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# UPSTREAM

# TEXAS

FALL | WINTER  
2017-2018

A PUBLICATION OF THE TEXAS  
INDEPENDENT PRODUCERS AND  
ROYALTY OWNERS ASSOCIATION

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## > U.S. OIL AND GAS PRODUCTION AND PRICE OUTLOOK

ALSO INSIDE:

Feature:

Texas Takes the Lead on Seismicity Research

Legislative Profile:

State Representative Brooks Landgraf

Member Profile:

Bryan Sheffield,  
Chairman, CEO and Founder of Parsley Energy





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### Welcome to this edition of *Upstream Texas!*

TIPRO is the voice of Texas' upstream sector and represents members by lobbying at the state and federal levels to ensure they can continue to explore for and produce oil and natural gas. As the official bi-annual magazine of the association, *Upstream Texas* features insights into the opportunities and challenges currently facing the Texas oil and gas industry, as well as profiles key industry players and regulators.

In this issue of *Upstream Texas*, read how officials in Texas responded proactively after an uptick of seismic activity in the state at the end of 2013. Learn more about the state's TexNet program, a world-class seismic monitoring system that will provide Texans with better understanding of seismicity in the future. To see more, turn to page 8.

In addition, starting on page 10, discover what independent producers can expect moving into 2018. Leading energy data analytics company Drillinginfo explains why 2017 is seen as "the comeback year" for the U.S. oil and gas industry and offers an outlook for the oil and gas sector. In its forecast, Drillinginfo also shares with *Upstream* readers projections for the Permian, the basin now representing the largest contribution to growing U.S. oil production.

Lastly, inside this edition of TIPRO's magazine, review a special infographic showcasing TIPRO's advocacy efforts on behalf of members throughout the 2017 Texas Legislative Session. While legislators deliberated over policy during session, the association proudly educated lawmakers on measures beneficial to the oil and gas industry, and worked to defeat onerous legislation that would deter E&P activity in Texas. Turn to page 13 to see more.

And, as always, this publication also features profiles of industry and state leaders, including: Texas State Representative Brooks Landgraf (page 14); Texas Water Development Board Chairman Bech Bruun (page 15); and Parsley Energy CEO Bryan Sheffield (page 16).

TIPRO members, this is your magazine and we welcome your feedback. Please contact TIPRO's Director of Communications Kelli Snyder [ksnyder@tipro.org] or Content Strategist Susan Christmas [schristmas@naylor.com].

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# Power Automation Improves Operating Efficiencies, Decreases Costs

The need to reduce wasteful spending practices is more imperative than ever before in the oilfield. Many exploration and production companies have been “sticking to the grid” and drilling new wells within parameters close to permanent utilities. However, sometimes permanent utilities are not an option, such as in remote production areas of the US including the Bakken. In these scenarios, temporary power providers are becoming increasingly challenged to develop innovative technologies off the grid that meet environmental regulations and satisfy stringent economic requirements.

For example, many operators are turning to alternative fuel generators that leverage excess flared/ stranded gas captured from the wellhead. This allows optimized production activities, reduced operating expense, and meets tighter environmental regulations that require a reduction of flared gas. While diesel remains one of the most widely used fuels for powering drilling and production sites, costs associated with using diesel are far from optimal.

Further, by incorporating a power automation system, operators can eliminate generator idle hours and reduce the associated high costs of diesel while greatly reducing emissions, regardless of the fuel source. Customized automated power kits can be retrofitted on both diesel and natural gas generator sets to communicate with an operator’s programmable logic controls, for any remote project with intermittent power needs.

The design of the controls allows generators to automatically start and stop, only running when power is required. This innovative application not only saves fuel and



▲ Shown above is a Power Automation package provided by Aggreko on a single rod pump application

reduces emissions, but also increases uptime due to lower maintenance needs and fewer failures associated with overheating or excessive idle time. The most common applications for power automation include rod

pumps, midstream pumping stations and de-watering facilities. At many pumping stations, producers have been able to reduce their associated fuel costs by 50-80%.

## Real-World Results

One of the largest exploration and production companies in the Permian Basin was operating a field of five producing oil wells on electrical submersible pumps (ESPs). As each of the wells began to experience slower production volumes, they deployed rod pumps to replace the ESPs. Since the sites did not have access to utility infrastructure, standard diesel generators were used to power each rod pump.

However, the operator later needed to reduce site emissions and

lower operating costs. Aggreko was consulted and developed a solution including the installation of power automation kits and Tier4i diesel generators to seamlessly transition the sites. The new power packages allowed the generators to only run when the rod pumps were operating, and to automatically shut off when the rod pumps were inactive, effectively eliminating idle hours.

The power automation solution saved the operator \$130,000 annually, reduced emissions by 50% and delivered 100% uptime.



The background of the advertisement features a silhouette of an oil pumpjack against a vibrant sunset sky with orange, red, and purple hues. The sun is low on the horizon, creating a strong glow. A glowing orange light trail curves across the bottom of the image.

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“Power Automation saved us  
**52%** on fuel costs.”

– Permian Basin Operator

Many oilfield operations are intermittent by nature, and do not demand power 24/7. Yet, the generators on these sites have historically run non-stop, regardless of whether the application needs power at the time.

Thanks to innovations in Power Automation technology and in-house engineering expertise at Aggreko, idle hours can be completely eliminated. What this means for operators is up to 60% savings in fuel costs—which translates to **saving hundreds of thousands or even millions of dollars annually**, depending on the number of automated sites.

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# TEXAS' UPSTREAM INDUSTRY CONTINUES TO EVOLVE

**Allen Gilmer, Drillinginfo**

CHAIRMAN – TEXAS INDEPENDENT PRODUCERS & ROYALTY OWNERS ASSOCIATION

**WITH NEW INNOVATIONS AND** technologies constantly in development, our country's upstream oil and gas industry is evolving more and more quickly, driving a stake in the heart of the idea that we are just a stagnant and dying dinosaur. In fact, the pace of advancement with the upstream sector today far outstrips that seen with all other energy industries. In our own version of Moore's Law, our performance per well is doubling every 4-5 years in unconventional plays, leaving international big investment/big reserve seekers flat-footed.

"Energy dominance" is the term President Trump has used to describe today's energy strategy for our nation...supplanting the 45-year-old "energy independence" soporific that had been fed to us by politicians and policymakers alike who were tightly aligned only in the fact that they had no clue how to achieve such a thing, much less even understand what it meant in the first place.

Now, all that has changed, thanks to, frankly...YOU. America's independent oil and gas producers – and more specifically, Texas independent producers – continue to lead the way, grinding costs down while improving results, achieving economic returns in what increasingly looks to be a long-term, low-price environment.

So, many ask, what's next for our industry?

We have already established the resource base that can be converted to reserves in the United States, and more precisely in the Permian Basin, dwarf the reserve volumes of any other country today. This means that whatever producers can do to permanently lower the cost to drill/complete/stimulate wells will just add more "infinite" reserves to our already massive volumes. Every cost component of a modern unconventional well – from pressure pumping, to proppant, to fluids, to drilling, to logging, to chemicals, to water treatment/disposal – has substantial research and breakthroughs announced every week. The bigger players are starting to look like the Major oil companies, bringing in-house many of the tasks and responsibilities that have been ceded to

oilfield service companies over time. Having your own low-cost source of proppant or fluid, or chemicals for instance, is becoming more common place in order to squeeze every point of value out once these projects get into the full-steam development phase.

Watch for more interesting "hybrid" plays that morph extremely risk-reduced conventional drilling with using unconventional techniques. In these formations, it all will come down to ROI. Does the dollar I am spending return more than a dollar? When I was a producer, I myself tried to quantify the real multiples for horizontal drilling as compared to vertical drilling. The rule of thumb at that time was "it costs twice the vertical costs, and makes triple the reserves." This logic though I must concede wasn't always this best...I later realized it didn't really work that way at all. In reality, some plays showed a cost three times or higher, and some offered up to 30 times as much production. Rarely could you find the so-called "magic numbers" working, but when they did, wow!

While attending the recent Summer NAPE Expo in Houston this past August, I noticed several of these "conventional sheep in unconventional wolf's clothing," which could very well supply much higher returns than that from the big resource plays you might see being targeted today. While traditional oilfield PE has been scared of conventional exploration investment opportunities for some time, there is a window for exceptionally high returns in this class who choose to take advantage of the traditional avoidance of such deals due to notion of old risks, and not taking into account the new risk reduction that is in place today. President Obama's 2012 JOBS Act also opened up the industry to crowdsource funding online from non-accredited investors. This presents an awesome opportunity to educate the 97 percent of the public that this opens oil and gas investing to about the joys and benefits of U.S. oil and gas production.

All in all, it is a great time to be alive. Keep it turning to the right, TIPRO members! ■



We have already established the resource base that can be converted to reserves in the United States, and more precisely in the Permian Basin, dwarf the reserve volumes of any other country today. This means that whatever producers can do to permanently lower the cost to drill/complete/stimulate wells will just add more "infinite" reserves to our already massive volumes.

# TIPRO TACKLES NEW CHALLENGES, OPPORTUNITIES FACING INDUSTRY

**Ed Longanecker**

PRESIDENT—TEXAS INDEPENDENT PRODUCERS & ROYALTY OWNERS ASSOCIATION

**WITH THE END OF** another successful legislative session here in Texas, we shift our focus to other priorities for the interim period and continue with advancing our targeted federal policy agenda. On the state level, our team is concentrating on policy measures that relate to property tax reform, additional funding for county roads and infrastructure in energy-related areas, technological improvements at the Texas Railroad Commission, and ongoing discussions regarding seismicity and related data provided by TexNet.

Included in this edition of *Upstream Texas*, members will find more extensive information on the work of TexNet, and learn more about how our state has led the country in efforts to study the issue of seismicity. As I've stated publicly with the media, in public testimony and highlighted through presentations, it is imperative that we have accurate and reliable data to determine the true cause of seismic events in our state in order to develop the right policies, regulations and industry best practices to protect Texas citizens and ensure responsible development of oil and natural gas in our state. This is again one of many issues that TIPRO will monitor during the interim and for more many years to come. We will continue to keep our members informed of any related information and strategies, as developments occur, through our regular committee meetings and communication outreach.

Meanwhile, as we approach the second year of the Trump Administration, we reflect on the many accomplishments achieved on the federal level from a regulatory standpoint and look ahead to supporting further efforts that will continue to strengthen the oil and natural gas industry. With sound energy policies and strong leadership, we will further expand our energy dominance on a global scale and see the related benefits come to fruition for our country and all Americans, with Texas leading the way.

Since taking office, President Trump has withdrawn nearly 500 regulations proposed in the Obama Administration's final regulatory agenda in 2016. This is in addition to delaying 300 regulatory proposals in the midst of the rulemaking process and halting another 100 policies. Citing federal overreach and burdensome regulations, President Trump has prioritized domestic fossil fuel interests and repealed many overreaching measures advanced during the previous administration, with a particular focus on the Environmental Protection Agency (EPA) and Interior Department.

As we know, many campaigns, organizations and related regulations are often not solely based on protecting the environment. Over time this effort has blossomed into a big business, with environmental groups, research organizations, and even some academic institutions gravitating toward the highest bidders. Campaigns like "Beyond Coal," "Beyond Natural Gas," and "Keep in the Ground" are just a few examples that are instrumental in carrying out their donors' wishes to dismantle an industry that they have invested in betting against.

Fighting billion dollar donors, a flawed ideology, and elected officials that use climate change for political gain is a long-term endeavor and one that is of critical importance to our state and country.

Over the years, our association has directly supported numerous efforts to reduce the number of unnecessary federal regulations placed on our industry. This includes filing a lawsuit more recently against the EPA challenging federal methane regulations for new and modified sources, successfully removing the EPA's Information Collection Request (ICR) for existing sources and TIPRO's Motion to Intervene in the Resource Conservation and Recovery Act (RCRA) lawsuit where environmental activist organizations were seeking to force the EPA to promulgate new rules for the disposal of E&P wastes under Subtitle D of RCRA.

Given the rise in frivolous lawsuits from activist organizations targeting the oil and natural gas industry and TIPRO's increasing involvement in such matters, this year our association's Board of Directors approved the formation of a standing legal committee. The focus of the TIPRO Legal Committee includes tracking and analyzing legal issues that impact producers and royalty owners, developing and executing strategies to be more proactive as an organization in the judicial arena, and providing recommendations to TIPRO's chairman, president and board on areas for engagement. This will add another layer of expertise and analysis to complement TIPRO's legal and regulatory analysis and related efforts.

Throughout our history, TIPRO has continued to evolve to effectively represent the many challenges and opportunities facing the Texas oil and natural gas industry. Our impact over the past 72 years has been significant. Our success, ongoing advocacy work, and many substantive contributions since our inception would not be possible without the support of our members. ■



Fighting billion dollar donors, a flawed ideology, and elected officials that use climate change for political gain is a long-term endeavor and one that is of critical importance to our state and country.



# TEXAS TAKES THE LEAD ON SEISMICITY

When Texans residing near Fort Worth began to notice seismic movement deep underground in late 2013, many asked what could be the cause. For a location not known to have earthquakes, it was not immediately obvious why those living in towns like Azle, Texas, would be encountering such events.

It quickly became clear that more data and analysis was needed to properly understand why the region was experiencing seismic activity.

Committed to finding answers, Texas officials took action.

## Legislators Look for Answers

In early 2014, Texas lawmakers formed a dedicated subcommittee involving members of the House Energy Resources Committee, who worked to explore the issue. The legislative panel met in Austin several times throughout 2014, holding public hearings and listening to testimony from the experts at the Bureau of Economic Geology (BEG), Southern Methodist University and the Texas Railroad Commission, as well as took input from industry and environmental groups. By the year's end, the subcommittee prepared a final report providing a strategy on how the legislature could adopt reasonable, sound policies for the state moving forward.

## State Regulators Pursue Proactive Measures, Too

While legislators at the state capitol worked to learn more about seismic events, the state's chief oil and gas regulatory agency,

the Texas Railroad Commission, also engaged in measures aimed at proactively addressing the issue. Following a recommendation offered by the House Energy Resources' Subcommittee on Seismic Activity, the Railroad Commission announced in March of 2014 the hire of a full-time seismologist, Dr. Craig Pearson. [Note: After serving in the role for nearly three years, Dr. Pearson resigned from the position in 2017 after becoming director of the commission's Midland District Office. This past August, the agency announced that Dr. Aaron Velasco would take over as seismologist for the Railroad Commission].

In addition to hiring a full-time seismologist, the commission adopted amendments to rules for disposal well operations in areas of historical or future seismic activity. The regulatory changes approved in 2014 by the Railroad Commission require that an operator utilize the United States Geologic Service database as a source for historical seismic activity. Statewide Rules 3.9 and 3.46 were updated allowing the Railroad Commission to modify, suspend, or terminate a permit for saltwater or other oil and gas waste disposal for just cause after due notice and opportunity for hearing. The rules also stipulate that operators collect disposal volumes and pressures as requested by the commission for submittal, and allows for the agency to request additional technical data from an operator as need-be, such as logs and geologic cross-sections where conditions exist that may increase the risk that fluids will not remain confined to the appropriate injection interval.

## The Creation of TexNet

In 2015, with the legislature back in session, state lawmakers established a new research and monitoring program called TexNet to improve the capability of the existing network and offer transparent access to data and information to provide a better understanding of seismic activity in Texas. The TexNet initiative along with the Center for Integrated Seismicity Research (CISR) permits researchers to collaborate and gather information about subsurface activity through the placement of additional seismometers across the state. Ultimately, TexNet has two primary goals: to monitor, locate and catalog seismic activity with magnitudes of 2.0 and larger, and to improve the state's ability to rapidly investigate ongoing earthquake sequences in Texas.

TIPRO President Ed Longanecker has on repeated occasions affirmed the association's strong support of the TexNet Seismic Research program. "Having accurate data is imperative to developing the right policies, regulations and industry best practices," Longanecker emphasizes. "TIPRO is committed to supporting continued research, funding and collaboration on this topic."

During the 84<sup>th</sup> Texas Legislative Session in 2015, with the passage of House Bill 2, state officials authorized initial funding of \$4.47 million to The University of Texas at Austin's (UT) BEG for the TexNet program, directing the bureau to develop and manage this new monitoring system and conduct associated research into seismicity. Approximately \$2.9 million of the

# RESEARCH

appropriation was used to install 22 permanent state-of-the-art seismometers in Texas and stage another 36 portable monitoring stations in BEG facilities across the state, ready for rapid deployment to investigate key future earthquake activity. The remaining \$1.571 million allocated from the state for the TexNet initiative helped provide support for a multi-disciplinary team of scientists, engineers, researchers and earthquake experts to gather data from events, conduct objective research, and then publish findings.

In conjunction with the formation of the program, under House Bill 2 as approved by the legislature, Texas also formed a TexNet Technical Advisory Committee (TAC), a group of experts appointed by the governor of Texas that regularly meets with research leaders to discuss network implementation plans, research strategies and tactics, as well as use of funds. The initial group of TAC members were appointed in March of 2016 by Texas Governor Greg Abbott. A year later, in the spring of 2017, the state approved a bill by House Committee on Energy Resources Chairman Drew Darby (R-San Angelo), which made changes to the advisory board for TexNet to allow for appointments on the board by other statewide elected officials.

“The TexNet program provides critical data on the seismic activity in the state,” says Chairman Darby. “This gives regulators the information and tools they need to understand how production, disposal and regulatory actions can affect the subsurface.”

In addition to the TexNet Program, UT’s BEG created CISR, an academic and industry consortium that is taking a multidisciplinary, trans-college research approach, conducting fundamental and applied research to better understand the subsurface processes and naturally occurring and potentially induced seismicity.

Geophysicist Timothy Tyrrell observes that the industry supports “a science-based approach to understanding seismicity, and TexNet and CISR are great steps to advance our understanding of this in Texas.” Tyrrell, who also is chair of the Texas Industry Seismicity Workgroup, points out that “over a dozen companies have already joined CISR and are actively involved, providing data and technical expertise.”

As work behind the TexNet program got underway, the team first focused on learning more about activity in the Dallas–Fort Worth Basin. In the early stages, deployment locations of permanent and transportable seismic stations were identified for the region, followed by the installation of station hardware and software. Using preliminary data, CISR researchers have already started to characterize faults, stress, and reservoir properties and conditions.

In more recent months, TexNet has deployed the first portable station in the Eagle Ford play and is finalizing contracting and construction plans for the placement of the remaining eight permanent stations. Researchers have incorporated detailed injection volume data

into the 3D models for the Azle area and are working on developing flow fluid models of the Fort Worth Basin.

Meanwhile, research associates involved with the CISR program also continue to publish regular reports each month that detail seismic network installation and operations updates, offer synopsis of recent seismicity in Texas and cover recruitment efforts, partnerships, program research, and related outreach efforts.

## Future Plans

In an Energy Resources Committee hearing this past summer, Chairman Darby announced that UT President Gregory Fenves committed to continue funding of the TexNet program for the 2018–19 biennium. With funding secured for future TexNet activities, CISR researchers are gearing up to shift focus towards the greater West Texas region. Already, plans are underway for installation of seismometers in the Permian Basin, specifically in those areas where development of unconventional reservoir systems has greatly increased in the past several years. Integrated analysis of the Eagle Ford Shale operating area and other parts in Texas are expected to follow.

This fall, TexNet will launch a website referred to as the TexNet Earthquake Portal, to provide open access to information recorded by TexNet seismometers. TIPRO will continue to work with industry and academic partners to support ongoing research efforts related to the TexNet and CISR Programs. ■



# U.S. OIL AND GAS PRODUCTION AND PRICE OUTLOOK

By Bernadette Johnson,

VICE PRESIDENT OF MARKET INTELLIGENCE FOR DRILLINGINFO

**FOLLOWING YEARS OF SUPPRESSED** market conditions, many see 2017 as the comeback year for the U.S. oil and gas industry. In wake of the crude price collapse in 2014, U.S. production for both crude and natural gas flattened, then dropped through 2016. And even though prices for crude continue to hover around \$50 per barrel, U.S. producers have tightened their belts and reemerged with lower breakevens, more efficient operations, and wells that are bigger than ever. As a result, Drillinginfo is forecasting dramatic growth through 2017, into 2018 and beyond.

Drillinginfo tracks 68 of the most important operators across U.S. unconventional plays. Specifically, the company follows their CAPEX plans, operational trends (such as drilling and completion costs), lease operating expenses, and merger, acquisition and divestiture (A&D) activity. This information is paired with Drillinginfo's detailed production and type-curve data to generate short-term volume forecasts. These forecasts represent the company's best outlook for production through the end of 2018.

Total U.S. crude production is currently forecasted to grow 988,000 barrels per day (bbl/d) between December 2016 and December 2017, and another 633,000 bbl/d by December 2018. Meanwhile, gross natural gas production is forecasted to grow 4.88 billion cubic feet per day (Bcf/d) between December 2016 and December 2017, and another 2.89 Bcf/d by the end of 2018.

The dramatic increase in production is a result of a sharp increase in rig activity, shorter drill times, bigger wells, and relatively low



EGOROV ARTEM/SHUTTERSTOCK.COM

drilling and completion costs. As tracked by Drillinginfo's Rig Analytics, at the start of September the rig count stood at 1,056, up from the low of 433 rigs observed in May 2016.

### **Global Crude Prices**

The growth of U.S. production is also a key driver of global crude prices. Expected to be the marginal supplier going forward, U.S. basin breakevens will establish global prices.

U.S. breakevens, adjusted for quality and transportation costs, range between \$25/barrel

and \$100+/barrel, but \$50 West Texas Intermediate (WTI) is a key price threshold that allows U.S. production to grow. At \$60 WTI, the U.S. can increase domestic crude production by over 700,000 bbl/d. As a result of these key price thresholds, combined with trends in demand and storage levels globally, Drillinginfo is currently forecasting WTI prices to average \$52 through 2018.

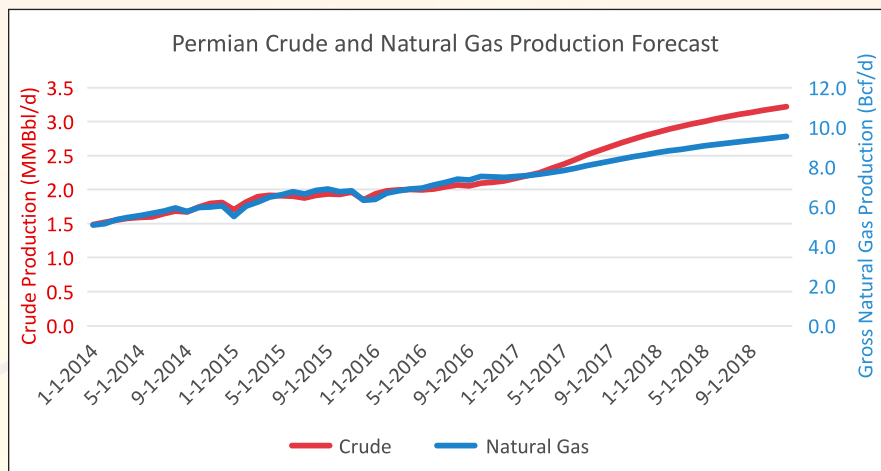
Regarding natural gas prices, Drillinginfo is forecasting an average of \$3.15 for Henry Hub Prices in 2018. This price is a result of detailed

knowledge available to analysts on supply, and demand forecasts by sector for power generation, industrial end uses, residential/commercial load, exports to Mexico, and LNG exports.

### **Beyond 2018**

Looking beyond 2018, U.S. production breakevens, plentiful supply, and short cycle response times will keep both crude and natural gas prices range bound for the foreseeable future. Specifically, the U.S. oil and gas industry's ability to produce a lot of





**Figure 1**

crude and natural gas at \$60 WTI (U.S. Crude Benchmark Price) and \$3.25 Henry Hub (U.S. Natural Gas Benchmark Price) will keep global prices from reaching historic peaks again. U.S. unconventional supply has changed the crude and natural gas markets.

While numerous basins are influential to overall U.S. production growth, the Permian Basin is unparalleled as the single most important driver of crude growth through 2018.

### Permian Oil & Gas Forecast

Long-known as a legacy conventional basin, operators in the Permian are now enjoying

the benefits of decades of geologic research, numerous economic stacked pay zones, and a friendly business environment for oil and gas. Producers have taken lessons learned from other explored unconventional plays such as the Haynesville, Barnett, Fayetteville, Bakken, Eagle Ford, Marcellus, and Utica, and are now applying them in West Texas. Type-curves are improving, activity is up, and the basin now represents the largest contribution to growing U.S. oil production.

More specifically, Drillinginfo tracks 26 individual operators in the Permian, many of which are members of TIPRO, ranging from the large players such as Concho, Apache and

Exxon (XTO) to up-and-comers including EP Energy, Matador, Diamondback, and Parsley.

Currently, Drillinginfo is forecasting the region to grow crude production by 667,000 Bbl/d between December 2016 and December 2017, and another 427,000 Bbl/d by December 2018 (Figure 1). Among the producers, Pioneer, Concho, and Parsley are each expected to grow by more than 40,000 Bbl/d of crude production by December 2017, compared to the same point last year. On the natural gas side, analysts are expecting 1.13 Bcf/d in growth between December 2016 and December 2017, and another 0.9 Bcf/d by the end of 2018.

In line with broader U.S. rig trends, the changes in the Permian's rig count since 2016 have been dramatic. The basin's rig count reached a low of 129 in May 2016, but has since rebounded to 400. As of the first week in September, Pioneer Natural Resources and Concho were leading activity with 20 rigs each, followed by Anadarko at 18 rigs, Apache at 17 rigs, Parsley and Exxon (XTO) each holding 16 rigs, and Occidental Petroleum at 15 rigs. Other operators make up the remaining 278 rigs.

Not only is activity up in the region, but each rig is now more productive than it has ever been because producers are able to drill wells faster and have increased the overall intensity of well completions to maximize productivity. These efficiency gains are here to stay and include more proppant injected per lateral foot, extended laterals, and multi-bench drilling (drilling multiple formations from one well bore).

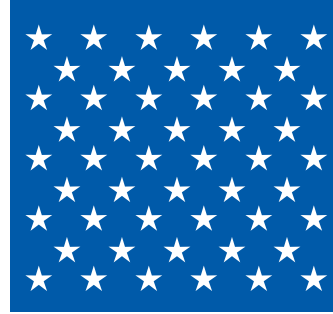
The impact of efficiencies on breakeven economics is dramatic. Permian crude breakevens are illustrated in the figure to the left, and range between \$27.48 for the Delaware Basin, Bone Spring formation Tier 1 assets to \$100+ for numerous Tier 3 assets, and small basins on the outskirts of the Permian such as the Val Verde and Marathon-Ouachita.

### A Turning Point for Industry

Lead by production gains from the Permian Basin, 2017 has shown to be the right time for a comeback for the U.S. oil and gas industry. Drilling and production efficiencies are at all-time highs, the rig count has increased by 144 percent since the low in May 2016, and the United States is on track to grow production for years to come. ■

Permian Basin - Formation	Asset Tier (1 Being the Best)		
	1	2	3
Delaware Basin - Bone Spring	\$27.48	\$43.17	\$77.36
Midland Basin - Spraberry	\$27.71	\$48.08	\$67.83
Delaware Basin - WolfCamp	\$28.35	\$47.36	\$69.39
Delaware Basin - Spraberry	\$29.33	\$46.84	\$74.10
Midland Basin - WolfCamp	\$34.78	\$51.70	\$100.00
Delaware Basin - Other	\$38.99	\$67.39	\$91.77
Northwest Shelf - Bone Spring	\$39.41	\$57.73	\$75.05
Midland Basin - Other	\$49.65	\$83.09	\$100.00
Central Basin Platform	\$50.92	\$100.00	\$100.00
Eastern Shelf	\$51.61	\$100.00	\$100.00
Northwest Shelf - WolfCamp	\$52.50	\$95.84	\$100.00
Northwest Shelf - Other	\$58.23	\$76.68	\$100.00
Marathon - Ouachita	\$100.00	N/A	N/A
Val Verde Basin	\$100.00	\$100.00	\$100.00

# TIPRO: A YEAR OF ADVOCACY



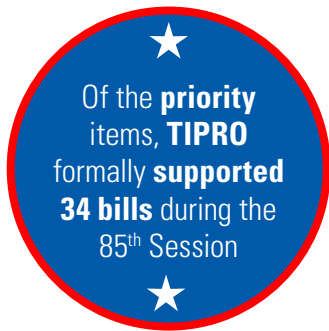
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**140**

Total number of days for the regular legislative session



**6,600**

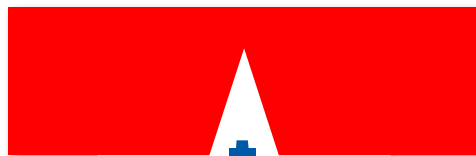
Number of bills filed for consideration during the 2017 session

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**4,400**

Number of bills filed in the Texas House



**71**

Years of service by TIPRO

Of the priority bills, TIPRO formally opposed 20 bills during the 85<sup>th</sup> Session



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**50%**

of the bills TIPRO supported this past session were signed by the governor

**2,356**

Number of bills filed in the Texas Senate

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**108**

bills were considered "priority" for TIPRO

Texas Governor Greg Abbott vetoed 50 bills passed during the 85<sup>th</sup> Session

**443**

Pieces of legislation actively tracked by TIPRO during the 85<sup>th</sup> Session



None of the bills TIPRO opposed successfully passed the legislature during the 2017 session

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The state legislature passed 1211 total bills during the 85<sup>th</sup> Session





## BROOKS LANDGRAF

State Representative (R-Odessa)

**AS STATE REPRESENTATIVE BROOKS Landgraf describes it, the Permian Basin helped stymie the Organization of Petroleum Exporting Countries (OPEC). It's a feat many wouldn't have thought possible a decade or two ago, but because of the Permian's remarkable success, the cartel decided to flood the oil market to quash U.S. output. Although no producers escaped completely unscathed from the resultant price trough, acknowledges the representative from Odessa, U.S. companies nonetheless have held their own, thanks largely to the basin that keeps on giving. "Even amid sustained low crude oil prices, our production numbers remained steady, much to OPEC's chagrin," says Landgraf.**

Being a native of Odessa and a fifth-generation West-Texas rancher, Landgraf conveys how having firsthand experience of managing his family's cattle operation and mineral interests has offered him personal insight into two of the most important sectors in the region.

In addition to managing his family's ranching operation in Odessa, currently Landgraf practices law at Todd, Barron, Thomason, Hudman & Baxter, P.C.

After earning an undergraduate degree from Texas A&M University, Landgraf received a law degree from St. Mary's University School of Law in San Antonio. Following law school, Landgraf recounts, he returned to West Texas and represented energy producers and other local businesses while working at Odessa's Shafer, Davis, O'Leary & Stoker law firm.

Landgraf says that service, beyond his upbringing in West Texas, really expanded his understanding of the industry that not only fuels Texas, but also the United States and nations around the world. "My perspective of the Texas oil and gas industry is how blessed we are to have an abundance of a commodity that fuels Texas, America and the world," expresses Landgraf. "Having been born and raised in the Permian Basin, the cycles of the oil and gas industry are second nature to me, and that's taught me to maximize output when times are good, and work efficiently when times are bad."

In spite of recent market conditions, Landgraf expresses enthusiasm about the outlook for the U.S. oil and gas industry, especially in the district he serves. "As prices slowly rise, the Permian Basin is seeing a positive uptick in permits and drilling activity, . . . The Permian Basin is unquestionably the most

innovative oil and gas producing region in the world, so when something big happens in the industry, it usually starts in the Permian Basin," emphasizes Landgraf. Further, he states, "the recent discovery of the Wolfcamp Shale play and fracturing sand mining means we will see a very robust economy."

Landgraf observes, though, that with such a surge in activity, increased demand is expected to be placed on local infrastructure, which is why he says he has been working with the Texas Department of Transportation (TxDOT) on maintaining and expanding the roadways within his legislative district.

During the state's 85<sup>th</sup> session in 2017, Landgraf authored and shepherded the passage of Senate Bill 1731, known as the "Texas Fuels" bill, which encourages the use of natural gas-based fuels in state fleet vehicles. Landgraf first introduced such a bill during the previous session, and continued pushing the concept this year. "The Texas Fuels bill, from a policy perspective, is a no-brainer, and that's why I authored the legislation in 2015, and was thrilled to work to finally pass it in 2017," he says. "The Texas Fuels bill joins two underutilized resources in Texas: natural gas and the Texas Emissions Reduction Plan (TERP) fund. Royalty owners, natural-gas producers and many other Texans are sitting atop a bountiful supply of natural gas, but the market for natural-gas based products is not being developed to its full potential. Similarly, the TERP fund is leaving more than a billion dollars on the sidelines, meaning that it's a resource that's not being used for the benefit of Texas. The Texas Fuels bill will put the TERP fund to work by converting government-fleet vehicles to run on natural-gas based fuels, which increases markets for natural gas, creates more jobs for Texans and also makes our air cleaner."

When considering the state's next legislative session in 2019, Landgraf suggests property tax reform and school finance reform will be a key areas of discussion and reform for lawmakers during the 86<sup>th</sup> session. "In my view, we will never have genuine property-tax reform in Texas unless we have meaningful school finance reform," Landgraf asserts. "The state has neglected public education and shifted that burden onto local school districts, and ultimately, to local property-tax payers. It is time that the state again step up to fund public education in such a way that our schools can improve while providing tax relief to Texas homeowners and business owners." ■



## BECH BRUUN

### Chairman of the Texas Water Development Board

**WHEN HE DECIDED TO accept a seat on the Texas Water Development Board (TWDB) in late 2013, Bech Bruun knew he faced a tall order, given that months prior Texas had launched a new state program aimed at addressing drought conditions plaguing the state. Bruun recalls how at that time the state was in the grip of a historic dry spell. “More than 97 percent of the state was in moderate to severe drought,” he says. “That wasn’t an overnight development, but one the state had been experiencing since the drought started in 2011.”**

Fortunately, Texas lawmakers made it a priority to establish affordable financing for projects under the state water plan. In 2013, only a few months before Bruun started his role at the TWDB, legislators passed House Bill 4, which included language creating the State Water Implementation Fund for Texas (SWIFT) program\*.

Bruun’s first few months at the TWDB included efforts to get the SWIFT program up and running by the date mandated by the legislature. Launching a new program entailed developing a stakeholder process, creating rules, prioritizing projects and drafting the application process. “Thankfully, TWDB staff was up for the challenge and not only successfully checked all the necessary boxes for launching the program, but completed it well before the mandated deadline,” he says.

Since then, Bruun reflects, conditions across the state have improved. He reports the TWDB has committed approximately \$5.6 billion to state water plan projects of all scopes and sizes, and the initiatives to apply for SWIFT assistance include seawater desalination, leak detection systems, water meter replacements, reservoirs, transmission pipelines and reclaimed water projects.

Meanwhile, Mother Nature is doing her part by bringing rain again – including the historic levels of rainfall dropped in Texas in August from Hurricane Harvey. “It’s a reminder that Texas weather conditions can change rapidly, and that we always should be prepared for times of drought or rain,” Bruun observes.

Bruun says that over the summer – the hottest time of year in the Lone Star State – less than 5 percent of Texas was experiencing drought conditions, and state reservoirs were looking good. Nevertheless, emphasizes Bruun, the agency knows it must remain vigilant to fulfill its role of helping communities secure the water they need. “This is Texas. The weather can change in an instant.”

Before TWDB, Bruun previously worked for then-Governor Rick Perry and the Brazos River Authority. During the 81<sup>st</sup> Texas Legislature, he served as chief of staff to Representative Todd Hunter, R-Corpus Christi, and as general counsel to the House Committee on Judiciary and Civil Jurisprudence.

With such extensive experience in all branches of Texas government, Bruun is no stranger to working to resolve some of the state’s most pressing issues, including those that relate to water supply. Hence, it came as little surprise when Governor Greg Abbott named Bruun as chairman of the TWDB in June 2015.

In addition to helping ensure SWIFT’s progress, other recent accomplishments during Bruun’s tenure at the TWDB include the completion of the 2017 State Water Plan, the success of the TWDB’s ‘Water for Texas 2017’ conference, and the creation of [www.TexasFlood.org](http://www.TexasFlood.org).

Further, Bruun notes how improvements made to the agency’s internal structure have improved operations at the TWDB. “We have restructured the agency to create six regional project development teams that focus on a specific region of the state. The teams are out in those communities identifying ways the TWDB can help them develop reliable and sustainable water supplies. When a community comes to the TWDB for financial assistance, it works through the teams to submit an application and have projects reviewed.”

Bruun mentions that the state’s 2017 Water Plan aims to add 8.5 million acre-feet of additional supplies by 2070, and while the lion’s share of that will come from efforts associated with surface water supplies and conservation efforts, groundwater strategies are expected to supply 10 percent of that water. That item includes research TWDB staff has conducted through the Brackish Resources Aquifers Characterization System (BRACS) program. Bruun says BRACS already has characterized eight of Texas’ brackish aquifers, and analysis of four more is underway. “The reports include information on the hydrogeologic framework, the water-bearing lithologic units, the properties related to groundwater flow, water salinity and water quality. The information will provide important data for regional planning groups and other entities interested in using brackish groundwater as a water supply,” he explains. “The oil and gas industry can assist the BRACS program by continuing to provide well data to the TWDB. This data is very helpful for us when we are studying Texas’ aquifers.”

On behalf of the association’s membership and the state’s oil and gas industry, TIPRO looks forward to continued collaboration with TWDB and Chairman Bruun to make certain Texas’ water resources are sustainable and readily available for years to come.

*\*The SWIFT program includes two funds, the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT). Revenue bonds for the program are issued through SWIRFT.*





## BRYAN SHEFFIELD

Chairman, CEO and Founder of Parsley Energy

**BRYAN SHEFFIELD COULD HAVE told his grandfather, Joe Parsley, “Thanks, but no thanks.” After all, trading options and interest rate futures seemed appropriate for a finance major, but when his grandfather extended the opportunity to operate about 100 mature Spraberry wells, Bryan became a third-generation oil and gas man.**

After 18 months of learning the ropes at Pioneer Natural Resources, where Bryan’s father Scott Sheffield had risen to chief executive officer, the younger Sheffield relocated to Midland, Texas, and launched Parsley Energy as a contract operator. The company drilled its first well in 2009, and within two years, upped its drilling activity from one rig to five. The evolution continued into 2013, he describes, when Parsley transitioned from vertical to horizontal projects. The next year, in 2014, Sheffield oversaw Parsley’s initial public offering (IPO), the second-largest exploration and production IPO ever. Since then, the company reports its production has grown at a 17 percent compound quarterly rate.

Sheffield indicates Parsley owes its vigorous expansion to a strategy that emphasizes “getting the most out of the best.” According to Sheffield, the company is “focused on owning and optimizing best-of-the-best acreage and developing this acreage as efficiently as possible in order to deliver strong and consistent cash flow growth.”

“We believe our extensive inventory of premium drilling locations, position at the low-end of the cost curve, and track record of first-rate well productivity set us up to deliver leading returns on capital for many years,” he says.

Parsley’s Permian Basin stomping ground, in fact, has become the country’s premier producing province. Its distinction, notes Sheffield, lies with its “layer cake” of several distinct target zones. “We have consistently focused on portions of the Permian with the most stacked-pay potential, and even now are targeting new zones that are proving highly productive.”

However, obtaining “the best” is not a focus limited only to Parsley’s properties. The company’s desire to secure top talent prompted executives to relocate Parsley’s headquarters from Midland to Austin, a decision that Sheffield sees as a way to appeal to a new crowd of oil and gas professionals. “We will always have strong ties to Midland as a family and as a company, but relocating our headquarters to Austin

has helped us attract and retain talented employees and made Parsley Energy a preferred workplace in the industry,” he says.

And then there is the teamwork that comes naturally to any outfit in which every participant has a stake. That—along with a willingness to experiment—Sheffield suggests, has helped allow the company stand out. “Parsley employees are personally invested in the company, and I mean that both figuratively and literally,” he remarks. “We made a decision before the IPO that every employee would receive company stock, including all of our field personnel. That policy, among many other factors, has contributed to a pervasive sense that we are all in this together. We are also a younger group on average and probably feel more freedom to challenge conventions than other companies and teams which may be accustomed to a certain way of doing things.”

But Parsley’s employees are not the only beneficiaries, Sheffield considers, citing energy’s pivotal role in human flourishing. Even as oil and gas resources have helped so many Americans enjoy a particular standard of living that, to quote American essayist Tom Wolfe, “would have made the Sun King blink,” a sizable chunk of the world population continues to need affordable and reliable energy. “I am gratified at how oil and gas continues to empower people in developing markets and expect that phenomenon to continue for at least the next few decades,” says Sheffield.

Today, the company reports an enterprise value topping \$9 billion, with nearly 450 employees and 800-plus operated wells. “Parsley Energy is poised to deliver more oil per dollar invested than almost any other operator, and our hedging strategy provides a buffer if oil prices decline and facilitates strategic growth in more constructive commodity scenarios,” adds Sheffield. “We are excited about the future.”

But that eye to the future doesn’t disregard the past, which includes many lessons learned from his own father and grandfather. “Having managed through several commodity price cycles, my dad is a stickler about debt,” he relates. “From the start, he asked often about Parsley Energy’s leverage, warning we should be ready for a downturn around any corner. He was right.” ■



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**Rajan Ahuja**

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**Jason Blake**

The AHE

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# Calendar of Events

## October 11, 2017

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
Houston, Texas  
For more information, call (202) 857-4733.

## October 30, 2017

TIPRO NASDAQ Market Close  
NASDAQ Stock Market  
New York City, New York  
For more information, call (512) 477-4452.

## November 8, 2017

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
Houston, Texas  
For more information, call (202) 857-4733.

## December 13, 2017

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
Houston, Texas  
For more information, call (202) 857-4733.

## January 10, 2018

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
Houston, Texas  
For more information, call (202) 857-4733.

## February 7-9, 2018

NAPE Summit  
George R. Brown Convention Center  
Houston, Texas  
For more information, call (817) 847-7700.

## February 14, 2018

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
Houston, Texas  
For more information, call (202) 857-4733.

## March 14, 2018

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
Houston, Texas  
For more information, call (202) 857-4733.

## March 26-27, 2018

TIPRO's 72<sup>nd</sup> Annual Convention  
Westin Memorial City  
Houston, Texas  
For more information, call (512) 477-4452.

## April 11, 2018

IPAA/TIPRO "Leaders in Industry" Luncheon  
Houston Petroleum Club  
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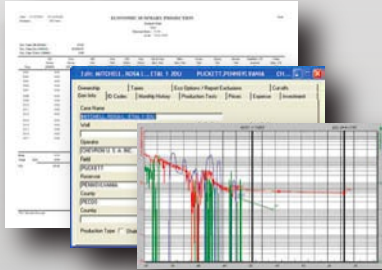
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