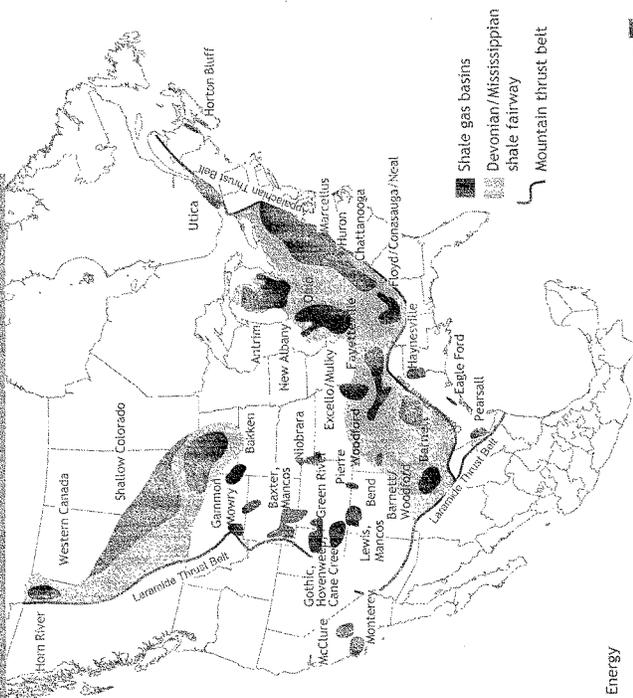
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North American shale gas Basins and plays

Just since 2006, resource base rose from 1,321 to 1,898 Tcf (44% increase), and it continues to rise.



Sources: EIA, Potential Gas Committee, Ziff Energy

NYSE: DVN

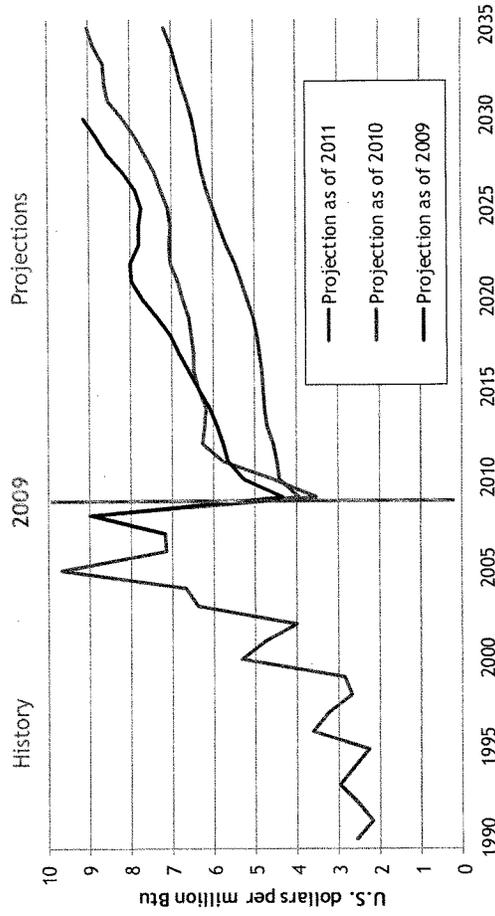
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EIA projections for natural gas Newfound abundance leads to lower prices

Natural gas price projections are significantly lower than past years due to an expanded shale gas resource base



Source: EIA, Annual Energy Outlook 2011

NYSE: DVN

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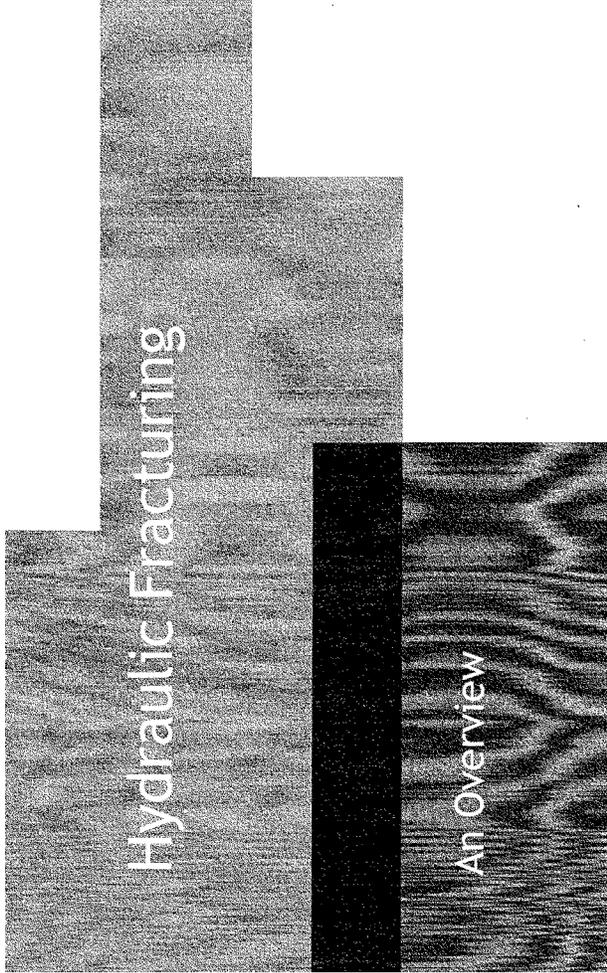
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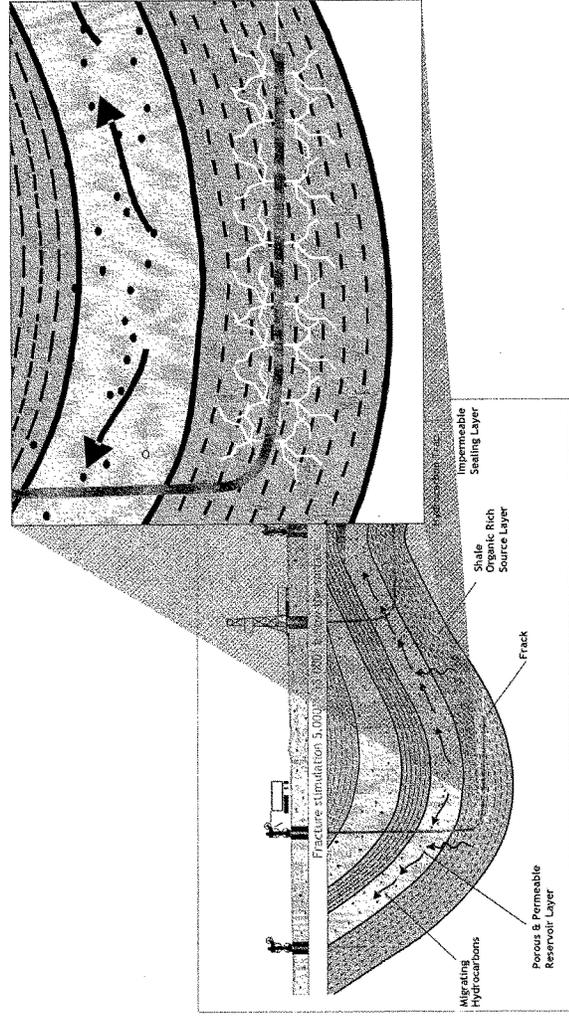
America's "new" natural gas: Choice, reliability, competition, price stability

- 100+ years of natural gas supply - and growing with technology
- New shale gas resources:
 - Near-term supply impact
 - Short well drilling times
 - Very high initial production rates
 - Long-term supply stability
 - Wells produce for 40-50 years or more
- New resources onshore are easier and less expensive to develop and less affected by weather
- More pipeline miles - gas where it's needed
- Additional LNG and storage capacity available if needed

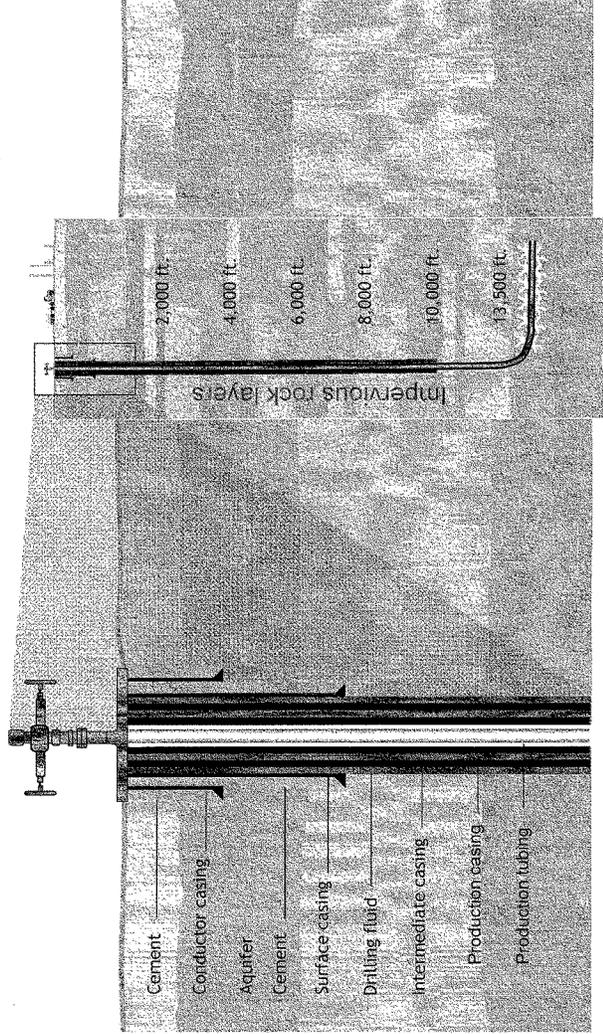
Bottom line:
Greater energy and economic security; more stable, predictable prices



Hydraulic fracturing

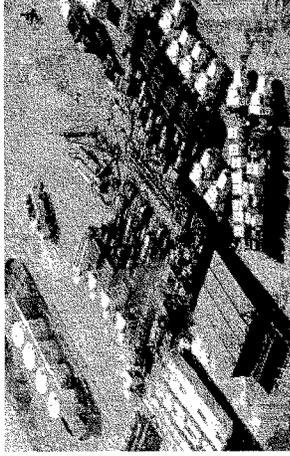


Well construction



Hydraulic fracturing 3-7 day process

- Each horizontal well is initially fractured in 6-8 stages
- Represents 90% of total water requirement for a Barnett Shale well
- Approximately 4 million gallons of fresh water are required per well, which equals the amount used:
 - By a golf course every two weeks
 - By New York City every six minutes
 - Through irrigation to produce 120 barrels of ethanol



Frack fluid components And their purposes

Ingredient	Percentage	Purpose
Water	95%	Creates necessary force to create tiny fractures within the formation
Sand	4.5%	Keeps fractures open, allowing natural gas to be collected in the well
Additives	0.5%	Gelling agents carry the sand through water. Others break down gel when natural gas is ready to be collected. Proppants keep fractures open so gas can flow to the wellbore. Ingredient lists for specific wells available at www.fracfocus.com .

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Source: EIA, Annual Energy Outlook 2011

NYSE: DVN

www.devonenergy.com

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 **devon**

Fracfocus.org

Hydraulic fracturing fluid composition

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)	Maximum Ingredient Concentration in HF Fluid (% by mass)
Water	Operator	Carrier	Water	7732-18-5	100.00%	84.46100%
Frac Sand (All Meshes) (CWT)	BHI	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	5.11699%
Hydrochloric Acid, 10.1-15%	BHI	Acidizing	Hydrochloric Acid	7647-01-0	15.00%	0.65562%
			Water	7732-18-5	85.00%	0.31633%
FRW-15A	BHI	Friction Reducer	Copolymer of Acrylamide and Sodium Acrylate	25967-30-8	40.00%	0.01819%
			Hydrated Light Distillate	84742-47-8	30.00%	0.01406%
			Nonyl Phenol Ethoxylate	127087-97-0	5.00%	0.00285%
			Sorbitan Monooleate	1338-43-8	5.00%	0.00235%
Ferrotrol 300L	BHI	Iron Control	Citric Acid	77-92-9	70.00%	0.00283%
NE-940	BHI	Non-emulsifier	Methanol	67-56-1	60.00%	0.00017%
			Isopropanol	67-63-0	10.00%	0.00003%
			2-Ethyl Hexanol	104-76-7	10.00%	0.00003%
			Polyoxyethylene Glycols	25322-66-3	5.00%	0.00001%
			Solvent naphtha (Petroleum) ¹ Heavy Atom.	64742-94-5	5.00%	0.00001%
			Ethoxylated Alcohol ¹ Branched	78330-19-5	5.00%	0.00001%
			Ethoxylated Alcohol ¹ Branched	79330-20-8	5.00%	0.00001%
			Naphthalene	81-20-3	1.00%	0.00000%
			1,2,4-Trimethyl Benzene	96-63-6	1.00%	0.00000%

Hydraulic fracturing

Key to the revolution

- Excellent environmental record over decades
- Regulated by states
- Fracfocus.com offers public database
- Continually improving well construction
- Steel and cement protection of aquifers
- Incident control, containment and clean-up plans

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Thank you

Dr. Bill Whitsitt

Executive Vice President
Public Affairs

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Chairman ISSA. Mr. Layton.

STATEMENT OF STEVE LAYTON

Mr. LAYTON. Thank you. Good morning.

Chairman ISSA. I think you need to turn your mic on.

Mr. LAYTON. Good morning. My name is Steve Layton, the president of E&B Natural Resources Management Corp., and it is an honor to appear before this committee as a representative of the independent oil and gas producers operating here in the San Joaquin Valley.

E&B is a California-based, privately owned, independent oil and gas company. We produce approximately 7,000 barrels of oil each day and have 140 employees. Our primary objective is growth and the replacement of our reserves.

It is important to note that E&B, along with many other independent oil producers, as Rock mentioned, reinvest virtually every single dollar-and-some that they earn in order to replace produced reserves and hopefully grow our respective companies. This significant and ongoing reinvestment of cash-flow by oil and gas companies is a vital but often overlooked part of the way this industry must manage its business in order to stay in business. This is exactly what has happened to E&B as well as many other companies in the United States, over the past 5 to 10 years particularly.

In 2003, E&B produced approximately 1,500 barrels of oil per day, but by reinvesting cash-flow, along with the financial support of banks, we implemented a growth strategy that led—led by field redevelopment and acquisitions. Today our production is in excess of 7,000 barrels of oil a day, and our employee count has grown from about 20 to 140. I would also like to mention that this production growth being matched by the job growth is something that we're very proud of at E&B.

Today I would like to focus on development, also known as “organic growth” to some, because it is this type of production growth that is important to all of us given the universal concerns about energy security. The industry's ability to grow production has been enhanced significantly by advances in exploration, drilling, production, and completion technology, including the fracking that we've heard about just now. But these gains, as great as they are, can be offset to a considerable degree by the ever increasing burden of statutory and regulatory impediments that we face.

California's and most on-shore fields are very mature, having produced, in some cases, for more than a hundred years. The easily captured, easily produced oil has already been exploited. For this reason, the application of new technology has been a critical part of our efforts to increase the production in these mature fields.

Perhaps the greatest evolution of technology in the San Joaquin Valley involves the use of steam to heat and mobilize oil that would otherwise be almost impossible to extract. Steam has been used for over 40 years; yet, the technology continues to be refined, augmented, and improved and continues to unlock large volumes of previously inaccessible reserves.

More specifically, I would like to reference a small parcel that E&B owns in one of the nearby heavy oil fields. Five years ago, this 5-acre lease was producing just a few barrels a day. In 2007, we

made a significant investment in the property and now have drilled more than 20 wells and implemented a modern steam drive. With the help of new drilling, completion, and thermal technology, this little 5-acre parcel is now producing almost 300 barrels a day and will produce in excess of a million barrels of oil before it is depleted. That equates to 1 million barrels of energy security from just 5 acres.

In other fields, we have benefited greatly from the use of horizontal drilling to sweep and capture large untapped areas of very mature oil producing reservoirs. The use of horizontals has given us the ability to access substantial new reserves in these old fields. One of these fields happens to be the primary driver of E&B's growth, and it is the site of a significant and ongoing drilling and redevelopment program.

In the 1990's, this field was on its last legs and appeared to be headed for abandonment. About 5 years ago, we began the redevelopment program that started with re-drills and, eventually, new vertical wells. And with the help of advances in well-completion technology—I'll mention fracking again—and improvements in artificial lift systems, our redevelopment efforts proved successful.

Last year we stepped things up a notch with the addition of a horizontal well development program. Not only now are we able to access reserves that would have been left behind, but after just 1 year, we're now generating over 10 percent of our production with less than 3 percent of our wells. We do expect this trend to continue and ultimately lead to a production rate in excess of 5,000 barrels a day. This is from a field that was almost abandoned 15 years ago.

Finally, when it comes to technology, I'd like to highlight the use of 3-D seismic imaging to help capture untested and undrilled sands containing significant quantities of oil and gas. In our case, we've acquired 3-D seismic over several hundred square miles of land recently, including several mature, old oil and gas fields, some having produced since the early 1940's and 1950's.

3-D seismic is usually thought of as a tool to help explore for new oil and gas fields, but it is also a very valuable tool to help hunt for untapped reserves in and around many of the tired, old oil fields that are all over California and many other States. It has been said by many that the best place to find oil is in an old oil field. Well, with the help of 3-D seismic and numerous other technological assets we have at our disposal, that statement is more true than ever.

Moving on to the impediments. In a nutshell, just as technology unlocks new oil and gas resources for companies, such as E&B, to exploit, new rules and regulations and permitting delays combine to hamper that effort. While unregulated and environmentally destructive practices have no business within our industry, I would like to point out just a few examples of what I view as burdensome regulations that have directly impacted our ability to produce more oil.

The first concern is Federal permitting and multiple Federal agencies. In our case, permits necessary to proceed with one of our 3-D surveys were delayed substantially by the U.S. Fish & Wildlife Service. The first permit to conduct the survey was submitted to

the Bureau of Land Management in December 2007. More than 16 months later, the required biological opinion was finally issued by the Fish & Wildlife Service. This delay paralyzed the project for almost 2 years.

Then in early 2010, we made a decision to expand the project by about 30 percent, which did require a modification of the project area. Upon review, the BLM, in fairly short order I will say, notified us that they believed the modified survey area met all criteria of the original permit and approved the plan. Unfortunately, Fish & Wildlife didn't see it that way and offered no explanation of why they disagreed with the BLM. The net result of these conflicting messages was a delay in this project for almost an additional year. That's a total of 3 years of delays because of these permitting issues.

The second example concerns the impact of various environmental laws, more specifically, The Endangered Species Act. This region has numerous threatened and endangered animals and plants. Regulations are in place that require operators to survey and determine whether any of these species would be impacted by development in new areas. This, of course, is common sense and environmentally sound; yet, these same laws apply to expansions and development within existing fields.

For example, in one of our largest fields, we intend to implement a steam flood that is directly adjacent to a very successful steam drive project operated by a larger company. To produce the steam necessary to heat the oil, we need to install a gas pipeline to fuel the steam generators. As part of the permitting process, a biological study is required, including one to determine if the blunt-nosed leopard lizard lives within the area of the pipeline. This actually requires two biological surveys, one in April and another in October. Our concern is that this project is already in a very highly impacted area adjoining existing thermal operations.

Furthermore, much of the pipeline route follows existing pipelines; yet, none of this seems to be given any consideration within the permitting process. It will be October before we can complete the survey, which could very well keep this project from being developed for over a year.

Finally, I want to bring to the committee's attention an example of some impediments we also face on the State level. In our case, it concerns permitting delays for another steam drive project.

In July 2010, we submitted an application to the California Division of Oil and Gas to reactivate a previous steam drive. Ten months later, we have yet to receive authorization for this multi-million dollar project even though steam floods are currently underway in sections directly adjacent to ours. No explanation has been offered by the Division of Oil and Gas for this delay.

In summary, it is without argument that the San Joaquin Valley, despite its age and regulatory challenges, holds significant additional oil and gas reserves that companies like E&B, using the latest technology, can exploit. If we can access these reserves in a timely and reasonable fashion, I have no doubt that all of the companies operating here in the Valley can add significantly to our Nation's domestic oil and gas production and will hire, train, and provide continued employment to thousands of new workers. This will,

without doubt, improve economic growth throughout this region and, more importantly, will aid in the quest to provide our Nation with a secure energy future. Thank you.

Chairman ISSA. Thank you.

[The prepared statement of Mr. Layton follows:]

E & B
NATURAL RESOURCES MANAGEMENT CORPORATION
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May 6th, 2011

Good Morning Mr. Chairman, Congressman McCarthy, Assemblywoman Grove, guests and panelists. My name is Steve Layton and I am President of E&B Natural Resources Management Corporation. Before I begin with my prepared testimony, I would like to state that it is an honor to be called before this committee as a representative of the independent oil and gas producers operating here in the San Joaquin Valley, and I certainly want to thank you for this opportunity.

As background, E&B Natural Resources Management is a California based privately owned Independent oil and gas Company. We produce approximately 7,000 barrels equivalent of oil and gas on a daily basis and employ 140 personnel. As a company, our primary emphasis is growth and replacement of our reserves. Thus it is important to note that E&B, along with many other independent oil and gas producers, reinvest virtually every single dollar earned in order to replace produced reserves and hopefully grow our respective companies. This significant and ongoing reinvestment

of cash flow by oil and gas companies is an vital but often overlooked part of the way this Industry must manage its business in order to STAY in business.

This in fact is what has happened at E&B as well as many other companies in the United States over the past five to ten years. In 2003, when management and operations were consolidated in California, E&B Natural Resources produced approximately 1,500 barrels of oil equivalent on a daily basis. Using our cash flow and along with the support of our banks, we implemented an acquisition, growth, and field redevelopment program. We have been successful in this endeavor and today our production is in excess of 7,000 barrels of oil equivalent per day. I would also like to mention that this production growth has also been matched by employee growth. In 2003, E&B Natural Resources employed approximately 20 personnel. Today we employ 140 – a fact that I am certainly proud of.

This growth in production and personnel has come through a combination of acquisitions and development of our existing fields; however for today I would like to focus on our development, or organic growth, because it is this type of production growth that is most important to all of us.

Furthermore, as I will soon discuss, our Industry's ability to grow production has been enhanced significantly by advances in exploration, drilling and production technologies, but as I will mention later, those gains can be offset to some or even to a great degree by the ever increasing burden of statutory and regulatory impediments that we face

First – Technology. California, and in particular our fields, are very mature; having produced in some cases for more than 100 years. Thus the easily captured, easily produced oil has already been exploited. For this reason, technology has been employed throughout the region to increase the recovery of oil in these mature fields. Perhaps the greatest evolution of technology in this valley is the use of steam to heat and mobilize oil that would otherwise be almost impossible to extract. Steam has been used for over 40 years in this area, yet the technology continues to be refined, augmented and improved which continues to unlock large volumes of previously inaccessible reserves. More specifically I would like to reference a small parcel we own in one of the nearby large heavy oil fields. Five years ago, this 5 acre lease of land located within the Kern River was producing just a few barrels of oil each day. In 2007, we made a significant investment in the property and now have drilled more than 20 wells and

have implemented a steam drive. With the help of new drilling, completion and thermal technology, this little five acre parcel is now producing almost 300 barrels of oil per day and we believe will produce in well in excess of 1,000,000 barrels of oil before it is depleted.

In other areas we have benefited significantly from the use of horizontal wells to sweep or capture larger untapped areas of oil producing reservoirs than the standard vertical well would reach. In E&B's case, the use of horizontals has added substantial new reserves to our flagship asset in California. This field is the primary driver of our growth and is the site of a significant drilling and redevelopment program. In the 1990's this field was on its last legs and appeared to be headed for abandonment. About five years ago we began a redevelopment program that started with redrills and eventually new vertical wells. With the help of advances in well completion technology and improvements in artificial lift systems, our redevelopment efforts proved successful. In 2010, we stepped things up a notch with the addition of a horizontal well development program. Not only are we now able to access reserves that would have been left behind but even at this early stage we are now generating over 10% of our production with less

than 3% of our wells. The use of this technology most likely gives us the ability to double our production over the next 3-5 years.

Finally, when it comes to technology, I would like to highlight the use of 3D seismic imaging to capture untested and undrilled sands and blocks containing significant quantities of oil and gas. In our case, we have acquired 3D seismic data over several hundred square miles including several very mature oil and gas fields, some having produced since the early 40s and 50s. 3D seismic is usually thought of as a tool to help explore for new oil and gas fields and that it is, but it is also a very valuable tool to help hunt for untapped reserves in and around many of the tired old oil fields that are all over California and many other states. Many have said that the best place to find oil is in an old oil field. With the help of 3D seismic and the numerous other technological assets we have at our disposal, that statement is truer than ever.

Now I would like to move on to the impediments we face in our continuing effort to grow and produce more oil. In a nutshell, just as technology unlocks new oil and gas resources for companies such as E&B to exploit, new rules and regulations, permitting delays, and uncertain accounting

rules combine to hamper that growth. While unregulated and environmentally destructive practices have no business within our industry, I would like to point out a few examples of what I view as unnecessary and burdensome regulation that has directly impacted our ability to produce additional oil, as well as hire additional employees.

The first example concerns the difficulty of receiving various permits – especially when multiple Federal Agencies are involved. In our case, permits necessary to proceed with one of the 3D surveys were delayed by the US Fish and Wildlife Service (USFWS) on two occasions. Our first permit to conduct the survey was submitted to the Bureau of Land Management (BLM) on December 18, 2007. More than 16 months later on April 29, 2009 the USFWS finally issued its Biological Opinion. The USFWS delay created a timing uncertainty that paralyzed the project for almost 2 years. In early 2010, a decision was made to expand the project area by about 30% which required a modification of the project area with the BLM. Upon review, the BLM believed that the modified survey area met all criteria of the original permit and approved the plan and notified the USFWS of their decision. Unfortunately the USFWS didn't see it that way and offered no explanation of why they did not agree with the BLM. The net

result of these conflicting messages was a delay in this project for almost one additional year.

A second example I would like to bring to the Committees attention concerns the impact of various environmental laws and more specifically articles and tenants of the Endangered Species Act. This region has numerous threatened and endangered animals and plants including Kit Foxes, the Tipton Kangaroo Rat, and the Blunt Nose Leopard Lizard. Regulations are in place that require oil and gas operators to survey and determine whether any of these species would be impacted by new development. This, of course, is common sense and is environmentally sound. Yet these same laws also apply to expansions and development within existing fields. For example, in one of our largest fields, we intend to implement a steam flood that is directly adjacent to a very successful steam flood operation owned and operated by a larger company. To produce the steam necessary to heat the oil, we need to install a 4-inch gas pipeline to fuel the steam generators . As part of the permitting process for receiving permission to operate a steam generator, a biologic study/review is required, including one to determine if Blunt-Nosed Leopard Lizards live within the area of the pipeline. This actually requires two biologic surveys;

one in April and another in October. What makes this particular survey unique is that it is already in a highly impacted area adjoining existing thermal operations. Furthermore, much of the planned pipeline route follows existing pipelines. Yet none of this is given any consideration within the permitting process. It will be October before we can complete the survey and this delay will keep this potential 10 million barrel reservoir which is capable of producing, 1,500 barrels of oil per day reservoir from being developed by up to and possibly more than a year.

Finally, I would like to bring to the Committees attention an example of some of the issues and impediments we face on the State level. In this case, the impediment concerns permitting delays related to a steam drive project west of Bakersfield, or more accurately a steam drive reactivation. In July of 2010, E&B submitted an application to the California DOGGR to reactivate previous steam drive operations within this field. The formal proposal requested the drilling of 26 inverted 7-spot steam drive patterns, which could produce in excess of 1,000 barrels of oil per day based on other thermal operations that completely surround our property. Ten months later, we have yet to receive authorization, even though steamfloods are currently underway in sections directly adjacent to our.

Again, no explanation or timeline has ever been offered by the Department of Oil and Gas for this delay.

In summary, it is without argument that the San Joaquin Valley, despite its age, holds significant additional oil and gas reserves that companies like E&B, using the latest technology, can exploit. If we can access these reserves in a timely and reasonable fashion, I have no doubt that all of the companies operating here in the Valley can add significantly to our nation's domestic oil and gas production; hire, train, and continue to employ thousands of new workers across all professions; improve and increase economic growth throughout this region, and perhaps most importantly assist our nation with energy security and independence.

Once again, I would like to thank the Committee for giving me this opportunity to represent the many oil and gas producers located in this region, and I would be glad to answer any questions you may have.

Steve Layton, President – Mr. Layton has served as President of E&B since 2000. During his career, Mr. Layton has been actively involved in building and managing several oil and gas companies including two that were acquired by Francesco Galesi in 2000 along with E&B Natural Resources. Mr. Layton is a member of the Board of Directors of the Louisiana Independent Oil and Gas Association and the California Independent Producers Association. Mr. Layton has also served as a Director and as Governor of the Houston Region for the Independent Petroleum Association of America and as President of the National Stripper Well Association. Mr. Layton earned a BS and MBA from the University of Tulsa.

Chairman ISSA. Mr. Hull.

STATEMENT OF TUPPER HULL

Mr. HULL. Mr. Chairman, thank you very much. My name is Tupper Hull. I am representing the Western States Petroleum Association today, and we're very pleased to have the opportunity to address you.

Western represents major petroleum, integrated petroleum companies that operate in California and other western States that we represent them in, as well as some of the large independent producers that Rock mentioned and independent refiners as well. We do think it's very important that this hearing is being held in Kern County, as others have mentioned. Kern County is responsible for producing about 72 percent of the oil that's produced in California today. And California, as you know, is the third largest oil producing State in the United States.

Chairman ISSA. I apologize for interrupting you, but I talked to the gentleman from Alaska, and he said as Alaska declines, he prefers that we mention we're No. 2 now.

Mr. HULL. You anticipated. For a period of a couple of months earlier this year, we were No. 2. Now we've slipped back to No. 3. So I had to correct my testimony. But we're giving them a run for their money.

As others have mentioned, you know, the technology has played such an important role in California, and not just prolonging the life of the oil production but in the livelihood of the tens of thousands of men and women that work in this industry, men and women who earn really good salaries and bring a tremendous amount of expertise and diversity to this region as well as other oil-producing regions in California.

You have asked us to talk about pathways to energy independence with a focus on hydrofracking, and I'm going to let others here with a great deal more expertise in hydrofracking address that specific issue. But we don't think any discussion about energy independence, or we would probably say energy security, is complete without mentioning the 10½ billion barrels of oil that the U.S. Geological Survey estimates is offshore of California in undiscovered but technically recoverable reserves off the coast.

To give you some sense as to what 10½ billion barrels would mean to California's energy security, if all that could be produced, it would and could replace all of the oil we currently import from foreign sources for 36 years. If you just look at our largest foreign source of oil, which is Saudi Arabia, that 10½ billion barrels—excuse me—could replace all Saudi imports for 155 years. It is a tremendous resource and one that we believe deserves consideration.

Now, we're very aware of the tragic event that took place in the Gulf of Mexico last year. We spent a lot of time explaining to the media and others our view on that and why the production that takes place in California occurs under conditions that are entirely different, very different, than what is taking place in the Gulf of Mexico in their deepwater exploration. The reserves on the outer continental shelf in the Pacific are in much shallower water; the pressures typically are much less than what was found in the Deepwater Horizon accident. And the safety equipment that is em-

ployed and the technology that's used is much more accessible on the production facilities in California.

For the last 40-plus years, a billion barrels of oil has been produced off of the California coast. And during that time, according to—and I apologize. I can't remember BOEMRE's full name. It's the former MMS—estimated or has said that a total of 850 barrels of oil have been accidentally released in the Pacific during that 40-plus years.

Now, make no mistake. That's 850 barrels too many. Our members get up every morning with a goal to ensure that not a drop of oil spills in any form during their operations. But over a 40-year period, we believe that's not just a commendable safety record but it reflects the kind of commitment and technologies that have been developed to protect the environment while providing important energy resources to the Nation.

The issue of energy security is particularly acute in California because as we say, California is an energy island. We are not connected to other refining and producing areas of the country by pipelines. Consequently, when there are upsets in supply or international events like we're experiencing now that impact oil supplies, it's very difficult to shift and move supplies around to balance the markets. And so Californians pay a price in volatility and upward pressure on prices because of this isolation.

And so for that reason, we believe oil produced in California is the most secure source of oil for us, it is the lowest cost source of oil. And we believe this conversation you're having today is the most important conversation from an energy perspective that we can have. Thank you very much.

[The prepared statement of Mr. Hull follows:]



**Committee on Oversight and Government Reform
Bakersfield California
May 6, 2011
Testimony**

Thank you for the opportunity to address you today.

My name is Tupper Hull. I am vice president of communications for the Western States Petroleum Association. WSPA represents the major petroleum companies that produce, refine, transport and market petroleum and petroleum products in California and five other western states. WSPA's membership includes both integrated major companies as well as a number of large independents focused exclusively on the exploration and production of crude oil and natural gas.

We appreciate the Committee's interest in the subject and its willingness to hold this hearing in Kern County.

Kern County is home to some of the largest and most productive crude oil fields in the United States. Many of the fields in Kern County have been producing oil for more than 100 years, thanks in large part to the development of new technologies and techniques that have prolonged the life of these oil fields and the livelihoods of the men and women who work them.

California is the third largest producer of crude oil in the United States (behind Texas and Alaska) and approximately 72 percent of that oil is produced here in Kern County.

California produces approximately 680,000 barrels of oil every day, some 12 percent of the nation's crude oil production. Every drop of oil produced in California, with some very rare exceptions, is refined in California and sold to consumers in California, Arizona, Nevada and Oregon.

Despite that rate of production, today it supplies just 38 percent of California's crude oil needs. Alaska provides another 14 percent of our crude oil requirements and the balance – 48 percent – comes from foreign sources. Hence, any new crude oil production in California will help reduce our state's dependence on foreign imports.

California is a prodigious consumer of petroleum products. We are the third largest gasoline consuming entity on earth, according to the California Energy Commission, behind the United States as a whole and China. Last year, California refineries produced more than 44 million gallons of gasoline, 10 million gallons of jet fuel and 14 million gallons of diesel fuel every day – 365 days. That's nearly 3 million gallons of petroleum products every hour of every day.

California refineries are among the most sophisticated in the United States, according to the Energy Information Administration. That means they are able to refine a very wide range of crude oils into useful products. They are among the cleanest in the country, operating under an enormous number of air quality regulations and by reducing emissions of criteria pollutants have played a major role in the dramatic improvement in air quality in California, according to the California Air Resources Board. And they are among the safest refineries in which to work, according to CalOSHA.

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You have asked us to address the question of energy security. We believe the nation's energy security, and therefore California's energy security, can best be enhanced using three distinct and equally important strategies.

One is to make sure we are using our available energy supplies as efficiently as possible. California already leads the nation in energy efficiency, according to the American Council on Energy Efficiency. But we can and will do more.

Two is to diversify our energy portfolio to bring consumers a broad choice of fuels and energy sources that are technically feasible, cost effective and affordable.

And three is to make sure we are using our domestic energy resources as fully and as prudently as possible. That means continuing to develop the technologies and practices that allow us to prolong the life of mature productive fields, discover new reserves and to tap energy resources that have been heretofore inaccessible. Integral to these efforts is a permitting and regulatory processes that provide clarity, certainty, and efficiency for the regulated entities.

One of the technologies that is vital to accessing existing energy resources and growing our domestic production is the process known as "hydraulic fracturing." Hydraulic fracturing is a completions technique that has been safely and efficiently used throughout the country, including California, for decades. Hydraulic fracturing allows us to develop oil and natural gas reserves that are locked in rock formations and cannot be extracted using conventional techniques. Despite media reports to the contrary, it is not a new or exotic technology.

The topic of hydraulic fracturing has received a great deal of attention in other parts of the country where it is being used to develop natural gas reserves in tight sands and shale formations, conditions that are not typical in California. The term hydraulic fracturing is very broad and covers a variety of different completions techniques. Discussions about hydraulic fracturing can be complicated, highly technical, and will differ significantly based on the geologic nature of the region and the resource.

To our knowledge, there has never been a single documented incident where fluids used in hydraulic fracturing have adversely impacted a California drinking water supply.

Shifting topics, any discussion about increasing California's domestic energy independence would not be complete without touching on the availability of the significant offshore resources lying immediately off our state's coast line. WSPA's members believe California consumers and businesses would be well served by development of the estimated 10.5 billion barrels of oil the U.S. Geological Survey says is technically recoverable off the California coast. To give you a sense of what those 10.5 billion barrels would mean for California, it could replace every drop of foreign oil we currently import for 36 years. Put another way, 10.5 billion barrel would allow us to replace all of the oil we receive from Saudi Arabia, our largest source of foreign oil, for 155 years.

We are very aware of the tragic events that occurred in the Gulf of Mexico last year. It is important to note that the identified undeveloped oil reserves off the California coast are in relatively shallow water, involve reservoir pressures that are significantly lower than the types of pressures encountered in

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deepwater ventures, and would not require the type of deepwater exploration and production required elsewhere.

California's offshore oil producers have safely produced more than 1 billion barrels of oil from state and federal offshore reserves for many decades. In the past 40 years, a total of 850 barrels of oil have been accidentally released into the Pacific from those operations. That 850 barrels is 850 too many in our view. But it is, by any measure, a tiny release rate is reflective of the commitment the petroleum industry has made to operating in the marine environment off the California coast in a safe and environmentally responsible manner.

The issue of energy security is especially acute in California and particularly timely. California, and the western US, are what we refer to as an Energy Island. No pipelines bring crude oil product into California from other refining or crude oil producing centers in the country. This isolation limits our ability to move products or crude oil into West Coast markets when there are supply shortages, infrastructure constraints and other supply/demand imbalances that put upward pressure on prices.

To conclude, oil produced in California is the most secure, least cost source of petroleum energy for California consumers and businesses.

Thank you and I would be happy to answer any questions you have.

Chairman ISSA. Thank you. Thank you all for your testimonies. As I said, this is a less formal environment; so I don't think we're going to do 5 minutes. I think we're going to go around multiple rounds, and I'm going a little bit in reverse order.

Mr. Hull, when you said 850 barrels into a billion barrels, any guess, just with the ships that come into the United States, how much was spilled in the same time off-loading per billion barrels of imported oil?

Mr. HULL. I wouldn't venture to guess. It's not really a number my members would be happy to have me carrying around and talking about. I mean, obviously—

Chairman ISSA. Would it surprise you to know that just the stuff coming out of bilges, that we regulate, far exceeds that.

Mr. HULL. I don't think there's any question that the risks associated with tankers and the volumes of oil that are coming into California every day to serve this market far outweigh the risks of producing here in the State of California in the Federal waters offshore.

Chairman ISSA. Mr. Layton, I'm going to ask you a question, and pretend that I'm representing the other side of the equation for a moment. I think it would be helpful.

Isn't it true that you're in an incredibly profitable industry, one in which the American people pay far more for their fuel than one would ordinarily figure it takes to extract and deliver it?

Mr. LAYTON. This industry, without question, is experiencing a very profitable period. You can look at the earnings releases of the public companies. I guess it depends on how you view it. If—

Chairman ISSA. Well, let me give you the followup for a second.

Whenever you have a really profitable industry, one in which foreign competition is not really competition because we need them, therefore, we must buy from them—it's not a question of "Do we buy from you?" Or "Do we buy from Qatar?" Or any other place, whether it's oil or natural gas. The fact is: We have to import more than half of all we consume in oil and beginning to become a net importer in natural gas if we don't reverse the trend.

In a sense, don't we have a world market, such as Saudi Arabia, where their lift cost is about \$8, that gets into port for \$8 a barrel—we're delivering them the difference between \$8 a barrel and \$140 a barrel. Well, your margins, your lift costs, are dramatically higher.

What would you expect, for example, the lift cost of a typical Bakersfield delivery of a barrel of oil to be, all in all?

Mr. LAYTON. In the steam drive projects that I mentioned in my testimony—

Chairman ISSA. Yes.

Mr. LAYTON [continuing]. We will—a typical operation, we'll spend \$40 to \$50 a barrel to extract the oil, including the cost of steam.

Chairman ISSA. And if you looked at the regulatory costs or, if you will, the delays, the excess that you spoke about in your testimony, how much of that is, in fact, an additional tax on this lift cost that you have.

Mr. LAYTON. It is easily another 10 to 20 percent on top of our regular lifting costs. And it certainly depends on the area. It does

vary, but it is significant. The delay and the uncertainty, although difficult to quantify in terms of a dollar-per-barrel lifting cost, it is equally as harmful as high lifting cost because it doesn't allow you to plan.

In our business, as I see it, stability equals security. Stability in the sense that we need a stable regulatory and tax environment operating. And if we have it, we can provide additional oil production that does ultimately lead to more energy security for this country.

Back to your question on the profitability, as I said, it depends on how you look at it. If you look at it as a company that takes those profits and puts them in a shoebox and buries it in the backyard, that's not such a good thing. But if you go to what really is happening—and I testified to and Rock mentioned—those profits are reinvested. That reinvestment leads to more energy security. And if you look at what's happened with the total production from the United States in the last few years, you're going to see a big difference in the production curve. We're on the incline now.

Chairman ISSA. I want to go back to that quickly. You're on the incline with a \$40 cost, of which probably 10 or more is produced by excesses in regulatory costs, over your competitors because an \$8 competitor is getting \$140 a barrel because there's not enough supply. Is that a fair statement.

That's what I was trying to get to in that rhetorical question, that, in fact, you triple your production—if America becomes close to self-sufficient, the Saudis' \$140-a-barrel oil, which costs them \$8 a barrel, or the Kuwaitis', which costs them \$6 a barrel to lift, they'll have to match the market, which would certainly drop into the \$60, \$70.

What I'm saying, in a way, is: Aren't you here asking us to give you the ability to produce enough to actually reduce the price of oil and the excess profitability that exists in the world today?

Mr. LAYTON. If we, as producers, are successful in what I think is a universal quest, to grow production, we understand the net result will be lower oil prices for the rest of the country. I mean, that's what happens with supply and demand. You have more supply, the price goes down. And we're trying to provide more supply.

Chairman ISSA. Mr. McCarthy mentioned my background in business. I've worked a lot in engineering, but the truth is that my love was economics. And there's nothing I like more than figuring out if you drop the price of energy—and almost everything we produce and everything we do is leveraged off energy—you drop the price of everything else.

So thank you for your comments on that.

Mr. FARENTHOLD. Thank you very much, Mr. Chairman. At the risk of being inhospitable, my first question to Mr. Hull is: You mentioned California was No. 3 and Alaska was No. 2 in oil production.

Chairman ISSA. Or the other way around.

Mr. FARENTHOLD. Or the other way around, depending on the month. Who is the solid No. 1 then?

Mr. HULL. I don't seem to recall that fact, Congressman. It's Texas and I started my career at the Houston Post back many years ago and covered the industry and found it fascinating.

Mr. FARENTHOLD. Let me visit, then, for a second, Mr. Hull, about the—your group represents a wide variety of companies, from the big ones to the little ones.

Mr. HULL. Primarily the large companies. We have a small membership of 26 companies. We're not a broad-based organization. We're the household names in the oil and natural gas business.

Mr. FARENTHOLD. So if somebody were going to refer to the "evil oil companies," they probably would be referring—

Mr. HULL. It would be Big Oil, yes, sir.

Mr. FARENTHOLD. So let me ask you. You hear about record profits within your industry, and you're always hearing about dollar amounts, but can we talk a little bit about percentage amounts? What's the typical percentage on return on y'all's investment.

Mr. HULL. What's fascinating about the periods we go through now—because I get to handle a lot of these questions—is we never really talk about this when the prices are depressed. I think we forget that in 2008 we had a period of extraordinarily high crude oil prices in August. By December, crude oil was trading at \$30 a barrel, and the price of gasoline came down by a comparable amount.

So we think it's important to talk not only about percentages—because you're right. These are the largest commercial enterprises on the face of the earth. The billions upon billions that are invested and required to bring these resources to market are enormous. And over a period of time, when you balance out the highs and the lows—

Mr. FARENTHOLD. An average.

Mr. HULL [continuing]. The oil and natural gas business makes about 6 to 6½ cents for every dollar they sell, their gross sales.

Mr. FARENTHOLD. How does that compare to other industries.

Mr. HULL. About a penny, a penny and a half less. So if you're an investor, manufacturing, as a whole, is generally more profitable than the oil and natural gas business over time.

Mr. FARENTHOLD. And also, you're typically public-traded companies, the "biggs."

Mr. HULL. Right.

Mr. FARENTHOLD. And the owners of those companies, typically, what, pension funds, mutual funds? Those are some of your largest shareholders.

Mr. HULL. Absolutely.

Mr. FARENTHOLD. So pretty much probably anybody in this room or watching on the Web, if they have a retirement plan or own a mutual fund, are probably the owners of one of your companies.

Mr. HULL. Absolutely. I don't have the exact figures right in front of me, but you're absolutely right. The vast majority of owners of Big Oil are pension funds and individual investors who have their retirement savings in these companies' ownership.

Mr. FARENTHOLD. I apologize for going—just questioning with you. I hope I'll have another round or two so I can ask some other people.

I wanted to visit a second about offshore. You talked about offshore in California; you talked for a minute about the tragedy with the BP blowout in the Gulf of Mexico. Being from Texas, let's talk a little bit about the Gulf of Mexico, if you wouldn't mind.

The U.S. oil companies aren't the only ones drilling in the Gulf of Mexico, are they?

Mr. HULL. You know, I don't believe so. But I have to be honest with you. Our purview includes only the western United States. I'm not familiar with who's operating in the Gulf of Mexico.

Mr. FARENTHOLD. As a lawyer, I don't ask you questions you have to answer to.

And you've actually got China drilling off the coast of Cuba; you've got the State oil company in Mexico that's drilling in the Gulf of Mexico as well.

So regardless of what amount of regulation we put on our domestic oil companies, we're not going to have any effect on what China and Mexico do. We can't change the way they drill.

Would that be an accurate statement?

Mr. HULL. I think that's correct, sir. I mean, I think the chairman mentioned too that while we are seeing prices at these very high levels, apparently related to the unrest in the Middle East, the longer-term picture is not just, you know, their—these other emerging economies are very actively and aggressively out in the world market looking for new production opportunities, they're buying a tremendous amount of oil, and it's creating upward—

Mr. FARENTHOLD. So do you think a better regulatory scheme or better way for the taxpayers to spend their money, rather than making it more difficult for y'all to drill in the Gulf and compete and make permitting and all these regulations, might be to invest a little bit of time and money some response, training and technology, so in the event something happened in a well owned by or operated by another country, we'd be able to respond to that as well as if something happened locally.

Mr. HULL. I lost the question. I apologize.

Mr. FARENTHOLD. Rather than putting excessive regulation on our domestic companies, making life difficult for them to compete, let's say, in the Gulf of Mexico, where you've got Mexico and China also drilling—something happens on a Mexican and/or a Chinese drilling rig and there's a blowout or a leak or something, wouldn't we be better off, rather spending our time and effort regulating domestic companies, coming up with responses that would benefit any worldwide oil company, training and technology?

Mr. HULL. Well, I think the U.S. oil and gas industry have led the world in developing those kinds of responses. In California, of course, we have huge resources on standby 24/7 to respond and have developed, along with other regions of the country, this technology that really is used worldwide to respond to any accidents that occur.

Mr. FARENTHOLD. Well, I'm over time. I'll let everybody else have a turn.

Chairman ISSA. I assure you, we will—as long as our witnesses are willing to indulge us, we would like to learn all we can.

Mr. MCCARTHY. I thank all the witnesses for their testimony. And it really comes down to why we're having the hearing and why we're having this challenge. We use more energy than we produce in this country. Having said that, that means we have to get it from somewhere else; so we pay for it from somewhere else.

The challenge that I've always faced in this job is: There are many times we think in California—we realize other States compete with us. We have the ability to say which State produces more. We watch every day when a company leaves California or somewhere else because they maybe give a little better price. We never really think that America competes with other countries, but we do. And energy is probably the No. 1 industry that you can find that could happen. If we make it harder here, we will still buy it somewhere else.

Now, this country has faced a lot of challenges. And normally when we face a challenge, we meet a goal and we go forward. We've done that in World War II. We achieved our goal. When we found that Russia went to space first, we made a goal for us and in a decade, we were going to go to the moon. We faced our attention on that.

For too long in energy, we only face our attention when the problem gets too big, and then we put our attention there, then we forget about it when it comes down so don't have the ability to go there. If anybody's ever lived in a community that has oil, you've seen the booms and the busts. If you've lived in this community, you watched a time where the cost to lift it was more than the barrel you could even sell it for. But you could not shut it down so you had to maintain it.

I have found that the country gets very divided. Now, a time that we all get united is usually during the Olympics. Why is it that we cheer for our country? We never ask them whether they're Republican or Democrat. But the other reason why we cheer so strongly is because America gets a level playing field. We do a 100-yard dash, we all start at the same starting line; we all have the same finishing line.

So we've got to think from that mindset too, that when we make stuff more difficult here, someone else can still be drilling someplace else that have different protections on the coast then we would have.

And so taking some of that, I thought some of this—some of this ability is what I saw here today. I loved the presentation where you've actually shown how it was going.

Now, technology has changed. And probably the best analogy I've heard from somebody, if you think of a bathtub and you fill it with water—picture that underground, that's a natural resource. An old way of doing it was putting a lot of straws into the bathtub and trying to get that water out. Horizontal is fundamentally different. Now we can just go to the drain and use one. So that's one over the land, and that's one ability to bring it up in a different capacity, and it's environmentally safer.

When oil was first discovered in Kern County, it was untapped. It was a lake. There's pictures of people in a boat, not of water but of oil. It's a fundamentally different place of where we have it now and our protection.

But I want to take that technology a little further, and I want to followup with Mr. Whitsitt.

When you do the fracking, you had shown in your graph that there has been some people bring up the issue about the water table and the protection. If you can walk me through that one more

time to show where fracking goes and where the water table is and what protections we have in going and using the technology.

Mr. WHITSITT. Great question, Congressman. Water tables or the aquifers that are drinkable are essentially shallow, and with very few exceptions, as I've indicated, a few hundred feet below the surface.

The States require and we, with our practices, implement a very strict regimen of sealing off those water sources at the surface or close to the surface with multiple layers of steel and cement, and then the frack job is done through those layers that seal off the water.

Mr. MCCARTHY. And when you normally do the fracking, how farther down is that from the water table, itself.

Mr. WHITSITT. Thousands of feet, in most cases. Certainly 15,000 feet is not uncommon. We, at Devon, are doing 8,000 to 10,000 to 12,000 feet, and so you're well below, far below the water sources.

In Canada—I will mention too—and this goes to other things we're doing to try to protect both water quality and—quantity and quality. We actually in our heavy oil operations in Canada have found ways to use non-potable water; so we use no freshwater to generate steam. And we're trying to find areas where we can do things like that all the time because we are very much in tune with concerns that are very legitimate, particularly in the west, about water issues.

We also try recycling where we can; we do it where we can. And we also blend water; so we use flowback water to put in the next job, if we're able to do that. And we're making progress on that technology all the time as well.

Mr. MCCARTHY. Now, we all know that one form of energy is not going to get it done. We also know that as advancements go, we will have renewables that have great potential for the future, but we need that bridge. The challenge that we have is that we have to have a policy that allows us, with the ebbs and flows of the cost, to actually bring the cost down. Because our economy, 70 percent is based on consumption.

With the price of oil rising so rapidly, what happens is: People are still paying that cost to business, and they're taking consumption out of the economy; so our economy drops. But that price still goes someplace else and goes out to another economy.

So, Rock, you brought up insight talking about the taxes, that they are very similar and the same taxes based upon any other business. Which of you could explain that a little further.

Mr. ZIERMAN. Well, there's been a lot of discussion about whether or not oil companies receive subsidies. And I was trying to make the distinction between a subsidy and a tax treatment.

In fact, first of all, the actual components that are within the administration's budget that they want to eliminate target independent producers, not major oil. So that's the first distinction. Most of those tax treatments are not available to major integrated oil companies; they're only for the independents.

But the second, more important point that I was trying to make is: A subsidy is a cash payment from the government for doing some sort of activity. It's quite different if you are having a debate within the IRS about how to treat a certain expense. And we would

be happy to have that debate. But keep in mind, the only way that you have this debate and the only way that you have these expenses is if you're deploying capital. And that's exactly what our companies are doing is they're deploying capital. And the question is: How best can they redeploy the new capital?

And that's what a lot of these tax treatments were designed for. Given the fact that this is highly risky, it's very expensive, and our energy security depends on it, the taxes in the teens and 1920's, a hundred years ago, were designed in order to encourage the rapid reinvestment of this capital back into the oil and drilling programs. And that's exactly what we've experienced.

Mr. MCCARTHY. If you do not invest the risk, you cannot get the tax.

Mr. ZIERMAN. That's correct.

Mr. WHITSITT. Can I just add one point here, please? I'd just inject for Devon—and we are a large independent exploration and production company.

The recent proposals by the administration, just on the intangible drilling costs—which are the real costs, as Rock has pointed out, in drilling a well—it's clearing the land, doing the environmental remediation. If those proposals were put in place, it would cost Devon about a billion dollars in the first year. And that would equate to our complete drilling program in the Barnett Shale—as I mentioned, is where the shale revolution really started, and it's the most prolific area in the country.

To us, we have to say, "What is that all about?" That looks to us like it is totally a wrong-headed policy that actually would penalize the companies that are most efficient at producing domestic resources that power this Nation.

Mr. MCCARTHY. I want to go to Assemblywoman Grove because she has witnessed, one—and kind of all your presentations—the redundancy of regulation, not just with oil, with renewables, trying to find—from wind and solar out in East Kern.

But from her own personal experience in a business, finding out because of what California does, we're setting up business in another State.

So I wonder if you can touch on, one, redundancy, what you are viewing outside in the district as well with our ability to produce more energy in America.

Ms. GROVE. Thank you. With all due respect, I would like to address just one thing prior to. We talked about taxes or tax that you guys were just addressing.

Industry, meaning the oil industry, is now at 41.4 percent of tax. And if California liberal politicians have their way—what we're fighting up in that building right now—and they did a 12½ percent oil severance tax—it will increase the industry tax to 53.9 percent.

Now, to give that number some perspective, if you take Apple in 2010, they paid 28 percent of its revenue or profit to the government—Apple did—while it generated more profits than Chevron. So in perspective, the oil industry is being punished on a tax base and—than other employment agents or industries.

If you go back to—Mr. Chairman, you had a question earlier about the "average products of goods and profit." And everyone in business knows that somebody could say, "Well, you run a \$25-mil-

lion-a-year corporation,” but after you pay payroll taxes, workers’ comp, liability insurance, and you get down to net profit, it’s less—it’s around \$100,000, not in the millions.

So if you take Apple, for instance, again, in a comparison, the average products sold are about 25 percent above the cost of materials and production for marketing and sales. And if you use that for the same—in comparison to with Exxon, Exxon’s profit margins, in comparison, were about 8.7 percent. And that’s hardly the windfall that people are proclaiming.

If you take the oil industry as a whole, they have 11½ percent basic on profit and making that the 45th most profitable industry of the year. That is hardly close to the top 10. So just to clarify those two things.

And then back to your question, Mr. McCarthy. I’m sorry. You know, from a business standpoint, being a third- and sometimes fourth-tier contractor for the oil industry, the job multiplier that we have—and I ran on jobs. You know, we have 2½ million people unemployed in the State of California, which affects our Federal revenue as well. And when I ran on jobs and you look at what industry can place in these jobs, you talk about the job multiplier.

A lot of individuals in the testimony have referenced the oil industry jobs. And I’m going to name a few local companies. If you take one oil field job in a platform, you have engineers, and you have site engineers, you have chemical engineers, you have mechanical engineers, you have people that are the “job multipliers” is what I call them.

If you build a site, you have an excavation crew, a site crew, a gravel crew. The gravel is produced someplace, mainly in one of the facilities that we have either on the Grapevine or in Mojave. You have trucking companies that transport that gravel to the site. You have everything from all those companies that are supported by oil—or Big Oil—small oil, independent oil. These are small businesses that thrive on this industry. You have people that supply more paper and pencils and products, like from Stinsons or O’Leary’s. You’ve got the simple things like Mona at Speedway Market where 90 percent of the people that go to work in the oil fields stop and purchase stuff from her for their daily consumption of food and breakfast.

So when you look at the small business that thrives on this industry, the jobs that are created and not created from private business because of the limitations with permit delays through the Division of Oil and Gas—or I’ve seen projects delayed out in the oil industry where a blunt-nosed leopard lizard is onsite and they CAUTION-tape it off and everybody sits around and waits for this lizard to leave.

You talk about—Mr. Layton talked about a description of a job that’s being delayed, where the activity of this blunt-nosed lizard is at certain times of the year; so you just have to stop working until this lizard finds its way to another location or goes into some type of hibernation. Those things don’t make any sense when it comes to job creation.

The oil industry and job creators are very conscious of things that need to be done to protect our environment and our land, but California and the Department of Fish & Game and Federal EPA

is way overreaching and has become completely unreasonable, to the hindrance or full-out assault to private-sector job creation.

Chairman ISSA. Assemblywoman, if I can followup on that. Is there really any difference, in your estimation, between the crazy—or the excess, as you're describing, in oil and the same excesses that are occurring that are delaying green energy roll-off? Because this is also an area of the State that has the potential to provide an awful lot of solar and other energy. Don't you find the same thing to be true, that the same self-inflicted wounds are hurting our ability to reach any reasonable goal of renewables?

Ms. GROVE. That's exactly true. And it's not only in renewable energy. You take—in East Kern, which I represent as well, there was a solar plant that wanted to put a solar facility in the Mojave Desert, where the sun is, and it was not able to do that because of a Mojave ground squirrel.

You look at industry—just private business industry across—from development. I have a developer in Taft who's had a certain piece of property who cannot develop that property and provide affordable housing in Taft, where we have a large oil production area, because of squirrels that live on that property. And you have to tag them and put a little antenna on them and transfer them to—you know, double the amount of property.

So the environment—

Chairman ISSA. You saw all that on Animal Planet. It was very impressive, the tracking. It's not very productive for mankind, I guess, but—

Ms. GROVE. It is not, and not productive for job creation in our State and in our Nation. You know, I recently had the opportunity to go to Texas. And it was very interesting—

Chairman ISSA. And see the Governor, I understand.

Ms. GROVE. I did. I got to meet Governor Perry.

And what was interesting is that we talked to—the Department of Railroad oversees their permit process in Texas for some—I'm not really sure about that, because the Railroad is—the permit process.

And keeping the same environmental protection, protecting our land and being conscious of our planet, they issue permits within 2 to 5 days, project permits, where we're sometimes delayed for up to years. That, and then the environmental delays with endangered species on these projects and properties causes jobs that we desperately need here in our State and our Nation to be delayed as well.

Chairman ISSA. Rock, you said something, and I want to try to put it in the record in a way that people who are not involved in the oil industry can understand.

You know, I came from the electronics industry. We watched the government come up with this interesting one that—our patents. If we had a patent and we went through and we paid the legal fees, we had to amortize the patent over the life of the patent. All the cost we pay to lawyers. So you pay the lawyers today; you finally get your patent—and by the way, if they turned down the patent, you could write it off.

But you actually had something worthwhile; so you got it, and you had to amortize. Then if you had to sue somebody to defend

your patent, you had to put all of that into, if you will, a long-term depreciation schedule because the government wanted your profits today, even if you had spent them in trying to create profits for the future.

Isn't that basically the same kind of wrong-minded thinking that American companies are seeing? Except in your case it's a drill bit, that when you dull the drill bit, you break a bunch of equipment as you're drilling down, and you set it aside and send it off to salvage. It's gone. You've spent—you bought it, you paid for it, you spent it, and you disposed of it. They now want you to amortize that over the useful life of the oil well.

Isn't that essentially what—because you say intangible. And to me, money out of my pocket that I know I spent, that they want me to pretend I didn't spend for 20 years, that's not intangible. Is that the intangible we're talking about here today?

Mr. ZIERMAN. That's exactly right. We're talking about mud, cement, testing, some drilling operations that you're talking about, all the things that are happening before a well is completed or any production has come online.

Chairman ISSA. You know what's amazing is America is a funny place. We talk about how we support business, we really care about it; but people in Washington, in my position, have done some amazing things.

I was in private business when NAFTA was passed. And whether you were for or against NAFTA, 1 day I found out NAFTA had been signed, and I found out as a result of NAFTA, I was going to have to wire-transfer weekly my payroll withholding taxes instead of sending a check. And the reason was because your predecessor, Bill Thomas, and all the other guys, they had a couple of billion they needed revenue to make NAFTA pencil out. So they got it by accelerating the speed with which every business in America would send money to the government. Now, it only scores a one-time event because they just accelerated the speed with which they got it from a couple of weeks or a quarter for small companies to immediate.

We're still doing that today, and it's one of the frustrations I have. I want your industry to expense everything, absolutely, that is consumed. I certainly want you to capitalize your long-term assets. If you've got a casing there, it's reasonable to have it over the life. But I want your capital to be put back to work as quickly as possible. I want Devon Energy to have a smaller bank line to put in more wells. And the amazing thing is, I can't get my government to go along. I can't even get the Ways and Means Committee to go along.

Let me go to another question that I wanted to understand, because fracking, which is not new technology, isn't what we're talking about here today. What we're talking about is better fracking.

Is that right?

Mr. WHITSITT. That's right. The new applications of fracking.

Chairman ISSA. And if I understood correctly, if we're concerned about the watershed, we've been concerned about it for 60 years, because you've been fracking for 60 years.

Mr. WHITSITT. Correct.

Chairman ISSA. And we should know—we shouldn't need Secretary Chu to endlessly study something you've been doing for 60 years.

Let me understand something. When you go down once but you go far further, as far as what you yield, the only difference in that is that you have—only have one area of risk, which is that casing, for far greater gain. Is that correct?

Mr. WHITSITT. The casing is placed for a couple of reasons. One, we've been talking about, obviously, is to protect the water sources. That's primary, and it happens in every well. There are other applications of casing, to prevent the hole from collapsing and those kinds of things. But the fact is—and what I think you're alluding to is—that we've been doing this for a long time. The technology gets better; the materials gets stronger; the knowledge of how we do this—and many times we do it along that horizontal length of pipe—it all improves. And we've seen remarkable efficiency gains.

And one more thing that is really remarkable today is: We're doing much more of what we call "pad drilling," where we can actually do these multiple horizontal wells from one surface location so that we don't have to disturb the surface multiple places around this gas field. So, again, the technology just continues to improve.

Chairman ISSA. Well, and that's what I was leading to. And I appreciate your clarifying my questionable question, because this is something where I'm still learning what you've spent a lifetime knowing.

You've got less exposure to the watershed because you're going less times for the total amount you're getting.

Mr. WHITSITT. Correct.

Chairman ISSA. Your risk, of course, always is—when you first drill through a water area, until you get it sealed and you're comfortable and all the tests are done, there's always some risk.

Let's just say hypothetically that you hit oil, because, on occasion, the earth's oil is much closer than you thought it would be, but you eliminated all that risk before you start going horizontal. So in a sense, horizontal is getting more from this already mitigated, small risk that you had when you first drilled, what—I guess in Oklahoma is—what is it, 1.2 million wells they've drilled or something?

Mr. WHITSITT. We've drilled a lot of wells and fracked 100,000 of them in Oklahoma.

But also, the other point I would make too, Congressman, is that in the shale plays, in particular, which is really the revolutionary thing now, once we are there—

Chairman ISSA. This is heavy, by the way. Anyone who didn't pick this up—when I set it back down, you've got to figure, this is pretty darn dense rock.

Mr. WHITSITT. It's pretty amazing that we're actually getting the gas to migrate through that rock to the wellbore.

And what I was going to say is that, also, when we are doing this in the shale plays, it almost becomes a—in those particular areas—something that we can replicate with less and less—almost zero—risk. Of course, there's always some.

But I think—in the Barnett Shale, I don't think we had a dry hole in thousands of wells for Devon. But that's because we've fi-

nally nailed this technology. It's right to your point, that it's American ingenuity, it's innovation, trying to put these things together in different ways in these different shale plays.

Chairman ISSA. Now, I'm only going to have about two more questions, but they're going to probably be ambiguous; so steer me through to the right answer to the questionable question.

When you used to go down and try to find a pocket of gas, methane, etc., all the combinations of what you find down there, it was hide-and-go-seek, and then when you found it, it could be quite a surprise. There was a risk because this is volatile; you don't know what pressure you're going to poke into and so on. You're out of that business for the most part. You're going into a low pressure but into rock rather than into a big pocket of gas with this technology.

Isn't that true?

Mr. WHITSITT. Well, the pressures do vary. There are some high-pressure areas and lower-pressure areas.

And I would say too that, as was mentioned earlier, along with the improvement in the completion techniques of the fracking and the drilling of the wells, we have had very significant, and continue to have very significant, seismic and geophysics type of technology improvements. And, again, it's putting all that together so that we know where we're going to find resources more accurately and we can drill fewer wells to find them and have more success.

Chairman ISSA. The reason I ask that question is: Like most people who don't know your technology, who watch TV, I had watched some years ago about what happens if you hit that pocket and you shatter the impermeable layer that had kept it there for a long time. You can, in fact, have natural gas flowing freely to the surface, and that has happened a few times in history, at least enough for television to capture it.

In the case of this technology, you're going through the impermeable layer, through the sand that was already there, back into the core rock that had not released it. So in a sense, it's a much safer operation because you're not up against, if you will, the great protection against gas free-flowing up.

Mr. WHITSITT. It's much safer, and it's much safer for other reasons as well, which is that our materials and our processes and our practices are so much better today as we've learned through the years because of the very incidents that you've talked about.

Chairman ISSA. Now, one last question for you, and then Rock's got an answer for a question that I asked earlier, I think.

This is a heck of a solid piece of rock. I looked at your presentation. And as I look at you going diagonally here and then there, I get the feeling that there's no question you're releasing more than otherwise was released. Is there available technology or an available percentage you can give me? What did we used to get when we just caught what happened to have bubbled up and was sitting there under the withholding chamber, what are we getting today when you frack, typically, and how much is really down there if you continue to improve your fracking to where you can sort of get it all?

Mr. WHITSITT. Well, I don't know how to answer the first part of the question in a global sense, but if you look at that one slide, there's a very dramatic representation from one area.

But I will say that the Potential Gas Committee—and these are the resource estimators that are the experts in this country and, really, known worldwide—they've just come out with yet another estimate of more natural gas that's recoverable in this country, something on the order of probably in North America, 2,500 trillion cubic feet, at least 20 trillion or so a year now.

So you can see. It's well more than a hundred years, it continues to grow with technology. And that's got to be exciting for the country.

Chairman ISSA. Well, certainly for those of us who heard that we were going to get our last drop of oil or our last drop of gas and we were going to need renewables already because it was all going to be gone, to find out that there's plenty more, obviously, I'm excited about oil, because I don't want us importing oil from unfriendly areas. But I'm even more excited about natural gas, because all of the green lobbyists who have ever come to see me—and many have—they all talk about how if we can just get off that dirty coal and get onto clean natural gas, what the benefit would be. Thank you for what your company is doing to take us from "X" carbon per Btu to a fraction of what it would be if we go from coal to natural gas.

And, Rock, you get the last answer to that question.

Mr. ZIERMAN. Well, I just wanted to mention another application of the directional drilling, and that is: Offshore California. Offshore production is a very emotional issue on the West Coast, but I want people to be cognizant of the fact that you can utilize this technology offshore California as well by using existing platforms or even onshore locations. You can directionally drill to some of the 10 billion barrels that Tupper was mentioning without installing any new platforms.

And I will also mention in closing that the MMS made that prediction in 1985. They have not been permitted since then to update their reserve numbers. That same year, they estimated that in the Gulf, there were 9 billion barrels of oil potential; 25 years later and 6,000 platforms later, which is what's been installed in the Gulf, the reserve number is now 45 billion. So even though we've been producing from 6,000 offshore platforms for 25 years, we have five times as much reserve. And that gets to Steve's point: Where the oil is where the oil is. And it has been in the past.

Mr. MCCARTHY. Mr. Chairman, can I just touch on that.

We have Vandenberg Air Force Base there. You have the ability on the base to drill horizontally out; so you're never even offshore.

And there's one thing that happens in Santa Barbara that's much different. We have a natural seepage of oil onto the beach. And an individual came to my office that was showing me the statistics of the growth of that and what that does to the birds and the environment and the others. The ability to take that out, where the natural seepage—where you can control it, where it's coming through, to protect the environment from the seepage in the direction of where it's going. And you can do that now, because of tech-

nology, in a much more environmentally safe way that you talked about.

Mr. ZIERMAN. In fact, the seepage is over a hundred barrels a day. So when Tupper was talking about the 800 barrels over 30 years, or whatever the figure was, represents about 8 days of what Mother Nature does every day.

Mr. MCCARTHY. And if you would relieve that and direct it, it would not be causing environmental concerns and problems that it is currently.

Mr. ZIERMAN. That's correct.

Mr. MCCARTHY. I yield back.

Mr. FARENTHOLD. Thank you very much. I'd like to ask a couple of questions to Mr. Whitsitt. We appreciate your operations, actually, in South Texas. You're a great employer.

Chairman ISSA. You keep going right to the edge of our indulgence here. I said it was going to be casual and friendly, but, you know, let's just stop rubbing it in. First of all, you haven't said Oklahoma once. If you keep saying Texas over California, I'll start rubbing Oklahoma against you, and I know what that does to Texas.

Mr. FARENTHOLD. Especially when it comes to football.

Chairman ISSA. Exactly.

Mr. FARENTHOLD. But let's talk a little bit about the water. That is actually of more interest to California than it is to Texas. Though we are a semiarid State, we have a great deal of water resources.

The bulk of the water that y'all use in hydraulic fracking operations, you recycle. I mean, you pump it down there, and you bring it back. Is that not correct?

Mr. WHITSITT. We recycle where we can. I wouldn't say it's the bulk of the water. We're getting better at this all the time. But where we can recycle, we can recover about 40 percent of the water and then blend it with freshwater and that kind of thing.

Mr. FARENTHOLD. So let's compare a fracking operation to amount of energy produced. If you can't just do this in your head, that's OK. But I think you were saying that a typical gallon of ethanol takes 120 gallons of water in irrigation. So to create a gallon of gasoline in a fracked well, it's got to be in order of magnitude different.

Mr. WHITSITT. I think what we've said in the testimony is—and this is very interesting—that the amount of water it takes to frack a well that will produce, I think, up to 3 billion cubic feet of gas—that's a lot of gas—would produce about 120 barrels of ethanol.

Mr. FARENTHOLD. So let's talk a little bit about—we're talking about how much natural gas there is. We're starting to see technology develop where automobiles, buses, and fleets are starting to run on natural gas. And, again, I apologize if I'm getting out of your area of expertise.

But just—if you take the Btu output, or the energy output, of a natural gas versus gasoline to power a vehicle, do you have an idea or does anybody on the panel have an idea what the cost of a gallon of gasoline, if we were using natural gas in vehicles, would be?

Mr. WHITSITT. I think in Oklahoma City, if I remember correctly, the latest numbers that I've seen for an equivalent was about \$1.39.

Mr. FARENTHOLD. So the natural gas, \$1.39, equivalent of what we're now paying, \$5. Potentially a great economic boom. Is that technology—I assume that technology is pretty close. I mean, I see natural gas buses everywhere.

Mr. WHITSITT. Well, Congressman, I had a natural gas powered, dual-fuel Buick in 1995. I had a fueler right in my garage that ran off my house, house gas system. And that technology is out there. It's a matter of economics. It's a matter of getting the range on the vehicles. They are coming. And particularly, with fleets and—I think the market is sorting that out. It's a great benefit to the country.

Mr. FARENTHOLD. And I remember as I was growing up—I guess it was—it would have been 30 years ago—we had butane-powered farm trucks. That's a mature technology.

Now, I want to shift back to one broad, kind of general question, if you would. I noticed in your resume that you actually—public policy was something you studied in college. Let's take a big, broad, general picture of the energy policy of this country.

As I look at it now, we're promoting an energy policy that's looking to do away with some of your tax credits. We're looking at an increased regulatory burden. If you were going to concoct an energy policy that was adverse to creating affordable energy for everybody—and maybe I shouldn't ask this—can you think of something we're not doing to make it worse?

Mr. WHITSITT. It's difficult. Let me just correct a couple of things that you said and kind of build on that.

First of all, we don't get tax credits.

Mr. FARENTHOLD. You're—I didn't read the talking points memo, but what the other side calls "tax credits" are basically the same fair business treatment that any other industry gets.

Mr. WHITSITT. That question that you asked is a great question because, first, energy policy should do no harm. And it seems like we've got things turned upside down on their head now, where we are trying to do things with energy policy that would punish those that are doing the right thing efficiently for the country. We are ignoring sources of energy that are safe and secure—I'll give you one example that this committee might be interested in, and that is, when we look at North America, we have the most sophisticated gas market in the world. And it is relatively insulated from the rest of the world. Not totally but relatively.

And the oil market we also have—our largest supplier of oil outside the United States is Canada, and yet we are stalling in putting additional capacity through the Keystone XL pipeline from Canada to bring more oil into the United States and it's incomprehensible why we would be doing that.

Again, the State Department has found the environmental consequences are not great. And we can use the energy; we need it. And, again, I could go down the list, Congressman, but it really reflects what you just said.

Mr. FARENTHOLD. Thank you very much.

Chairman ISSA. All good things must come to an end, and in this case, mostly, it's we borrowed this room. So I want to close.

First of all, I want to thank the Courage Campaign, who came up and gave me a petition with a relatively limited amount of information but an awful lot of people who care about this issue. I understand there are some other companies and individuals who brought items today. If you'll bring them up before we leave, they will all be included in the record.

Additionally, if you note our favorite URL, americanjobcreators.com—if you go to americanjobcreators.com, especially for the young people—snicker, but please go there—consider looking and asking yourself what is standing in the way of job creation. We don't predetermine. We ask you to tell us what you believe. And be specific. If you'll do that, if you'll join the endless numbers of people who have done that—originally it was based on a few letters sent out and then a demand by job creators around the country to have an opportunity to tell what they believe is stopping them.

With that, I will ask unanimous consent that we leave the committee report open for 7 days so that all Members can include opening remarks and other extraneous material. We will, as I said, collect information today and through americanjobcreators.com.

I'd like to thank our witnesses. You've been very kind with your time. I would also suggest that if answers, based on our prompting, come to you, please include those. We want to make the record complete. This is the first on this particular portion, but we will be looking at all aspects of energy self-sufficiency in the days to come. So don't be limited in your response.

And with that, the hearing is adjourned.

[Whereupon, at 11:52 a.m., the committee was adjourned.]

[The prepared statement of Hon. Elijah E. Cummings and additional information submitted for the hearing record follow:]

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Congress of the United States
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Opening Statement

Rep. Elijah E. Cummings, Ranking Member

Committee on Oversight and Government Reform
Hearing on "Pathways to Energy Independence: Hydraulic
Fracturing and Other New Technologies."

May 5, 2011

Thank you Mr. Chairman.

Hydraulic fracturing — more commonly known as “fracking” — is a technique originally developed to stimulate oil production from deep wells with declining supply. More recently, however, this technique has been used to initiate oil and gas production in unconventional reserves where oil or gas was previously inaccessible or cost-prohibitive to recover.

While it is clear that our nation needs every available advantage to gain access to our domestic energy supplies, we cannot allow the unregulated use of recovery processes that may cause significant environmental damage and may even put human health at risk.

Fracking often involves the use of highly toxic chemicals. Last Congress, for example, Democrats on the House Energy and Commerce Committee launched an investigation to examine the practice of hydraulic fracturing in the United States. As part of that inquiry, the Committee identified the types and volumes of the chemicals used by 14 leading oil and gas service companies that use this technique.

What the Committee found was cause for deep concern: between 2005 and 2009, those 14 companies injected 780 million gallons of hydraulic fracturing fluid. These fluids were composed of 2,500 different fracturing products which were themselves mixtures of 750 chemicals and other components. While some of these chemicals appear relatively benign—like gelatin or citric acid—others, such as benzene, a known human carcinogen, or toluene, a regulated contaminant under the Safe Drinking Water Act, could pose a severe risk to human health or the environment.

The use of these chemicals in the fracking process may put the environment and local residents at risk due to poor well construction, leakage of contaminated wastewater into groundwater supplies, or the improper above-ground handling of return wastewater. In Avella,

Pennsylvania, for example, soil sampled around well sites where fracking is conducted contained arsenic at 6,430 times permissible levels and tetrachloroethene, a carcinogen and central-nervous-system suppressant, at 1, 417 times permissible levels, according to a major article published last year in *Vanity Fair*.

In April of this year, a well blowout in Leroy Township, Pennsylvania allowed thousands of gallons of fracking fluid to flow into the Susquehanna River and subsequently into the Chesapeake Bay. Maryland Attorney General Douglas Gansler notified Chesapeake Energy Corporation on May 2 that the State of Maryland intends to sue the company for violations of the Federal Resource Conservation and Recovery Act and the Clean Water Act. The Attorney General's press release on this matter notes that the Susquehanna River is the drinking water source for millions of people.

I am dismayed that the Energy Policy Act of 2005 specifically exempts hydraulic fracturing from the Safe Drinking Water Act. Thus, there are no public disclosure requirements for oil and gas producers who rely on this technique. These companies can inject millions of gallons of fluid containing toxic chemicals into the ground near our aquifers, and they do not have to identify these chemicals or the amounts they have released. Further, it is my understanding that state laws governing disclosure requirements apparently fluctuate greatly between states.

Because there appears to be so much we do not know yet know about fracking and its potential impacts on drinking water supplies — in the short or longer run — I believe a much brighter spotlight needs to be directed towards this practice. It is my view that we must demonstrate more convincingly that hydraulic fracturing is safe and does not endanger the health of the public or of natural ecosystems before it is more widely used.

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Kern Oil & Refining Co.

7724 E. PANAMA LANE
BAKERSFIELD, CALIFORNIA 93307-9210
(661) 845-0761 FAX (661) 845-0330

May 6, 2011

The Honorable Darrell Issa
Chair, House Oversight & Government Reform Committee
United States House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

Kern Oil & Refining Co. (Kern) respectfully submits the following written testimony, as part of your local committee hearing in Bakersfield, California on May 6, 2011.

Kern is a small, privately owned petroleum refiner located in Bakersfield, California in the southern San Joaquin Valley. Kern is the only refinery producing gasoline and diesel fuel between Los Angeles and the Bay Area, the two strategic areas in our state that have a high concentration of large refineries. Kern has operated for approximately 70 years and employs about 110 employees. It should also be noted that the economic multiplier for the refining sector of the petroleum industry is nearly 9, which means Kern is economically responsible for more than 1,000 jobs in the Bakersfield area.

Kern's refining capacity is 27,000 barrels per day and the refinery produces approximately 380,000 gallons per day of California Air Resources Board (CARB) Reformulated Gasoline and approximately 380,000 gallons per day of CARB Ultra-Low Sulfur #2 Diesel Fuel. Kern also provides other products such as solvents, mineral spirits and kerosene as well as feedstocks that other, more complex refineries can further process into CARB Gasoline and CARB Diesel. Kern does not own or operate any upstream crude oil or natural gas production. All of Kern's crude oil supplies are produced in the United States, primarily from major oil company producers, and the company does not own, have any interest in, or operate any downstream retail or marketing facilities. All of Kern's gasoline and diesel fuel production is sold in the open market across its refinery loading rack to a broad range of customers, including major oil companies as well as independent companies, in the central part of California which lies between the Los Angeles area and San Francisco area refining complexes referred to above.

The refiner sector of the petroleum industry is highly regulated; in fact, of Kern's 110 employees, 6 full time employees are dedicated to Environmental, Health and Safety regulatory issues alone. Along with the additional staff required for regulatory compliance, there are very significant costs associated with these regulations, and as important, tremendous uncertainties of raw material, feedstock and blendstock supply and costs due to the myriad of complex regulations.

The Honorable Darrell Issa
 Chair, House Oversight & Government Reform Committee
 May 6, 2011
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Federal, State and Local regulations and fuel standards have had a significant negative impact on small refiners in California, for California Energy Commission (CEC) data indicates that in 1981 there were 12 small refiners producing transportation fuels in California. Today, there are only two small refiners remaining in California that manufacture transportation fuels, both of which are located in Bakersfield, and Kern is the only California small refiner that manufactures both California Reformulated Gasoline and CARB Ultra-Low Sulfur #2 Diesel Fuel. The small refiners that no longer manufacture transportation fuels were either forced out of business due to the enormous costs required to comply with the more stringent environmental and fuel standards; or they have converted their refineries to produce asphalt and no longer manufacture transportation fuels.

Since Kern operates in California, it is subject to many duplicative and overlapping Federal, State and Local regulations. Some examples are listed below:

- Federal Title V Stationary Source Permits
- Local Air District Stationary Source Permits
- Federal Renewable Fuel Standard (RFS-2)
- California Low Carbon Fuel Standard (LCFS)
- CARB Reformulated Gasoline Standard (RFG)
- CARB Ultra Low Sulfur Diesel Standard (ULSD)
- Federal Greenhouse Gas (GHG) Mandatory Reporting
- California AB 32 Greenhouse Gas Mandatory Reporting
- Federal Tailoring Rule GHG Stationary Source Controls
- California AB 32 Scoping Plan GHG Stationary Source Controls
- California AB 32 Cap and Trade
- Federal Process Safety Management Standard
- Federal Risk Management Program
- California Accidental Release Program (Cal ARP)
- Federal Oil Spill Liability Trust Fund
- California Oil Spill Fund
- California AB 32 Administration Fee (\$400K annually)
- Local APCD Heater NOx Rule Fee (\$300K annually)
- California LCFS Credit Purchase Costs (uncertain)
- Federal RIN Purchase Costs (uncertain)
- California Cap & Trade Credit Allowance Costs (uncertain)
- Local Air Permitting Fees (\$70K annually)
- California Non-Vehicular Source Fee (\$50K annually)
- California Site Cleanup Administration Fees (\$50K annually)
- California Hazardous Waste Fee (\$20K Annually)

Rather than discuss the individual impact of each regulation on Kern in the limited space of this letter, the entire, overall effect of these regulations should be understood. From the above list alone, yearly fees associated with these programs are approximately \$900,000, or looking at it in another way, \$9,000 per Kern employee per year. And this is simply administrative fees alone!

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A very real concern regarding environmental and fuel program costs and compliance with the newer, emerging GHG regulations and renewable fuel regulations are the credit costs, which are estimated to be in the tens of millions of dollars per year to a company like Kern, and the uncertainty of these regulations. Some real examples of uncertainty that will affect Kern are; product availability, such as cellulosic ethanol production; biomass feedstock costs, such as tallow, algae, and bio-oils; and tax credits, such as renewable diesel/biodiesel and alternative fuel credits. In short, in order to achieve compliance with such burdensome regulations, the regulated, small refiner community requires more supply and cost certainty and must also be provided with clear, efficient and effective mechanisms with which to pass these costs through to the consumer.

While this letter primarily addresses Kern's concerns associated with environmental and fuel program costs, issues related to a potential California crude oil severance tax, crude oil producers' inability to economically and timely expand their exploration and production efforts, the short-term nature of certain necessary renewable fuels economic incentives, and the negative impacts of speculative activities in the crude oil commodities trading markets also weigh heavily on Kern. We would look forward to further discussing our thoughts in this regard with you and your committee's staff.

Sincerely,



Jake C. Belin
President