Building for the Future

2018 SUSTAINABILITY REPORT

Apache

Building for the Future, Sustainably

To build a sustainable future, Apache believes it is essential to deliver profitable, long-term growth in a way that protects and enhances the safety and health of our employees, our communities and the environment. To do this, we focus on developing innovative operational approaches that deliver environmental, social and financial returns.

Our Vision

To be the premier exploration and production company, contributing to global progress by helping meet the world's energy needs.

Our Mission

To grow in an innovative, safe, environmentally responsible and profitable manner for the long-term benefit of our stakeholders.

Our Core Values

- Expect top performance and innovation
- Seek relentless improvement in all facets
- Drive to succeed with a sense of urgency
- Safety is not negotiable and will not be compromised
- Invest in our greatest asset: our people
- Foster a contrarian spirit
- Treat our stakeholders with respect and dignity
- We derive benefit from the Earth and take our environmental responsibility seriously
- Conduct our business with honesty and integrity

2017 Highlights

98%
of Apache's total water withdrawals were nonpotable

↓55%
decrease in volume of toxic chemicals used in hydraulically fractured wells from 2016 to 2017

↓9%
decrease in Apache's methane emissions intensity from 2016 to 2017

↓41%
decrease in Total Recordable Incident Rate for employees and contractors since 2013

↓50%
decrease in Days Away, Restricted or Transferred Rate for employees and contractors since 2013

97%
of employees are local nationals companywide

10,000+
girls educated in Apache-funded schools in Egypt, most of whom would otherwise not have had access to education

Contents

2018 Sustainability Report
Welcome to Apache's 2018 sustainability report. To view the report online, please visit the Apache website at www.apachecorp.com/sustainability.

Apache Website
www.apachecorp.com

Media or Other Stakeholder Inquiries
Members of the media and other external stakeholders are welcome to contact Apache's Public Affairs office with inquiries or for information about the company. These requests may be directed to media@apachecorp.com.

Letter from the CEO

At Apache, we understand that our company's success hinges upon our ability to produce lasting benefits for all stakeholders, including our investors, our employees and the communities in which we operate. To accomplish this, we are building for the future sustainably by investing in innovative operational approaches that deliver environmental, social and financial returns.

Innovative thinking has always been what we do at Apache, rooted in our Core Values and culture and exemplified by our contrarian spirit and constant pursuit of continuous improvement. But over the last year, we have further strengthened this culture of innovation to advance our application of technologies and best practices as we build for the future.

For example, we've reorganized our management team to better support our strong bench of innovators. We're expanding cutting-edge technologies and processes across our business, including innovation in well drilling and water treatment, the use of biocatalysts in our fracturing fluids, increased application of big data analytics, and unique employee development and educational tools. Innovation is helping us save money, yield better results, increase efficiencies and reduce our footprint all at the same time. We're pleased to share examples throughout the pages of this report.

Achieving Our Mission

Across our operations, we are achieving our mission to profitably grow in an innovative, safe and environmentally responsible manner for the long-term benefit of our shareholders and other stakeholders. Our water management programs, emission reduction efforts, robust safety initiatives and industry-leading governance practices are just a few of the many examples of how we are achieving our sustainability commitments.

In Alpine High, for example, we are applying innovations in exploration and development, industry-leading risk assessment and operational practices, and new ways of approaching stakeholder engagement to deliver on our promise for a higher standard of responsible oil and gas operations. When we first announced our development plans for Alpine High two years ago, we committed to protecting a region beloved for its beauty and unique natural resources. As we've moved from planning and exploration to longer-term development and production, we believe we are going above and beyond expectations to maximize positive benefits while minimizing potential impacts. Through rigorous plans and policies for operations and strong engagement with the community, we are setting a standard for other operators in the area and demonstrating that our corporate financial objectives and environmental and social commitments can coexist. You'll find more details about our work in the area beginning on p. 40.

"Across our operations, we are achieving our mission to profitably grow in an innovative, safe and environmentally responsible manner for the long-term benefit of our shareholders and other stakeholders."

Apache by the Numbers

~90% of water used for drilling and completions in Alpine High was recycled or nonpotable as of September 2018

~47% of our total water withdrawals in 2017 were recycled or reused

On track to meet our goal of reducing methane emissions intensity to 0.36 percent or less of total methane production by 2025

Nearly $1 million in grants and aid contributed by Apache and our employees for colleagues in need of emergency assistance

Across our operations, we have been industry leaders in minimizing our use of valuable freshwater resources. In Alpine High, 90 percent of the water used for drilling and completions is recycled or nonpotable. In all our regions, about 47 percent of our total water withdrawals in 2017 were recycled or reused. In the past year we've also made continued, incremental progress on other key environmental sustainability metrics, including a 9 percent reduction in methane emissions intensity from 2016 to 2017 as we work toward our science-based goal to reduce methane emissions intensity to 0.36 percent or less of production by 2025.

Investing in Our Greatest Asset

Our people are our greatest asset and investing in them through superior health and safety programs, training and development, and other support, is a top priority. In 2017, we launched an innovative human resources system, called 'A' Game Resources, to further advance employee development, performance and satisfaction. We also continue our efforts to hire locally. In 2017, 97 percent of our workforce were local nationals.

To further protect the safety of our employees, contractors and communities, we recently expanded the health and safety goals component of our executive cash incentive bonus to put even greater emphasis on safety excellence. We outperformed the three targets we set in 2017, which was the first year of this new initiative. (Read more on p. 78.)

This past year put our people to the ultimate test when Hurricane Harvey roared through Texas, dropping more than 60 inches of rain and causing an estimated $125 billion in damage. Our employees rose to the challenge, keeping our operations running and supporting their fellow Apaches and other community members.

Apache and our employees contributed nearly $1 million in grants and aid to colleagues who were in need of emergency assistance and another $250,000 to the American Red Cross to help with relief efforts across our community. You'll find some examples of how Apaches responded to the storm in the case study on p. 98 of this report.

Being a responsible operator and a good neighbor and investing in our people and our communities are essential elements of our approach to doing business. As we build for the future, we will continue to live our Core Values – investing in our people, never compromising safety, taking our environmental responsibility seriously, treating our stakeholders with respect and dignity and conducting our business with honesty and integrity – as we pursue our efforts to deliver long-term value to all of our stakeholders.

John J. Christmann IV

John J. Christmann IV
Chief Executive Officer and President

"This past year put our people to the ultimate test when Hurricane Harvey roared through Texas, dropping more than 60 inches of rain and causing an estimated $125 billion in damage. Our employees rose to the challenge, keeping our operations running and supporting their fellow Apaches and other community members."

About Apache

Apache Corporation is a Houston-based oil and gas exploration and production company with operations in the United States, Egypt and the United Kingdom.[1] Since our founding in 1954, Apache has grown to become one of the world's top independent oil and gas exploration and production companies.

Our Approach

Apache has built a team unified by our values, our commitment to building shareholder value, and our culture, which empowers every employee to make decisions and achieve the company's goals. Our global team is brought together by a sense of ownership and the knowledge that the best answers win. Apache is building for the future with a commitment to delivering long-term, returns-focused growth. Our continued focus on financial discipline, rigorous portfolio management and relentless performance optimization has advanced our strategy and positioned Apache for success in 2018 and beyond.

As we build a sustainable future, we know that our ability to succeed in the long term is based on operating responsibly and building lasting relationships. As such, Apache is developing innovative operational approaches that deliver environmental, social and financial returns. Our daily actions and decisions are guided by our Core Values, including investing in our people, an uncompromising commitment to safety, respect for our stakeholders and communities, environmental responsibility and acting with ethics and integrity.

Our Operations and Regions

Apache's asset portfolio includes conventional and unconventional, onshore and offshore, exploration and production interests in the United States, Egypt's Western Desert, the United Kingdom's North Sea and Suriname.[2] We organize our operations into regions, which are generally grouped by geographic area.

In North America, we have two onshore regions:

- The Midcontinent/Gulf Coast Region, which includes the Granite Wash, Tonkawa, Marmaton, Cleveland and other formations of the West Anadarko Basin, the Canyon Lime formation in the Texas panhandle, the Woodford-SCOOP and Stack plays located in central Oklahoma and the Eagle Ford shale in East Texas.

- The Permian Region, located in West Texas and New Mexico, which includes the Permian sub-basins, the Midland Basin, the Central Basin Platform/Northwest Shelf and Delaware Basin. Examples of shale plays within this region include the Woodford, Barnett, Pennsylvanian, Cline, Wolfcamp, Bone Spring, Spraberry and Alpine High.

We also have one offshore region in North America – the Gulf of Mexico Region – which consists of both shallow and deepwater exploration and production.

In 2017, our North American operations represented approximately 52 percent of our total production and 69 percent of our proved reserves.

We have two international regions:

- The Egypt Region, which includes onshore conventional assets in Egypt's Western Desert.

- The North Sea Region, which includes all offshore assets based in the United Kingdom.

We also have an offshore exploration program in Suriname.

[1] Apache also has exploratory operations in Suriname.
[2] During the third quarter of 2017, Apache completed the sale of its Canadian operations.

2017 Operational Overview

298 Mboe/d
Oil and NGL
Production

958 MMcf/d
Natural Gas
Production

1.2 Billion Boe
Proved
Reserves
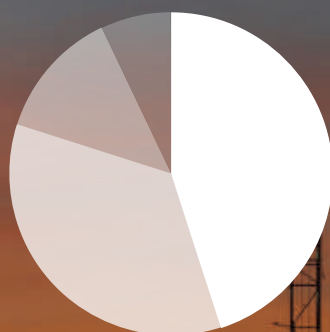
PRODUCTION
- United States 45%
- Egypt 35%
- United Kindgom 13%
- Canada* 7%
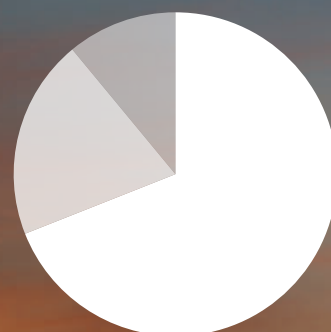
TOTAL ESTIMATED PROVED RESERVES
- United States 69%
- Egypt 20%
- United Kindgom 11%

	Oil & NGL Production (Bbls/day)	Natural Gas Production (Mcf/day)	Proved Reserves (Mboe)	Gross Acreage** (In Thousands)
United States	140,163	394,366	810,787	6,669
Canada*	9,470	131,479	–	–
Egypt	98,058	386,194	239,476	5,598
United Kingdom	50,038	45,521	124,723	362
Other International	–	–	–	2,308

Key

NGL = natural gas liquids
Mboe/d = thousand barrels of oil equivalent per day
MMcf/d = million cubic feet per day
Boe = barrel of oil equivalent
Mcf = thousand cubic feet
Bbls = barrels

* During the third quarter of 2017, Apache
  completed the sale of its Canadian operations

** Developed and undeveloped

About This Report

This 2018 sustainability report covers Apache's performance in the areas of governance, economics, environmental stewardship, health and safety, workplace and employee issues, and community involvement.

The report was prepared using the Global Reporting Initiative (GRI) Sustainability Reporting Standards (2016) and is in accordance with the GRI Standards at the core level. We also consulted the *Oil and Gas Industry Guidance on Voluntary Sustainability Reporting* (2015) developed by IPIECA (the global oil and gas industry association for environmental and social issues), the American Petroleum Institute and the International Association of Oil & Gas Producers; as well as the Sustainability Accounting Standards Board's *Oil and Gas Exploration and Production Sustainability Accounting Standard* (October 2017). In addition, we referred to *Disclosing the Facts 2016: Transparency and Risk in Hydraulic Fracturing* and *Disclosing the Facts 2017: Transparency and Risk in Methane Emissions*, published by As You Sow, Boston Common Asset Management and the Investor Environmental Health Network. *Disclosing the Facts* is an annual investor scorecard ranking the 30 largest oil and gas companies engaged in hydraulic fracturing. See the Reporting Standards and Scorecards section for an index of indicators from these frameworks discussed in this report (p. 120).

Data included in this report cover the 2017 calendar year unless otherwise noted. In the third quarter of 2017, Apache divested its Canadian operations. Environmental and employee data for 2017 do not include our Canadian operations. Health and safety, local spending and financial data include the Canadian operations through the third quarter of 2017.

Increasing Transparency

We believe that transparency is critical to our relationships with stakeholders and our ability to continuously improve the sustainability of our operations. For example, in this report we further expanded our sustainability reporting to help us be more transparent on a greater number of issues. For example, we increased our reporting on:

- Internal governance processes and Board-level management of environmental, social and governance (ESG) issues

- Climate-related risk management

- Key questions Apache receives from stakeholders and how we are responding

Assuring Report Content

At Apache, we demand accuracy and excellence in all our activities, including the content of this sustainability report. This report was reviewed by select members of our executive team, as well as by our Internal Audit function (described on p. 32). The rigorous internal audit included verifying or corroborating certain data points and facts, providing accountability for the accuracy of this report.

2017 DTF Scorecard

Our efforts to increase transparency are supported by our performance in the *Disclosing the Facts* (DTF) rankings. In 2017, we tied for first place in the ranking out of 28 companies, improving from third place in 2016.

COMPANY	POINTS
Apache	**12**
BHP	12
Southwestern	12
Conoco	11
Hess	11
Shell	11
Chesapeake	10
Newfield	10
Range	10
Exxon	9
Noble	9
Pioneer	9
Carrizo	7
CONSOL	7
Devon	7
EOG	6
Anadarko	5
WPX	5
Antero	4
Occidental	4
BP	3
Chevron	2
Continental	1
EQT	1
QEP	1
Whiting	1
Cabot	0
Encana	0

Identifying Our Most Material Issues

In 2017, we conducted a materiality analysis to understand internal and external stakeholders' perspectives on the most important sustainability issues associated with our operations. The results of this analysis guided the content we included in this report.

We determined our most material issues through a four-step process:

1. **Identify issues:** We identified our sustainability-related issues, impacts, benefits, risks and opportunities by interviewing a range of internal and external stakeholders, reviewing documents representing a wide variety of stakeholder views and interests, and reviewing peer companies' material issues. For our internal stakeholders, we considered the perspectives of employees from across our organization. Our external stakeholders included mainstream investors, ESG-focused investors, ESG-focused nonprofit organizations, community members and leaders in areas where we operate, and regulators. Based on these interviews and documents, we developed a comprehensive list of potentially important issues across an extensive suite of topics, including governance, environment, local community impacts and benefits, employees and contractors, and financial performance.

2. **Prioritize issues:** We prioritized and revised the list of potential material issues based on the level of importance our internal and external stakeholders placed on those issues and the frequency with which they raised the issues. Issues were also prioritized based on their overall potential to impact the environment and society; their likelihood to influence stakeholders' decision making and assessments of the company; and their impact on Apache's financial performance.

3. **Review and revise:** We reviewed the initial prioritization with a range of internal stakeholders to confirm the accuracy of the material issue ratings, and revised as needed.

4. **Determine Report Content:** We used the final material issues list to evaluate whether we were adequately reporting on the issues that are most important to our internal and external stakeholders. Our analysis confirmed that the issues on which we have consistently reported are in fact the top issues of greatest concern to our stakeholders. We will continue to maintain or increase our reporting on these topics. In this year's report, for example, we have increased our level of disclosure on many topics found to be most important to our stakeholders, including: water use and management, methane emissions, and management of health and safety, environmental and social issues. We are also reporting on a range of issues that are important to Apache and our stakeholders but were not ranked at the highest level of importance by all groups. For example, we discuss how Apache is addressing the potential risks to our business associated with climate change.

Moving forward, we plan to review and update this analysis regularly, and we will continue to revise our report content based on these analyses.

1 IDENTIFY ISSUES

2 PRIORITIZE ISSUES

3 REVIEW & REVISE

4 DETERMINE REPORT CONTENT

Apache's Material Issues

Based on our materiality analysis, we found the following issues were of highest importance to internal and external stakeholders:

- Employee and contractor health and safety
- Greenhouse gas/methane emissions and energy use
- Impacts on community infrastructure

- Local economic impacts
- Proactive community engagement
- Regulation and compliance
- Reputation/social license to operate

- Risk management
- Sustainability, HSE (health, safety and environment), and social issue management
- Water use and sourcing, water quality and wastewater management

This analysis has confirmed that the issues on which we have consistently reported are in fact the top issues of greatest concern to our stakeholders. We will continue our high level of reporting on these topics and on the others identified.

Building for the Future Through Innovation

In today's rapidly changing world, innovation is critical to Apache's long-term success. Innovative thinking has always been part of our company, embedded in Apache's Core Values and the culture that underpins how we work every day. It is part of our contrarian spirit and our relentless pursuit of continuous improvement. Over the past year, we have worked to further strengthen our culture of innovation, building on our strong track record of breakthrough technologies and practices.

"There is a real 'doer' spirit here; Apache gets things done. And this is paired with a respectful but candid inclination to challenge and debate. These two things underpin the company's ability to innovate and apply new ideas at an accelerated pace."

-David Pursell
Senior Vice President, Planning, Reserves and Fundamentals

Fostering Innovation

Apache has a long history of recruiting and facilitating the work of a broad team of innovators across the company to deliver better ideas, better technologies and better ways of doing things.

For example, the groups that make up Apache's Energy Technologies organization have been incubators for innovation for over a decade, developing new technologies and processes and then bringing them to Apache's regional operations for testing and implementation. This group – which includes strategic hires with backgrounds in key technical areas, including seismic techniques, water recycling and fracturing chemicals – collaborates with vendors, entrepreneurs and

universities to develop or identify new approaches and then applies them to Apache's operations. In addition to corporate-level groups focused on innovation, employees across Apache's regions and operations are also successful innovators, continually finding and implementing better ways to do things.

In 2018, we enhanced our executive-level management structure to further foster innovation, underscoring its importance to Apache's strategy. For example, Apache hired Mark Meyer as senior vice president, Energy Technology, Data Analytics & Commercial Intelligence, to strengthen Apache's bench of innovators and provide an executive-level champion for innovation across the company. In addition, Paul Griffith

was named vice president, Energy Technology Services, consolidating the management of multiple teams focused on developing new approaches for Apache's operations to help cross-pollinate innovation in key technical areas for the company.

"Having a senior vice president position dedicated to innovation illustrates that this is a core strategic focus at Apache," said David Pursell, senior vice president, Planning, Reserves and Fundamentals, who was also recently hired to drive innovation through the company's financial planning processes. "But it's the cultural alignment on this that I see across the company, at every level, in every department and every region that is the critical success factor. There is a real 'doer' spirit here; Apache gets things done. And this is paired with a respectful but candid inclination to challenge and debate. These two things underpin the company's ability to innovate and apply new ideas at an accelerated pace."

We foster innovation across the company in other ways as well. The Apache Technology Forum, for example, is an internal innovation lab in which employees from across the company come together to share new technologies or processes they have developed, discuss challenges and brainstorm improvements and solutions. We also host bi-weekly technology webcasts in which all employees are invited to learn about new ideas being developed within the company.

Innovations that Deliver Environmental, Social and Financial Returns

Innovation helps us save money, get better results and be more efficient. "While we are open to big ideas and big thinking in every facet of our business, we are also focused on delivering near-term solutions that will grow value for Apache shareholders and other stakeholders," explained Meyer. "We are seeking novel approaches to our operations that yield environmental, social and financial returns."

For example, we are continuously designing and implementing new ways to maximize the productivity of our wells, which

ultimately decreases costs and reduces our footprint. The more production we can get from each well, the fewer wells we need to drill. Fewer wells means less water used, reduced potential for spills or injuries, decreased impacts on the land and fewer trucks on the road, among other benefits.

At Apache, we focus on developing innovations that yield environmental, social and financial returns.

Across the company, we are exploring and implementing new and better technologies and improving our processes. The following are some of the recent examples of innovation that are yielding financial, social and environmental benefits. Other highlights from innovative projects can be found throughout this report, many of which are indicated by the icon shown on p. 13.

Applying Big Data Analytics

"Big data," a buzzword in technology and business circles for several years, refers to large quantities of data that can be analyzed by computers to reveal underlying trends and patterns that might not otherwise be visible. We are harnessing the power of big data analytics – developing ever bigger and better datasets and more sophisticated analysis capabilities – to catalyze innovative thinking, drive operational improvements and increase efficiencies across the company. We are building models of our operations that are more objective and much more robust, helping us make better predictions and more accurate decisions. This approach will help take Apache to the next level in terms of both environmental stewardship and shareholder returns by enabling us to identify entirely new ways to improve our performance while lowering the time, cost and risk associated with trying those new ideas.

"Moving forward, innovation will be data-centric," explained Meyer. "When people think of 'big data'-focused industries, right now oil and gas is not on the chart. That's going to change, and Apache will be at the center of that. Effective innovation requires a number of things, but it will increasingly be led by data."

"Effective innovation requires a number of things, but it will increasingly be led by data."

- Mark Meyer
Senior Vice President, Energy Technology, Data Analytics & Commercial Intelligence

This is a unique time in the industry to leverage new technologies and strong mathematical concepts to approach problems in new ways across a diverse rig fleet, large volumes of historical data and increasing operational access, all while reducing costs and risks, boosting capital efficiency and accelerating learning. Improving our drilling performance is one key area in which we are applying advanced data analytics. Traditionally, the use of high-frequency drilling data has been limited to typical trend charts and simple analytical tools at the rig site or in remote real-time operations centers. These approaches produced better, but limited, drilling performance results. To improve upon this, Apache's Drilling Data Services group built the Drilling Intelligence Guide (DIG), a new real-time drilling advisory system that leverages known physics-based models, pattern matching and big data analytics.

Through DIG, we are automating and enhancing traditional engineering by capturing and streaming real-time data through analytic models to help optimize decisions. We are then dissecting the results from previous wells into operational parameters for a better understanding of what worked previously in different but similar parts of the world, under similar conditions over time or with specific types of equipment. Using this integrated data with deep learning techniques has helped deliver predictive models tuned to over 90 percent accuracy. These predictive models can be used for better well designs and leveraged during real-time drilling operations to help teams avoid downtime and achieve their highest performance. "Overall, DIG will help reduce our drilling costs and risks because we're looking at data to accelerate our learning," explained Michael Behounek, senior drilling

performance advisor. DIG can be expanded in the future to accept other datasets from completions and production to not only optimize drilling, but also to better understand how drilling results impact completions and ultimately production performance.

Another key big data innovation we are applying is a rapid oil field digitization campaign as a means to improve efficiency, reduce operating costs and continue to focus on safety amid a lower commodity price environment. Apache currently has three remote monitoring and data centers through which we are collecting large amounts of data from our operations across thousands of square miles and analyzing it to improve decision making and lower costs. Data from these centers is used for a wide range of improvements, including optimizing well productivity, logistics and equipment performance. These centers are helping us save money and also improve our environmental and social performance. For example, field sensors and operational instrumentation tools allow us to run diagnostics of equipment from remote locations and identify any potential issues early. The remote centers are also helping to improve our methane detection and repair programs. Describing these remote operating centers, Brad Eubanks, vice president, Operations, Houston Region explained, "By combining all of our information into a user-friendly platform we are able to create a clear picture of the oil field. This enables us to dispatch field

We are harnessing the power of big data analytics to catalyze innovative thinking, drive operational improvements and increase efficiencies across the company.

personnel more efficiently and reduce equipment downtime, both of which lead to substantial cost savings."

Data analytics are also being put to new uses in our Human Resources department. The upstream oil and gas industry is always evolving with new technology and is extraordinarily cyclical, with cycles of boom and bust. The challenge for companies like ours is figuring out how to match our human capital with the unique business cycles of our industry. We're using workforce analytics tools to leverage data and help us develop predictive staffing plans in preparation for industry changes. Our goal is to improve the effectiveness of our people-related decision making and human resources strategy and continue to improve our staffing, retention and development initiatives.

Advancing Water Recycling

Apache has been an industry leader in developing innovative ways to recycle water from our operations for hydraulic fracturing. For years, we have been researching water treatment systems and processes along with hydraulic fracturing technologies and formulations to help us develop new ways to treat all kinds of produced water efficiently, economically and safely. We continue advanced research on ways to mitigate impurities in produced water through both internal research and collaborations with leading universities and third-party labs.

Our approach to water treatment, storage and pipeline transport infrastructure helps us simultaneously cut costs and improve our environmental and social performance. By recycling water, we lower costs, reduce potential safety and environmental impacts associated with trucking water and disposing of it in saltwater injection wells, and lessen our use of fresh water.

Advancements in Seismic Techniques

Seismic surveying is a foundational technology for oil and gas development, helping companies locate oil and gas reserves and determine the most efficient methods for unlocking those reserves. Dave Monk, director, Global Geophysics and distinguished advisor, has developed or helped develop major innovations in seismic technology that have changed the way the whole industry approaches seismic exploration. For example, Monk developed a new way to organize marine seismic data collection, which improves the seismic data while reducing costs. His technique is now widely used. Monk estimates the technology has saved Apache tens of millions of dollars and the industry as a whole hundreds of millions of dollars.

Monk has also worked on seismic technologies that achieve the dual goals of reducing costs and decreasing social and environmental impacts. In Apache's former Canadian operations, for example, engineers were faced with the challenge of undertaking seismic surveys in heavily wooded areas with shallow drinking water aquifers. The traditional method of using dynamite to produce sound waves, the

"Apache employees are constantly challenging the way we do things. We are always striving to do things more efficiently, use less energy and less infrastructure while being more reliable and having a smaller environmental footprint. And, making it even more challenging, we are also maintaining very tight budgets. Our approach to water recycling is something really innovative, and it checks all the boxes of reducing costs and reducing impacts."

-Cal Cooper
Director, Emerging Technologies

In 2018, Apache initiated an annual innovation award to recognize employees who have developed new and better technologies and processes to support our operations. Mark Meyer presented the first award to Dave Monk for his contributions to the field of seismic technologies.

reflections of which are then measured to gain seismic data, would have had many negative impacts in this area. So Monk and his team developed small, maneuverable machines that "thumped" the ground to make the necessary sound waves. These could be steered through the forest without cutting down trees and could produce high-quality seismic data without impacting water aquifers as dynamite would have. This approach continues to be used across the industry.

Rethinking Remediation

Traditional techniques for remediating soils – which focus on excavating and landfilling impacted soils – are costly and time consuming. They also have significant environmental impacts, ranging from land disturbance to emissions from heavy machinery and trucking.

To address these issues, Jason Ho, a staff production engineer in Apache's emerging technology group, was tasked with finding an innovative approach to remediating soil without causing collateral damage to the surrounding ecosystem. "We were faced with remediating salt-impacted soils at a long-abandoned production site, previously occupied by past

operators, that was far from any landfills and was surrounded by sensitive habitats including bogs and boreal forests," Ho explained.

In response, Ho and his team modified an electrokinetic (EK) process previously used by the U.S. military to remediate heavy metals. The EK process generates an electric field throughout the soil, which then separates positively and negatively charged ions and other contaminants, causing them to migrate and become concentrated at their respective electrodes for simple removal with very limited soil disturbance. This highly concentrated contamination can then easily be collected and safely transported to a disposal well.

In 2017, Apache completed a pilot trial of in-situ remediation using EK, successfully removing subsurface contaminants, including more than 5 tonnes of salt, with minimal soil disturbance, machinery, trucking or landfilling of waste. In addition, even at this pilot stage, the EK process cost substantially less than conventional remediation techniques.

Environmental, Social and Financial Returns from Apache Innovations

Over $75 million
saved by using innovative seismic technologies

Overall water management costs
reduced due to water recycling programs, which also reduced our use of fresh water and the need for water disposal

16 active patents
held by Apache employees in areas such as seismic testing, basin modeling, reservoir engineering, petrophysics, drilling and completions

Reporting on Apache Innovations
Apache innovation projects are highlighted throughout this report where you see this icon.

Ask Apache

We seek to understand and respond to the issues that are most important to our stakeholders. Our **Ask Apache** feature identifies the issues most frequently raised by stakeholders, provides concise but thorough answers describing how we are addressing these topics, and points to more detailed, related content throughout this report.

Q&A

Some stakeholders have raised concerns about methane emissions and leaks during the drilling, production, processing and transport of natural gas, with some suggesting these methane losses may reduce or eliminate the overall greenhouse gas (GHG) reduction benefits of natural gas versus other fuels.

Q How is Apache addressing methane emissions and leaks in its operations?

A As a cleaner-burning fossil fuel, natural gas plays an important role in the transition to a lower-carbon energy future. However, the benefits of natural gas can be undercut by methane leakage during production, processing and transportation to customers. To address this issue, we employ a leak detection and repair (LDAR) program using the latest equipment and technologies to reduce methane losses. We are also collaborating with industry, government and nongovernmental partners to develop more effective leak detection and loss-reduction methodologies.

Apache is a charter member of the ONE Future Coalition, an industry group working with companies across the natural gas value chain to develop and implement voluntary programs that will reduce methane losses to less than 1 percent of total methane production from the wellhead to the ultimate point of use. ONE Future has committed to an upstream sector emissions target of 0.36 percent or less of gross methane production (also called methane emissions intensity) by the year 2025. Apache has adopted this same goal, and we are on track to meet it. In 2017, our global methane emissions intensity was 0.43 percent, a reduction of 9 percent compared to 2016.

Participation in the ONE Future Coalition has also been accepted by the U.S. Environmental Protection Agency (EPA) as a recognized protocol within their voluntary Methane Challenge program for methane leak reductions. Under the Methane Challenge program, companies can report and take credit for their leakage reduction efforts and share their learnings with the EPA and other stakeholders.

Leak detection is an ongoing and regular part of Apache employees' on-site activities, and we use a range of methods to minimize methane leaks throughout the lifecycle of our operations. In the design and engineering of new facilities, we seek to minimize the potential for methane leaks. We use optical gas imaging (OGI) cameras to examine all new facilities before they come online to verify that our design and construction plans do indeed prevent leaks as expected. Facilities are re-inspected during operations as needed to address improperly functioning equipment or maintenance issues. We also use OGI cameras to inspect wellheads, compressor stations and buried pipeline routes. While OGI cameras are a valuable tool in monitoring our facilities, they cannot identify the type of gas or volume of the emissions. Therefore, when potential leaks are identified using an OGI camera, the team further investigates to determine their nature and source.

In addition, employees are trained to perform olfactory, visual and audio (OVA) inspections for possible leaks. Leaks are fixed immediately upon detection whenever possible. If the leak source cannot be identified with OVA inspections, we use OGI cameras to identify it. We also use these cameras after completing repairs to verify the leaks have been fixed successfully.

> At our newest development in Alpine High, we are strategically designing infrastructure to meet the growing needs of the play while minimizing emissions.

Methane Emissions Intensity
(Leak/loss rate %)

2013	2014	2015	2016	2017
0.55	0.53	0.49	0.47	0.43
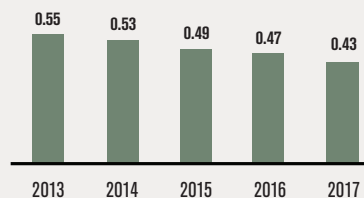
Approximately 90 percent of our emissions are determined using engineering calculations, EPA emissions factors and IPIECA and API AP-42 emissions factors for the oil and gas industry.

Methane Emissions Performance

Our Goal: 0.36%

methane emissions as a percentage of total methane production

Our Progress: ↓22%

decrease in methane emissions intensity since 2013

We continue to enhance our LDAR program to support compliance with new regulations, and we are evaluating alternative methane detection tools as a supplement to optical gas imaging technology.

At our newest development in Alpine High, we are strategically designing infrastructure to meet the growing needs of the play as development ramps up, while minimizing emissions from leaks, flaring and venting as much as practicable. For example, we are applying proven emission reduction technologies and processes, including implementing stringent truck loading and tank emissions controls on both test facilities and permanent facilities; shutting in flares from exploratory wells; using reduced-emission completions; installing pneumatic controllers powered by air rather than compressed natural gas; and implementing our rigorous leak detection and repair system.

> Leak detection is an ongoing and regular part of Apache employees' on-site activities, and we use a range of methods to minimize methane leaks throughout the lifecycle of our operations.

In 2017, we joined the American Petroleum Institute's Environmental Partnership, a group of U.S. oil and gas companies working together to address environmental challenges and further improve environmental performance in our industry – starting with methane. As part of this effort, we have made the following commitments: implement a leak detection program, including ongoing monitoring and timely repair of fugitive emission at all relevant sites within the next five years; replace, remove or retrofit high-bleed pneumatic controllers with low- or zero-emitting devices within the next five years; and implement a monitoring and emission reduction program for liquids removal within the next 18 months. Moving forward, we will report annually on our progress against these goals.

Learn more about our methane reduction and overall GHG reduction efforts in the Environment section (p. 64).

There is increasing interest in how oil and gas companies may be affected by increased carbon regulation as well as how companies are assessing and managing climate change-related risks, such as carbon asset risks or stranded assets. Shareholders are concerned about potential financial risks companies may face due to increased carbon regulations, changes in energy demand and/or competition from lower-carbon energy sources as nations reduce fossil fuel use.

Q How does Apache assess and plan for climate change-related risks?

A We are paying close attention and giving careful thought to the issue of climate change and the important debate over its implications for Apache and our stakeholders. As a part of our regular, ongoing business and planning risk management processes, we consider climate change-related risks, including forecasts of future demand and pricing in energy markets and changes in government regulations and policy. We also consider a range of pricing scenarios when forming our long-term investment and development plans, including scenarios in a carbon-constrained world. These assessments are integrated into our overall risk management process, which includes senior managers and executives on the Corporate Risk Management Committee. This committee is overseen by our Board of Directors and the Board's Audit Committee (see more on p. 32). Across Apache, people at all levels and in a wide range of departments – such as Planning, Marketing, Tax, Risk Management, Treasury, Public Affairs, Government Affairs and others – participate in carefully analyzing the potential impacts of climate change-related risks on our business. We cast a broad net to ensure rigorous scenario planning in an uncertain world.

> Climate change-related risks and opportunities are integrated into Apache's overall risk management process, which is overseen by our Board of Directors.

Potential Risks and Opportunities

Apache assesses and responds to climate-related risks and opportunities including but not limited to the following:

Risks

- Changes in regulatory frameworks that could impact the cost of our operations and/or products
- Changes in consumer demand and preferences
- Changes in investor assessments and requirements
- Competition from other energy sources
- Physical risks such as from changing weather patterns

Opportunities

- Cost savings and/or revenue enhancements associated with new technologies that can make our operations more resource-efficient
- Reputational and financial benefits associated with managing climate-related risks
- Increased investor demand and access to and reduced cost of capital
- Improved regulatory relationships associated with proactive, constructive engagement on regulatory issues and voluntary performance improvements
- Improved employee attraction and retention based on our track record as a responsible operator

Our best protection – from an investment and a policy point of view – is managing the life expectancy of our proved resource base. A long-duration production cycle not only sacrifices financial value, it also exposes the capital invested to a greater risk of fluctuations in long-term hydrocarbon demand trends. Avoiding those concerns, coupled with our relentless focus on being one of the lowest-cost and most resource-efficient operators in our industry, allows us to be more nimble in adapting to be the best corporate citizen we can be.

Our portfolio approach also enables us to shift capital investment away from certain assets in response to changes in regulations, energy demand or other factors, which limits our financial risks. This point is supported by IHS Energy's *Deflating the "Carbon Bubble"* report, which concludes that integrated oil and gas company investments face limited near-term carbon-related financial risk because "the intrinsic value of most publicly traded oil and gas companies is based primarily on the valuation of proved reserves, 90 percent of which are expected to be monetized in the next 10–15 years."[3]

Recent studies by the International Energy Agency (IEA) suggest that, even in a carbon-constrained future scenario, where carbon dioxide (CO_2) in the atmosphere is kept to 450 parts per million, demand for oil and gas will continue to grow for the next 20 years, and fossil fuels will continue to make up a significant portion of the overall energy mix. This suggests that oil and natural gas will continue to play an important role, even in a lower-carbon energy future.

Natural gas has a role to play in helping to reduce global GHG emissions. According to the IEA, global energy-related CO_2 emissions were flat for a third straight year in 2016 even as the global economy grew. The IEA notes that this decoupling of economic growth from CO_2 emissions is due in part to the increased use of natural gas in electricity generation, especially in the United States where, in 2016, for the first time ever, more natural gas was used in electricity generation than coal. The EPA's most recent report on GHG emissions also supports this point. According to this report, net GHG emissions in the U.S. decreased by 11 percent overall from 2005 to 2016, and GHG emissions from fossil fuel combustion in the electric power sector decreased by 25 percent during that same timeframe, in large part due to the increased use of natural gas in electric power generation.[4]

We are developing innovative approaches to our operational processes that lower our costs, reduce our environmental footprint and maximize opportunities for natural gas in a lower-carbon energy future. For example, we are working to reduce fugitive methane emissions and encouraging others in our industry to do so as well (see p. 64). To address the potential physical impacts of climate change, such as reduced freshwater supplies, we are continuing our efforts to use alternatives to fresh water, especially in water-scarce areas (see p. 55).

We continuously manage our asset mix to further limit our exposure to carbon risk. It is far easier to conduct scenario analyses over five-year timeframes than over ones that are decades long. While we do our best to look ahead, we also believe that being conservative, thoughtful, open and nimble are the best ways to run a responsible exploration and production company in light of today's important environmental policy issues.

We seek to be a resource to others in discussions about carbon regulations and to educate those who are charged with setting policies. While we do not set policy ourselves, we are a proponent of inclusive discussions that focus on sound science and a realistic approach to carbon mitigation.

We also believe there are significant benefits to voluntary reduction programs, which give companies the freedom to be innovative and to focus on improving those areas where they can effect the most change. We are members of several industry groups that seek to address GHG emissions, including ONE Future and the American Petroleum Institute's Environmental Partnership (see p. 69).

Learn more about our methane reduction and overall GHG reduction efforts in the Environment section (see p. 64).

Apache's Scenario Planning Framework

1 RISK ASSESSMENT

2 OIL AND GAS PRICE SCENARIOS

3 STRATEGY AND PLANNING

4 CAPITAL ALLOCATION

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[3] N. Meyer and L. Brinker, *Deflating the "Carbon Bubble": The Reality of Oil and Gas Company Valuation*, IHS, 2014, https://ihsmarkit.com/research-analysis/q22-deflating-the-carbon-bubble.html.
[4] U.S. EPA Inventory of U.S. GHG Emissions and Sinks 1990–2016 (released March 2018).

Over the past decade, advances in drilling and extraction technologies have made it possible to access unconventional oil and gas reserves that were formerly considered uneconomical and technically difficult to develop. The resulting industrywide increase in unconventional development has garnered significant public attention, with some voicing concerns about potential environmental impacts such as water-quality impairment and methane emissions.

Q How is Apache addressing the potential impacts of unconventional oil and gas development?

A Unconventional oil and gas development accesses reserves in low-permeability rock formations, which require different approaches and technologies from those used in conventional development. The primary unconventional technologies are directional – or horizontal – drilling and multi-stage hydraulic fracturing of horizontal wells. Hydraulic fracturing is a process for stimulating a well to enhance production. In this process, water, sand and small amounts of chemicals are injected into the well. The high-pressure injection creates and opens fissures in the low-permeability rock formation, which releases the oil and gas. All of this occurs thousands of feet below the surface and far below groundwater aquifers, under many layers of impermeable rock. Over the past few years, Apache has shifted its focus toward developing unconventional oil and gas resources, primarily in onshore shale plays in North America. We have been proactive in understanding and addressing the concerns and potential impacts of developing our unconventional resources.

Many of the processes and issues associated with unconventional development are the same as with conventional oil and gas extraction, which we have been managing responsibly for decades. Nonetheless, we recognize the unique issues associated with unconventional development and have responded with stringent operating procedures to address those issues and respond to public concerns.

Some of our key areas of focus for unconventional operations include the following:

Reducing Freshwater Use – Hydraulic fracturing requires large amounts of water, and we understand concerns that our operations may compete with other freshwater uses. We have a long-standing commitment to – and track record of – using alternatives to fresh water to maintain this precious resource for other users. We have developed innovative approaches to reducing our freshwater use, including using nonpotable water such as recycled water, brackish water and treated municipal wastewater. Where we operate in potentially water-scarce regions, including parts of Texas and western Oklahoma, we are especially focused on using alternative water sources. In these areas, we have built extensive infrastructure to store, treat and transport recycled produced water and brackish water. There are nine produced water recycling facilities – six in Alpine High and three in the Permian Basin. Many of these facilities can also treat brackish water for use in our operations. We have also built extensive water storage and pipeline systems to further facilitate water recycling and reuse. For example, in Alpine High, as of September 2018, approximately 90 percent of the water we used for drilling and completions was recycled or nonpotable water. (Read more on p. 48.)

Protecting Water Quality Through Well Integrity – Risks to water quality – in particular the potential for contamination of freshwater sources with hydraulic fracturing fluids or oil and gas leakage – is a frequently voiced concern. To protect water quality, we follow rigorous well integrity protocols, including pressure testing and cement bond logging, with ultrasonic and temperature testing to ensure the cement has bonded properly to the protective casing and the formation. We test water quality prior to beginning operations in a new area to obtain baseline water-quality data, and we may require post-drilling water-quality monitoring based on the location's risk profile. (Read more on p. 56.)

Using Greener Fracturing Chemicals – We are reducing the environmental and water-quality risks associated with fracturing chemicals. We require using alternatives to benzene, toluene, ethylbenzene and xylene (BTEX) whenever possible. And we are at the forefront of using dry fracturing additives, which reduce environmental risk and the quantities of chemicals needed. We report our U.S. hydraulic fracturing activity through the online FracFocus database, which publishes detailed information about the chemicals used in hydraulic fracturing on a well-by-well basis. (Read more on p. 58.)

> Approximately 90 percent of water used for drilling and completions in Alpine High was recycled or nonpotable as of September 2018.

Reducing Greenhouse Gas Emissions – When burned, natural gas produces fewer GHG emissions than many other fuels. However, concerns have been raised about how methane leakage during production, processing and transportation impacts the lifecycle GHG emission reduction benefits of using natural gas. We continue to improve our leak reduction program to reduce methane losses, and we are collaborating with industry, government and nongovernmental partners to develop more effective leak detection and reduction methods (see p. 64). We are also reducing our GHG emissions by improving operational efficiency (see p. 68).

Addressing Induced Seismicity – The potential for induced seismicity from industry operations, especially with respect to injected wastewater disposal, has received substantial public attention. The process of hydraulic fracturing itself is not considered by the scientific community to be a significant seismic hazard. However, Apache is at the forefront of addressing the potential for induced seismicity that could result from our completion operations or wastewater disposal.

One of our key mitigation strategies is reducing the amount of water that needs to be disposed in saltwater injection disposal wells in the first place by recycling and reusing produced water when practicable. In addition, it is standard Apache practice to continuously monitor hydraulic fracturing for unusual fracture growth so that operations can be modified if needed. In areas of heightened concern for seismicity, we have used seismic arrays to ensure that our operations have no material adverse impact. When we do send produced water for disposal in injection wells, we choose reputable disposal operators and audit their operations to ensure they adhere to regulatory and permit requirements. (Read more on p. 63.)

> Apache reduced the volume of toxic chemicals used in hydraulically fractured wells by 55 percent in our North American regions between 2016 and 2017.

Addressing Community Concerns – Apache has worked diligently to build strong relationships and foster candid, two-way communications in the communities where we operate. We work with local community members and governments to address concerns ranging from environmental issues to road safety to noise, dust, odors and light. We also want to make it easy for community members to share concerns with us and for us to address those concerns. We provide multiple grievance mechanisms in all our operating regions. We address the complaints received and escalate them as appropriate through our management hierarchy. We aggregate and analyze communications received through this system to help us identify trends and share lessons learned across our organization. We also work to maximize the benefits of our presence in the communities where we operate. For example, we seek to hire locally and use local suppliers. And, through our "give where we live" approach to philanthropy, we focus on supporting the specific needs of our local communities. (Read more on p. 108.)

ASK APACHE

Investors are increasingly interested in Board-level engagement in environmental, health and safety, social and governance issues – and especially in how companies encourage Board-level experience on these topics.

Q **How does Apache address Board and management experience on environmental, social and governance (ESG) issues?**

A At Apache, we seek to hire people with expertise on our most important ESG issues and expand knowledge on these topics throughout our company, from our Directors and senior management to field-level operators and everyone in between.

Approximately 70 percent of current Directors have experience in environmental and regulatory issues. For example, George Lawrence worked as assistant chief in the U.S. Department of Justice's Environmental Enforcement Section. Amy Nelson has substantial water-related expertise and has been sought after by her clients in the energy services and equipment industry for this specific experience. Other Directors have acquired such experience through their service as executives in areas that require extensive interaction with regulatory and environmental agencies. The matrix at right provides additional details on Board of Directors' experience and demographics.

> Approximately 70 percent of current Directors have experience in environmental and regulatory issues.

To foster ongoing engagement with and education on ESG issues, our Board of Directors receives regular reports and presentations on a range of sustainability issues, including but not limited to health, safety, security and environmental performance; GHG emissions and water usage; cyber security; and our alignment with our Human Rights Principles. In addition, Board members are regularly apprised of Apache's environmental and community engagement efforts in Alpine High. The Board's Corporate Governance and Nominating (CGN) Committee serves as a conduit for information on these topics to the rest of the Board. The CGN Committee's annual calendar includes times at designated meetings for more in-depth

discussion on a wide range of ESG topics. Our Board members also engage directly with ESG-focused shareholders to gain external perspectives on key ESG issues. In June 2018, for example, three Directors, including our independent chairman, attended Governance Week, an Apache co-coordinated conference covering a wide range of ESG topics, where they received direct feedback on ESG topics that are important to our shareholders. Our CEO and other senior management also regularly engage with ESG-focused investors to understand their perspectives on key issues (see p. 31).

While Board-level experience in ESG issues is important, we also seek to expand experience and knowledge of these issues across our organization. For example, we regularly seek out strategic hires who can assist us in addressing key environmental challenges in our industry, including chemists to help us develop a more effective and greener approach to hydraulic fracturing additives and experts in water recycling to help us develop innovative ways to reduce freshwater use and turn a potential waste product into a valuable input. These experts serve as resources to our regional employees, collaborating with them in the field to improve our environmental performance.

We also provide ongoing education on a wide range of ESG topics to all employees across the company. For example, we offer trainings on health, safety and environmental topics – such as driver safety, hazard communication and threatened and endangered species – through our Apache Academy. And we encourage employees to participate in other ongoing educational opportunities, such as our recurring technical workshops and presentations.

	ANNELL BAY
Knowledge, Skills and Experience	
Public Company CEO Experience	
Public Company CFO Experience	
Executive Experience	◇
Financial Reporting	
Risk Management	◇
Accounting	
Corporate Governance/Ethics	◇
Environmental/Regulatory	◇
Legal	
Global Experience	◇
Operations	◇
Strategic Planning/Oversight	
Mergers and Acquisitions	
Upstream Experience	◇
Midstream Experience	
Demographic Background	
Race/Ethnicity	
African American	
Asian/Pacific Islander	
White/Caucasian	◇
Hispanic/Latino	
Native American	
Age	
Years (as of December 31, 2017)	62
Gender (Male/Female)	F
Board Tenure (Year Joined)	2014
Years on Board (as of May 24, 2018)	4
Number of Public Boards	3

JOHN CHRISTMANN	CHANSOO JOUNG	RENE JOYCE	GEORGE LAWRENCE	JOHN LOWE	WILLIAM MONTGOMERY	AMY NELSON	DANIEL RABUN	PETER RAGAUSS
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								◇
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◇	◇	◇		◇	◇		◇	◇
	◇							
◇		◇	◇	◇	◇	◇	◇	◇
51	57	70	67	58	56	48	63	60
M	M	M	M	M	M	F	M	M
2015	2011	2017	1996	2013	2011	2014	2015	2014
3	7	1	22	4	6	4	3	3
1	1	2	1	3	2	1	2	2

Since their release in 2015, the United Nations' Sustainable Development Goals (SDGs) have gained a lot of interest and discussion among private-sector companies.

Q **How is Apache considering the SDGs in its sustainability strategy?**

A We are aware of the SDGs and support the overall effort to encourage sustainable development across the 17 major categories covered by the goals. We will continue to consider these goals to advance and evolve our role as a good corporate citizen.

Below are some of the SDGs we believe are most applicable to Apache's operations and how we are working to address them:

Goal 4: Quality Education, and Goal 5: Gender Equality – Apache has had a long-standing commitment to quality education. We are quite proud to support Springboard, for example, which has been providing schools for girls in Egypt since 2004. In many rural areas of Egypt, schooling is just for boys. In the 14 years since launching Springboard, we have supported the construction of 201 schools in Egypt, which together have taught more than 10,000 girls how to read and write. Some Springboard students have even gone on to pursue advanced degrees (see p. 105). In addition, the Fund for Teachers (FFT) program, originally the brainchild of Apache founder Raymond Plank, is now a thriving, Houston-based nonprofit. Fund for Teachers enriches the personal and professional growth of teachers by supporting them as they pursue opportunities around the globe in self-designed summer fellowships. More than 7,500 teachers have used $28 million in FFT grants to become students again (see pp. 108-109).

Goal 6: Clean Water and Sanitation – Apache has a long track record of minimizing our use of fresh water – especially in water-scarce areas – and protecting water quality everywhere we operate. Many of our activities support the specific targets of SDG 6, including our efforts to use alternatives to fresh water, increase water recycling and reuse, minimize the use of toxic chemicals in our fracturing fluids and reduce the possibility for spills. For example, in West Texas – a water-stressed area – we have used approximately 45 percent nonpotable or recycled water to run our completion operations

over the past five years. We are working to increase that percentage by expanding our water recycling, treatment and transportation systems, all of which include containment and leak detection to prevent spills. In 2017, we built seven new water recycling facilities and miles of pipelines to transport that water to and from our operations. Also in 2017, we reduced the volume of toxic chemicals we used in hydraulically fractured wells by approximately 55 percent compared to 2016. And, we continue to improve our well integrity processes and technologies to protect groundwater and surface water. Read more about our water management and protection efforts in the Environment section (p. 55).

Goal 7: Affordable and Clean Energy – Delivering energy is at the core of our business. Natural gas is both abundant and cleaner burning than other major fuel sources. Through our efforts to reduce methane emissions and the overall environmental footprint of our operations, we are working to deliver cleaner energy that supports a lower-carbon future (see p. 64).

Goal 8: Decent Work and Economic Growth – We seek to maximize local economic benefits everywhere we operate. For example, we prioritize hiring locally, supplying communities with good paying jobs. Companywide, 97 percent of our employees were local nationals in 2017, and in our overseas regions in the North Sea and Egypt, 99 percent and 71 percent of our employees were local nationals, respectively (see p. 107). In addition, hundreds of local nationals are employed in joint ventures we have with the Egyptian government. We offer competitive wages and benefits, and we regularly participate in region-specific salary surveys to ensure we provide competitive wages. We also make it a point to source supplies and services locally whenever possible and ask our vendors to do the same.

Sustainable Development Goals

Goal 15: Life on Land – At Apache, we view ourselves as stewards of the lands where we work. Protecting species and habitats from potential adverse effects of our operations is an important priority. We conduct biodiversity assessments as part of our pre-development planning processes and adjust our development plans accordingly to protect threatened and endangered species and habitats. For example, in Alpine High, our newest operating area, we undertook a comprehensive biodiversity assessment before beginning exploration and

adjusted our operations to avoid affecting nesting black-capped vireos, the one federally listed endangered species found in the area. This builds on our proven efforts to support the conservation of the lesser prairie chicken and dunes sagebrush lizard in New Mexico and West Texas.

We manage some of our land to conserve threatened ecosystems. These properties include the Ucross Ranch – a 20,000-acre ranch in Wyoming that we manage as a model for sustainable land-use management practices – and much of our land holdings in Louisiana, where we manage 270,000 acres to protect threatened Gulf Coast wetlands and the species that call them home.

We also regularly collaborate with nonprofits, government agencies and others in our industry to protect habitat and preserve biodiversity. Perhaps our most well-known philanthropic effort to preserve and enhance life on land is the Apache Tree Grant Program, through which we have donated more than 4 million trees in 17 states since beginning the program in 2005. Through this program we have helped to reforest natural areas in Texas and New Mexico that have been impacted by wildfires and supported bottomland hardwood habitat restoration in Louisiana. Read more about the Apache Tree Grant Program in the Society section (p. 112) and our overall efforts to protect biodiversity in the Environment section (p. 49).

Some oil and gas companies have faced criticism for setting up new operations in communities without providing significant advantages to the people who live and work there.

Q What is Apache doing to make sure that the local communities where Apache operates benefit from the company's presence?

A Apache's operations bring significant economic benefits to local communities, including direct jobs for local residents, indirect jobs and economic expansion in supporting industries, and direct local investment by our company. We seek to maximize these benefits in all the areas where we operate. We focus on hiring qualified individuals who reside in our locations of operation, including the United States, Egypt, the United Kingdom and Suriname, and we make it a point to source supplies and services locally whenever possible and ask our vendors to do the same. Welding services, water hauling, roustabout crews, construction crews and civil project installation crews are just some of the categories in which we procure goods and services from local suppliers. One of the benefits of our decentralized organization, with supply chain personnel embedded in each region, is that it furthers our efforts to involve the local community and suppliers in our business. Even in an industry dominated by multinational providers, our operating regions spend, on average, nearly 30 percent of their budgets with suppliers and vendors who are geographically local.

We also contribute to local economies through a variety of taxes and fees. In 2017, Apache paid nearly $34 million in local property taxes, which help to fund school districts, cities, counties, hospital districts, community colleges and other such entities.

> We seek to maximize local economic benefits in all the areas where we operate.

We are working to maximize local economic benefits in Alpine High, our newest development area, and in all our future production areas. To help us do this, we are studying how oil and gas development has impacted other communities, seeking lessons and best practices to apply in Alpine High. We have commissioned a comprehensive study of the potential economic impacts of the Alpine High development. The study will also assess four major unconventional plays in the United States (the Bakken, Eagle Ford, Marcellus and Utica plays), including lessons learned by local community leaders and producers on how to minimize negative impacts and maximize benefits associated with oil and gas development. We will use the results of this study to help maximize local benefits of our development in Alpine High and inform best practices across our operations.

Our "give where we live" approach to philanthropy allows us to zero in on the specific needs of the areas where we operate. We focus on community investments in the key topic areas of health and social, the environment, education and the arts.

While our operations offer myriad benefits to communities, we do recognize that some of the high-activity elements of our production work can create concentrated, if temporary, inconveniences. Our guiding principle is always to minimize these impacts on local residents as much as possible from the

> Apache paid nearly $34 million in local property taxes in 2017, which help to fund school districts, cities, counties, hospital districts, community colleges and other such entities.

Apache representatives present a fire truck donation to Balmorhea volunteer firefighters as part of the company's ongoing community efforts in Reeves County, Texas.

outset. On issues ranging from the size of our well pads to our trucking routes, we thoughtfully work out logistics to avoid or minimize issues such as traffic congestion, road safety, dust, noise and odors.

We want to make it easy for community members to share concerns with us and for us to be able to address and resolve those concerns. Moreover, we want to make sure we learn from every complaint and try to avoid any related issues across our operations.

We obtain regular formal and informal feedback from local stakeholders to understand and address community concerns; our goal is to mitigate any potential impacts of our operations

Our guiding principle is always to minimize impacts on local residents as much as possible from the outset.

before they become problems. As part of an effort to be more responsive to community needs, we recently established a formal grievance hotline that is operated 24 hours a day by staff members in Houston, where they monitor security cameras on Apache properties worldwide and catalog any concerns that are flagged. (Apache is one of only a few independent oil and gas companies with a 24-hour call center operated by employees rather than a third party.) Community members may contact Apache with a grievance by calling our toll-free hotline number, the Apache Good Neighbor Line, at 1-866-705-2400.

We take a "give where we live" approach to philanthropy.

Learn more about Apache's local economic benefits and commitment to minimizing impacts on communities in the Society section (p. 107).

Governance

At Apache, we believe that demonstrating good corporate governance and operating responsibly are central to protecting our reputation, responding to the needs of our varied stakeholders and maintaining value for our shareholders and other stakeholders. We consider corporate governance to be more than a set of written principles and practices. It is embedded in our culture of honesty and integrity and demonstrated daily in our actions and engagements.

70%
of Apache Board members have environmental and regulatory experience

100+
departments and processes across the company are assessed by our Internal Audit department through periodic reviews

Recent Improvements in Corporate Governance and Compensation Practices

We regularly review and update our corporate governance policies and practices. And, we continually reach out to our many constituencies to ensure that our governance systems are dynamic and robust enough to keep pace with the ever-changing world in which we operate and the evolving needs of our stakeholders.

Advancing Women in Corporate Governance

In 2012, Apache hosted the first Women in Governance luncheon, an annual corporate governance event focused on bringing together female proxy voters and directors to discuss best practices and trends within the governance space. Since then, this event – which Apache continues to help organize – has grown from an annual luncheon into Governance Week, a week-long conference that facilitates networking among professional women and helps to disseminate best practices on environmental, social and governance (ESG) issues. This event – and the networks and relationships it has helped to facilitate – has been instrumental in helping to promote more women on public boards as well as advancing the development and implementation of governance best practices.

In recent years, Apache has steadily improved our governance and compensation practices to further strengthen our culture of integrity, accountability and transparency. Many of these improvements, including the following from 2017, are based on feedback from our shareholders.

- Revised our management compensation metrics to reward returns rather than growth

In 2017, Apache further increased health, safety, security, and environmental performance-related compensation incentives for managers.

- Increased our health, safety, security and environmental (HSSE) performance-related compensation incentives from 5 to 10 percent of the portion of management's annual cash incentive bonus payments that is based on meeting corporate objectives

- Significantly refreshed the Board of Directors' membership so that 90 percent of current Directors have served for seven years or less

Other corporate governance best practices we have enacted include the following:[5]

- Separating the chairman and chief executive officer (CEO) positions

- Selecting an independent, nonexecutive chairman

- Revising and expanding our Code of Business Conduct and Ethics

- Replacing our prior internally hosted fraud line with the Apache Hotline, a premier externally hosted resource through which any person may report, anonymously if they so choose, suspected violations of law or Apache policies

- Adopting a set of Human Rights Principles and a Statement on Indigenous Peoples

- Expanding and improving the health, safety and environmental goals by including a comprehensive qualitative assessment of leading and lagging measures to drive excellence in facets of HSSE beyond safety

- Further expanding our regular disclosure of political expenditures

- Undertaking extensive shareholder engagement practices

- Aligning the CEO's target compensation with the median of our peers

[5] For additional Apache corporate governance best practices, see p. 5 of Apache's 2018 Proxy Statement.

Corporate Governance

Apache's CEO and president directly oversees the company's business. The Board of Directors, which is elected by the company's shareholders, oversees management and assures that the long-term interests of shareholders are being served. Both the Board of Directors and senior management recognize that the long-term interests of shareholders are advanced by responsibly addressing the concerns of other stakeholders and interested parties, including employees, customers, suppliers, government officials and the public at large.

Board of Directors

Apache's Board plays a vital role in the design, implementation and monitoring of our corporate governance. All of Apache's nonemployee Directors, including the Board chair, are independent under each of the three relevant standards: those of the New York Stock Exchange, the NASDAQ National Market and the Securities and Exchange Commission.

We select Board members based on a wide range of criteria, including relevant expertise; dedication to the highest ethical, health, safety and environmental standards; and a willingness to question and challenge management. Currently, 100 percent of Board members have industry experience and 70 percent have environmental and regulatory experience.[6] We conduct a comprehensive Board evaluation process every year for every Director that includes in-depth conversations and personalized feedback.

The Board's diversity encompasses – among other elements – race, gender, age and experience. More than 30 percent of Apache's nonemployee Board members are female or ethnic minorities. These Directors play critical roles on our Board, including chairing the Corporate Governance and Nominating (CGN) Committee and the Audit Committee and taking a leading role in our shareholder engagement activities.

In recent years, we have taken a number of steps to improve Board composition and succession to ensure we have ongoing exposure to fresh expertise and experience. We reduced the Board's average term length to six years through year-end 2017, compared with 17 years in 2013. Five of the Board's 10 members were appointed since 2014, and all Board members are subject to a mandatory retirement age of 75.

Board Engagement on ESG Issues

Apache's Board is highly engaged in the oversight of environmental and social issues. The CGN Committee and the full Board receive regular reports on ESG topics, including the company's management of and performance on a range of environmental, safety, community and governance issues (see the table below for some examples). For more information on how we advance expertise on key ESG issues at the Board level and throughout our organization, see p. 37.

The CGN Committee, Audit Committee and/or Board receives reports on and discusses ESG issues including the following:

ESG TOPIC	FREQUENCY OF BOARD REVIEW
Compliance issues	At least annually
Cyber security	Every meeting
Health, safety and environmental metrics	Every meeting
Monitoring of human rights policy	At least annually

[6] For more information on Board selection criteria, see p. 24 of Apache's 2018 Proxy Statement.

GOVERNANCE

Our Board has three standing committees, each devoted to a separate aspect of risk oversight:

- The Audit Committee oversees the integrity of the company's financial statements, compliance with legal and regulatory requirements, the company's internal audit function and independent auditors and the company's accounting and financial reporting, among other duties.

- The Management Development and Compensation Committee oversees compensation of the company's executives and employees and reviews human capital matters, among other duties. In recent years this committee has overseen a major overhaul of our compensation practices, as well as substantial management changes, which includes our new CEO, chief financial officer and other key officers.

- The Corporate Governance and Nominating Committee oversees the nomination of Directors, the annual Board evaluation processes, ESG issues and corporate governance issues.[7]

Committee charters and a list of our current Board members can be found on our website.

Enterprise Risk Management

Employees at all levels of the organization regularly work to identify and manage risk. To support these efforts, we have a Corporate Risk Management Committee, made up of senior management, which ensures procedures are in place for the corporatewide identification of both nonoperational and operational risks. The committee also provides oversight of ongoing, companywide monitoring and management of risks. The committee reports at nearly every Board of Directors' Audit Committee meeting on some aspect of risk management and provides the Audit Committee an annual update on the overall risk management process. The Corporate Risk Management Committee is supported by a centralized risk assessment function to ensure regular and thorough review of nonoperational risks.

Apache also has a separate risk management function focused specifically on health, safety, environmental and security risks, to maintain intense focus on these critical risk categories. These formal risk management teams work together with all Apache employees to understand and mitigate risks across our operations.

Internal Audit

Apache's Internal Audit group is an independent, objective assurance and consulting function designed to add value by assessing and improving the company's operations. The group achieves these objectives by applying a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, internal controls, governance and business processes. The internal audit process typically includes one or more of the following activities:

- Considering business and functional risks
- Assessing business processes
- Evaluating the design and effectiveness of internal controls
- Ensuring the accuracy of reported information
- Monitoring compliance
- Assuring safeguards are in place and functioning properly
- Improving operations
- Offering insights and advice on areas audited, with respect to best practices

Based on audit results, the Internal Audit group develops specific recommendations for continuous improvement. Our internal audit process is designed to enhance our culture of accountability and to support Apache's Core Values – especially the values of conducting our business with honesty and integrity and seeking relentless improvement in all facets.

> Our internal audit process is designed to enhance our culture of accountability and to support Apache's Core Values.

The Internal Audit group reports to the Board of Directors' Audit Committee, providing an independent assessment mechanism for the Board concerning the company's business practices and performance.

Internal auditors assess more than 100 different departments and processes across the company. Each year, the group develops audit targets and a formal audit plan based on a detailed risk assessment process. Audits are also scheduled to

Read more about how Apache assesses and plans for climate change-related risks in the Ask Apache section, p. 18.

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[7]For more information on this last bullet, see pp. 25–26 of Apache's 2017 Proxy Statement.

ensure that every group or process is reviewed at least once every four years, with most reviewed more frequently. Examples of audits conducted include: Apache's enterprise risk management processes; corporate and regional supply chains; various operational and financial functions, information technology systems and processes; and governance practices.

Compliance

Apache maintains a Compliance and Ethics program, overseen by the director of compliance, which supports value creation in Apache's business by promoting responsible conduct in accordance with applicable laws, rules, regulations and government requirements. Our Compliance Group provides guidance, training, oversight, enforcement and reporting in order to support Apache's unwavering commitment to the highest ethical standards.

The director of compliance ensures that Apache has well-defined and articulated standards and procedures designed to prevent and detect misconduct. These standards, and specifically our Code of Business Conduct and Ethics, include a wide range of examples to distill our overarching policies and standards down to real-world, on-the-job scenarios.

Our compliance training reinforces that all employees have a responsibility to report any suspected misconduct or unethical or illegal activity. To facilitate this reporting, we maintain the Apache Hotline, a fraud and whistleblower line. This is a 24/7/365 resource, externally hosted and managed by a third party, through which employees and external stakeholders may anonymously report any alleged violations of law or Apache's policies and standards of conduct. All communications to the Apache Hotline are tracked and investigated by our Internal Compliance team, with assistance as necessary from other subject matter experts throughout the organization. In addition to the Apache Hotline, we continue to maintain our Procedures for the Submission of Complaints and Concerns regarding Accounting, Internal Accounting Controls, or Auditing Matters, available on our website.

The director of compliance is also primarily responsible for overseeing internal investigations and – where warranted – providing input concerning the enforcement of compliance issues. All reported concerns are investigated by the director of compliance and/or relevant personnel from Human Resources, Accounting, Legal and other departments. Concerns that may involve substantial risk to human health or safety; the potential for criminal liability or fines; or potential anti-trust, bribery or corruption violations; or are otherwise found to be of serious concern are escalated for reporting to the CEO, general counsel and senior vice president of human resources for management review, and then promptly reported to a designated member of Apache's Board of Directors.

Continually reinforcing key company policies by communicating the results of select internal investigations to our employees is an important part of our compliance activities because it provides visibility into our investigation and compliance processes and underscores the company's commitment to operating with the highest ethical standards. We use key investigations, especially those with broad applicability across the organization, to ensure employees understand their obligations and requirements under applicable Apache policies. We share information on selected investigations, as well as other important compliance-related information, with all employees through periodic compliance bulletins.

> We continually reinforce key company policies by communicating the results of select investigations, as well as other important compliance-related information, with all employees through periodic compliance bulletins.

APACHE HOTLINE
866.756.2599

Apache is committed to preserving, protecting and fostering the culture of trust and integrity that has long defined Apache as a company. Doing this requires that every Apache Director, officer, employee and contractor voice their concern if they observe or suspect a violation of law or Apache policies.

VOICE YOUR CONCERN

GOVERNANCE

Ethics and Anti-Corruption

Apache's policy is to conduct business fairly, ethically and in compliance with applicable laws, regulations and other government requirements. Our Code of Business Conduct and Ethics requires not only the avoidance of misconduct, but also the avoidance of acts or omissions that give the appearance of misconduct.

Our Code explains the primary policies governing the high standards of conduct applicable to every Apache employee, including but not limited to equal employment opportunity, anti-harassment, social media guidelines, conflicts of interest, handling of confidential information, data privacy and recordkeeping, anti-corruption and anti-bribery, political contributions and lobbying, and insider trading. In addition, the Code and supplementary policies, such as Apache's Voice Your Concern Policy, emphasize every employee's duty to report any suspected violation of law or Apache's policies, provide guidance on how to submit a report, highlight and reinforce our anti-retaliation policy, and outline our investigation and enforcement process.

All employees, as well as Apache's Board of Directors, receive training on the Code and are required to certify annually that they have read the Code and fulfilled the requirements and expectations set forth in that document. Our Board of Directors periodically reviews the Code and makes updates or revisions as necessary or appropriate.

Apache derives its competitive advantage through our talent and strategic vision, never through unethical or illegal actions. Our Code's anti-bribery and anti-corruption provisions strictly prohibit any employee from offering or accepting a bribe, kickback or any improper favor in order to secure a business advantage. Moreover, any person acting on behalf of Apache is prohibited from giving or accepting a gift or entertainment that is excessive in value or frequency, violates any laws or regulations, or could be construed as a bribe or a payoff. Apache officers and employees are responsible for promptly reporting any actual, attempted or apparent violations of applicable laws, rules, regulations or the Code of Business Conduct and Ethics.

As a U.S. entity doing business abroad, Apache is also subject to the Foreign Corrupt Practices Act (FCPA) and similar anti-bribery and anti-corruption laws of other nations, which may apply to our interactions with foreign government agencies and/or officials. In 2017, our director of compliance revised and updated the company's FCPA Compliance Guide. All employees who, for example, engage directly with foreign governments or officials receive annual in-person training on the FCPA and its relevance to their work. We use a case study method for these trainings focusing on recent U.S. Department of Justice and Securities and Exchange Commission investigations and/or enforcement actions in order to apply the lessons learned to Apache's operations. All other employees are required to read and understand our policies and procedures with respect to matters that may pertain to the FCPA or similar laws. Our director of compliance and other employees attend external anti-corruption and compliance education programs and conferences and use these resources to stay up to date on best practices. Apache's director of compliance, in partnership with our Legal department, provides an ongoing resource for any Apache employee with questions on the FCPA or other applicable anti-corruption laws.

External Checklists, Codes and Principles

Working with a number of our ESG-focused shareholders, Apache developed and adopted a Statement on Political Expenditures and Board Oversight, a set of Human Rights Principles and a Statement on Indigenous Peoples (read more on p. 104). These statements and principles are monitored by management, and our performance in these areas is reported regularly to our Board's Corporate Governance and Nominating Committee. We have also worked with shareholders and nongovernmental organizations to identify key values and principles of conduct for other important ESG issues. These are captured in, among other documents, our Code of Business Conduct and Ethics and our Statement of Core Values.

We recognize that it has become popular for shareholders to ask companies to demonstrate their concern for these subjects by signing on to various charters, codes, oaths, checklists and principles created by third parties. We value these debates, but we do not believe that signing third-party documents as a show of support for particular goals is a substitute for actually trying to achieve them.

100 percent of Apache employees and directors receive training on our Code of Business Conduct and Ethics and are required to recertify each year.

Public Policy and Political Disclosures

Apache participates in the political and public policy process in a responsible and ethical way that serves the best interests of our shareholders and the safety and wellbeing of our workforce and other stakeholders. We operate in the highly regulated oil and natural gas industry, and our operations are affected by actions at many levels of government. Our public policy activities include education and advocacy efforts at the federal, state and local government levels.

Apache is committed to complying with all applicable state and federal rules pertaining to lobbying and disclosures. Relevant reports regarding our activities are publicly available via the appropriate state websites; the Office of the Clerk, U.S. House of Representatives; the Secretary of the Senate, U.S. Senate; and the various state ethics commissions. Our Governmental Affairs function manages and coordinates the company's political and public policy activities.

Political Action Committee

In accordance with federal and state law and a policy statement promulgated by our Board of Directors, Apache does not make corporate contributions to candidates or political committees supporting candidates in federal or state elections. Employees can support candidates for office through the Apache employees' Political Action Committee (Apache PAC), which is funded exclusively through voluntary contributions from eligible employees and Directors. Employees participating in Apache PAC are not reimbursed, directly or indirectly, for political contributions or expenses.

Apache PAC contributes to federal and state political candidates who support responsible oil and natural gas activities and other business issues of interest to the company. Disbursements by Apache PAC are made solely based upon the best interests of the company and its shareholders, not on the personal agendas of individual Directors, officers or employees. All Apache PAC contributions are fully disclosed in reports filed with the Federal Election Commission (FEC) and appropriate state websites and can be accessed on the FEC website.

Trade Associations

Apache participates in trade and industry associations and engages directly in advocacy and grassroots communications efforts. The company joins trade associations to share technical and standards expertise and to be part of important public education efforts regarding major issues of common concern to our industry. Our participation in trade and industry associations is subject to management oversight by our Governmental Affairs function, which approves our memberships and serves as the principal representative in such associations.

Apache pays regular membership dues to several trade associations. Some utilize a portion of those dues for nondeductible state and federal lobbying and political expenditures. Per the requirements of Section 162(e)(1) of the Internal Revenue Code, such trade associations must provide us with the percentage of our annual dues that are attributable to lobbying expenses. We disclose these contributions on our website.

Lobbying

Apache lawfully engages in the legislative process to communicate our views on legislative and regulatory matters affecting our business at the federal, state and local level. This activity is subject to various federal and state rules and regulations, and Apache is committed to complying with all of those requirements.

Apache Named as a Trendsetter in Political Disclosures

In 2017 and 2018, Apache scored a 92.9 percent on the highly respected CPA-Zicklin Index of Corporate Political Disclosure and Accountability, making us one of only 57 S&P 500 companies - and one of only two exploration and production companies - to be recognized as a trendsetter by CPA-Zicklin in transparency on this topic.

Engagement

Apache regularly engages with a wide range of stakeholders to gain insights into and input on issues, trends, best practices and specific stakeholder interests and concerns.

Key stakeholder groups with whom we engage regularly include shareholders, employees, suppliers, customers, local communities, regulators, local media, government officials and nongovernmental organizations (NGOs). The table below summarizes how we engage with key stakeholder groups.

Stakeholder Engagement Overview

STAKEHOLDER GROUP	ENGAGEMENT METHODS	READ MORE IN THIS REPORT
Shareholders	Annual shareholder meeting Investor days and conferences ESG-focused investor meetings Governance conferences Ongoing one-on-one investor discussions	Shareholder Engagement, p. 37
Employees	Quarterly employee town halls Regional employee meetings Ongoing employee trainings Employee satisfaction surveys Regular leadership communications	Employee Engagement, p. 96 Employee Training and Performance Feedback, p. 90
Landowners and mineral owners	Ongoing engagement via our landmen Community grievance hotline and resolution process	Community Engagement, p. 102
Local communities	Local community outreach and philanthropy Community grievance hotline and resolution process Community open houses Local job fairs and other recruitment efforts	Community Engagement, p. 102 Delivering a Higher Standard for Responsible Development in Alpine High, p. 40
Suppliers and contractors	Contractor vetting process Contractor assessments Contractor engagement meetings	Contractor Management and Engagement, p. 97 Managing Contractor Safety, p. 81
Regulators and government entities	Supporting regulatory development as relevant	Public Policy and Political Disclosures, p. 35 Reducing Fugitive Methane Emissions, p. 64 Seismicity and Oil and Gas Operations, p. 63
NGOs and academics	ESG investor engagement Research support and funding	Water Management, p. 62 Delivering a Higher Standard for Responsible Development in Alpine High, p. 40 Building for the Future Through Innovation, p. 10
Local media	Regular contact and response to local television stations, newspapers and radio stations	

Shareholder Engagement

Apache places significant importance on engagement with our investors. We regularly engage with shareholders and welcome feedback on topics such as corporate governance, business strategy, compensation and ESG issues.

Apache's shareholder engagement starts at the top. The Board values our shareholders' perspectives, and feedback from shareholders on our business, corporate governance, executive compensation and sustainability practices are important considerations for Board discussions throughout the year. Our independent Board chair and other Board members are accessible to shareholders at a variety of events, including our annual meeting, our investor days, some of our ESG-focused meetings and a number of governance conferences, including Governance Week (discussed on p. 30). In addition, Board members engage with shareholders individually throughout the year. They can also be contacted through our corporate secretary, who relays communications to them as appropriate

Apache's CEO and other members of the executive team maintain an active schedule of meetings and communications with shareholders. In addition to numerous investor conferences, the executive team regularly visits shareholders in their offices, hosts meetings in Apache's corporate office in Houston, and also hosts site visits for more focused discussions on Apache operations. We give direct access to our operations and personnel through field visits to water recycling facilities, well completion operations, and data analytics centers.

Engaging on ESG Issues

We recognize that gaining outside perspectives on key environmental, social and governance issues helps us better understand and address these topics. That's why we engage regularly and frequently with shareholders, government agencies and regulators, and NGOs on ESG issues. For example:

- We host multiple meetings each year for active shareholders, each focused on an individual environmental or social issue. We invite peer companies to these meetings to improve in-person dialogue on ESG issues across the industry.

- Our CEO meets every year in person with our active shareholders in a multi-hour, no-holds-barred discussion of ESG issues.

- A number of our Board members have been speakers at major ESG conferences, enabling further in-person discussion of ESG issues.

- We are a founding member of ONE Future, a coalition of industry companies focused on reducing methane emissions across the entire natural gas value chain.

- We regularly make our leading engineers, geologists and other experts available to NGOs to help inform their work.

In addition to regular shareholder engagement on operational and financial performance, our CEO holds an annual one-on-one meeting with our "lead active shareholder," who is designated by a group of our more involved shareholders to discuss ESG issues and progress on previously set targets and goals for the coming year. That meeting is followed by a larger meeting of active shareholders who can pose questions on any subject and get answers directly from the CEO.

In 2017, Apache management and the Board held more than 82 meetings with shareholders – representing 58 percent of Apache's shares outstanding – to gather feedback on our business strategy, corporate governance, executive compensation program and sustainability oversight. We also hosted numerous additional meetings focused on specific environmental or social issues, including carbon asset risk and greenhouse gas emissions reporting. Based on feedback from these discussions, we have continued to increase disclosure in this sustainability report and modified our compensation program, among other improvements.

Apache's technical experts meet throughout the year with shareholders to discuss a wide variety of issues, including the alignment of financial and ESG goals; emissions, chemical and water issues related to exploration and production operations; stranded assets; and climate change-related concerns.

ESG Engagement

The following are some of the key organizations with which we engage on ESG issues:

- Berkeley Earth
- Ceres
- Clean Gulf Associates
- Environmental Defense Fund
- F&C Asset Management
- Interfaith Center on Corporate Responsibility
- Investor Environmental Health Network
- League of Conservation Voters
- Local Authority Pension Fund Forum
- Marine Well Containment
- Mitchell Foundation
- Nathan Cummings Foundation
- Natural Resources Defense Council
- Oil Spill Response Limited
- ONE Future Coalition
- Pensions & Investment Research Consultants Ltd.
- Sierra Club
- Sustainability Accounting Standards Board
- The Nature Conservancy
- Third Way

A New Model for Engagement to Improve Performance and Reduce Risks Across the Industry

As hydraulic fracturing has become an important part of oil and gas development globally, ESG-focused investors are increasingly interested in understanding and minimizing potential environmental and social impacts associated with this method of production. While this is also a central goal for Apache and other producers in our industry, in the past there was limited collaboration between companies and investors to develop aligned metrics and quantify sustainability performance.

Across the industry, many ESG investors have taken rather confrontational approaches to gain information from companies and attempt to influence management and performance. The resulting engagements have often been brief, focusing on investor-filed shareholder proposals with limited options or time for companies to respond.

In 2003, Apache took a then-novel approach to ESG-focused investors who sought improved transparency and performance on key elements of hydraulic fracturing-based oil and gas development. We proactively forged a collaborative relationship at the senior management level with a prominent ESG-focused investment group, Boston Common Asset Management, to build mutual understanding of our goals and challenges, increase transparency and develop opportunities to improve performance and reduce risks.

This engagement has grown to include three to four meetings per year in which Apache's executives and technical experts host other companies and investors to discuss important environmental or social issues and an annual, multi-hour, unrestricted discussion on ESG issues between Apache's CEO, Boston Common Asset Management and other active shareholders.

Apache has always been committed to operating responsibly and minimizing our impacts, but this collaboration has fostered creative ideas for even better performance. For example, our engagement with ESG-focused investors has encouraged and helped shape our efforts to use greener additives in our fracturing process and our work with external organizations, such as the American Chemical Society's Green Chemistry Institute Roundtable, to further these efforts.

Most importantly, many of the engagement-related improvements Apache first introduced are now happening across the industry. Apache has led by example not only in our own operations and performance but also by bringing other producers into this collaborative process. For example, we helped to develop Frac Focus, the fracturing chemical disclosure registry now used by nearly all producers in the industry. We also supported the development of *Disclosing the Facts*, an annual investor scorecard ranking the largest oil and gas companies engaged in hydraulic fracturing, which has significantly increased disclosure and performance on environmental and social issues in our industry.

> Many of the engagement-related improvements Apache first introduced are now happening across the industry. For example, we helped to develop Frac Focus, the fracturing chemical disclosure registry now used by nearly all producers in the industry. We also supported the development of *Disclosing the Facts*, an annual investor scorecard ranking the largest oil and gas companies engaged in hydraulic fracturing.

Health, Safety, Security and Environmental Governance

At Apache, safety is not negotiable and will not be compromised. As a company, we derive benefit from the Earth, and we take our environmental responsibility seriously. To ensure we live by these Core Values, Apache has a corporate Health, Safety, Security and Environmental department, led by the vice president of corporate HSSE, as well as regional HSSE departments.

Our HSSE management develops and oversees implementation of the company's HSSE policies, standards and practices, and work rules, which define workforce expectations and behaviors that drive Apache to build and maintain a culture of safety and environmental responsibility. We have a suite of worldwide HSSE standards that set company performance expectations for all our operations. In some cases, our regions develop their own HSSE policies and programs to address locally specific issues.

> **Apache's Board regularly reviews management of ESG issues, including reviewing performance against HSSE compensation goals at every Board meeting.**

All of our active operational areas have internally reviewed guidelines and procedures to ensure responsible operations given local characteristics, geophysical features and regulations. We use operating procedures typical of our industry at all Apache sites, and further tailor them to account for local issues and requirements.

Apache establishes corporatewide HSSE performance goals as well as region-specific performance goals that support the corporate goals. All of these goals are a component of incentive compensation plans for all employees, including senior management. For years, management compensation has been tied to key employee safety metrics. Beginning in 2017, we expanded the HSSE goals component of our management's annual cash incentive bonus to include a comprehensive qualitative assessment of leading and lagging measures, in order to drive excellence in facets of HSSE beyond safety. The HSSE goals comprise 10 percent of the annual incentive plan.

Our Board's Corporate Governance and Nominating Committee regularly reviews the management of ESG issues. In addition, the Management Development and Compensation Committee sets company compensation goals, which include health, safety and environmental goals. The Board assesses performance against these goals at every Board meeting.

Apache has a sophisticated, companywide system for HSSE incident reporting and response. Incidents are recorded and tracked in an incident reporting and management software system. Incidents are rated using a variety of criteria, including severity, event type and status, and are reported through a round-the-clock-staffed incident management center. Incident information is shared with relevant personnel, including, where appropriate, the Board of Directors. Each incident is actively managed through resolution of the event, to assess and mitigate impacts, perform external reporting as appropriate and determine causal factors. Lessons learned from each event are also shared throughout the organization.

Governance Downloads

For more information on our governance practices and policies, see the following links:

- Apache's Corporate Governance Principles
- Apache's Directors' and Officers' Stock Ownership Requirements
- Apache's Policy regarding Margin Loans and Pledges by Directors and Officers
- Apache's Policy Prohibiting Hedging Securities by Directors and Officers
- Apache's Executive Compensation Clawback Policy
- Apache's Policy on Parachute Payments for Executives and Accelerated Vesting of Equity upon Change in Control
- Apache's Policy on Political Contributions and Lobbying Disclosures
- Apache's 2017 Disclosure of Political Contributions and Lobbying Disclosures
- Apache's 2016 Disclosure of Political Contributions and Lobbying Disclosures
- Apache's 2015 Disclosure of Political Contributions and Lobbying Disclosures
- Apache's 2014 Disclosure of Political Contributions and Lobbying Disclosures
- Apache's Code of Business Conduct and Ethics
- Procedures for the Submission of Complaints and Concerns regarding Accounting, Internal Accounting Controls, or Auditing Matters
- Apache's Human Rights Principles
- Apache's Statement on Monitoring Human Rights Principles
- Apache's Statement on Indigenous Peoples

Delivering a Higher Standard for Responsible Development in Alpine High

In 2016, Apache announced the discovery of Alpine High, an oil and natural gas play in Reeves County, Texas. Our development in this area, which has largely lagged the rest of the state in economic development, will bring significant benefits to the local economy, schools and public services. But we also know we must protect Alpine High's scenic landscape and unique natural resources, which are beloved by locals and visitors alike. To protect the area, we have committed to delivering a high standard for responsible oil and gas development in Alpine High. Now, three years into our exploration and development here, as a result of the intensive research, risk mitigation and best practices we have implemented, we are delivering on that commitment.

1,600

number of lights in Alpine High we check every week to ensure compliance with "dark skies" measures

$3.3 million

invested in road repairs in Alpine High as of October 2018

Taking Risk Assessment and Avoidance to a New High

We began our work in Alpine High with intense pre-development research, risk assessments and planning; proactive community engagement; and the development of operational plans that meet or exceed industry best practices. As we move from planning and exploration into longer-term development and production, we are maintaining our commitment to this unique area and delivering on a new standard for responsible development. By going above and beyond, we hope to set an example for other operators in the area, demonstrating how corporate objectives and environmental care can work in tandem.

We are developing Alpine High to maximize positive benefits while minimizing potential impacts. Everywhere Apache operates, we seek to first understand the area and then create a development plan tailored to its distinctive attributes. In Alpine High, we have taken this risk assessment process to a new level. In addition to undertaking our own thorough evaluations of baseline environmental and cultural resources, we have hired world-leading impact assessment firms and an independent laboratory accredited through the National Environmental Laboratory Accreditation system to support Apache's internal processes. We are also engaging proactively and regularly with the community to understand and address residents' concerns. And, we are partnering with regional academic institutions to assess the area and thoroughly understand its unique natural and cultural features.

Based on these evaluations, we are implementing rigorous plans and policies for our operations that are designed to protect the unique attributes of the area while incorporating best management practices and lessons learned from other developments across the country as well as cutting-edge academic research. Examples of the best management practices we're applying include baseline water resource sampling, the use of closed-loop drilling systems in certain

parts of the play, and "dark skies"-compliant lighting given the field's proximity to the McDonald Observatory.

Finally, in both our exploratory operations and our longer-term development and production of oil and gas, we are implementing strict compliance and control systems and maintaining comprehensive community engagement and ongoing environmental and cultural assessments that will best enable us to deliver on our promises.

Based on our extensive research and engagement, we have developed comprehensive assessment processes and mitigation plans for nearly 20 areas of potential risk, including but not limited to surface water and groundwater protective measures; produced water disposal; emissions compliance; potential safety and nuisance impacts such as road conditions, operational noise, equipment movement and road safety; dark skies compliance; biodiversity; locations of cultural resources; and infrastructure construction. Moving forward, we will continually monitor and reassess each of these risk areas and adjust our mitigation strategies as needed.

Partnering with Universities to Understand Resources and Mitigate Risks

Research partnerships with regional academic institutions are a key element of our industry-leading approach to identifying and avoiding potential risks in Alpine High. Through these partnerships, we are assessing the conditions of environmental media (e.g., air, soil and water) near our operations and thoroughly understanding the region's distinctive natural and cultural features. Our key research partnerships include the following:

- Assessments of groundwater and surface water quality with the University of Texas at Arlington. In 2018, we extended this study for another year, providing a third-party supplement to the hundreds of water, soil and air samples Apache collects and analyzes on an ongoing basis.

- Initial desktop studies to identify vulnerabilities to water resources in the area's underground cave and spring systems, with the National Cave and Karst Research Institute (NCKRI), a nonprofit, federal government-supported organization headquartered at the New Mexico Institute of Mining and Technology in Carlsbad.

- Ongoing research into the local and regional groundwater flow system to address knowledge gaps identified by the initial NCKRI desktop study, including assessments of groundwater elevation and chemistry, groundwater flow and movement, and precipitation and spring recharge, with the University of Texas at Austin's Bureau of Economic Geology.

Sharing Information to Help Others Protect the Area's Unique Resources

We are using the results from internal and third-party research in Alpine High to minimize impacts from our development on the local environment and local communities. But we are also sharing data and study results with other stakeholders to help them make more informed decisions about local resources. For example, though we will not be using water from the local spring system, we are sharing our studies of the system with landowners, state and local water boards, agricultural boards and others to help them better understand and plan their use of these water resources.

We have also formed a working group with industry peers to share information and best practices about water and other environmental issues in the area. And, we are using our extensive understanding of the region to weigh in when appropriate on permit applications for oil and gas operations. For example, we review saltwater disposal well permit applications within the Alpine High area. As part of this process, if we identify potential issues with a proposed location, we attempt to engage with the applicant to discuss the application.

Risk Assessment and Mitigation Processes

Understand Risk

We're engaging with the local community, undertaking extensive research, and partnering with external research organizations and universities to assess baseline conditions and thoroughly understand the region's unique natural and cultural features. Some examples of these efforts include:

Studying groundwater and surface water systems and baseline water quality in the Alpine High resource area with the University of Texas at Arlington and a world-leading environmental firm

Assessing potential risks to underground water systems with the National Cave and Karst Research Institute and the University of Texas at Austin's Bureau of Economic Geology

Engaging with community members to understand their needs and concerns

Avoid Impacts

We've identified and developed mitigation plans for nearly 20 areas of potential risks, including water systems, emissions, safety, biodiversity and cultural resources.

Protecting the environment:

- No development activities in or under Balmorhea State Park or the city of Balmorhea
- Ongoing monitoring of air, soil and water quality
- Working to source all operations from nonpotable water resources, either recycled produced water or brackish groundwater

Following stringent "dark skies"-compliant lighting requirements and conducting weekly compliance audits

Reducing emissions by minimizing flaring and capturing operational emissions
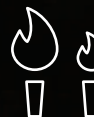
Minimizing road and traffic impacts with advanced logistics, route management and water pipeline infrastructure
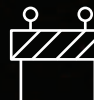
Ensure Performance

We've developed stringent compliance and control systems that enable us to implement our risk mitigation plans effectively and reassess potential risks on an ongoing basis.

Conducting ongoing assessments for potential cultural sites, with a stop-work requirement for any potential discoveries

Implementing systems to continuously monitor aquifer levels and water quality in water supply wells and existing nearby water wells

Performing weekly drills focused on preventing loss of control and conducting regular well control audits

Implementing regular road monitoring and repair programs and having the Apache security team routinely monitor employee and contractor road safety

Engaging with the Community

Treating residents in our operating areas with respect and dignity is one of our Core Values at Apache. This includes working to understand their concerns and needs. At Alpine High, we have proactively engaged with a range of stakeholders, including community leaders, government officials, natural area managers, landowners, Native American cultural and historical experts, academic researchers and environmental groups. We have sought to work effectively with those who welcomed our work in the region as well as those who viewed our operations with skepticism.

We try to make it easy for community members to share their concerns with us and to learn about our operations. For example, we formed a Community Advisory Council made up of local stakeholders to provide an ongoing conduit for open and effective dialogue. We meet with the Council at least quarterly to discuss any problems, concerns or positive things they have learned from the community about Apache's operations or oil and gas operations in the area in general. We then work with the Council members and other residents to develop solutions to problems and maximize positive outcomes. We have also implemented a rig tour program to give stakeholders a chance to experience our operations firsthand.

We seek feedback from local stakeholders in other ways as well, including ongoing dialogue with public officials, business leaders and residents who want to discuss our operations. We also encourage residents to use the Apache Good Neighbor Line, our corporate community compliance tracking and response system, to communicate with the company (read more on p. 103).

We take all community concerns seriously and work with residents to find mutually agreeable solutions.

Protecting Cultural and Native American Resources

Apache has great respect for the cultural resources of all our local communities, and we take special care to respect Native American communities. (See p. 104 for more on our efforts with regard to indigenous communities generally.) We undertook extensive archeological and cultural impact assessments in Alpine High, including evaluations of possible Native American cultural sites. These assessments looked at potential impacts from our operations as well as from pipelines being developed to facilitate our operations. As we expand operations in the area, we review these cultural assessments before beginning work in any new locations. Our unanticipated discoveries plan requires stopping work for any suspected cultural discovery until it can be further investigated. We also train employees and relevant contractors on what to do in case of an unanticipated cultural discovery.

Safeguarding the Community and Road Safety

At Apache, we never compromise on safety, and we take steps to ensure the safety of our operations and local communities. In Alpine High we are working collaboratively with local law enforcement and first responders to educate them about our operations, and we have shared emergency response plans and procedures to help ensure community safety.

Road safety and impacts to local roads are another key area of focus. Our operations can increase traffic, especially truck traffic on local roads. The increase in traffic can damage roads and create safety risks and inconveniences for local residents. To address road impacts, as of October 2018 we have invested $3.3 million in road repairs in Alpine High to help compensate for truck traffic from our own operations.

We have extensive driving safety and courtesy training and enforcement programs for Apache employees, including remote vehicle monitoring systems. We extend these expectations to our contractors through strict guidelines and standards on driving behavior. The Apache security team regularly monitors and enforces local driving regulations and Apache requirements. Other proactive measures to minimize our traffic-related impacts include:

- Employing a route assessment and optimization program to identify the best routes and times for trucks associated with our operations to travel;

- Using escort and pilot vehicles for heavy and large loads;

- Managing road dust through road watering and other programs;

- Regularly assessing road damage and working with relevant local officials to address concerns; and

- Working with local law enforcement to coordinate road safety efforts.

We are also reducing truck traffic by building extensive water storage and pipeline infrastructure. The pipelines, which carry water to completion operations and facilitate water recycling, eliminate approximately 1,000 truck trips per day.

> Every week, our field personnel check the more than 1,600 lights we have installed in Alpine High to ensure we stay in compliance with dark skies measures.

Minimizing Noise

We have voluntarily imposed the standards set forth in the city of Fort Worth's noise ordinance to our operations within a five-mile radius of the city of Balmorhea. These are some of the strictest industry-related noise regulations in the state and are more stringent than the local noise requirements. We conduct noise sampling and modeling for our drilling, completions and compressor activities to ensure offsite equipment noise levels do not exceed city of Fort Worth noise ordinance limitations.

Protecting Dark Skies

The Alpine High area is known for its dark skies, making it the perfect place for the astronomical research done at the nearby McDonald Observatory. Apache has worked proactively with the Observatory to develop dark skies measures for our facilities. We have implemented a number of important modifications, including installing shielding on certain lights, experimenting with different fixtures and adjusting our lighting so it points downward rather than up toward the night sky. There are now more than 1,600 lights in the Alpine High play, and our field personnel are assigned to check each one individually every week to ensure we stay in compliance with dark skies measures. We discuss dark skies compliance at our regular employee and contractor safety meetings. In addition, McDonald Observatory staff have facilitated informational sessions to educate Apache employees and contractors on key dark skies issues as well as ways to minimize lighting impacts. And, we arrange for Observatory personnel to visit our drilling locations for periodic lighting inspections.

In collaboration with the Observatory, the Permian Basin Petroleum Association, the largest oil and gas trade association in West Texas, developed recommendations for lighting to help ensure that all operators in the area do their part to minimize light pollution. Apache is also following these recommendations – from the number of lights and the lumen output of each bulb to fixture design and direction – and will continue to work with the Observatory to mitigate the impact our activities may have on one of the darkest areas in the continental United States.

To further educate the industry and other operators in the area, Apache worked with the Observatory to develop a training video for the oil and gas industry. This video is now available on the Observatory website for download.

"Knowing absolutely nothing about the oil and gas industry, I appreciate Apache Corporation creating this committee, keeping the community informed about its activities. This committee shows that Apache Corporation is being a good corporate citizen."

- Pat Brijalba
    Balmorhea Economic Development Board and Apache Alpine High Community Advisory Committee Member

Protecting the Environment

Southern Reeves County is home to many natural treasures, including Balmorhea State Park and the San Solomon Springs system and associated aquifers. Water is scarce in this area of West Texas, and we are using a wide range of measures to help protect this and other environmental resources in Alpine High.

Safeguarding Water

We are implementing a suite of best management practices to protect the water resources in Alpine High:

Ongoing monitoring of groundwater and surface water – In addition to the extensive baseline water assessment we are undertaking, we are conducting ongoing water-quality and -quantity testing throughout our operations. We are also continually expanding and improving the systems we have developed to monitor aquifer levels and water quality in existing water wells.

Using alternative water sources – Apache is a leader in reducing the use of fresh water in our operations by recycling our own produced water and using other nonpotable water, including brackish aquifer sources (read more on p. 55). In Alpine High, our goal is to recycle 100 percent of our produced water and to source all additional water needed from nonpotable water sources. To accomplish this goal as soon as possible, we are building water distribution, storage and recycling infrastructure. We have already built six water recycling systems in the Alpine High region and four brackish water facilities to source water from the nonpotable Rustler aquifer. We have installed more than 40 miles of pipeline to move recycled produced water and nonpotable water to our drill sites. As of September 2018, approximately 90 percent of the water we used for drilling and completions in Alpine High was recycled or nonpotable water.

Bolstering already-strong well integrity practices – We are using our extensive knowledge of underground formations in the area to avoid siting wells in places with challenging subsurface geologic configurations, including karst characteristics (such as caves and caverns), salt beds, corrosive brine zones and potential subsidence zones. We also pressure test the cement on every surface casing string in every well (see p. 56). We are adding on-site well control specialists in key areas. We are also performing weekly exercises focused on maintaining wellhead pressure control and conducting regular well control audits.

Protecting underground aquifer and spring systems – We base our development plans on extensive proprietary seismic data that includes assessments for the presence of underground cave and spring systems. And, we are augmenting existing scientific knowledge of the area's groundwater and spring system through ongoing and expanded academic studies with nationally recognized research institutes. We are also exploring the use of multiple shallow seismic techniques to help expand our ability to further identify and map the shallow subsurface formations near Balmorhea. We are using this knowledge not only to guide our own development activities, but also to inform nearby operators of potential hazards associated with oil and gas wells and saltwater disposal well locations.

Minimizing the risk of spills – In certain areas of Alpine High where proximity to particularly sensitive features creates greater potential for operational risks, we are implementing a series of best management practices that provide additional safeguards above state regulatory requirements, including the use of closed-loop drilling systems, liners under fluid storage and operational equipment, and automated tank level indication

> In Alpine High, our goal is to recycle 100 percent of our produced water and to source all additional water needed from nonpotable sources.

and shut-in devices. We also utilize truck escorts when transporting drill cuttings for disposal. Our produced water storage impoundments are constructed to standards that exceed state regulations, using two layers of liners with leak detection systems between each liner. Our water transport pipeline systems also eliminate the need for truck transport of water, thereby reducing the risks associated with loading, unloading and transporting fluids by truck. To bolster the in-person monitoring of all equipment and operations done during regular site visits, we have also implemented improved remote monitoring capability. Through our Fusion Center in San Antonio, which opened in July 2017, we have the ability to monitor and track a wide range of production statistics 24 hours a day, 365 days a year; these statistics are analyzed to identify, predict and address potential functional issues before they become incidents. The system includes cameras that allow us to remotely "see" equipment to better monitor performance.

Minimizing Air Impacts

As in all of our operations, we are implementing best practices to reduce emissions in Alpine High. We are undertaking baseline air quality studies and track our air emissions to identify and mitigate any future impacts.

Emissions can be higher from tests of temporary exploratory wells, like the kind we have been operating thus far in Alpine High, than from production wells. We are taking a number of steps to reduce air emission impacts from even our exploratory wells.

For example, we are:

- Shutting in flares from exploratory wells as soon as possible, even before reaching permitted flare volumes.

- Using reduced-emission completions technologies, which capture methane emissions from the completion process, even in tests of temporary exploratory wells.

- Implementing the more stringent truck loading and tank emissions controls required for permanent facilities on our temporary test facilities.

As we move from exploration to production, we are taking additional steps to minimize emissions, including using reduced-emission completions; installing pneumatic controllers powered by air rather than compressed natural gas; and implementing our rigorous leak detection and repair program.

Protecting Biodiversity

As part of our initial assessment and risk analysis process, and before siting well locations, we assessed the presence of endangered or threatened species for the entire Alpine High region and confirmed we will not be impacting known sensitive areas, critical habitat or water resources. We have also developed training and guidance for employees on the identification of endangered species and what to do if a suspected species is encountered during operations.

We are using native grasses and other locally appropriate plants when remediating test well sites. We have a full-time staff member in charge of biodiversity issues associated with well remediation. We monitor vegetation at all closed and remediated wells for one year to ensure it is thriving. We often plant trees around existing well sites, as a complement to our long-standing Apache tree planting program (see p. 112).

Innovating in Alpine High

"Our approach to Alpine High exemplifies what Apache is all about. All of Apache's Core Values are in action here every day: relentless improvement, treating stakeholders with respect, taking environmental responsibility seriously, never compromising safety, and delivering top performance and innovation. We know people are watching what we're doing here. They're wondering if we will live up to the promise of extraordinary environmental leadership once we move into actual field development and production. We are confident in our approach to Alpine High, because we aren't just thinking outside the box; we've gotten rid of the box altogether! Our approach here is truly cutting-edge."

- Marcus Bruton
HSE Manager, North America Unconventional Resources

Protecting Balmorhea State Park and the San Solomon Springs System

Apache is committed to protecting Alpine High's unique natural resources. Although the footprint of Balmorhea State Park and its spring system is a small part of the overall Alpine High area – the park covers approximately 40 of the nearly 400,000 acres of the resource play, or 0.01 percent – its natural beauty is cherished by many, and protecting the spring system is a key concern for both local residents and Apache. Examples of our efforts to protect this resource include the following:

- Apache has worked with the community to address specific concerns regarding development in the region. As part of this effort, we have committed to not pursuing development activities in or under the city of Balmorhea or within Balmorhea State Park.

- Apache is partnering with regional universities and federal agencies to augment current scientific knowledge through detailed scientific studies of the regional aquifer systems associated with the springs to ensure Apache's operations do not impact the quality or quantity of water in the aquifer systems feeding these springs.

- We have implemented a plan to meet our operational water needs with an extensive water recycling program supplemented by the use of brackish water resources, to minimize the use of fresh groundwater.

Maximizing Local Economic Benefits

Apache is making a multi-decade investment in Alpine High and is making a commitment to support our neighbors in Reeves County. Local economic benefits include jobs in the oil and gas industry, jobs and increased revenues for supporting industries and service providers, royalty and tax payments to governments, and contributions to schools and public services. We are undertaking an extensive assessment of potential economic benefits, including direct, indirect and induced job creation, tax revenue and economic multiplier effects.

As in all of our regions, Apache actively seeks to hire locally in Alpine High. In June 2017, we hosted a job fair to encourage residents to seek employment opportunities and careers with Apache. We are proud to report that, since then, we have added 36 direct Apache employees who call Reeves County home. We also seek to hire local contractors.

Even though we strive to hire from within the region, our operations have resulted in an influx of employees and contractors hired from beyond a 150-mile radius. Apache provides temporary accommodations for those employees and contractors due to limited hotel vacancies, rotational schedules, and as a way to reduce excessive commutes and drive time. These accommodations are not permanent and are utilized based on work rotation schedules.

Apache's presence in the region also contributes to considerable investments in schools and public services. For example, a significant royalty owner in the area is the Texas General Land Office, whose royalty and bonus payments go to support the state's Permanent University Fund and Permanent School Fund, which help finance Texas public schools and universities.

We aim to understand the community's needs and priorities so we can determine how best to help. For example, the Balmorhea Independent School District has not previously benefited from oil and gas development like other districts in the Permian Basin have. While this will change as development ramps up, the current needs in the community are great. Apache has, therefore, begun to make investments in and

partner with the school district. Since late 2016, we have donated $300,000 to the Balmorhea school system for infrastructure upgrades, technology updates and other special projects. In 2016 and 2017, the Balmorhea High School six-man football team made the state finals, and we helped them get to the game by chartering buses for the team, their families and local supporters. Apache also donated a much-needed fire truck to the Balmorhea Volunteer Fire Department. As we expand our operations, we will continue to work with the communities in Alpine High to determine how we can best support them.

A New Approach to Maximizing Local Economic Benefits

In addition to undertaking a standard economic impact analysis, we are taking an innovative approach to help us and the Alpine High community maximize local economic benefits by learning from other communities that have seen recent increases in oil and gas development. As part of this effort, we have commissioned a comprehensive study of the local economic and social impacts of oil and gas development in four major unconventional plays in the United States. This includes gathering inputs directly from community members and oil and gas operators on the lessons they have learned about how to minimize negative impacts and maximize benefits associated with oil and gas development. We will use the results of this study to inform our long-term development plans and community outreach programs.

Environment

We consider how our operations affect the planet and seek to reduce our impacts at every stage of our business. Our efforts include limiting impacts on sensitive species and habitats, protecting water quality and finding alternatives to freshwater use, reducing the lifecycle methane emissions of our operations, and engaging our employees in waste reduction programs.

1st

Apache tied for first among the 28 largest oil and gas companies on *Disclosing the Facts 2017: Transparency and Risk in Methane Emissions*, a leading industry scorecard

0.36% or less

our methane emissions intensity goal by 2025; we are on track to meet this goal

Environmental Protection: A Core Value

At Apache, protecting the environment is part of the mission and Core Values that guide our daily work.

First and foremost, Apache is committed to complying with the regulatory requirements applicable to our business. We seek to go above and beyond the minimum standards by being good stewards of the land and water in our areas of operation.

We harness the innovative spirit of our operations staff, as well as their technical and scientific expertise, to develop new, industry-leading methods for conserving water, reducing emissions and protecting land. This commitment is backed up by comprehensive health, safety, security and environmental

(HSSE) management and internal audit systems (see pp. 32 and 39) designed to help ensure that we accurately measure and achieve compliance. For more on how our people are innovating to protect the environment, see our feature story on innovation (p. 10).

As shown in our Key Performance Data section (p. 116), our efforts to reduce environmental impacts are paying off. We have consistently improved in our major environmental performance metrics since 2013.

Environment by the Numbers

~47%
of Apache's total water withdrawals were recycled or reused in 2017

~90%
of the water used for drilling and completions in Alpine High was recycled or nonpotable as of September 2018

↓55%
reduction in the volume of toxic chemicals we used per hydraulically fractured well in North America between 2016 and 2017

↓9%
reduction in Apache's methane emissions intensity from 2016 to 2017

↓25,000 tonnes
of CO_2e eliminated through operational efficiency and emission reduction projects in 2017

Water Management

At Apache, we minimize our use of fresh water, which we recognize is a precious and limited resource, by seeking innovative ways to use nonpotable water and to reduce the overall amount of water required for our operations. We also follow stringent procedures for safeguarding water quality and handling produced water responsibly.

Apache's primary water withdrawal – approximately 95 percent of our total water withdrawals – is produced water. It is nonpotable water, typically brine, and can contain minerals and organic materials, depending on formation characteristics. We recycle and reuse this water in our operations as much as possible. We typically reuse more than 45 percent of the produced water from our wells by deploying it in secondary recovery and enhanced oil recovery (EOR), a process that injects water back into wells to improve oil and gas recovery.

Our other water withdrawals include nonpotable groundwater from brackish aquifers and potable surface water, groundwater and municipal water. In general, less than 1 to 2 percent of our total water withdrawals are potable water. See the water withdrawal data by region table for more details on our water withdrawals by source (p. 118).

Once withdrawn, water is used for drilling, completions in our hydraulic fracturing operations, secondary recovery and EOR.

Using Alternative Water Sources

Responsible water management is important in all areas of operations. Apache is proactive in seeking out alternative water sources, especially in areas of the United States and Egypt that could be considered "water scarce," depending on conditions, location, pricing and regulations. Apache recognizes that all areas where we operate in the Permian Basin, Texas and in central Oklahoma have scarce surface water resources, even where there are obvious features like ponds, lakes or streams. In these areas we do our best to minimize use of any surface water for our well operations especially for development projects. Nearly 100 percent of our water comes from the subsurface. We have made extensive efforts to identify, map and understand fresh ground water and nonpotable brackish ground water resources wherever we have significant operations using the most appropriate available geoscience

Innovations in Fracturing Fluid

To further facilitate our use of nonpotable, brackish water sources, we have developed specialized fracturing additives, such as friction reducers, that work effectively in highly saline water.

techniques for the situation which include advanced computational and modeling tools to refine our interpretations. Given that the quality of our understanding depends on the availability and quality of data to support it, we have water monitoring wells to provide direct data in some areas, while in others we have done advanced geophysical work to support our interpretations. When appropriate, we utilize the WRI Aqueduct tool to confirm our assessment of water-scarce areas within our operations.

We continue to be an industry leader in using nonpotable water sources, including recycled water, brackish groundwater and municipal wastewater. We are expanding our ability to use these alternative water sources across our operating regions, allowing us to avoid using fresh water needed by municipal water systems, farmers and others in our local communities. In addition, recycling water helps reduce the costs associated with purchasing and transporting water and with disposing of wastewater in deep injection wells.

As much as possible, we recycle produced water to utilize in our hydraulic fracturing operations. This has multiple benefits, including reducing our use of fresh water, reducing water-hauling truck traffic and reducing costs associated with water disposal.

Produced water can be challenging to reuse in our operations because it often contains high levels of dissolved minerals, salts, and oil and gas residue that can negatively affect Apache's equipment and processes. For years we have been

In 2017, approximately 47 percent of Apache's total water withdrawals were recycled or reused.

testing and refining methods for treating, storing and reusing produced water, to handle it responsibly and to make it useable for our operations. Regardless of end use, we handle this water very carefully to avoid impacting soil, groundwater and surface water quality. Water that will be used for hydraulic fracturing is further treated to remove impurities that can affect the hydraulic fracturing process or equipment.

In 2017, in the Permian Region in West Texas, we built two new treatment facilities and relocated another facility to better serve our changing drilling locations. In Alpine High, our newest operating region, we have built six water treatment facilities since 2016.

Once treated, water is stored in specially engineered, double-lined impoundments or tanks that include leak detection technology and are routinely inspected and continually monitored. Loss of primary containment is rare, but, should it occur, we have secondary containment and detailed spill prevention, countermeasure and control plans to address losses. We address potential emissions from produced water by removing hydrocarbons prior to storing the water. Also, we use bird diversion systems on open impoundments to address potential hazards to wildlife.

Over the past few years, we have dramatically increased our water storage capacity and improved our ongoing treatment of stored water to ensure it remains ready for reuse. We have developed a range of innovative technologies and processes to allow us to store larger volumes of treated produced water for longer times, which enables us to better match our water use

needs with our production schedules and thereby recycle more water. For example, we've developed innovative strategies to safely maintain stored water by using multiple smaller impoundments and applying advanced chemistry.

We have also expanded our water pipeline infrastructure, allowing us to move water within our operations without trucks, which reduces trucking-related emissions, minimizes the potential for spills and lessens impacts on local roads. Less than 5 percent of the water we source in the Permian and Alpine High regions is delivered by truck.

When we are not able to use produced water for EOR or recycle it into our hydraulic fracturing operations, we dispose of it in permitted injection wells in accordance with regulatory requirements and industry best management practices. We do not reuse produced water for any other purposes.

In Alpine High and the Permian Region, we also use brackish groundwater that is far too salty to be used for drinking water in our hydraulic fracturing operations. We have developed treatment systems to remove magnesium, iron, bacteria, organic material and fine solids from the water, as these materials can complicate water chemistry and damage pipelines, pumping equipment and the formation. In our past Gulf Coast Region operations, we used municipal effluent for hydraulic fracturing. Though this alternative water source is not currently utilized, we continue to evaluate the potential use of alternative water sources in all areas of operation. Some examples of criteria considered for evaluation include transportation, infrastructure, treatment methods and cost.

Safeguarding Water Quality

We test and obtain baseline water-quality data prior to beginning operations in a new area. We also conduct post-drilling water-quality monitoring as needed based on the location's risk profile. Water-quality tests include but are not limited to pH, salinity and TPH (total petroleum hydrocarbons).

Protecting the integrity of our wells is another way Apache safeguards water quality. We take great care to minimize the chances of any well failure that could impact local water resources. Our engineers, geologists and geophysicists design

Supporting Innovations in Well Integrity

We are researching new technologies to further improve well integrity. In 2017, for example, we completed an extensive study of "frac hits" or fracture-initiated well-to-well communication, which can have negative impacts on well productivity and mechanics. We assessed different causes and potential impacts and are developing more effective approaches for reducing these incidents and their impacts. We also coordinated with other operators working near our wells to address the potential for frac hits.

Water Recycled/Reused
Total volume recycled/reused as a percentage of withdrawals

2013	2014	2015	2016	2017
52%	46%	49%	56%	47%
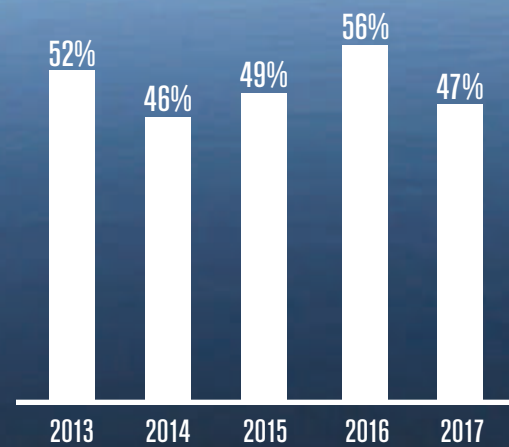
Recycled and reused water is defined as water used for a new or similar purpose. This includes water used for secondary recovery or EOR.

our well drilling and completion plans based on a detailed understanding of local geologic and operational conditions for the entire zone of impact for each well they drill. They also consider the potential for impact to adjacent wells or faults and include mitigations to prevent adverse impacts. Depending on well spacing and fracture direction, fracture volumes and pressures are adjusted and nearby wells remotely monitored using appropriate surveillance technologies.

We carefully design the surface casings for our wells to protect freshwater resources. This includes verifying well quality with pressure tests and physical inspections. We monitor and record essential data from cement jobs and performance evaluations to ensure adequate isolation of producing intervals, including zonal isolation from protected water resources. We use additional cement testing methods, including cement bond logs, ultrasonic testing and temperature testing, to ensure the cement has bonded properly to the protective casing and the formation. We perform pressure tests on every surface casing string. We also conduct pressure testing and monitoring of all hydraulic fracturing operations.

Greener Chemicals for Hydraulic Fracturing

Hydraulic fracturing fluid is typically composed of water, sand and a small amount of chemical additives used to facilitate the fracturing process and protect the well from damage.
We are taking many steps to use "greener" chemicals in our operations.

The additives in our hydraulic fracturing fluids serve five primary functions:

- Friction reducers minimize friction and pressure in the well casing. They allow the fluid to carry more sand into the fractures, making them wider and more permeable in order to produce oil and gas. Friction reducers also reduce the horsepower required to fracture the well, which lowers emissions from pressure pumping.

- Gel systems thicken water to allow it to carry more sand into the fractures.

- Scale inhibitors prevent scale from forming in the well casing. Scale can slow the flow of oil and gas to the surface and degrade the casing.

- Surfactants are detergents that help wash out contaminants downhole so the well can yield more oil and gas.

- Biocides reduce bacterial growth in the well, as such growth can damage both the casing and the producing formations.

In short, friction reducers, gel systems and surfactants are used during hydraulic fracturing to maximize the release of hydrocarbons into the wellbore. Surfactants, biocides and scale inhibitors are used during and after hydraulic fracturing to ensure the hydrocarbons flow and to protect casing integrity.

Disclosing Chemical Data

Apache has been an industry leader in transparency about our use of hydraulic fracturing additives. We report our U.S. hydraulic fracturing activity to the FracFocus.org website. We also follow Texas' more stringent disclosure regulations in all of our U.S. operating locations.

We have actively promoted industry participation in the FracFocus chemical registry. This web-based system publishes detailed information about chemicals used in hydraulic fracturing on a well-by-well basis and links to a geographical coordinate system within Google Maps. On FracFocus.org, authorities and reporting agencies can gather and analyze information on any dataset, and the public can easily determine the details of chemicals used in specific wells or areas.

Some vendors and chemical suppliers, citing the protection of their intellectual property, refuse to fully detail the composition of their proprietary additives. Working with our vendors, we have developed and use self-sourced fracturing chemicals, not only to lower environmental risk, but for the added benefit that by doing so we reduce the use of unknown chemicals that cannot be disclosed because of their protection as confidential business information. We also help our vendors develop procedures to ensure that data from well completions is submitted to the FracFocus website.

Chemical Risk Reduction Strategies

We are working to reformulate the chemicals we use in fracturing, including through collaboration with service companies to identify chemical and technological alternatives that lower potential environmental impacts. We conduct periodic reviews of FracFocus information and meet with vendors and regional experts to discuss using more sustainable chemical alternatives. We encourage service companies to provide environmentally responsible chemical additives at

economically acceptable prices.

We have reduced the use of added benzene, toluene, ethylbenzene, and xylene (BTEX) as reported in FracFocus from 30 treatments in 2015 to 8 treatments in 2016 and eventually to zero in both 2017 and 2018. Of those historical treatments that did contain added BTEX constituents, 84 percent utilized xylene with the remaining 8 percent each using toluene and ethylbenzene, respectively. We do not use BTEX as a standalone constituent of hydraulic fracturing fluids and we work with our frac chemical vendors in a continuous improvement process to provide additives that minimize even the trace amounts of BTEX that may be present in the select few, hydrocarbon-based additives. And, we are using additives that have less risk of bioaccumulation and that are more biodegradable.

We continue to incorporate "dry" hydraulic fracturing technologies. For example, we are replacing liquid guar slurry, friction reducers and scale inhibitors with powdered materials when industrial hygiene, cost, efficacy and vendor supply/equipment are practicable. Using powdered materials has many benefits. It significantly reduces the volume of liquid chemicals that need to be transported by truck, which in turn lowers truck emissions and improves road safety. Dry fracturing also reduces VOC emissions and risks relating to handling, containment and spills. We are also creating certain chemicals onsite, thereby eliminating the need to transport them.

Successfully Reducing Our Use of Toxic Chemicals

We are reducing the environmental risks associated with our hydraulic fracturing additives. The volume of toxic chemicals we used per hydraulically fractured well decreased by approximately 55 percent between 2016 and 2017 in Apache's North American regions.

An aerial view of a well completion operation in West Texas.

Upstream Oil and Gas Water Cycle

At Apache, we minimize our use of fresh water by seeking innovative ways to use nonpotable water and reduce the overall amount of water required for our operations. We have developed technologies and processes to use alternative water sources in our completion operations, including using recycled produced water and nonpotable groundwater.

Produced Water Treatment for Reuse

Recycled Produced Water

Nonpotable Water

Drilling and Completions

Fresh Water

Key

Produced water flow

Recycled water flow for certain operations

Source water flow

Apache's Produced Water
Treatment Facilities

Disposal

Oil, Gas and Water
Separation

Producing
Wells

Secondary
Recovery
or EOR
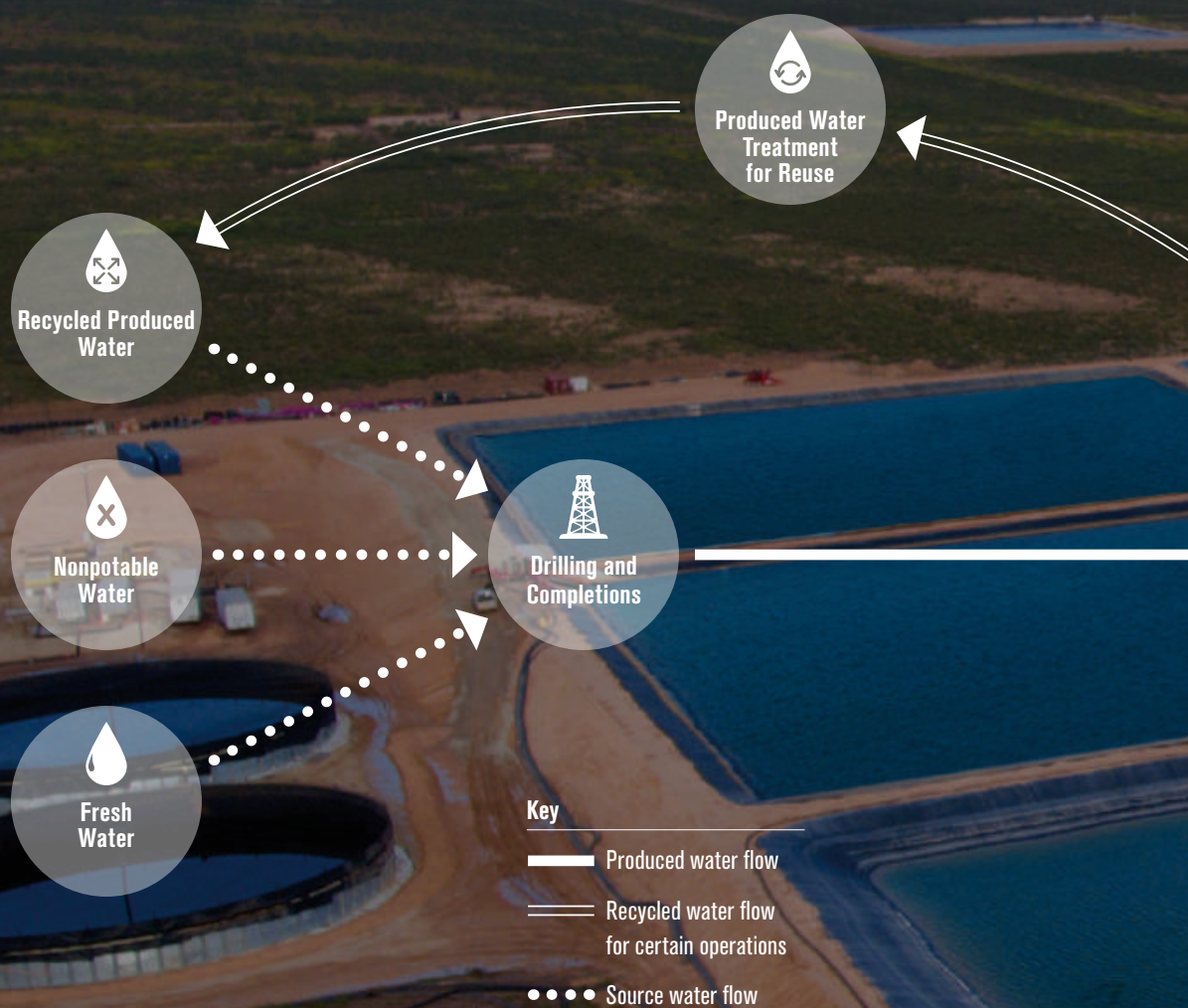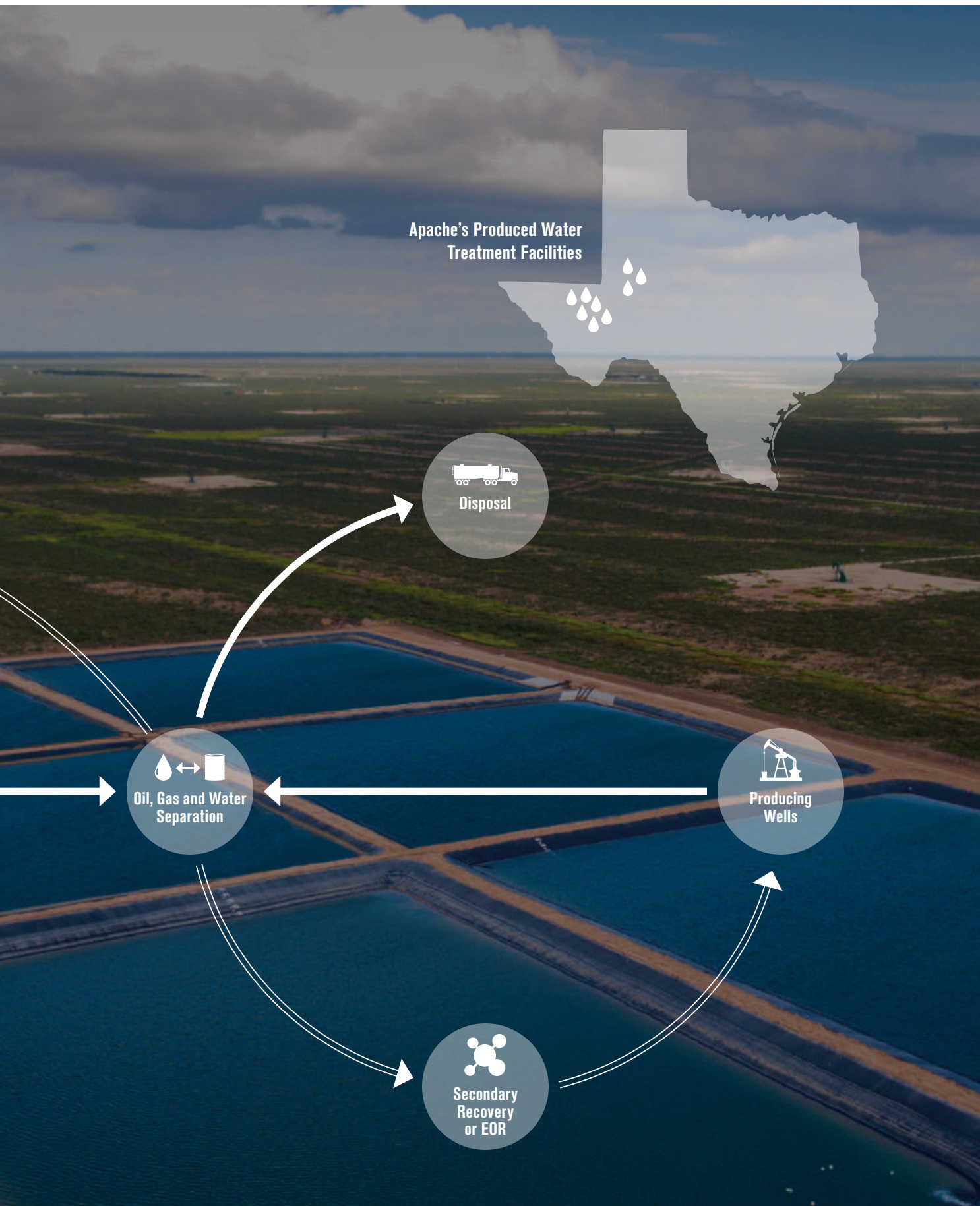
Innovative Approaches to Greener Fracturing Additives

Apache is working with industry and academic partners to develop innovative and greener hydraulic fracturing additives.

Apache is working with the American Chemical Society's Green Chemistry Institute to develop a totally new approach to address the problem of biomass accumulation in hydraulically fractured wells. Bacteria causes a wide range of problems in oil and gas wells, including corrosion and plugging up the well. Currently, biocides are used to manage bacteria populations. The new approach Apache is investigating would use specialized, bio-catalytic enzymes to attack the bacteria, a greener alternative that would eliminate the need for biocides.

"This approach would be a step change in how we handle bacteria in wells," said Danny Durham, Apache's director, global upstream chemicals and lead on this study. "People are using this approach in pharmaceuticals right now to better target diseases and other medical problems. If we can make it work in oil and gas wells, it will be a disruptive innovation."

Specialized enzymes would be safer, greener, more effective and less costly. Unlike biocides, which are synthetic chemicals, bio-catalytic enzymes are naturally occurring and nontoxic. They are also very specialized, targeting only the bacteria they are designed to attack.

Another benefit: They do not "wear out" in the process of killing bacteria. "The whole idea of a catalyst is that it doesn't become part of the reaction that it initiates," explained Durham. "The enzyme does its job and then moves to the next reaction, eliminating the need to keep adding more and more enzymes to keep bacteria under control. With biocides, you always have to add more. Bio-catalytic enzymes will start off, or catalyze, the process of eliminating bacteria, and then move on to a new attack."

Currently, Apache is working on this idea with several other oil and gas companies through the Green Chemistry Institute's Hydraulic Fracturing Roundtable. Apache was a founding member of the Roundtable, a consortium of operators and service companies that pool and attract resources to develop more effective and sustainable chemistry for common hydraulic fracturing needs. An Apache employee is the current chairperson of the Roundtable.

We are also working with the University of Texas at Arlington on a multi-year study to help understand how fracturing additives change and behave under high pressures and temperatures throughout the well fracturing process. We will use the results of this study to advance our efforts to use more environmentally friendly fracturing additives and better control the impact of additives on the environment.

> "People are using this approach in pharmaceuticals right now to better target diseases and other medical problems. If we can make it work in oil and gas wells, it will be a disruptive innovation."
>
> **- Danny Durham**
> **Director, Global Upstream Chemicals**

Seismicity and Oil and Gas Operations

The potential for "induced seismicity" has been of interest to academics, regulators and operators who have gained meaningful insight into causation mechanisms, how to identify areas of elevated risk, and how to manage and reduce unwanted outcomes.

Two seismicity concepts may have a potential impact on Apache's operations in the United States: events caused by large scale salt water "disposal," and events caused by hydraulic fracturing.

Apache carefully reviews the potential for induced seismicity in its North American operations based on analysis of available geological data including known fault characteristics, state of stress, and other parameters. Our subject matter experts follow the most current research in the field, and we actively engage with leading experts to test ideas and interpretations. While state-of-the-art analysis notionally suggests where induced earthquakes might be more likely to occur, or where they appear less so or even very unlikely to occur, it remains impossible to predict the timing of events with any confidence. Current tools are merely guides to better practices, and Apache uses them appropriately to mitigate risk.

Of Apache's major North American operating areas, two are considered to have a meaningful risk for induced seismicity by state authorities:

- In the SCOOP/STACK play of Oklahoma, regulators have imposed limits on injection wells, and more recently, began requiring monitoring of wells during hydraulic fracturing to comply with a "stop-light" for activity based upon the magnitude of directly-generated events. Apache routinely exceeds regulatory minimums for monitoring by a wide margin and employs extensive micro-seismic arrays and down hole monitors. We also contract with an independent group to provide "off-lease" surface detection arrays and near real-time seismic event characterization when we conduct hydraulic fracturing operations. When any of our monitoring systems suggest event sizes are increasing, we activate contingency plans and techniques to modify our operations in order to prevent events above specific magnitudes. As of December 2018, we have successfully applied these techniques and have been able to avoid seismic events that would have required us to suspend or cease operations.

- The Delaware Basin of West Texas is naturally the most seismically active part of the state, and it has witnessed the most significant increase in mapped and located very small seismic events (magnitude less than 2.5). Their timing corresponds with a large increase in industry activity, especially of water disposal into shallow reservoirs of the Delaware Mountain Group. Apache's Alpine High area is adjacent to areas with elevated small magnitude event counts as shown on maps at the TexNet website. There are no disposal wells within Alpine High, and we have actively engaged with commercial disposal well operators to keep them out of the area. Currently the Texas Railroad Commission, the state's oil and gas regulator, does not have any requirements limiting or monitoring hydraulic fracturing-related seismicity in this area because it is not considered a material risk there. However, it is concerned with future increases in seismicity as disposal volumes in the Delaware Basin grow with increasing production.

- In the Midland Basin, another major operating area in North America, the risk for induced seismicity is considered minimal. However, we also recognize that there are potential issues depending on how the salt water disposal business grows in the future.

Apache's primary strategy for mitigating potential induced seismicity from salt water disposal is reducing the amount of water we need to dispose in the first place by recycling and reusing water in our own operations (see p. 55). We believe we have made exceptional progress in this area. In addition, we are exploring ways to recover and reuse water that has already been disposed in injection wells, which could reduce water pressure in those existing disposal reservoirs.

When disposing water in Apache-operated disposal wells, we ensure compliance with applicable federal and state regulations regarding underground injection control. The requirements include pressure testing, mechanical integrity testing, and monitoring injection rate and pressure. When utilizing commercial disposal wells, we assess their operating processes to ensure compliance with best practices and relevant regulations. The auditing process includes assessing third-party disposal contractors' operating procedures; investigating any potential violations, fines, inspection deficiencies, or lawsuits filed by regulatory agencies; reviewing compliance with state and local regulations, permits and orders, and facility-specific requirements; and conducting our own site visits.

In an effort to be on the cutting edge of seismicity issues, we collaborate with leading universities, including Stanford University, The California Institute of Technology and the University of Texas at Austin, and fund research to better understand and model the fundamentals of induced seismic activity. For example, we support and engage with the Center for Integrated Seismic Research at the University of Texas' Bureau of Economic Geology, as well as the state of Texas' TexNet project, a seismic monitoring effort.

Air Emissions

Greenhouse gases are emitted from the production of oil and natural gas, from methane leakage during production and transport, and from the ultimate burning of oil and natural gas to produce energy. We are working to reduce the impacts of our operations on all of these fronts.

OLFACTORY, VISUAL AND

IDENTIFY

abnormal odors, which could indicate the presence of leaking natural gas, some components of which have a strong odor

Reducing Fugitive Methane Emissions

Small quantities of natural gas can escape into the atmosphere between the wellhead and the end user. These escaping emissions raise the lifecycle carbon intensity of natural gas and reduce the amount of natural gas that can be sold by operators. These fugitive emissions are measured by looking at the methane emissions intensity or the methane leak/loss rate, which is calculated by dividing annual methane emissions by annual methane production volume. The reduction of these emissions is an important environmental and economic issue for natural gas producers. We are working hard to reduce our own leak/loss rate and to collaborate with others in the industry to develop better approaches to leak detection and reduction.

We use a range of methods to minimize methane leaks, such

> Apache reported a methane emissions intensity, or leak/loss rate, of 0.43 percent in 2017, down from 0.47 percent in 2016.

as careful design and engineering of new facilities and preventive maintenance programs. We adhere to applicable design standards and use equipment specifically designed to perform in severe service conditions, where the materials produced are more corrosive. Our preventive maintenance programs utilize historical operational data to facilitate proactive upkeep, repair and replacement schedules and help to minimize methane leaks from equipment by preemptively identifying maintenance issues or improperly functioning equipment.

Leak detection is an ongoing and regular part of Apache employees' on-site activities. New and existing facilities are inspected during regular operations. Field employees are trained to perform olfactory, visual and audio (OVA) inspections for possible leaks as a part of their overall competency training.

New employees must demonstrate competency in safety and operating requirements such as OVA inspections before conducting field work without the supervision of more experienced employees. The diagram above describes the components of an OVA inspection.

Our objective is to repair leaks at the time they are detected; when this is not possible, the leak is repaired when required resources become available and safe operating conditions can be assured. Leak repair can be delayed slightly if replacement parts are not on-site, repairs require facility shutdown or the source of the leak cannot be detected at the time of initial discovery. If the leak source cannot be identified with OVA inspections, we use optical gas imaging (OGI) cameras to identify the leak and then verify that it has been repaired successfully.

OGI cameras, which are similar to "night vision" cameras, distinguish between temperature differences to detect

AUDIO INSPECTION

OBSERVE
site conditions and note changes in equipment and the site, which could be related to or result in leaking equipment

LISTEN
for auditory cues that equipment is not operating correctly and may be leaking

escaping gas, which appears as a white or black cloud relative to the ambient air. Opgal and FLIR manufacture two of the commonly used cameras. While OGI cameras are a valuable tool in monitoring our facilities, they cannot identify the type of gas or the size of leaks. Therefore, when any potential leak is identified using an OGI camera, the team further investigates to determine its nature and source. All employees and contractors using OGI cameras are trained to use the cameras correctly. Select employees increase their knowledge by attending advanced training courses to attain certification.

As a part of our leak detection and repair (LDAR) program, we use OGI cameras to examine all newly constructed facilities before they come online, to verify that our design and construction plans do indeed prevent leaks as expected. The inspections focus on all the components of the facility that have the potential for methane leakage, including actuators, flanges, manifolds, pressure vessels, tanks and valves. These facilities are reexamined annually with an OGI camera. We also use OGI cameras to inspect wellheads, compressor stations and buried pipeline routes near residential communities and public facilities.

We continue to enhance our LDAR program to support compliance with new regulations, and we are evaluating alternative methane detection tools as a supplement to optical gas imaging technology.

What Are Apache's Greenhouse Gas Emissions?

The main greenhouse gases (GHGs) emitted from operations in the upstream oil and gas industry are carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The sources of these emissions include combustion, flaring, fugitives, purchased electricity, storage and loading, and venting and flashing.

Carbon Dioxide   **Methane**   **Nitrous Oxide**

CO_2 CH_4 N_2O
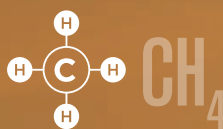
Global Warming Potentials

Each of the GHG components (CO_2, CH_4 and N_2O) has a global warming potential (GWP) assigned to it by the U.S. Environmental Protection Agency for use in its GHG reporting programs. The volume of each component gas – multiplied by its GWP – results in a calculated value of carbon dioxide equivalents (CO_2e) for that component.

1

CO_2 has an assigned GWP of 1, which means 1 tonne of CO_2 times a GWP of 1, produces 1 tonne of CO_2e.

25

CH_4 has an assigned GWP of 25, which means 1 tonne of CH_4 times a GWP of 25, produces 25 tonnes of CO_2e.

298

N_2O has an assigned GWP of 298, which means 1 tonne of N_2O times a GWP of 298, produces 298 tonnes of CO_2e.

How Does Apache Calculate GHG Emissions?

Apache calculates our total GHG emissions from all three components in CO_2 equivalents based on the following equation:

Tonnes **CO_2** produced x1 GWP **+** Tonnes **CH_4** produced x25 GWP **+** Tonnes **N_2O** produced x298 GWP **=** Total tonnes **CO_2e**

↓18% decrease in GHG emissions intensity since 2013

↓22% decrease in methane emissions intensity since 2013

Why Does Apache Use Intensity Metrics?

We measure our progress in reducing GHG and methane emissions based on intensity metrics (emissions per unit of production) rather than gross emissions because intensity metrics provide a more comparable year-over-year measure of our performance that is not skewed by changes in activity levels, acquisitions and divestitures, and other factors.

Apache GHG Emissions Intensity
tonnes of CO_2e/Mboe*

2013	2014	2015	2016	2017
24.8	24.7	24.3	22.1	20.4
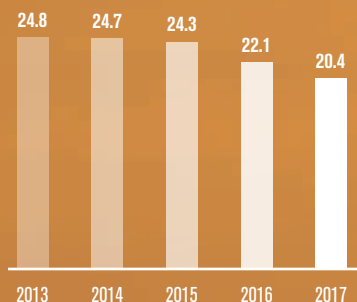
$$\text{GHG emissions intensity} = \frac{\text{Gross emissions in tonnes of } CO_2e}{\text{Gross production in Mboe}}$$

Apache Methane Emissions Intensity
percentage rate

2013	2014	2015	2016	2017
0.55	0.53	0.49	0.47	0.43
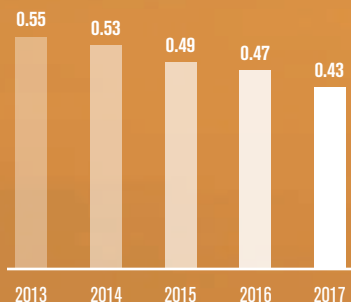
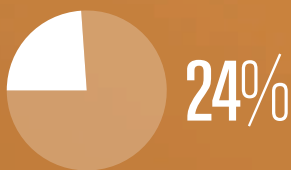$$\text{Methane emissions intensity} = \frac{\text{Gross tonnes of methane emitted}}{\text{Gross tonnes of methane produced}}$$

* Mboe stands for thousand barrels of oil equivalent.
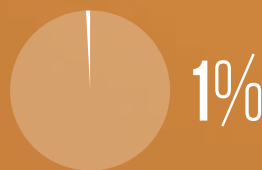
Apache 2017 GHG Emissions = 7,050,000 tonnes CO_2e
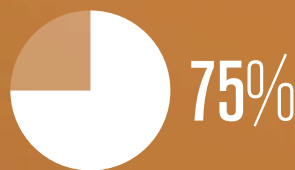
75%
5,300,000 tonnes CO_2 = 5,300,000 tonnes CO_2e

24%
68,000 tonnes of CH_4 = 1,700,000 tonnes CO_2e

1%
168 tonnes N_2O = 50,000 tonnes CO_2e

ENVIRONMENT

Decreasing Production-Related GHG Emissions and Energy Use

We are working to decrease production-related greenhouse gas (GHG) emissions and energy use by improving the efficiency of our production processes and using lower-emission energy sources to power our operations. Greenhouse gas management assessment is an element of the annual compensation incentives for Apache executives.

We seek to minimize emissions by reducing the venting and flaring of gas. We flare gas from wells only when pressures and volumes are too low to access pipeline capacity or when there is no pipeline infrastructure immediately available, as can be the case with test wells. We also conduct reduced-emission completions, a process that captures gas produced during well completions and workovers so it can be processed for sale rather than flared. In 2017, we performed reduced-emissions completions for 100 percent of the natural gas wells completed using hydraulic fracturing.

We avoid directly venting natural gas wherever practicable. We flare rather than vent if some form of gas release is required for safety or other reasons, because flaring has lower GHG impacts than venting.

We also have practices in place to reduce emissions from planned events such as liquids unloading and compressor blowdowns. In 2017, emissions from planned events were less than 1 percent of our total GHG emissions.

In 2017, we completed projects that increased our operational efficiency and reduced emissions. These projects accounted for a reduction of approximately 25,000 tonnes of carbon dioxide equivalents (CO_2e). These efficiency projects – which included electrification, power efficiency and operational changes – will also benefit our bottom line by reducing operating costs.

Where we have access to the electrical grid at well sites and facilities, we prefer to power operations using electricity rather than internal combustion engines, thereby reducing fuel consumption and on-site GHG emissions.

In addition, we install low-bleed or no-bleed natural gas or compressed air pneumatic controllers, which have reduced methane emissions, on all new facilities. In early 2018, we committed to replace, remove or retrofit all high-bleed controllers within the next five years. In our U.S. onshore operations, 35 percent of existing controllers are high-bleed natural gas pneumatic controllers.

Tracking Air Emissions

Apache tracks carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) emissions from our drilling, completion and production operations. To determine our overall GHG inventory, we monitor a range of emissions sources, including combustion, storage, loading and transport, flash gas, flaring, dehydration, venting, fugitive emissions, electricity and gas processing.

We focus on emissions intensity, rather than on gross GHG tonnage, to gauge our progress and performance in controlling emissions and the success of our efforts to improve operational efficiency. Emissions intensity is calculated by dividing annual emissions by annual production volume. We do not target gross GHG emissions because they are skewed by numerous variables, including the divestiture or acquisition of facilities, commencement of new facilities, declining gas and oil production at old facilities, and changes in equipment, regulations and/or transport availability. Emissions intensity is a better metric as it accounts for and normalizes these kinds of operational changes over time.

Our global methane emissions intensity, or methane leak/loss rate, was 0.43 percent of our total gross methane production in 2017, down from 0.47 percent in 2016. Methane emissions intensity accounts for gas vented directly to the atmosphere during compressor maintenance, well blowdowns, pipeline blowdowns and fugitive emissions, as well as unburned methane in the exhaust from combustion sources, engines and flares. While there has been some fluctuation in this metric over time, we have seen an overall downward trend, with a decrease of 22 percent since 2013.

Innovating to Reduce Emissions

Our emissions detection research has shown that open tank hatches are a significant source of emissions. For that reason, we are using auto-closing tank hatches on new tanks and working toward developing an automatic close technology for older tank hatches to eliminate this emissions source.

APACHE CASE STUDY

Supporting Industrywide Emission Reduction Goals and Performance Improvement

Apache participates in a number of initiatives that aim to reduce methane emissions across our industry by setting aggressive voluntary goals and commitments that will drive performance improvements. These types of voluntary programs provide operators with the flexibility to reduce methane emissions in the most efficient manner possible using innovative techniques that they determine, which avoids the pitfalls of traditional command-and-control regulations.

Apache is a charter member of the ONE Future Coalition, a group of 16 companies from across the natural gas value chain, including the production, processing, transmission and distribution sectors. The centerpiece of ONE Future's work is developing and implementing voluntary programs that will reduce methane losses to less than 1 percent of total methane production from the wellhead through to the point of use. This overall goal includes specific reduction targets for each segment of the natural gas value chain, which members commit to meeting. The upstream sector target is 0.36 percent or less of methane emitted from gross methane production by 2025. Apache has adopted this same goal and is on track to meet it.

In 2017, we joined the American Petroleum Institute's Environmental Partnership, a group of 48 U.S. oil and gas companies working together to address environmental challenges and improve environmental performance in our industry. The partnership's first focus is developing and tracking voluntary activities to reduce methane and VOC emissions. As a member of the partnership, Apache has made and is implementing the following commitments:

• Implement a leak detection program, including ongoing monitoring and timely repair of fugitive emissions utilizing detection methods and technologies such as optical gas imaging cameras at all relevant sites within the next five years. As part of this program, we also commit that repairs of any identified leaks will be completed within 60 days unless a delay of repair is required until the next scheduled shutdown or pending the availability of parts necessary for the repair.

• Replace, remove or retrofit high-bleed pneumatic controllers with low- or zero-emitting devices within the next five years using alternative technologies such as continuous-low-bleed controllers, intermittent-vent controllers, electrically operated controllers and valve actuator or mechanical controllers, or compressed air to replace natural gas as the motive gas.

• Implement a monitoring program to minimize emissions associated with the removal of liquids that, as a well ages, can build up and restrict natural gas flow. As part of this, within the next 18 months we will monitor the manual unloading process and minimize gas vented to the atmosphere during liquids unloading events.

Reducing Methane Emissions Through Industry Partnerships

Apache is a charter member of the ONE Future Coalition and joined the American Petroleum Institute's new Environmental Partnership. Through both memberships, we are working to reduce methane emissions across our industry.

Biodiversity

At Apache, we view ourselves as stewards of the lands and waters where we work. Protecting species and habitats from the potential adverse effects of our operations is an important priority. We conduct biodiversity assessments as part of our pre-development planning processes and adjust our development plans accordingly to protect threatened and endangered species and habitats. We also participate in collaborative efforts to minimize our impacts on biodiversity.

Protecting Sensitive Species Across Our Operations

Protecting sensitive species and their habitats in the areas where we operate is an important part of our environmental commitment.

In Alpine High, Apache's newest operating area, we conducted a comprehensive biodiversity assessment before beginning exploration. We identified a small area of critical habitat for the black-capped vireo, a federally listed endangered bird that

uses the region in its annual migration. We regularly screen the species' designated habitat for the presence of nesting birds, and we will not operate in those areas if nesting birds are present.

Apache has also participated in a collaborative conservation effort to protect the population and habitat of the lesser prairie chicken (LEPC), a species of prairie grouse endemic to the southern high plains of the United States. As part of this effort, which was initiated to help prevent the species from having to

be listed as threatened or endangered, Apache enrolled nearly 1 million acres in conservation plans and paid fees to help landowners conduct conservation efforts on their own properties. Through a combined effort by 160 companies, including 105 oil and gas operators, 7.5 million acres have been conserved and more than $61.2 million in funding for conservation programs has been collected from private industry. The conservation efforts focus on protecting, improving or restoring native habitat to help LEPC populations

recover and thrive. Thanks in part to the success of the conservation plans, the LEPC population has flourished.

We undertook a similar process in New Mexico and West Texas regarding the dunes sagebrush lizard. As with the LEPC, this species was removed from consideration for listing under the federal Endangered Species Act due in part to voluntary conservation activities carried out by companies in the oil and gas industry, including Apache.

In our past seismic operations in marine environments, including the Gulf of Mexico, the North Sea and Alaska, and more recently Suriname, we used careful location-specific management programs, incorporating the latest technology and tools, to assess, mitigate and minimize the potential impacts of seismic operations on marine ecosystems. Though we are not conducting any marine seismic surveys currently, we will continue to follow stringent protocols to protect marine species if we return to this work in the future.

Managing Lands with a Conservation Focus

While we work to protect species and habitats on all the lands where we produce oil and gas, we also manage some of our land primarily to conserve threatened ecosystems, including on the Ucross Ranch in Wyoming and our land holdings in Louisiana.

Ucross Ranch: A Model of Sustainable Rangeland Management

The Ucross Ranch, located near the base of the Big Horn Mountains in Wyoming, is partially owned by Apache and managed by the Apache Foundation, a nonprofit subsidiary of Apache Corporation. Since 2005, the Foundation has managed the 20,000-acre ranch as a model for profitable and sustainable land-use management practices, protecting increasingly threatened grassland ecosystems. Here we use cattle as a tool to improve grasslands and reduce noxious weeds, rather than using mechanical and chemical treatments. We use a short-duration rotation grazing strategy for cattle that has reduced bare ground on rangelands from approximately 50 percent to less than 2 percent and significantly improved streambank stability, all while tripling the sustainable stocking rate for cattle. In large part due to these practices, the ranch provides excellent habitat for mule deer, white-tailed deer, pronghorn, sage grouse, sharp-tailed

In 2017, we completed a multi-year project to restore fish access in Piney Creek, which runs through the Ucross Ranch.

grouse, turkey, grey partridge and many species of waterfowl. The Apache Foundation also works with the Wyoming Game and Fish Department to open public access routes across the ranch to provide improved hunting opportunities for deer, pronghorn and game birds on adjacent Wyoming State Trust lands.

In 2017, we completed a multi-year project to restore fish access in Piney Creek, which runs through the Ucross Ranch, and nearby Clear Creek. We replaced several old dams on the creeks, which had blocked fish from the upper reaches of the creeks, limiting their access to the cooler waters they need in the late summer. Using a new fish ladder and roughened ramps that act like riffles, fish can now migrate the entire run of Piney Creek and gain access to Clear Creek, both of which had been blocked to fish for more than 100 years. Working with the Wyoming Game and Fish Department and Trout Unlimited, we used telemetry tags to track brown and rainbow trout populations in the creeks. Within 24 hours of gaining access, fish were using the fish ladder. They now move up and down the river throughout the year, going as much as five miles upstream to seek cooler water and better spawning habitat.

Apache has been recognized by state and national organizations for our leadership in protecting rangeland

> Thanks to the innovative range management practices used by the Apache Foundation, the Ucross Ranch provides high-quality habitat for a variety of native species, including the sage grouse.

biodiversity and advancing sustainable range management. For example, in 2017 Apache was awarded Landowner of the Year by the Wyoming Game and Fish Department for our efforts to sustainably manage the Ucross Ranch. This award is given to Wyoming landowners who have demonstrated outstanding practices in wildlife management, habitat improvement and conservation techniques on their property.

Protecting and Restoring Gulf Coast Wetlands

In Louisiana, Apache manages 270,000 acres of our land primarily to protect swamps and marshes in the Gulf Coast region and the species that call these areas home. These swamps and marshes are among the nation's most at-risk wetlands. Louisiana alone has lost up to 40 square miles of marsh per year for several decades, due to the natural processes of subsidence, saltwater intrusion and shoreline erosion, as well as human activities such as levee construction along the Mississippi River and the dredging of navigation canals.

Wetlands serve as breeding grounds for thousands of species of aquatic life, land animals and birds, and provide habitat for more than 5 million migratory waterfowl each year. They act as a storm surge buffer during hurricanes and provide flood control by holding excess water during heavy rainfall. And, they replenish aquifers and purify water by filtering out pollutants

and absorbing nutrients. On the Gulf Coast, wetlands also provide billions of dollars in revenue and thousands of jobs in oil and gas development, shipping, fisheries, ecotourism, recreation and other industries.

We spend over $450,000 per year on average to restore and protect the wetlands and marshes we own in Louisiana. Our local employees work year-round to manage and protect the land, including through vegetative plantings, operating water control structures and rebuilding shorelines to keep out saltier waters, which kill marsh grasses.

In addition to restoring and protecting wetlands and marshes on our own lands, we work with local government agencies, conservation organizations and other oil and gas companies on wetland projects. In 2017 and early 2018, for example, we worked with the Point-aux-Chene Wildlife Management Area and Ducks Unlimited, donating $50,000 to help improve habitat in the wildlife area. We also donated land to the preserve, which is adjacent to Apache's land, to improve recreational opportunities.

Our Louisiana-based conservation efforts also include protecting specific species that call the local wetlands home. Most recently, in February 2018, Apache partnered with the Barataria-Terrebonne National Estuary Program (BTNEP) to build osprey nesting platforms on our property in Louisiana. We had observed ospreys building nests on nearby wellheads, suggesting they were interested in raising young in the area but needed more suitable nesting opportunities. Apache donated money, employee time and equipment to help build 10 nesting platforms on Apache land where we have observed ospreys feeding regularly. Early in the spring nesting season, ospreys had already begun building nests on three of the platforms we provided. As part of this cooperative effort, Apache employees take BTNEP ornithologists out to the nesting platforms bi-weekly to monitor the ospreys' activity.

Osprey using the nesting platforms Apache built in partnership with the Barataria-Terrebonne National Estuary Program.

For years, Apache has been helping alligators thrive in the coastal marshes of Louisiana by supporting a sustainable harvesting and ranching operation that has helped bring the reptiles back from the brink of extinction. Previously unregulated, alligator hunting was banned in Louisiana in 1963 after alligator populations dropped dramatically. In the early 1970s, the Louisiana Department of Wildlife and Fisheries (LDWF) began a sustainable use management program to study the lifecycle of alligators and come up with ways to prevent poaching and allow harvesting while managing the population. Apache participates in the LDWF sustainable harvest program on the 270,000 acres of coastal Louisiana land we own, which is in prime alligator habitat. Wetlands

along the Gulf Coast are also home to populations of bald eagles, a formerly endangered species. Though our production activities in the area are limited, Apache works with state wildlife officials in determining the placement of well sites to avoid interfering with bald eagle nesting sites.

Apache was awarded the prestigious Governor's Award for Conservationist of the Year in 2016 in recognition of the company's outstanding contribution toward preserving Louisiana's natural resources and for our overall commitment to habitat restoration.

Spills

We work hard to reduce spills throughout the lifecycle of our operations. We begin by planning and designing our operations to minimize the risks of spills and reduce their impact if they do occur. During construction, we follow strict well and pipeline integrity standards, and we routinely assess the integrity of our operating equipment in accordance with recognized industry practices.

Apache leads the inflatable-boom deployment training on a supply vessel in Chaguaramas, Trinidad.

We use primary and secondary containment systems, including impermeable membranes under relevant equipment in our onshore U.S. operations. We prioritize transporting produced water in pipelines rather than trucks, to reduce the potential for spills.

We also train employees to identify and mitigate risks as part of their regular job duties, and we select contractors who do the same. Personnel are always present during drilling and completion activities, monitoring operations to avoid spills and responding as quickly as possible if one should occur. Some production operations are also monitored continuously through automated on-site systems and manned remote operating centers.

In the event a spill does occur, field personnel respond promptly and follow a planned spill response protocol to determine the spill source and location and then act to minimize the potential for adverse impacts. We have detailed response plans for all our operations. We are also committed to following all local and national cleanup and reporting requirements. (Read more about our crisis and emergency management process, which includes spill response, on p. 83.)

In 2017, we had 302 hydrocarbon spills to the environment that were greater than one barrel in size, up slightly from 299 in 2016.

Responding to Offshore Spills

The Marine Well Containment Company (MWCC), of which Apache is a member company, was formed by major oil companies in the wake of the 2010 Gulf of Mexico oil spill. Its proprietary system was designed and built for use in the deepwater U.S. Gulf of Mexico in water depths from 500 feet to 10,000 feet, temperatures up to 350 degrees Fahrenheit and pressures up to 15,000 pounds per square inch. The system has the capacity to contain up to 100,000 barrels of liquid per day and handle up to 200 million standard cubic feet of gas per day. It includes three capping stacks, two of which are rated for 10,000 pounds of pressure per square inch and the third rated for 15,000 pounds. It is able to store up to 700,000 barrels of liquid in each of its two Modular Capture Vessels until it can be brought onshore via shuttle tankers for further processing.

Ten companies hold equal stakes in the MWCC and divided the initial $1 billion outlay to build the system. The system's equipment is listed in the emergency response plans for 156 oil and gas leases in the Gulf of Mexico.

We have also enhanced our spill response capabilities by joining Clean Gulf Associates, the Marine Spill Response Corporation, and Oil Spill Response Limited (OSRL), as well as by engaging Wild Well Control. The OSRL membership provides the North Sea Region with access to the Oil Spill Prevention and Response Advisory Group well capping device.

In Suriname, Apache maintains our proactive approach toward oil spill prevention through preparation, planning and training with key stakeholders. We have assisted the local government in the development of a National Oil Spill Contingency Plan and, along with our industry partners, provided subject matter experts to train and educate local government agencies. Additionally, we evaluate oil spill response equipment providers and contract with them for specific spill response equipment based on our operations. Apache pre-stages equipment in multiple locations for rapid response in the event of a spill. Pre-staging locations include the Apache Shore Base in Chaguaramas, Trinidad, aboard contracted offshore supply vessels and a contracted drill ship, and in the Port of Paramaribo, Suriname.

Waste

Apache's primary solid waste streams are drilling residuals and waste from our office buildings. We also are prepared to address the presence of naturally occurring radioactive material (NORM).

Disposal of Drilling Residuals

Drilling residuals are the mixture of mud, cuttings and drilling fluids residue that come out of a well during the drilling and completion process. We capture drilling residuals on-site and dispose of them based on composition and in accordance with applicable regulations in all of our operating areas. Disposal of residual drilling waste is tightly regulated by the individual states in which we operate. Though regulatory disposal requirements may differ slightly state-to-state, they are fairly uniform and include requirements for classification of hazardous or non-hazardous waste, manifesting, transportation and disposal methods.

Managing Naturally Occurring Radioactive Material

NORM may sometimes be found in rock formations where oil and gas operations are taking place. Trace amounts of

We routinely survey production equipment for the presence of naturally occurring radioactive material and take appropriate measures to prevent human exposure if it is detected.

radioactive isotopes that exist in the rocks can be transported as water-soluble ions to the surface in produced water from oil and gas formations. In most cases, the trace amounts of radioactive ions pass through water handling systems in concentrations below detectable limits. NORM ions present measurable radioactivity above natural background levels only when aggregated or highly condensed into waterborne scales such as barium or strontium sulfate or other types of unusual precipitates in water handling equipment. Radioactivity levels are very low and only pose a concern to workers if the material comes into prolonged direct contact or is ingested or inhaled.

When Apache's operations generate produced water that may contain NORM, we carefully monitor water handling operations to reduce precipitation or deposits that can concentrate NORM. We routinely survey production equipment for the presence of NORM and take appropriate measures to prevent human

exposure if it is detected. Relevant field employees are trained on the potential hazards of NORM and how to minimize them.

If NORM is found to be present, equipment with radio-activity levels above regulatory thresholds will be labeled to advise workers of the presence of NORM and to prevent disturbance of the scale material. Equipment containing NORM will be decontaminated by state-licensed service companies specializing in the management of NORM whose workers are trained to manage the material in a manner that prevents exposure. The removed NORM will be disposed of in accordance with applicable regulatory requirements to isolate the material from any future exposure.

Aiming for Zero Office Waste

Since 2015, Apache has conducted one or more waste audits in each of our North America region office locations (Houston, Midland and San Antonio, Texas) to identify ways to improve our processes, reduce waste and increase our recycling efforts. We developed the AIM for ZERO WASTE recycling program to align our day-to-day office behavior with the company's mission and Core Values by teaching and encouraging employees to reduce waste to landfill.

A main focus of this effort is expanding and improving recycling programs at each of our office locations, where local services are available. As part of this program, Apache made it a policy to stop purchasing nonrecyclable polystyrene (i.e., Styrofoam) cups and instead provide reusable beverage containers, inscribed with the AIM for ZERO WASTE program logo. We communicate opportunities and incentives to recycle through ongoing education and special events, including an annual Earth Day celebration. We also added improved waste and recycling instructional signage throughout our offices.

We promote reusable to-go food containers in our corporate dining facility in lieu of polystyrene to-go boxes that otherwise would have ended up in the landfill. Since May 1, 2016, we estimate more than 19,280 polystyrene boxes have been eliminated and nearly 370 reusable to-go food containers have been sold.

Through the AIM for ZERO WASTE program, Apache employees have significantly improved the Houston, Midland and San Antonio offices' waste-to-landfill diversion rates.

Employees also signed a pledge to stop using polystyrene foam packaging; to reduce, reuse and recycle materials whenever possible; and to adopt and implement other Earth-friendly habits beyond the workplace.

As part of the AIM for ZERO WASTE initiative, we also reevaluated purchasing methods and worked with suppliers to reduce packaging and other noncritical waste coming onto our properties.

We are continuing our commitment to recycling electronic waste as well; we recycled approximately 21.68 tons of this type of waste in 2017.

Office waste audits are conducted periodically to assess our progress. Our Houston office improved its waste-to-landfill diversion rate from 53 percent in 2016 to 70 percent in 2017. Our Midland office improved its waste-to-landfill diversion rate from 54 percent in 2017 to 62 percent in 2018. We undertook our first waste audit in San Antonio in 2018 to establish its baseline waste diversion rate of 65 percent, measured after one year of AIM for ZERO WASTE implementation. We plan to perform this audit again next year to assess progress and identify areas for behavioral improvement to continue to reduce our waste-to-landfill ratio.

Health and Safety

The safety of our employees, contractors and communities is not negotiable and will not be compromised. Maintaining the safety of our employees, contractors and communities is deeply rooted in our Core Values and is our highest priority.

↓41%

decrease in Total Recordable Incident Rate since 2013

100%

of Apache regions host annual biometric screenings for employees to measure key health indicators

Building a Safe Workplace

We are committed to building and maintaining a safe workplace for all employees and contractors. We are also committed to the identification and successful management of safety hazards in the workplace.

There are inherent risks to working in drilling and production. Our industry's daily operations involve large and powerful machinery, flammable materials and chemicals. Workers are often outdoors, in all seasons and all types of weather. And our people drive tens of millions of miles each year, putting them at risk for driving incidents.

Our people work to identify, assess and mitigate risks associated with our operations. Whether during pre-job planning, on-site observations or post-incident investigations, employees and contractors have a responsibility to manage these risks to help ensure that all workers arrive home safely at the end of their work day.

To encourage safe behavior, we routinely recognize the efforts of our employees and contractors. When key milestones are reached – such as zero injuries, zero vehicle incidents or zero environmental incidents during a particular time period – workers and work groups are acknowledged and commended for their performance. In addition, employee compensation, including senior management compensation, is tied to key employee safety metrics. To further drive safety excellence, we recently expanded the health, safety, security and environmental (HSSE) goals component of senior management's annual cash incentive bonus to include a comprehensive qualitative assessment of leading and lagging measures. (Read more about HSSE management on p. 39).

For 2017 – the first year in which these expanded measures were implemented – we outperformed our three key targets by 11 percent, 26 percent and 15 percent, respectively.

Health and Safety Training and Education

We offer a wide range of training programs for employees and contractors to promote their full understanding of, and compliance with, our health and safety policies and programs and to help build the skills needed to work safely. We also encourage personal responsibility for safe operating conditions and have built a culture of individual accountability for safety issues. We empower our people to stop work at a job site if they have any safety concerns.

Our online training platform, which is incorporated into Apache Academy, gives employees easy access to safety-related

A New Management System

We are implementing a new event management software system that will allow us to better track safety incidents – including near misses – across our global operations. The software, which will be installed by the end of 2018, will align our processes in all regions and provide an enhanced tool to communicate pertinent health and safety data across the entire workforce through increased data analysis and reporting.

This new system will also provide a uniform solution for management of change (MOC). Previously, there was not a standardized process to facilitate the MOC process. The new event management system will provide an advanced electronic MOC platform that will enable greater consistency and uniformity throughout the enterprise.

information. We have been updating our training programs to capture field knowledge gained from years of on-the-job experience from our workforce and are building that knowledge into specific courses that can be shared across the organization.

We have hundreds of training courses available to keep field employees and managers informed about evolving issues and best practices. (Read more about Apache Academy on p. 90.)

We impose on our contractors our expectation that they have high-quality training programs for their employees as well. Although our contractors bear responsibility for training their employees, we evaluate the effectiveness of their training programs when making decisions about which contractors will work for us. Each region conducts audits on individual contract companies throughout the year to ensure that appropriate health and safety criteria are being met. We also are part of ISNetworld, which is used in our industry to track and evaluate contractor safety programs. (Read more about contractor safety on p. 81.)

Driver Safety

In 2017, our employees drove more than 45 million miles, down from 47 million miles the previous year. Many of these miles were in remote areas. Operating a motor vehicle is one of the riskiest activities our workforce performs on a daily basis. In fact, driving issues are the main source of industrywide safety incidents. Driving behavior is also one of the key concerns raised by those who live in the communities where we operate.

Apache has adopted a multi-faceted approach to help ensure the safety of our workers and to make the roads in our communities safer. This approach includes top management support, a comprehensive fleet tracking system, driver feedback, and a host of training programs and policies, educational campaigns and outreach activities. Our focus over the past couple of years on improving driving performance has helped to lower our incident rates.

Our driving-related incident rates have been consistently declining, with a reduction of 23 percent between 2013 and 2017, and a 12 percent decline between 2016 and 2017.

In the U.S., our fleets use GPS monitoring devices to track and record vehicle locations and driving behaviors (e.g., speeding, harsh braking, rapid acceleration and seat belt usage). Coaching and training are provided when positive or negative driving behaviors are observed, to further improve performance and demonstrate our commitment to driving safety. This connected fleet program is also helping Apache increase operational efficiency and reduce our carbon footprint by identifying opportunities to decrease excessive idling.

Apache's management teams support driver safety performance by analyzing and acting on key driver trends,

> Our driving-related incident rates have been consistently declining, with a reduction of 23 percent between 2013 and 2017.

Safety by the Numbers

↓**41%**

reduction in Workforce* Total Recordable Incident Rate since 2013

↓**50%**

reduction in Workforce* Days Away, Restricted or Tranferred Rate since 2013

↓**23%**

reduction in Apache employees' Vehicle Incident Rate since 2013

53 million

hours worked by employees and contractors

45 million

miles driven by employees

*Workforce includes employees and contractors

Improving Road Safety Through Industry, Government And Community Collaboration

As oil production has grown in the Permian Basin, so too has road traffic. And with more vehicles on the road come more accidents. Following a call to action from within the industry to improve road safety, Apache helped establish the Permian Road Safety Coalition, a collaboration among industry peers, government officials, researchers and community members. The coalition works with safety experts, law enforcement, industry leaders and public officials to make roads safer for drivers and passengers by advocating responsible driving habits. Launched in 2015, the group continues to make progress by sharing knowledge, raising awareness, sponsoring forums and advocating for safer roads. Apache plays an active role in the coalition.

communicating expectations and enforcing vehicle policies. Employees are reminded of our driving policies and rules as needed through companywide communications and during safety meetings. We implement regular driver training initiatives across our global operations, including classroom, on-road and e-learning training. Lessons learned from vehicle incident investigations are also shared, to prevent similar incidents from recurring and to raise awareness.

AIM for ZERO

We are constantly focused on working safer and working smarter. Our AIM for ZERO process is one part of our Operational Excellence Framework, which seeks to establish and maintain a safe and environmentally responsible workplace for everyone. Formally rolled out in 2016, AIM for ZERO is now fully embedded within our organization, providing the tools and resources that empower our people to identify and report potential hazards and stop work whenever necessary. Through the implementation of the new event management system, we will be able to further strengthen AIM for ZERO with the

adoption of new tools such as intuitive mobile applications for hazard and near-miss reporting.

The framework supports our culture of safety and encourages our people and our contractors to report ideas, suggestions and observations that may mitigate workplace risks. AIM for ZERO supports our safety culture by putting into action the motto of "See Something, Say Something."

Employees and contractors can make their voices heard by:

- Filling out an online form;
- Filling out hard copies of forms at our various locations of operations; or
- Calling a telephone hotline.

All submissions trigger actions by regional and corporate team members, as well as preventative measures and/or process improvements to be implemented through the development of mitigation plans. Perhaps even more important, we make it clear that employees will never be reprimanded for reporting a

safety concern or incident or for stopping work they deem unsafe.

AIM for ZERO is a state of mind and an empowerment tool for employees to do what they need to do to protect their safety, the safety of others and the safety of the environment. We know zero is an aggressive goal – zero incidents, zero near misses, zero preventable occurrences and zero fatalities. But we believe it's the mindset we need to deliver true operational excellence.

Apache

Improvement

Methods

for

Zero incidents

Empowered employees and contractors

Responsibility for yourself and others

Operational excellence

Safety Recognition

Six foreman areas – all within the Permian Region's Northwest District – were recognized for their exemplary safety records in 2017. The entire district was recognized for achieving at least a Triple Zero award, defined as zero Occupational Safety and Health Administration (OSHA) recordable incidents, zero vehicle incidents and zero contractor lost time incidents. Even more impressive, five out of the six foreman areas in the district had zero recordable incidents across the entire workforce (both employees and contractors), garnering them the very prestigious Excellence in Safety award and proving that zero is not only possible, it is achievable. Watch the video.

Managing Contractor Safety

Like the majority of oil and gas companies, Apache relies on contractors to support all elements of our operations – from exploration and production to well closure and remediation. Indeed, contractors typically account for about two-thirds of our total workforce hours each year. We are as committed to the safety of our contractor workforce as we are to the safety of our own employees. We ask our contractors to instill in their own organizations Apache's Core Values of safety and environmental responsibility and require contractors to demonstrate that they have safe and effective safety management systems in place. Contractor safety performance has improved significantly over time, due in large part to our enhanced focus on verifying safety systems and engaging with contractors. (See charts on p. 82.)

Apache uses various third-party databases and company protocols across the organization to evaluate potential contractors before hiring. Over the years, we have refined our standardized contractor safety auditing processes, which address selection, evaluation, monitoring and post-contract review. All contractors working for Apache are required to have written safety and environmental programs and procedures in place. Depending on the type of service or work, contractors are required to develop specific safe work practices to demonstrate that their personnel can perform their job functions safely. In 2017, we updated our vendor agreements, requiring contractors to comply with all of Apache's health and safety regulations as well as any region-specific programs. The companies must have a robust suite of safety policies, including a comprehensive training program, hazard identification and job safety analysis processes, stop-work authority, an incident reporting system and drug and alcohol testing.

OSHA recently revised its standards to mitigate health hazards for workers who may be exposed to respirable crystalline silica. In response, we have developed guidance to help manage workers' exposure to silica dust, which can be present during completion operations.

In addition to third-party verifications, we conduct our own periodic contractor safety audits, both on job sites and in contractor field offices. The frequency of the audits and spot checks varies by region of operation. Contractor audits assess a range of issues, including safe work practices and safety programs, and help determine that written safety programs are being followed on the ground. In 2017, our health and safety teams continued to spend more face-to-face time with contractor companies to reinforce that safety is a Core Value for us and that we expect the same of them. In addition, we have been able to share incidents, lessons learned and best practices with our core contractors at monthly meetings in our field offices. For more information on our contractor selection and management processes, see p. 97.

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# Steady Improvement in Health and Safety Performance

We have seen a steady improvement in our overall safety performance over the last five years, thanks largely to robust worker training programs and a culture of personal responsibility that empowers individuals to stop work that they consider to be unsafe.

In 2017, the Total Recordable Incident Rate (TRIR) for our overall workforce went up slightly, from 0.52 to 0.56, while the Days Away Restricted Or Transferred (DART) rate declined, from 0.27 to 0.23. Both figures are 41 percent and 50 percent lower, respectively, than they were in 2013. The Vehicle Incident Rate, meanwhile, declined 12 percent from the prior year and was 23 percent lower than in 2013.

Regrettably, four contractor fatalities occurred during work performed on behalf of Apache in 2017. Of those, two were related to drilling; one was related to driving; and the fourth was an operations-related incident. We identify and communicate root causes and incorporate lessons learned from incidents so that, to the best of our ability, we can eliminate the conditions that resulted in the incidents across our operations. We are now using our new 'A' Game training tool for a more unified and consistent means to communicate lessons learned and general safety alerts. (Learn more on p. 90).

Total Recordable Incident Rate
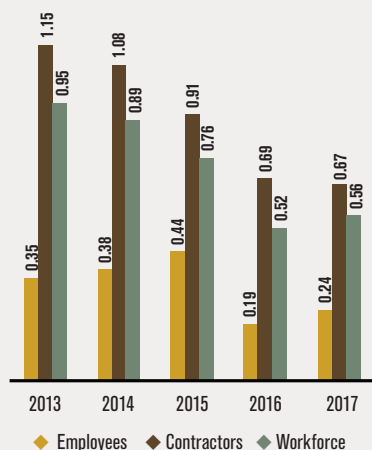
Total Recordable Incident Rate is calculated by multiplying total number of recordable injuries by 200,000 hours then dividing by total person-hours worked. The TRIR measures the rate of work-related injuries and illness that result in medical treatment. Medical treatment includes the use of prescription medication to relieve inflammation or ease discomfort.

Days Away, Restricted or Transferred Rate
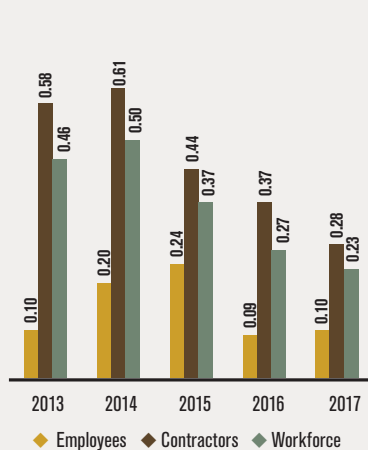
Days Away, Restricted or Transferred rate is calculated by multiplying total number of DART injuries by 200,000 hours then dividing by total person-hours worked. The DART rate calculates work-related injuries and illnesses that lead to an employee missing work, requiring restrictions in work duties or requiring a transfer from regular work duties.

Vehicle Incident Rate (Apache employees)
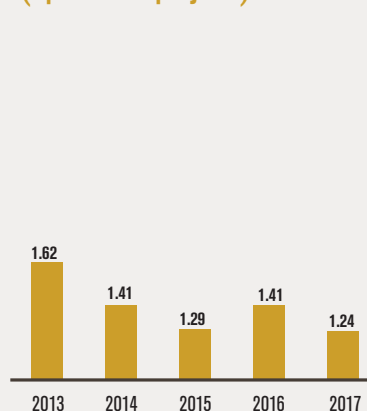
Vehicle Incident Rate is calculated by multiplying the total number of vehicle incidents by 1 million miles driven then dividing by total mileage.

Crisis and Emergency Management

Apache's approach to crisis and emergency management follows a four-part process: plan, prepare, respond and recover.

Apache has diverse operations in multiple countries with varying operational risks and local, regional and national crisis management regulations and requirements. In response, we have developed a corporate Crisis Management Plan that establishes our Corporate Preparedness Framework. This framework outlines our planning process and personnel response training in order to be prepared should an emergency incident occur. All of our regions are required to meet our corporate standard for emergency response preparedness, including developing plans for the region staff and separate response plans for each asset, based on relevant local regulations.

Our Corporate Preparedness Framework is designed to:

- Secure and protect our people, contractors, neighboring communities, facilities, information, operations and the environment in a manner consistent with related laws and policies, as well as with our corporate Core Values;

- Quickly and effectively identify, respond to, manage and recover from crises;

- Minimize the impact of incidents on Apache's people, facilities, operations and stakeholders; and

- Maintain response capabilities through ongoing planning, training and quality assurance activities.

Our Corporate Preparedness Framework also establishes an iterative and ongoing process for identifying risks, preparing and training for crises, managing crises, and learning from crises for continuous improvement.

Our crisis management preparation was put to the test in the fall of 2017, when Hurricane Harvey struck Houston. Learn more in the Hurricane Harvey case study on p. 98. We have been incorporating lessons learned from the storm into our future crisis planning.

By the end of 2017, each of our regions had initiated the development of its own business continuity plan identifying the critical processes, personnel and resources needed to resume operations as quickly as possible should a business interruption occur. Mitigation strategies for a business continuity response are based on thorough risk and business impact analyses. These are not cookie-cutter plans, as the potential for business disruptions varies significantly from one region to another.

Crisis Management Approach

RISK IDENTIFICATION
- mitigation
- monitoring
- governance
- compliance

TRAINING & AWARENESS
- crisis drills
- table top training
- field-based scenario training

CRISIS MANAGEMENT
- crisis management plan
- crisis communications plan
- business continuity plan
- regional response inventory

CONTINUOUS IMPROVEMENT
- post-incident review
- lessons learned sharing
- plan revisions

What Is a Crisis?

When we think about crisis management, we're not just talking about oil spills, fires or catastrophic storms. We also make contingency plans to deal with business interruptions at both the corporate and operating region levels. Such risks include acts of terrorism, corporate malfeasance, fraud and significant commodity price fluctuations, to name just a few.

Apache Global Response Team

To support our crisis response capabilities, Apache has a Global Response Team of more than 100 employees representing each operating region and our corporate office who train together in hypothetical crisis situations to provide support to region incident management teams. The Apache Global Response Team receives standardized incident command system training. Having this team in place ensures that Apache can respond quickly to emergency incidents and maintain comprehensive internal management of both short- and longer-term crisis events. As a result, nearly any potential crisis can be managed by our employees with an understanding of, and commitment to, Apache's Core Values and long-term success.

Crisis Management Trainings

All Apache employees who have been identified as having a role in crisis management are offered annual training on crisis support, crisis communication and business continuity plans.

For example, Apache's executive leadership participates in quarterly, case-study-based training on crisis management topics, including reviewing crises experienced by other companies, crisis communication and specific Apache crisis management plans. Senior management also participates in an annual, all-day crisis drill, based upon hypothetical scenarios involving Apache assets and operations.

Industry Collaborations and Partnerships

We participate in several industry collaborations to improve our emergency response capabilities. Apache is a member of Marine Well Containment Company for well control issues in the Gulf of Mexico, and of Oil Spill Response Limited, which provides well control and spill response support in the North Sea. We also have a contract with Wild Well Control for any well control, capping stack or subsea debris cleaning and dispersant applications that may be required for an incident in any other area of operations.

Global Wellness

The health and safety of our workforce depends on much more than on-the-job safety. The company's global wellness programs offer health services and resources to encourage employees to adopt healthy lifestyles for themselves and their families.

Several Apache office locations have on-site cafeterias and fitness facilities. Cafeterias offer subsidized dining options that include healthy choices and easy access to nutrition information. Where available, fitness facilities are open at no charge to employees and offer a wide variety of exercise equipment, fitness and training classes and programming to encourage employees' overall physical health. In regional offices, we shape our fitness and wellness programs to fit the employee base and take into consideration the needs of those employees working in the field. In 2017, some of the activities included health-related scavenger hunts, group exercise classes and weight loss challenges.

All Apache regions host annual biometric screenings for employees to measure key health indicators, such as body mass index and cholesterol levels. After the assessment, each employee receives a personalized and confidential report with their results and recommendations for improving health. Employees can access their health information online through a workplace wellness program that includes additional resources such as tips for healthy living, webinars and peer challenges. They can also log their activities on fitness apps.

Workforce

Since our founding in 1954, Apache has grown through the determination and efforts of our people. Today, we continue to hire the best people in the exploration and production business. We retain them through challenging and rewarding work that empowers them to seize new opportunities as they navigate the challenges of the energy industry.

3,356
Apache employees worldwide, as of December 31, 2017
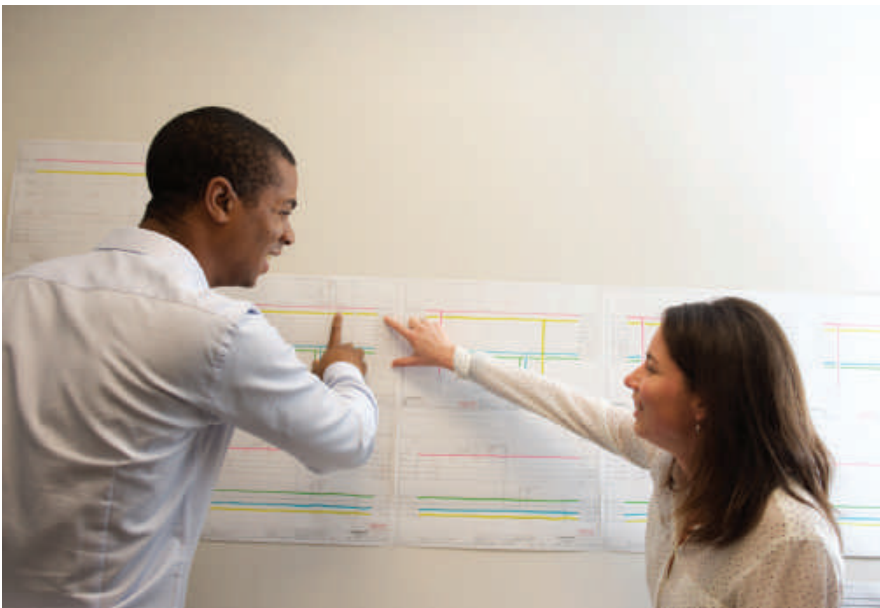
42,000+
employee learning programs completed in 2017

Employee Diversity

A diverse workforce – one that reflects the dynamic diversity of races, religions and cultures in the communities where we operate – gives us a competitive advantage by ensuring we have a full range of ideas, viewpoints and approaches to solving business challenges.

Apache is an equal opportunity employer. Our Code of Business Conduct and Ethics requires that we conduct business, including employment practices, in accordance with all applicable laws, rules, regulations and government requirements. All employment-based decisions are made without regard to race, color, religion, sex, familial status, marital status, sexual orientation, genetic information, gender identity, national origin, age, veteran status, disability or any other status protected by applicable federal, state or local law.

These standards support our commitment to equal employment opportunities, prohibit harassment and discrimination in the workplace and meet or exceed the requirements of applicable laws and regulations in the countries where we operate. Any form of discrimination by or toward employees, contractors, suppliers or customers in any Apache workplace is strictly prohibited.

Hiring Veterans

Apache is honored to employ veterans from all branches of the military. Among our Core Values are respect, honesty, integrity, a sense of urgency and top performance. Military veterans have demonstrated these same values through their service, and they translate well to the Apache workforce.

We partner with veterans' recruiting organizations as part of our efforts to increase the number of veterans we hire. Apache annually honors our employees and their family members who are veterans with a ceremony and the presentation of a commemorative coin. (Read about our donations to veterans' organizations on p. 111.)

Drawing from the Pool of Local Talent

Apache places a high priority on investing in the regions where we operate. The practice of hiring locally is one way Apache can make meaningful economic contributions to the communities where we operate, especially in areas where professional jobs can be otherwise scarce.

When Apache operates outside the U.S., we typically draw the majority of our workforce from the pool of local talent. In our North Sea Region this has not been difficult, as many of our employees and potential employees already have deep expertise in the oil and gas industry. But in other locations, such as Egypt and Suriname, we must take additional steps, as adequate numbers of professionals with the technical skills and talent we need aren't always immediately available among the local talent pools.

We first began operating in Egypt more than 20 years ago through a joint venture with the Egyptian Petroleum Company. Our joint venture agreement specified that we hire nine nationals for every expatriate employee. Initially, we hired oil and gas experts from abroad and tapped the local market as much as possible for technical talent. At that time, however, the petroleum engineering and geological talent pools were small. Therefore we primarily hired for administrative positions, offering full-time jobs and benefits to Egyptians who might not otherwise have been able to find comparable employment.

Over the past several years, however, the oil and gas industry in Egypt has become an attractive career prospect for students entering university. Local universities have partnered with oil and gas companies, including Apache, to strengthen their technical programs and provide skill-ready petroleum engineers and geologists. Early-career petroleum engineers and geologists also sought out work opportunities across the Middle East and North Africa region to broaden their technical knowledge base.

In 2014, we boosted our support of geological programs in Egyptian universities by providing a geological summer training program in which students spend four weeks in training classes at Apache. During the program, students learn to apply what they learned in university to practical work-related challenges. In addition, leaders from Apache have served on the advisory board for the petroleum and energy engineering program at the American University in Cairo. In this role, our experienced petroleum engineers have the opportunity to partner with the university to ensure learning remains industry-relevant and prepares students for a career in the oil and gas industry.

In 2016, 80 percent of our new hires in Egypt were Egyptian nationals, and approximately two-thirds of those were in technical and professional positions. In 2017, 65 percent of our new hires in Egypt were Egyptian nationals, and 85 percent of those were in technical and professional positions. In 2018, we started our first reservoir and petroleum engineering internship consisting of local university students. The internship program, a partnership with the American University in Cairo, lasts 12 weeks, with students rotating between our Apache Egypt office, Khalda Petroleum Company and Qarun Petroleum Company.

Mark Avery, Apache's senior manager for international human resources, explained that there are many advantages to hiring local talent. "Local hires know the customs, the culture and the language. They know how to build professional relationships with our partners and do business in their home country," he said. "Seeking out and employing technically competent nationals sends a strong message about our commitment to doing business in the country."

In Egypt in particular, much of the work that is done is built upon relationships, Avery explained. Having a greater number of employees who speak the language and who are connected to their communities benefits our company.

In Suriname, where we are now in the early stages of offshore exploration, we are looking at ways to build local capacity so that "hopefully one day a Surinamese national will run the division," said Ian Roberts, Apache's country manager for Suriname. In 2018, we participated in an industry-funded study to identify the skills and capabilities of the local workforce, which will ultimately help fill gaps and train residents for future jobs at Apache Suriname or within our industry.

> "Local hires know the customs, the culture and the language. They know how to build professional relationships with our partners and do business in their home country."
>
> **– Mark Avery**
> **Senior Manager for International Human Resources**

"It is part of our responsibility as a foreign company operating in Suriname to help build local capacity," Roberts said. "There is an expectation that we will create jobs, but we have to be sure that we have a qualified workforce who can do the work."

A greater local presence also benefits our volunteer and philanthropic programs, such as our ongoing work to support education and local corporate social responsibility projects. (Read more about these efforts in Egypt and Suriname on pp. 105 and 106.)

Employee Training and Performance Feedback

Well-trained and supported employees are critical to our success. When employees develop new skills, they infuse our workplace with energy and creativity. This, in turn, enhances our ability to attract and retain the best talent.

In 2017, we rolled out an innovative human resources tool, which Apache branded as 'A' Game Resources, that offers a new approach to continuous performance, goal management, compensation planning, leadership development and learning. We have invested in this cutting-edge technology to provide our people with the resources they need to excel in their careers. Also, numerous studies show that companies perform better when employees set goals, give and receive real-time feedback, take part in learning opportunities and are held accountable for individual performance.

Through 'A' Game, employees are able to create personalized goals that align with team and company goals, access goal management tools and receive prompt feedback from their managers and peers. Ongoing feedback allows employees to have continuous – and more productive – conversations with their managers about their performance, rather than once-a-year appraisals that often leave employees unsatisfied.

Embedded within 'A' Game is Apache Academy, a multi-tiered learning platform that has transformed our training and development opportunities for employees. With an interactive design that looks like an online university campus, the Academy

gives employees access to literally thousands of courses, books, videos, white papers and other learning tools that are accessible from desktop and mobile devices.

"We're trying to make our learning offerings fun and easy to access," said Greta Uranich, Apache's senior human resources manager for North American Unconventional Resources, Corporate, and Learning & Development.

Among some of its other features, Apache Academy includes a "Learning Spotlight" that recommends specific resources available for professional and personal development. One course in early 2018, for example, showcased self-improvement, including tips for building effective mentoring relationships and suggestions for overcoming obstacles that challenge self-improvement efforts.

Within Apache Academy, we recently launched the Apache Management Fundamentals Program, designed for directors, managers and supervisors. Initial course offerings focus on management skills designed to impact employee engagement, increase Apache's overall performance, achieve alignment through goal setting and provide targeted and developmentally focused feedback.

'A' Game also includes succession planning resources, allowing current leaders to build talent pools by discipline across the organization and to identify future leaders. Employees have the ability to plan succession for the roles held by their direct reports and those below their direct reports within their line of authority. Research shows that employees are significantly more engaged working for a company that has a clear succession planning process, and companies with high rates of engaged employees outperform their peers.

The initial response to Apache Academy has been enthusiastic. Employees completed more than 42,000 learning programs during the Academy's first year, including in the areas of safety, compliance, technical training and management. The online courses make it easier to train employees within their areas – and to track which individuals still need to complete necessary course modules.

In 2018, we plan to host a series of "learning fairs" to show employees in even greater detail how they can tailor Apache Academy to best suit their career needs.
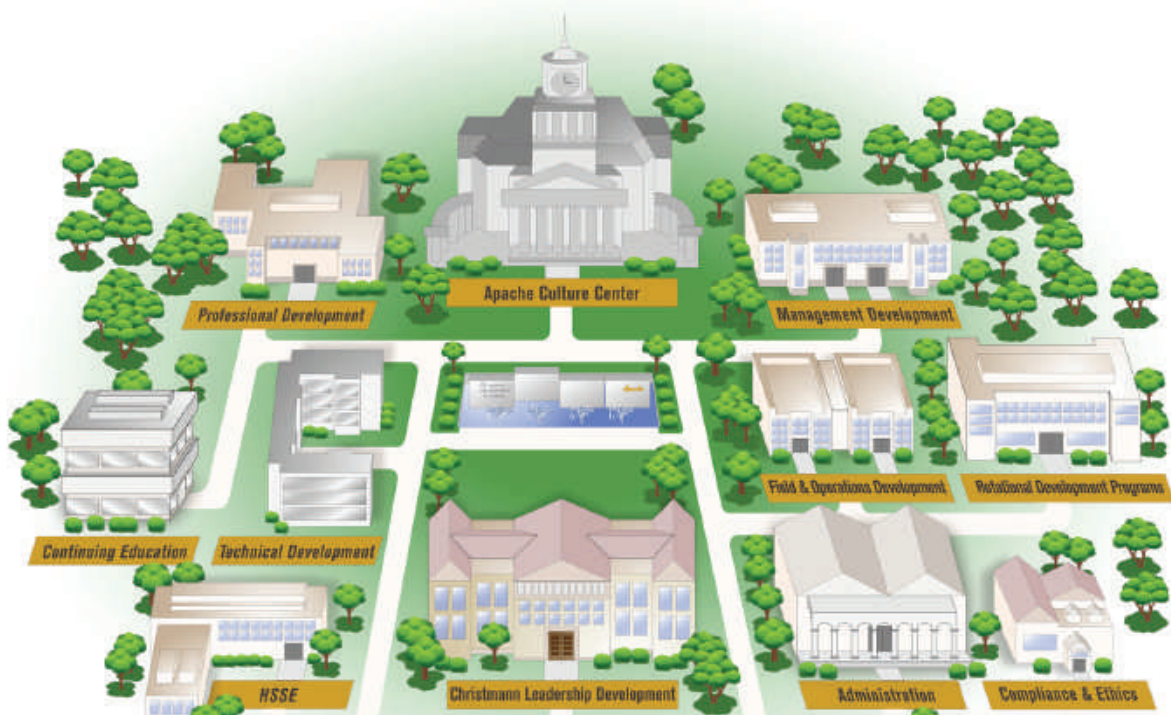
The Apache Academy offers an interactive learning environment for our employees.

Hiring from Within

At Apache, we believe it's important to promote people from inside the company. We also encourage employees to consider job changes that may not necessarily be promotions but rather lateral movements from one department to another, to broaden their development and gain new experiences. All job changes at Apache – whether promotions or lateral moves – are looked at positively by management. Our Human Resources team meets frequently throughout the year to talk about job openings across the company and consider whether someone internally is available to fill those positions. Through their profiles in 'A' Game Resources, employees are able to showcase their job skills, work experience, formal and continuing education, specialized training, language skills, project work, career goals, awards and recognition, professional memberships and geographic mobility. Managers can (and do) refer to 'A' Game profiles when making decisions about career development opportunities.

"We're trying to make our learning offerings fun and easy to access."

- Greta Uranich
Senior Human Resources Manager for North American Unconventional Resources, Corporate, and Learning & Development

Apache HR teams recently launched the Half Time Report showcasing 'A' Game Resources.

"The internship program gave me the skills I need to grow as a professional and make an impact. I was able to learn by doing and add value to Apache."

– **Sonali Patel,** Supply Chain Intern

"I am thankful for the opportunity to have been at Apache these past two summers. It has truly enhanced my confidence in being able to add value quickly and with sound engineering skills."

– **Darius Pitre,** Petroleum Engineering Intern

"I am of the 'learn by doing, doing by hands-on' generation. I wanted to learn from the wellhead in, and the skills I learned this summer have made me better personally and professionally. I am well on my way to a great career in the oil and gas industry."

– **John Hoffman,** Petroleum Engineering Field Intern

"I was impressed by the cutting-edge work that is being performed by people who are passionate every day about what they do. Apache really is a premier workplace."

– **Garvie Crane,** Geophysics Intern

"The most rewarding aspect of my internships has been the level of responsibility I was able to take on. I was able to work on a high-level modeling project for Egypt this summer. I felt that I was contributing significant value to my department and to Apache."

– **Michael Duke,** Petroleum Engineering Intern

"I appreciated the opportunity to have a hands-on learning experience and really connect with what I have learned so far in the classroom."

– **Kaleigh Brady,** Petroleum Engineering Field Intern

Internship and Development Rotational Programs

Our robust internship program helps us build a pipeline of exceptional talent for our company. This program offers internship opportunities in a variety of technical and professional disciplines that provide a broad introduction to the company and to the oil and gas industry. Interns work on real projects, both in the office and in the field, and interact directly with top leaders in the company.

Apache also invests in a variety of science, technology, engineering and mathematics (STEM) initiatives in partnership with community colleges and universities. We recruit top-tier talent from these colleges and universities for summer internships that feed directly into career development programs. Recent graduates receive structured training and development, providing valuable opportunities for advancement. These programs bring qualified applicants into the technical and professional arena and assist in promoting these employees into senior technical and managerial roles.

Apache's internship and development programs specialize in petroleum and drilling engineering, the geosciences and land disciplines. The engineering development programs include subspecialties such as production, completions, drilling and field operations. These programs involve extensive educational and on-the-job training with cross-functional and professional rotations.

We also use an internship model to promote skills building and development for existing employees. We have development rotational programs designed to help employees expand their networks across geographical regions and provide them with practical experience in a range of environments, as well as the chance to accomplish challenging projects and assignments that contribute to the company's success.

To date, we have graduated more than 150 individuals from our three-year development rotational program, and nearly 20 percent of those are currently in managerial and senior leadership roles.

Nearly 15 percent have had experience in international assignments. Graduates who stay on at Apache ultimately serve as mentors to interns and new hires – building and strengthening our teams.

The success of these programs is critical to Apache's future, as the ability to hire and retain top-tier diverse talent ensures that Apache maintains a quality pipeline of future leaders.

Promoting Networking and Fostering Camaraderie

Networking, professional development and, of course, camaraderie — these are just some of the many benefits extolled by members of our two employee resource groups: the Apache Young Professionals' Network (AYPN) and the Apache Women's Network (AWN).

Apache's AYPN volleyball team won the city of Houston's summer sand volleyball tournament in 2017.

AYPN got its start about a decade ago. Although open to all Apache employees, the majority of its 470 members are in their 20s or 30s. Co-chair Matthew White is one of them. The 26-year-old drilling engineer joined Apache as a college intern and was hired full-time upon graduation.

While attending a networking event after moving from the Midland region to Houston, White asked how he could get more involved. By the next week, he was named to AYPN's board. Having a prominent role in the group has "definitely helped my exposure internally in the company," he said. "And it's helped me to see other parts of Apache beyond my own area. It's a great resource to get to know others, especially in roles you may not otherwise be aware of."

Run by a board of eight employees, AYPN hosts several types of events, including learning sessions during lunch and intramural sports and social meet-ups after hours.

Lunch-and-learn sessions typically attract 60 to 80 people; more intimate executive luncheons offer the chance for about 30 members at a time to meet with senior C-suite leaders.

Having a group focused especially on millennials can be a strong selling point when competing for top talent from colleges and universities, "especially if it's a school that doesn't already have a lot of alumni working here," White added.

AWN, meanwhile, was formed in 2015 and now has about 270 members in Houston and another 90 members in our Midland office. It, too, is open to all Apache employees although the majority of members are female. Similar to AYPN, it focuses on learning programs and networking. In addition to lunch-and-learn sessions, AWN offers "master classes" with Apache subject matter experts, along with social and networking activities such as a book club, happy hour events, and a networking reception with Apache executives.

In partnership with our Human Resources department, the group also sponsors a successful mentorship program that pairs mentors with mentees for six-month periods (although some continue their relationships well beyond that). The program has grown from 24 participants in 2016 to 36 in 2017. New for 2018 is a group mentorship program.

Melissa Nelson, president of AWN's steering committee, said the group has helped "expand my network and meet other female Apaches, getting a chance to know more about what they do in their specific areas of expertise."

Essi Kwabi, a petrophysicist at Apache, especially appreciates the camaraderie that AWN provides in her typically male-dominated field. "I feel like part of my contribution to AWN through my role on the steering committee is sending a message that we women can be something different."

"In my position in Information Technology, I manage a large team at our Service Desk. I came into the mentorship program hoping for real-world examples of how I could become a better manager and build a stronger team. Right from the beginning, my mentor dug right in with me and gave concrete examples and suggestions that have really helped me build my skills. I approached this program looking to grow and learn. Not only did I gain a mentor out of it, but I also gained a friend."

– Rachel Roan
   IT Customer Support Supervisor and mentee

"I thoroughly enjoyed having Rachel as my mentee in the mentorship program. From day one, she had so much enthusiasm for learning and a strong desire to be a better leader at Apache. Her enthusiasm was contagious. Not only was she interested in building a stronger team, but she was interested in how she can develop them along the way. What she didn't know is that she was already well on her way to doing just that. Although both of our schedules at Apache were extremely busy, we found time to really connect. I'm glad that I was able to provide her with real-world examples that she could apply to her current-day challenges. Rachel is a valuable asset to our leadership team at Apache, and I have all the confidence that she will continue to do great things for our company."

– Emily McClung
   Vice President, Community Partnerships and Employee Engagement and mentor

"The mentoring program was invaluable to me, and my mentor, Patrick Cassidy, was instrumental in helping me to navigate through several of the issues I had. The program introduced me to many people I had not met personally before, and I am looking forward to a continued relationship with Patrick as well as others who were in the program. I benefited from the program so much that I wanted to lead it this year!"

 – Claire Dai-McGaughy
   Treasury Supervisor and mentee

"My experience was very positive, as Claire provided me with insights into company functions and introductions to co-workers that help me with my role in communicating Apache's performance and progress."

– Patrick Cassidy
   Investor Relations Director and mentor

Employee Engagement

Engaging employees in our corporate mission and values is critical to enhancing safety, morale, satisfaction and performance at Apache.

Our CEO hosts quarterly town hall meetings at our corporate headquarters and employee events at regional offices during visits throughout the year. These meetings provide employees with an opportunity to hear about the company's strategy and corporate updates as well as to ask questions of management.

We also host regular "tickerTALKS" for employees to hear directly from our vice president of Investor Relations. These meetings, which focus on financial markets, Apache's stock performance and the market performance of our industry peers, also give employees a chance to ask questions about our business.

Our annual employee survey lets us hear directly from our people about their experiences working at Apache. The survey, conducted through a third party called Energage, allows anonymous employee feedback on topics such as working conditions, career opportunities, compensation, managers and company direction. This feedback provides valuable data to Apache managers to inform decisions and opportunities that enhance the employee experience. Our management team takes the results of the annual survey seriously, and department heads identify two to three areas they want to focus on for continuous improvement. They establish goals,

develop plans for growth and work with their teams to make progress over time.

'A' Game Resources further enhances employee engagement through clear, collaborative and aligned goals; frequent, focused and future-oriented real-time feedback; continuous, accessible and targeted learning; achievement-oriented, fair, accurate and development-centered accountability; and year-round succession planning and development.

Volunteerism is another important employee engagement tool at Apache. To read more about our people and their commitment to our communities, see the Society section starting on p. 100.

Top Place to Work

IIn 2017 and 2018, we earned recognition as a top workplace in both the *Houston Chronicle* and the *San Antonio Express-News* based on surveys of our employees. (We earned the same recognition in Houston in 2016.)

Contractor Management and Engagement

Our comprehensive vendor selection and onboarding process takes into consideration environmental, health and safety requirements, which are Apache-identified criteria based on regulatory, company and industry best practices, as well as technical capabilities, product quality, service quality, financial qualifications and, of course, cost. We are committed to complying with applicable regulatory requirements in each country where we operate.

Apache's contracts for goods and services include requirements for supplier compliance with applicable local laws and regulations, which cover areas such as safety, health, human rights, the environment, process safety, drug and alcohol use, business ethics, conflicts of interest, the Foreign Corrupt Practices Act, the U.K. Bribery Act and other applicable anti-corruption laws. They also include requirements based on Apache's own standards and expectations for the management of and performance on key issues including safety, environment and ethics, for which Apache strives to exceed the standards set by applicable laws and regulations.

We assess and monitor contractors using leading third-party supply chain management tools that provide real-time evaluations of suppliers on a range of criteria, including performance and management of safety, insurance, anti-corruption and other legal and business issues. Contractors are monitored continuously to identify any changes in status that may affect their ability to work at one of our locations.

We actively engage with our contractors to promote effective, two-way communication. Every year, each of our U.S. regions facilitates town hall-style meetings with both contractors and employees. The primary focus of these meetings is to review key health and safety information as well as communicate new policies and procedures. We include contractors in extensive job and site-specific orientation and onboarding before they begin work on our sites. We also include them in our regular safety meetings and job site safety assessments. In total, Apache held 158 formal contractor engagements during 2017. Many of these were one-on-one sessions highlighting specific issues or areas of concern. In 2017, we held monthly safety meetings with core contractors in each of our Permian Region's 29 foreman areas.

In total, Apache held 158 formal contractor engagements during 2017. Many of these were one-on-one sessions highlighting specific issues or areas of concern.

In these meetings, district leadership communicated the importance of Apache's job safety analyses, hazard identifications, and practices that encourage employees and contractors to stop any job they feel is unsafe. Through these meetings, the region engaged with more than 1,000 contractors over the course of the year. The sessions provided an opportunity for contractors to connect with Apache employees at all levels of the regional organization, to better understand Apache's fundamental priority in every project: to arrive home safely each day.

Hurricane Harvey: Putting Us to the Test

If there were one word to describe Hurricane Harvey, it would be this: Relentless.

Over a period of five days in August 2017, the record-breaking storm pummeled Texas with more than 60 inches of rain and historic flooding, causing an estimated $125 billion in damage. In our headquarters city of Houston, freeways turned into waterways, thousands of people were driven from their flooded homes and thousands more were stranded when rising waters created islands across the city. Worst of all, the storm claimed the lives of more than 75 people.

Through it all, our people rose to the challenge, activating our Apache Business Continuity Plan to keep our operations running. Our employees also went above and beyond to make sure their fellow employees were accounted for and taken care of.

Our crisis management team met each day to keep information flowing about the status of our operations and office closures. They also established support committees to help meet the needs of employees and implemented a roll call to make contact with every Houston employee and determine their status.

Once the rain stopped and the extent of the damage became evident, our people took steps to help ease the blow. All of our 1,005 Houston employees were affected by the storm to some degree, with more than 140 experiencing direct property damage or related impacts. We supported the American Red Cross to help our communities at large, activated the Apache Employee Relief Fund (AERF) – an emergency funding program supported by employee donations to help fellow employees through a crisis – and created two additional loan and grant programs, funded by the company, to help those affected. Apache's CEO, John Christmann, personally reached out to each of the families most impacted by the storm to ensure those employees were aware of the relief programs at the company. Support committees of employees helped arrange temporary housing, transportation and child care and aided those whose homes were flooded.

Managing in a Crisis

Dan Lauer, manager, Crisis and Emergency Response, and Jamey Nolan, senior staff emergency response coordinator, are paid to worry. For the past five years, these two Apache employees have been refining Apache's Crisis Management Plan, which is designed to ensure the company is prepared for crises ranging from terrorism to operational incidents to natural disasters.

Annual drills are just one of the many ways Apache trains each location for an emergency. The drill for 2017 was planned to test our hurricane preparedness. Ironically, the drill was originally scheduled for August 31 – the day the sun finally came out after five days of Harvey's wrath.

But Hurricane Harvey was not a drill, and it proved to be a true test of Apache's commitment to preparedness.

The crisis management team had never been fully activated for an event of Harvey's size and scale. But when the storm struck, the team of approximately 40 members jumped into action, using every available form of communication to stay in touch with employees and provide updates.

The post-demolition home of Michelle Taylor, landman, North America Land Group, and Ryan Taylor, senior reservoir engineer, Resource Development Management. "The most incredible part of our story was the endless support and assistance we received from our Apache family," Michelle Taylor said. "We could not have accomplished what we did without the help from Apache employees. Apaches always take care of their fellow Apache family, and we are eternally grateful to work with such selfless people. Apaches coming together like they did speaks volumes about who we are as a company."

Hurricane Harvey by the Numbers

60+
inches of rain

$125 billion
in damage

Nearly $1 million
in Apache grants and aid to employees

The flooded home of Patrick Cassidy, director, Investor Relations. "Throughout this ordeal, my co-workers were unreasonably accommodating as I've had to meet with adjusters, work crews, construction contractors, car brokers and others, often at a moment's notice," he said. "CEO John Christmann called to make sure I was aware of the relief programs Apache provided, and I know he called many others before me and had a long list to get through after me."

"Like everybody, I was primarily concerned with the safety of our people," said Grady Ables, senior region vice president, North Sea, Egypt, Houston Operations and HSSE. "I knew we had solid emergency response plans in place. But until the moment of trial comes, you never know just how well they'll work and how people will respond."

The Apache Incident Management (AIM) Center

The AIM Center is our company's eyes and ears and a key element of our Crisis Management Plan. AIM staff had their sights on Harvey from the moment it transformed from a tropical storm in the Gulf of Mexico to a dangerous Category 4 hurricane heading toward the Texas Gulf Coast.

During the year, the AIM Center's staff rotate duties on a daily 24/7 schedule to monitor safety and security conditions across our global operations. "They're like our internal communications and notifications hub," said Nolan.

During Harvey, a small team worked around the clock for the better part of a week, trying to account for Houston employees and helping individuals get the assistance they needed. In support of the crisis team's effort to connect with our employees, the AIM Center sent emergency alerts and impact surveys to all Houston-based employees using various modes of communication. Many employees were hard to reach, especially given limited electricity in the area.

Helping Each Other

Some of our people jumped into action when they learned that their colleagues were in trouble. Take, for example, Randy "R.P." Johnson, Corporate Security manager and a former police officer, who volunteered to assist with his two-person kayak and an SUV with a lift kit.

Stacey Paris, an administrative executive assistant in Human Resources, was one of the employees Johnson helped. Paris's street looked like a lake, her house was flooded and there was no way for her to drive her car. She tried calling 911 and the Coast Guard but couldn't get through on any emergency lines. A neighborhood rescue operation already in progress wouldn't allow her to bring her dogs – and she refused to leave without them.

Johnson was already in her neighborhood when he learned that she was stranded, and he paddled his way up to her garage in an orange kayak.

"There are no words to express how happy I was to see him," Paris said. "Somehow he managed to get me, my three dogs and a bag of dog food onto the kayak. He paddled us back to his Jeep which was about five streets away, and the journey took us about 45 minutes."

Offering Financial Assistance

Overall, Apache contributed nearly $1 million in grants and aid to employees needing emergency assistance as a result of the hurricane.

The AERF was activated during the storm to help employees who were affected. Nearly 300 employees and members of the Board of Directors donated over $90,000 to help impacted employees.

We set up the Apache Incentive Compensation Loan Program to provide eligible employees with loans in the amount of 50 percent of their annual incentive compensation target for calendar year 2017, ultimately distributing more than $375,000. We also created the Apache Disaster Relief Program as a supplement to the AERF for those who lived in areas declared as disasters by the Federal Emergency Management Agency. We made $500,000 in grants available to qualifying employees.

And, to help with humanitarian efforts in the beleaguered Houston community, Apache donated $250,000 to the American Red Cross.

Employees weren't the only ones who contributed to our people. G. Wade Caldwell and John Beckham don't work for Apache. They're members of a family who owns more than 18,000 acres where Apache has leased exploration, development and production rights as part of our Alpine High play. Caldwell and Beckham watched with worry as the hurricane disaster unfolded in Houston and decided they wanted to help. They gathered other members of their family and agreed to contribute $150,000 to the AERF for Apache employees.

"We just appreciate what [Apache employees] have done for us, and we were trying to return the favor in a small way," Caldwell said.

Beyond just the dollars and financial support, Apache employees donated hours of their time to help their colleagues whose homes were seriously damaged by the storm.

Society

At Apache, we actively engage with stakeholders in our communities to understand their concerns and needs, maximize our positive contributions and minimize any potential negative impacts of our business. Our philanthropic approach empowers our employees to decide where we will make financial and volunteer contributions.

$880,000

in bridge funding distributed to employees through the
Apache Employee Relief Fund

97%

of Apache employees are local nationals companywide

Community Engagement

We are committed to being a good neighbor, which means we take the time to listen. Apache operates in numerous communities around the world, each with its own characteristics and needs. We focus on developing positive relationships by treating those who live and work in these communities with dignity and respect – and by listening to, and addressing, their concerns.

We follow the same high standards of community engagement and responsiveness everywhere we operate, but our approach is tailored to the unique circumstances of each area. For example, since beginning exploration activities in southern Reeves County, Texas, home of the Alpine High play, we have undertaken extensive engagement and research efforts to protect the unique features of the area and to understand concerns among landowners and other community members, such as the impacts of bright lights on their famously dark skies. (Read more about our work and our engagement with the McDonald Observatory in Alpine High on p. 47.)

We develop relationships within our communities through a broad and inclusive process that spans from project initiation to completion. We maintain regular and open communication with local officials and community leaders to promote friendly and proactive dialogue, and we encourage community members to reach out if they have any issues to discuss. Building these partnerships provides a foundation for positive socioeconomic outcomes for both our company and our communities.

Understanding and Addressing Community Concerns

We obtain regular formal and informal feedback from local stakeholders to understand and address community concerns; our goal is to mitigate any potential impacts of our operations before they become problems. We then take that input into consideration in our decision-making processes, both in the planning phases and after we begin operations.

In each of our operating regions, Apache employs dedicated community and landowner engagement teams that maintain proactive, responsive and ongoing communication channels with local residents. Our landmen are often the first employees to develop positive working relationships with surface and mineral owners in a new operating area. They meet with mineral owners to negotiate leases and rights of use and work with surface owners to discuss and mitigate their concerns and to assure them that Apache is available for assistance should any problems arise.

Our Public Affairs and Government Affairs teams conduct regular stakeholder outreach and engagement through meetings, informal conversations and ongoing dialogue. And in our most recent materiality analysis, conducted for our 2017 sustainability report, we interviewed a number of external stakeholders, including representatives of one of the school districts where our Alpine High play is located and from the McDonald Observatory.

In addition, we regularly meet with local emergency responders to make sure they know to call our 24-hour hotline number immediately if they suspect there's a problem at one of our locations. In May 2018, for example, Apache met with the Reeves County Sheriff's Office, the Pecos Police Department and the Pecos and Monahans volunteer fire departments. We gave them a tour of our central control room – the Fusion Center in San Antonio – and discussed emergency preparedness and mutual emergency response capabilities.

While we take great pride in the work of our community outreach professionals, we expect everyone at Apache to be a community ambassador. Employees are trained to be open and responsive to community members' concerns and to share honest, factual answers about our operations and potential impacts.

Minimizing Community Impacts

While most of the high-activity elements of our operations are short-lived, we know that they can create some concentrated, though temporary, inconveniences. Our guiding principle is always to minimize these impacts on local residents as much

as possible from the outset. On issues ranging from the size of our well pads to our trucking routes, we thoughtfully work out logistics to avoid or minimize issues such as traffic congestion, road safety, dust, noise and odors.

During the pad siting process, we take multiple factors into consideration, including accessibility and road conditions. We often drive the roads in the region to get a ground-level view of the situation and preemptively address potential concerns, such as vulnerable roads, residential density and other factors.

Once we commit to a pad location, we develop approved routes for heavy trucking to reduce the potential for widespread disturbance and traffic congestion. We then require all heavy trucks servicing the location to use the approved routes, which minimizes impacts on other road users. We also implement dust suppression measures to reduce impacts on nearby residents and for the safety of vehicles traveling the road.

We contribute to repairing roads as needed. In 2018, for example, Apache is voluntarily contributing $3.3 million to pay for repairs on nearly 28 miles of roadway in Reeves County, near our Alpine High play.

We also work to reduce our impacts on local roads and communities by fostering safe driving practices among our employees and contractors (see p. 79). We use vehicle

> **In 2018, Apache is voluntarily contributing $3.3 million to pay for repairs on nearly 28 miles of roadway in Reeves County, near our Alpine High play.**

monitoring devices to help ensure employees operate vehicles safely on public roadways.

We also reduce truck traffic and impacts on roads by using pipelines instead of vehicles to transport water whenever possible. These pipelines eliminate approximately 1,000 truck trips per day.

Noise, light and odor are other common community concerns. We install sound barriers as needed and use specialized lighting to reduce impacts on nearby residents. Odor from our operations can occur when a formation contains hydrogen sulfide. If hydrogen sulfide emissions cannot be addressed through the well siting process, we install emission controls to mitigate odors and emissions during the production stage.

Addressing Community Complaints

While we work hard to address concerns before residents feel the need to complain, we also want to make it easy for community members to share concerns with us and for us to be able to address and resolve those concerns. Moreover, we want to make sure we learn from every complaint and try to avoid any related issues across our operations.

As part of an effort to be responsive to community needs, we operate a formal grievance hotline, the Apache Good Neighbor Line. The call center is staffed 24 hours a day by employees in Houston, where they monitor security cameras on Apache

properties worldwide and catalog any concerns that are flagged. (Apache is one of only a few independent oil and gas companies with a 24-hour call center operated by employees rather than a third party.)

We also established a tracking and ticketing system and a matrix for cataloging types of concerns. Each grievance is consolidated and maintained in a central system, and issues are routed to the appropriate region contact for further action. All inquiries receive a thorough, individualized investigation to determine the underlying details and develop appropriate resolutions. Company representatives work to address each situation and provide a timely response to the inquiry. Most issues are resolved within 72 hours.

In 2017, we received fewer than 20 complaints through the hotline and reports from the regions. These complaints covered issues such as excessive noise and light, vehicle speed and debris on properties. All of the complaints were addressed.

The number of formal complaints might increase as we continue to promote the hotline number and encourage people to contact us and report problems. We look forward to the opportunity to better understand and address community concerns.

We also formally track grievances brought to the attention of our people in the field, including project managers at job sites and the Apache landmen, whose primary job is engaging with the surface and mineral owners on and around our operations.

The Apache Good Neighbor Line

We have grievance mechanisms for public feedback, concerns and comments in all of our operating regions, including in-person at our offices and via email, phone and social media. Community grievances can also be made to the company via the toll-free Apache Good Neighbor Line: 1-866-705-2400.

SOCIETY

Human Rights

Respect for human rights is at the core of Apache's values and operations. We worked together with our long-term shareholders in a multi-year process to develop the foundation of the company's Human Rights Principles, which our Board of Directors formally adopted in 2013.

The principles are consistent with the framework laid out by John Ruggie, the United Nations' special representative on business and human rights. Aimed at the honest, fair and dignified treatment of all human beings for whom our operations create opportunities, our Human Rights Principles formalize practices already in place throughout our regions. In accordance with the principles, the company's monitoring results are thoroughly assessed and reported annually to the Corporate Governance and Nominating Committee of our Board.

Three of Apache Corporation's subsidiaries based in the United Kingdom – Apache North Sea Limited, Apache Beryl I Limited and Apache North Sea Production Limited – published a statement pursuant to the U.K. Modern Slavery Act. This law requires certain companies doing business in the United Kingdom to post a statement regarding the steps the company has taken to ensure, as much as reasonably possible, that modern slavery or human trafficking is not taking place within the organization or its supply chain.

We're partnering with Truckers Against Trafficking to build awareness around human and sex trafficking activities.

Respecting Indigenous People

An integral part of Apache's business is building enduring relationships with the communities in which we operate. This commitment includes recognition of and respect for indigenous people who live and work in these communities and have a strong connection to the land. At shareholders' request, we adopted a statement concerning indigenous peoples as part of our Human Rights Principles.

Apache has endeavored to incorporate indigenous perspectives into project planning, design and execution, and operational planning. In Alpine High, for example, we assessed the area for potential Native American cultural sites and have a program in place to address any previously unidentified cultural sites that may be uncovered in the course of operations (read more about Alpine High on p. 40). During the exploration and development phase of a project, Apache promotes open communications by conducting community meetings and working directly with indigenous groups and local nongovernmental organizations.

Whether through education, training, employment or benefit agreements, Apache also strives to ensure that our projects have direct and long-lasting benefits for national peoples and their local communities.

As our global operations have evolved over the years, today we have few remaining locations with indigenous populations.

Addressing Human Trafficking

To do our part to fight human trafficking, Apache proactively informs employees and major contractors and suppliers of the resources available that describe trafficking behaviors to watch for and contact numbers to use to report these behaviors, if observed. For example, the advocacy organization Truckers Against Trafficking provides an educational video, downloadable cards and phone numbers to help truck drivers in North America combat human trafficking.

We are a member of the Oil and Gas Trafficking Advocacy Group, which is working to prevent sex trafficking at home and abroad. The group meets regularly to discuss prevention and awareness topics and to build knowledge on the many facets of human trafficking.

In 2018, Apache partnered with Truckers Against Trafficking to support a coalition-building effort in the Permian Basin among operators, government officials and law enforcement to increase awareness and cross-train on strategies that can help mitigate human and sex trafficking activities. We also plan to host the Freedom Drivers Project at all Texas office locations to educate employees on the details of human trafficking and ways we can all be vigilant in efforts to help end human trafficking.

APACHE CASE STUDY

Creating Educational Opportunities for Girls in Egypt

In many rural villages in Egypt, only boys are expected to go to school. Apache has been helping to change that through our support of a nonprofit organization whose mission is increasing educational opportunities for disadvantaged children – especially girls.

Apache founder Raymond Plank launched Springboard – Educating the Future, in 2004, as part of his larger commitment to educating underserved populations. Today, Apache remains one of the primary funding sources of the organization as it works to advance education for girls. Springboard also works with governmental and nongovernmental organizations, as well as individuals and other corporations, in support of the Egyptian government's Girls' Education Initiative.

Through Springboard, Apache has supported the construction of 201 mostly one-room girls' schools in Egypt, which together have taught more than 10,000 girls how to read and write. To date, about 4,300 students have graduated, with some of those going on to secondary schools to pursue advanced degrees. (Apache has also supported the construction of nine coed schools, which serve about 350 students in areas near our drilling and production in the Western Desert of Egypt.)

In addition to contributing capital for school construction, Apache supports annual school maintenance – 63 of the

schools for girls were renovated in 2017 – and we recently hired a contractor to oversee ongoing school maintenance activities. We also provide supplies – including 70 new desks and chairs in 2017 – and financial aid awards for graduates to help them get accepted into universities and secure scholarships. Several Apache executives sit on the board of directors for Springboard, whose budget averages about $140,000 each year.

Our regional office in Egypt also has provided full scholarships to support Egyptian students at the American University in Cairo who are majoring in petroleum engineering. Apache employees and their families also frequently support the schools, donating supplies such as stationery, backpacks and clothing. And in 2017, our sixth annual Fun Run/Walk/Cycle event in Egypt raised enough money to purchase 19 laptops for Springboard girls' schools. Nearly 150 Apache employees, spouses and families participated in the event, which covered a cumulative distance of 795 kilometers – the highest in five years.

Girls' Schools by the Numbers

201
schools built

10,000+
girls educated

Also in Egypt, and as part of our "give where we live" approach to philanthropy, Apache supports more than 60 orphanages yearly, supplying blankets, clothes and medical aid and paying the tuition and fees for about 350 children enrolled in schools. In 2017, Apache organized a special "back-to-school" event that was attended by about 600 children.

Engaging with the Surinamese Community

In 2012, Apache signed our first production-sharing contract with the state oil company of Suriname. While our physical presence there remains small, we seek to make a meaningful impact on the local labor pool and on a variety of social causes. Between 2013 and 2018, Apache has invested approximately $1 million in Suriname on corporate social responsibility (CSR) programs in areas such as education, health and welfare, and local employment capacity building.

Employment capacity has been an especially important area of focus. For example, we have been a key funder of a baseline survey to help understand the present-day labor capacity of the industrial service sector. The ultimate goal is to fill jobs with suitable local talent to support Apache's future production in Suriname. Hiring locally is good for the Surinamese economy, but it's also good for Apache's bottom line. "We are a commercial organization, and having the right mix of local talent is one of the keys to a successful development," said Ian Roberts, our country manager for Suriname.

Once the baseline survey and gap analysis are completed, we'll have a better understanding of what the country's labor force is today. From there, we could develop training programs to support specific functions where gaps exist. Over the last few years, we have also focused on community engagement, hosting meetings with local residents to learn more about their needs and to talk about our timeline for oil exploration and discovery.

Our welfare and education projects in Suriname have provided funds over several years to support educational and residential facilities for disadvantaged and disabled young people. The Huize Tyltyl care facility, which caters to young people with disabilities, is one of our flagship projects. Over the years, we have funded the installation of flood prevention equipment on premises, as well as follow-on renovation projects to bring the building up to code and to accommodate wheelchair-bound residents. In 2017, we upgraded the facility's library, helped build a physical therapy room and installed a covered patio for residents' use.

"It's been clear to us with every project we do how much of an impact we have on the children who attend this facility," Roberts said. "We really have improved the quality of life of the residents."

Aishel Bradley is Apache's external affairs representative and a native of Suriname who finds her work rewarding both professionally and personally. "During the closing ceremony of

> "We are a commercial organization, and having the right mix of local talent is one of the keys to a successful development."
>
> – Ian Roberts
> Country Manager for Suriname

the renovation projects of Huize Tyltyl, the headmistress told me that one of the girls came up to her and said, 'Our home is becoming so beautiful,'" Bradley said. "It warmed my heart. That is what CSR is all about – to bring a smile on the faces of these children and have a positive impact on their lives."

Apache will continue our engagement with local communities to understand and help address evolving needs.

Local Economic Impacts

Apache's operations bring benefits to communities in the form of local hiring and spending. We focus on hiring qualified individuals who reside in the areas where we operate, including the United States, Egypt, the United Kingdom and Suriname.

In Egypt, for example, we directly employ 213 Egyptian nationals. Through our joint ventures with the national oil company, the Egyptian General Petroleum Company, an additional 3,700 Egyptian nationals are employed, and nearly 3,400 more work as contractors for Apache or our joint venture partners.

We offer competitive wages and benefits and actively recruit qualified candidates with demonstrated skills and experience specific to the particular requirements for each job. We regularly participate in region-specific salary surveys to ensure we provide competitive wages to attract and retain top talent. In all locations, we make compensation enhancements based upon salary survey results when needed.

Local Spending

Like hiring locally, sourcing supplies and services locally makes economic sense and engenders goodwill in the communities in which we operate. Apache makes it a point to develop strong relationships with local suppliers and contractors.

Many products and services for the oil and gas industry are commonly provided by large multinational suppliers – including products such as offshore rigs, turbines, wellhead equipment and steel pipe. Apache seeks to purchase what we can from local businesses. Welding services, water hauling, roustabout crews, construction crews and civil project installation crews are a few of the categories in which we procure goods and services from local suppliers. Having supply chain personnel embedded in each region furthers our efforts to involve the local community and suppliers in our business. Our operating regions spend, on average, nearly 30 percent of their budgets with suppliers and vendors who are geographically local.

We also contribute to local economies through a variety of taxes and fees. In 2017, Apache paid about $34 million in local property taxes assessed upon reserves in place. Texas is one of only two states that allows local governments to tax oil and gas reserves. In some cases those tax payments make up a very large percentage of the total revenue collected by school districts, cities, counties, hospital districts, community colleges and other such entities.

Local Hiring*

COUNTRY	EMPLOYEES	NATIONAL EMPLOYEES IN OTHER LOCATIONS	EXPATRIATE EMPLOYEES	PERCENT OF NATIONAL EMPLOYEES
Egypt	299	0	86	71.24%
United Kingdom	559	6	7	98.75%
United States	2,498	88	1	99.96%

Local Spending*

REGION	TOTAL SPEND	LOCAL SPEND	PERCENT LOCAL SPEND
Canada*	$262,698,004	$122,149,853	46%
Corporate	$198,682,526	$58,996,469	30%
Egypt	$496,833,725	$235,539,253	47%
Midcontinent/Gulf Coast	$186,742,562	$40,272,448	22%
Gulf of Mexico	$41,319,761	$5,499,946	13%
North Sea	$777,861,953	$166,518,901	21%
Permian**	$2,106,509,914	$460,912,729	22%
Total	$4,070,648,445	$1,089,889,599	27%

* As of December 31, 2017, with the exception of Canada, which is through the third quarter of 2017.
** Includes North American Unconventional Resources.

Philanthropy and Volunteering

When it comes to community philanthropy, our philosophy is simple: We "give where we live," targeting the specific needs of the areas where we operate. Our corporate outreach program is employee-driven, empowering our people to decide where to volunteer and giving them a say in how corporate dollars are spent within local communities.

Apache employees have a long-standing commitment to Habitat for Humanity, which builds affordable housing for people in need. Each year, Apache volunteers gather in Houston to build a Habitat home together. During 2017, nearly 100 Apache volunteers built their ninth sponsored home for Habitat.

Apache employees in each region who have ideas for community service projects make proposals to cross-functional peer committees. These proposals focus heavily on health and wellness, education and environmental improvements.

In 2018, we reconstituted our Corporate Outreach Council, which provides governance and oversight for our community investments. We also formalized our philanthropic policies and principles, to enable greater consistency in how we fund, track and measure activities across the organization.

In addition to employee volunteering, we support a variety of causes and nonprofit organizations through direct corporate giving and employee matching gifts. Among the many charities supported by Apache employees are Special Olympics, the American Red Cross, the Houston Food Bank, the Muscular Dystrophy Association, Project C.U.R.E, the Lupus Foundation, Fund for Teachers, the Children's Cancer Foundation in Egypt and Maggie's Cancer Caring Centres of Aberdeen (Scotland).

Recent improvements to our matching gift program make it easier for employees to donate money to the charities of their choice. Every dollar contributed via an updated website goes directly to the nonprofit. Apache makes a dollar-for-dollar match, up to $10,000 per employee with a total corporate cap on matching gifts of $750,000 per year.

Specific examples of our philanthropic and volunteer efforts are described in this section, grouped into the key topic areas of education, health and social, environment and the arts.

Education

Apache promotes educational opportunities for teachers and students across the globe.

Fund for Teachers (FFT), the brainchild of Apache founder Raymond Plank and now a thriving, national nonprofit, was founded in 2001. The organization www.fundforteachers.org impacts future generations by enriching the personal and professional growth of teachers.

Lifetime Achievement Award

The Muscular Dystrophy Association (MDA) recently honored Apache with a lifetime achievement award for raising $500,000 over 10 years for the organization. Apache teams participate in an annual chili cook-off and a bowl-a-thon along with team fundraisers to help fund MDA camp scholarships.

2017 Community Investments

Arts 2%

Education[*] 32%

Environment 24%

Health & Social 15%

Matching Contributions[**] 27%
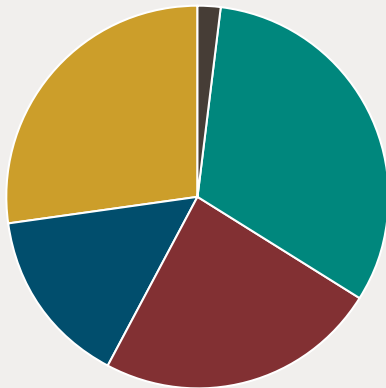
*Combined Education and In-kind contributions. In-kind contributions are primarily for the Fund for Teachers program and Springboard.

**Matching contributions include the employee matching gift and Apache's match.

Since its inception, FFT has provided nearly $28 million in grants to 7,500 teachers working in schools across the United States. The fellowships take teachers out of the classroom to self-guided cultural expeditions, service-learning projects and national conferences, providing them with learning opportunities and a chance to reflect on how their experiences could shape future curricula.

These teachers don't sit back; they make change happen. They dream up ways to make learning more connected, more real and more fun. They dissolve the walls of their classrooms and bring student learning into the community. In an FFT classroom, learning is necessary and urgent. It has purpose.

FFT is the only organization in the country that invites teachers in any school, no matter the content or grade level, to think big, be creative and bring joy, challenge and passion to learning. Apache proudly supports FFT, its investment in outstanding teachers, and its inspiring impact on students and their schools.

In response to local needs, Apache also makes frequent donations directly to schools and school districts within our

areas of operation. For example, we are supporting several projects in the Balmorhea Independent School District in Texas near our Alpine High operations, including a $150,000 donation for new computers and upgrades to computer labs. The donation also allowed the district to upgrade campus security with new cameras, card-reader access doors and a fence to create a much safer environment for students and staff. (Read more on p. 51.)

In addition, we support higher education, such as our $2 million pledge over three years to the Colorado School of Mines, one of the universities from which we actively recruit graduating students. Half of that amount went toward upgrading the Petroleum Engineering Department's drilling laboratory. The grant was also used to purchase a micro drilling rig that the school uses to research and test potential improvements to current drilling practices. The remaining funds are designated for the creation of a new graduate fellows program and to support several academic departments.

"Apache has gone above and beyond in doing things to help our school district. [In 2016 and 2017] they paid for charter buses for our football team and community members to travel to Arlington, Texas, for our state championship football games. They provided $150,000 [in 2017] for us to buy computers for our computer labs, which enabled us to move the existing computers into the regular classrooms. This money also enabled us to buy a new server that serves the whole school. This money also allowed us to put in place security measures that will help us keep our students safe. Lastly, they have appointed an employee to serve and to help us establish an Education Foundation Board."

- Manuel Espino
Former Superintendent, Balmorhea Independent School District

Fund for Teachers: A Grand Education

Not long after the final end-of-school bell rang, elementary teacher Cassie Pierce packed her car and left her home state of Oklahoma in her rearview mirror. Thanks to a fellowship from Fund for Teachers, she would spend the next three weeks making her way through 11 states, six national parks and one national monument so she could show her students that our national parks are something worth celebrating.

"As the sole social studies and science teacher for all fourth grade students at Deer Creek Prairie Vale School, it was vital for me to pursue this experience in order to create a more meaningful and personal curriculum," said Pierce. "Seeing the beauty of our country's protected sites gave me a far greater appreciation of them, as well as a desire to teach conservation to my students and also make them aware of opportunities available to them in our own country."

Pierce says her students learn differently now because they no longer have a teacher relying on a textbook.

"When we study fossils, I recount my Grand Canyon fossil walk with Ranger Mike. When we discuss the impact of mules in the Southwest, I relate my harrowing experience of riding one at the North Rim. As we study early settlers in the West, I show them videos of my shopping experience in an early pioneer general store at Grand Teton National Park," said Pierce, who traveled during the summer of 2016.

The beginning of the next school year coincided with the National Park Service's centennial and the White House's "Every Kid in a Park" initiative. This nexus ended up characterizing Pierce's entire school year – and her teaching for the years to come. Armed with firsthand knowledge from the fellowship, she is now able to offer an enriched concept of U.S. geography, which is difficult for many students to fully understand.

In the academic year after her travels, Pierce had her students select a national park to research and create presentations about their learning. Then they shared their new knowledge with younger grades using digital media.

"OK, so, I think the national parks presentation was fun, but I was also kind of nervous to teach the other kids, because it isn't every day you present and teach a bunch of kindergartners," said one of Pierce's fourth graders. "You want them to remember you as a really smart kid."

Pierce's students extended the learning by partnering with a kindergartner to read them books about national parks.

"Now when someone says, 'I went to a national park,' the kids will know what that is, and it feels good to know that I'm the one who taught them that," said another student.

Students' research left them wanting more information than they could find in textbooks or on the internet, so they lobbied parents for family vacations to national parks the following summer.

"I have been so excited to notice a ripple effect from my fellowship," said Pierce. "Children who visit our parks grow up to be adults who then take their families, and national parks continue to be supported and loved for generations to come."

Health and Social

Around the globe, Apache donates funds to a wide variety of organizations and programs aimed at improving individual and public health and social conditions.

Over the years, hundreds of Apache employees have participated in two separate 150-mile bike rides in Texas: the Houston MS150 and the Cactus & Crude Ride in Midland, for which Apache is the lead sponsor. Both rides raise funds for the Multiple Sclerosis (MS) Society, which is dedicated to finding a cure for this debilitating disease. Through fundraising efforts, Apache employees have raised more than $1.2 million to combat MS.

Apache has also been the title sponsor of the Mayor's Wellness Weekend in Houston, which features the Tour de Houston Bike Ride through the city, and the Bayou City Classic Fun Run around the downtown area. The purpose of Wellness Weekend is to promote exercise and healthy outdoor activity. Both the ride and the run raise money for the Houston Parks and Recreation Department for restoration and tree planting projects. Donations to date from these two events total approximately $900,000.

Apache has also supported the University of Texas MD Anderson Cancer Center through a $2.5 million grant over five years. This included support of the hospital's Moon Shots program, which is designed to accelerate the conversion of scientific discoveries into clinical advances and significantly reduce cancer mortality rates. It has improved surgical outcomes for ovarian cancer, expanded the potential impact of new drugs and developed a novel family outreach program to head off cancers fueled by known genetic risk mutations.

Also in Houston, Apache employees have raised and donated enough money to have a room named after the company in the Houston Ronald McDonald House, and once a month employees provide and serve dinner to the children and families in residence at the House.

First Responder Donations and Disaster Relief

We all rely on first responders in our communities. We believe it's important to give back to the emergency crews who work so hard to protect us. Every year, we make donations to dozens of volunteer fire departments in our U.S. areas of operation, helping to fund a variety of equipment and supply needs.

Apache also has a long legacy of providing aid in response to disasters. In Texas since 2011, we have provided both grants and matching donations to the Missions on Wheels organization, which maintains mobile emergency support equipment that can respond quickly to disasters in the region.

Helping Our Colleagues

The Apache Employee Relief Fund (AERF) provides bridge funding to help employees recover from catastrophic events such as hurricanes, tornadoes, flooding, fires and medical emergencies. The goal is to ensure that employees and their families quickly receive assistance following devastation or loss. Funded through employee donations, the AERF has distributed nearly $880,000 to employees from its inception to the end of 2017. Learn more in the Hurricane Harvey story on p. 98.

Honoring Veterans

During the month of May, Apache employees honored veterans by holding collection drives for snacks, toiletries and other goods to send to service members deployed overseas. The program began in 2013 in celebration of Military Appreciation Month. In the years since, Apache has collected items for

Mike Yates, geophysical advisor, E&P Technology, has raised nearly $180,000 riding for MS over 19 years. "If you know me, you'll know that my persistence for this cause has always been relentless," he said. "It has made me Apache's top fundraiser for a number of years, and has earned me a spot in the National Multiple Sclerosis Society Hall of Fame for lifetime fundraising over $100,000."
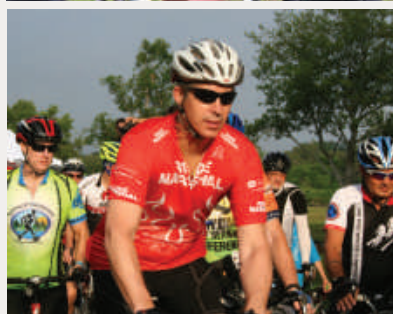
Dennis Yanchak, senior geoscience advisor, has been riding in the Houston MS150 almost every year since 1998. "This past year has been difficult for me and my family, having lost our house due to Hurricane Harvey flooding . . . luckily my bike was saved!" he said. "So now I am going to put it to good use helping those with MS. I've upped my dedication and fundraising since joining Team Apache, and have been in Club 300 (the MS150's top fundraisers) the past few years.

SOCIETY

Apache donated $50,000 to the Elk City Fire Department to purchase a mobile command center after a tornado ripped through the Oklahoma community.

nearly 10,000 care packages for troops stationed all over the world. We collect cash donations to help cover the postage expenses, and Apache matches each gift. In the Permian Region, employees donated $25 to "adopt" a soldier, purchasing care packages with items such as snacks and toiletries. Each employee included a note in their package before it got sent off to the deployed soldier.

Also during Military Appreciation Month, several of our regions in Texas honored employees who have served in the military as well as those employees with military loved ones. Our company shows our appreciation to these individuals with a commemorative coin. We have recognized more than 200 veterans since we began the program in 2014.

Environment

Apache's environmental initiatives include our award-winning Tree Grant Program and the Ucross Ranch in Wyoming.

Apache's Tree Grant Program

For more than a decade, we have been donating trees to a wide variety of nonprofit and governmental organizations in the United States, including cities, counties, schools, parks, universities, youth associations, wildlife refuges and community groups.

Launched in 2005, the Apache Tree Grant Program has donated more than 4 million trees to nonprofits in 17 states.

We kicked off the 2017–2018 planting season by awarding more than 288,000 trees to 48 nonprofits. In large part due to our tree program, Apache was recognized as the 2016 Conservationist of the Year in the Louisiana Governor's State Conservation Achievement Awards. This was in recognition of our consistent support of bottomland hardwood habitat restoration in that state.

Other Apache-sponsored projects have included the planting of more than 600,000 pine tree seedlings to restore and reforest the 3,700-acre Bastrop State Park in Bastrop, Texas, and the planting of 68,000 saplings on 352 acres of Santa Fe National Forest in New Mexico. Both protected areas had been previously decimated by wildfires. We have integrated our tree planting program into our newest region, Alpine High, where we have awarded several grants to local communities in the area.

Our tree grant program also supports tree planting in our corporate headquarters city of Houston, which has lost millions of trees due to drought and hurricane damage. For example, Apache sponsors the popular Tour de Houston Bike Ride and Bayou City Classic Fun Run, which both benefit the nonprofit Houston Parks and Recreation Department and its efforts to reforest the city.

And through our Trees for Tots program, employees plant young redbud trees in Houston's Memorial Park to celebrate the birth

or adoption of a child to an Apache employee's family. More than 130 trees have been planted since we began the initiative in 2013. Although most trees have been planted in Memorial Park, some have been taken home to be planted in an employee's yard. In 2018, the Trees for Tots program was expanded to include the employees in our Midland office.

Ucross Ranch

Established by Apache founder Raymond Plank in 1981, the Ucross Ranch in Wyoming is a 20,000-acre working cattle ranch where artists, writers and composers are provided free residency and space to work. Part of the attraction for these visitors, however, is the birds that fill the landscape, such as bald eagles, great blue herons, bobolinks, owls, greater sage grouse and Swainson's hawks. The ranch is designated an Important Bird Area by the National Audubon Society.

In recent years, the Apache Foundation has worked hard to improve the quality and condition of the Clear and Piney Creeks, which flow through the Ucross Ranch, including removing dams to allow local fish access to more of the river system. As part of this effort, we invited children from the local school to help tag and track fish and their migration. Learn more about Ucross on p. 71.

The Arts

Apache has been a strong supporter of the arts since the inception of the company more than 60 years ago. Over the last 20 years, the company has donated approximately $26 million to arts groups in the United States and around the world, through grants, employee matching gifts and in-kind donations.

As discussed previously in this section, the highly regarded Ucross Foundation in Wyoming hosts an artists-in-residence program open to all forms of artistic expression. The Foundation provides room, board and facilities for artists to find their muse – and the opportunity to do some of their best work without outside distractions.

In Houston, Apache has supported the Tony Award-winning Alley Theatre for nearly 15 years. The Alley is one of the largest theater companies outside of New York and provides audiences with a variety of top-quality work, including new plays and classics, the rediscovered and the rarely performed. Also in Houston, we provided capital funding for the Houston Museum of Natural Science's development of a 10,000-square-foot hall dedicated to Egyptian antiquities.

Apache also has an active program to encourage our employees to enjoy the arts. At Apache Night at Theatre Under the Stars in Houston, for example, more than 1,000 employees, families and friends attend several exclusive-to-Apache performances of major theater productions such as Les Miserables, Spamalot, Dream Girls and The Little Mermaid.

We provide similar opportunities with Family Night at the Houston Museum of Natural Science, during which employees and their families have exclusive and complete access to all museum exhibits and the Giant Screen Theatre; and the exclusive Apache Family Night at the Houston Ballet, where employees and their families launch the holiday season at the final dress rehearsal performance of "The Nutcracker."

We help to support local community theater in Midland, Texas, through the Arts Council of Midland as well as SeptemberFest at the Museum of the Southwest. And in the U.K. we help to support the Aberdeen International Youth Festival and the Pitmedden Music Festival. Each of these examples conveys our mission to "give where we live."
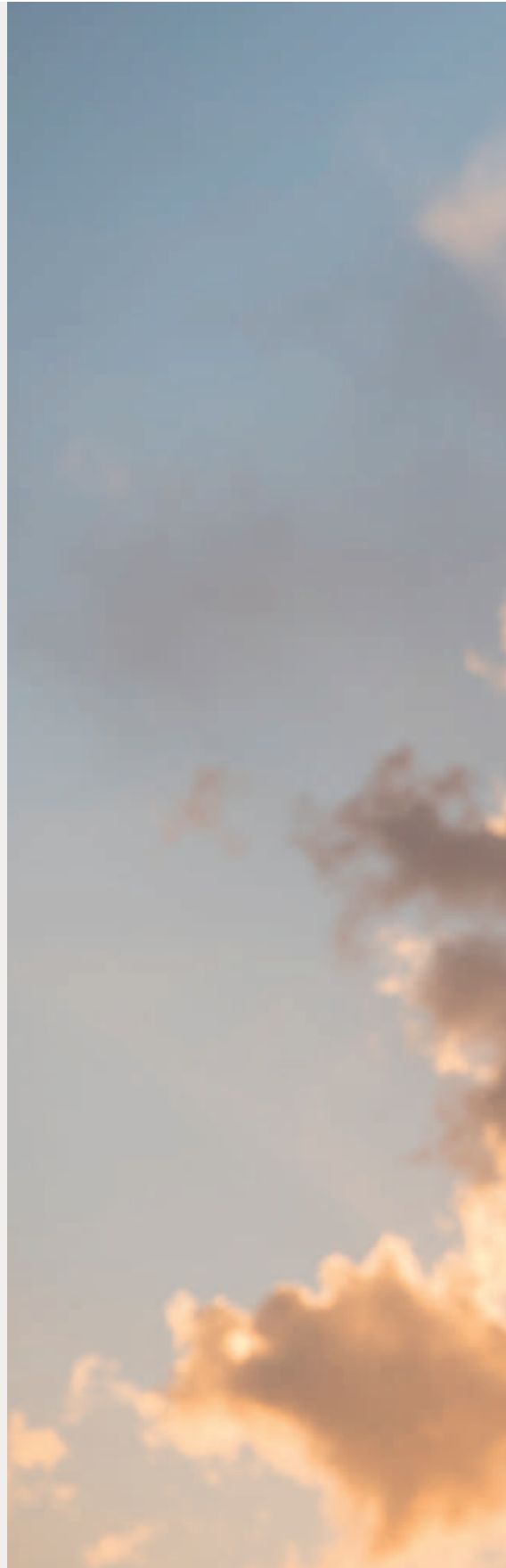
Appendix

Key Performance Data

	UNITS	2017	2016	2015	2014	2013
WATER WITHDRAWALS BY SOURCE						
Water use	Mbbls	953,340	1,037,980	1,209,370	1,221,590	1,186,080
Groundwater						
Potable	Mbbls	8,440	18,370	34,350	50,060	57,680
Nonpotable	Mbbls	938,920	1,011,710	1,157,030	1,142,040	1,113,030
Municipal water	Mbbls	3,410	2,960[8]	3,960	9,170	3,380
Municipal wastewater	Mbbls	–	–	4,110	–	–
Surface water						
Potable	Mbbls	2,570	4,940[8]	9,920	14,870	9,110
Nonpotable	Mbbls	–	–	–	5,450	2,880
Water intensity	Bbls/boe	3	3	4	3	3
Nonpotable water withdrawals	%	98	97	96	94	94
Recycled/reused	%	47	56	49	45	52
Hydraulic fracturing water details (U.S. only)						
Nonpotable water	%	47	26	41	32	38
Produced water captured for reuse	%	27	7	17	15	9
GREENHOUSE GAS EMISSIONS						
GHG emissions	tCO_2e	7,050,000	8,460,000	8,160,000	8,870,000	9,050,000
GHG emissions intensity	tCO_2e/Mboe	20.4	22.1[9]	24.3[9]	24.7	24.8
Methane emissions intensity	%	0.43	0.47[10]	0.49	0.53	0.55
Operated direct emissions (Scope 1)						
Carbon dioxide	tCO_2e	4,400,000	5,000,000	4,600,000	4,400,000	4,300,000
Methane	tCO_2e	1,700,000	2,400,000	2,300,000	2,700,000	3,100,000
Nitrous oxide	tCO_2e	50,000	60,000	60,000	270,000	250,000
Operated direct emissions (Scope 1) by source						
Flaring	%	28	27	25	21	23
Venting	%	5	5	6	10	10
Fuel combustion	%	47	46	45	47	44
Fugitives	%	15	16	17	16	17
Other	%	5	6	7	7	6
Electricity (Scope 2)	tCO_2e	900,000	1,000,000	1,200,000	1,500,000	1,400,000
Purchased fuel	MWh	3,060,000	3,620,000	3,280,000	3,900,000	8,890,000
Distillate fuel oil No. 2	MWh	1,070,000	920,000	330,000	390,000	980,000
Natural gas	MWh	1,990,000	2,700,000	2,950,000	3,510,000	7,910,000
SPILLS						
Hydrocarbon spills	No. >1 barrel in size	302	299	417	432	418

	UNITS	2017	2016	2015	2014	2013
HEALTH AND SAFETY						
Hours worked – workforce	Million hours	53	44	53	83	87
Employee Total Recordable Incident Rate	Per 200,000 hours worked	0.24	0.19	0.44	0.38	0.35
Contractor Total Recordable Incident Rate	Per 200,000 hours worked	0.67	0.69	0.91	1.08	1.15
Workforce Total Recordable Incident Rate	Per 200,000 hours worked	0.56	0.52	0.76	0.89	0.95
Employee Days Away, Restricted or Transferred Rate	Per 200,000 hours worked	0.10	0.09	0.24	0.20	0.10
Contractor Days Away, Restricted or Transferred Rate	Per 200,000 hours worked	0.28	0.37	0.44	0.61	0.58
Workforce Days Away, Restricted or Transferred Rate	Per 200,000 hours worked	0.23	0.27	0.37	0.50	0.46
Vehicle Incident Rate	#	1.24	1.41	1.29	1.41	1.62
OUR PEOPLE						
Full-time employees	#	3,356	3,727	3,860	4,850	4,973
United States	#	2,498	2,289	2,247	2,685	2,724
Canada[11]	#	–	510	526	678	782
United Kingdom	#	559	618	673	688	674
Egypt	#	299	310	414	415	402
Australia[12]	#	–	–	–	384	391
COMMUNITY ENGAGEMENT						
Total global local vendor spending	$ Million	1,090	869	1,709	2,928	3,058
Total global vendor spending	$ Million	4,071	2,950	6,852	10,924	12,651
Percentage of total global local spend	%	27	29	25	27	24
COMMUNITY INVESTMENTS						
Education*	%	32	18	25		
Health and social	%	15	23	30		
In–kind	%	–	17	12		
Arts	%	2	3	3		
Environment	%	24	18	15		
Matching contributions**	%	27	21	15		

  * Combined Education and In–kind contributions in 2017. In–kind contributions are primarily for the Fund for Teachers program and Springboard, both of which are discussed in the Society Section.
** Matching contributions include the employee matching gift and Apache's match.

	UNITS	2017	2016	2015	2014	2013
FINANCIAL AND PRODUCTION HIGHLIGHTS						
Oil and gas production revenues	$ Million	5,887	5,367	6,510	12,795	14,825
Natural gas production	MMcf/d	958	1,103	1,149	1,371	1,720
Oil and natural gas liquids production	Mbbls/d	298	338	352	369	381
Proved reserves	MMboe	1,175	1,311	1,564	2,396	2,646

[8] The 2016 municipal water and potable surface water values were adjusted slightly to account for improved data.
[9] The 2015 and 2016 GHG emissions intensity values were adjusted slightly to account for improved data.
[10] The 2016 methane emissions value was adjusted slightly to account for improved data.
[11] Canada assets were sold during the third quarter of 2017.
[12] Australia assets were sold in June 2015.

MMcf/d = millions of cubic feet of natural gas per day
Mbbls/d = thousands of barrels of oil or NGL per day
MMboe = millions of barrels of oil equivalent
Mbbls = thousands of barrels
Bbls/boe = barrels of water per barrels of oil equivalent

tCO_2e = metric tons of carbon dioxide equivalent
tCO_2e/Mboe = metric tons of carbon dioxide equivalent per thousands of barrels of oil equivalent
MWh = megawatt hour

2017 Water Withdrawals by Region

REGION	MUNICIPAL WATER (Mbbl)	GROUNDWATER (Mbbl)		SURFACE WATER (Mbbl)		TOTAL WATER WITHDRAWAL (Mbbl)	WATER INTENSITY (Mbbl/Boe)
		POTABLE	NONPOTABLE	POTABLE	NONPOTABLE		
Egypt	1,860	1,720	315,565	60	–	319,205	1
North Sea	–	–	191,370	425	–	191,795	7
Gulf of Mexico	1,000	–	1,275	–	–	2,275	0
Midcontinent/Gulf Coast	–	315	22,490	2,085	–	24,890	1
Permian[13]	550	6,405	408,220	–	–	415,175	7
U.S. Total	1,550	6,720	431,985	2,085	–	442,340	5
Total	3,410	8,440	938,920	2,570	–	953,340	3

2017 Hydraulic Fracturing Water Details (U.S. only)

REGION	NONPOTABLE	PRODUCED WATER CAPTURED FOR REUSE	TOTAL NONPOTABLE OR RECYCLED
Midcontinent/Gulf Coast	0%	0%	0%
Permian[13]	21%	28%	49%

2017 Produced Water Volumes (U.S. only)

REGION	PRODUCED WATER (Mbbl)
Midcontinent/Gulf Coast	22,490
Permian[13]	386,210

[13] Includes North American Unconventional Resources

Awards and Recognition

Apache is proud to be frequently recognized by third parties for our sustainability efforts, from our work to mitigate our impacts on the environment to the social causes we support. Recent awards include the following:

2018

- Top Workplace in Houston – *The Houston Chronicle*

- Top Workplace in San Antonio – *San Antonio Express-News*

- Trendsetter in Political Disclosure and Accountability (top 90% of companies in the S&P 500) – CPA Zicklin Index of Corporate Political Disclosure and Accountability

- Muscular Dystrophy Association's Lifetime Achievement Award

- All-America Executive Team – *Institutional Investor*

- World's Most Admired Companies – *FORTUNE*

2017

- Tied for first among the 28 largest oil and gas companies – *Disclosing the Facts 2017: Transparency and Risk in Methane Emissions* scorecard

- Top Workplace in Houston – *The Houston Chronicle*

- Top Workplace in San Antonio – *San Antonio Express-News*

- Trendsetter in Political Disclosure and Accountability (top 90% of companies in the S&P 500) – CPA Zicklin Index of Corporate Political Disclosure and Accountability

- Landowner of the Year – Wyoming Game and Fish Department

Reporting Standards and Scorecards

This report was prepared using the Global Reporting Initiative (GRI) Sustainability Reporting Standards and is in accordance with the GRI Standards at the core level. We also include indicators from IPIECA's Oil and Gas Industry Guidance on Voluntary Sustainability Reporting, The Sustainability Accounting Standards Board's Oil and Gas Exploration and Production Sustainability Accounting Standard and Disclosing the Facts 2019.

Global Reporting Initiative Content Index

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
GRI 102: GENERAL DISCLOSURES (2016)		
102-1	Name of the organization	p. 6
102-2	Activities, brands, products and services	pp. 6-7 2017 Form 10-K, pp. 1-2
102-3	Location of headquarters	Apache Corporation is headquartered in Houston, Texas.
102-4	Location of operations	pp. 6-7 2017 Form 10-K, pp. 2-6
102-5	Ownership and legal form	2017 Form 10-K, p. 1
102-6	Markets served	2017 Form 10-K, pp. 2-6
102-7	Scale of the organization	2017 Form 10-K, pp. 2-8, 11, 26
102-8	Information on employees and other workers	pp. 79, 81, 117 2017 Form 10-K, p. 11
102-9	Supply chain	pp. 81, 97
102-10	Significant changes to the organization and its supply chain	p. 6 2017 Form 10-K, pp. F-18-20 As of August 2017, Apache divested of all our Canadian assets.
102-11	Precautionary principle or approach	p. 32
102-12	External initiatives	pp. 37, 69
102-13	Membership of associations	pp. 37, 69, 108-115
102-14	Statement from senior decision-maker	pp. 4-5
102-15	Key impacts, risks and opportunities	pp. 4-5, 9, 10-14, 16-27 2017 Form 10-K, pp. 14-23
102-16	Values, principles, standards and norms of behavior	pp. 1, 34 Code of Business Conduct and Ethics
102-17	Mechanisms for advice and concerns about ethics	pp. 33-34 Code of Business Conduct and Ethics
102-18	Governance structure	pp. 30-32 Corporate Governance Principles
102-19	Delegating authority	pp. 31-32, 39
102-20	Executive-level responsibility for economic, environmental and social topics	Health, Safety, Security and Environmental issues are overseen by the Vice President of HSSE.
102-21	Consulting stakeholders on economic, environmental and social topics	pp. 9, 36-38

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
102-22	Composition of the highest governance body and its committees	pp. 31-32 2018 Proxy Statement, pp. 6-8, 15-20 Corporate Governance Principles
102-23	Chair of the highest governance body	pp. 31-32 2018 Proxy Statement, p. 5 Corporate Governance Principles
102-24	Nominating and selecting the highest governance body	2018 Proxy Statement, p. 24 Corporate Governance Principles, p. 2
102-25	Conflicts of interest	2018 Proxy Statement, p. 63 Code of Business Conduct and Ethics
102-26	Role of the highest governance body in setting purpose, values and strategy	pp. 31-32 Corporate Governance Principles
102-27	Collective knowledge of the highest governance body	pp. 22, 31-32, 37-38 2018 Proxy Statement, p. 8 Corporate Governance Principles, pp. 4, 6
102-28	Evaluating the highest governance body's performance	pp. 31-32 Corporate Governance Principles, p. 4
102-29	Identifying and managing economic, environmental and social impacts	pp. 18, 22, 31-32, 39 2018 Proxy Statement, pp. 21-23
102-30	Effectiveness of risk management processes	pp. 31-32, 39 2018 Proxy Statement, pp. 21-23
102-31	Review of economic, environmental and social topics	p. 31 2018 Proxy Statement, p. 25
102-32	Highest governance body's role in sustainability reporting	The Board of Directors' Corporate Governance Committee oversees discussion of the most important sustainability topics covered in this report. The report is reviewed and approved by select members of our executive team, as well as our internal audit function (described on pp. 8 and 34-35).
102-33	Communicating critical concerns	pp. 33-34 2018 Proxy Statement, p. 21 Code of Business Conduct and Ethics
102-35	Remuneration policies	2018 Proxy Statement, pp. 27-63
102-36	Process for determining remuneration	2018 Proxy Statement, pp. 27-63
102-37	Stakeholders' involvement in remuneration	2018 Proxy Statement, pp. 27-63
102-40	List of stakeholder groups	pp. 36-37
102-41	Collective bargaining agreements	2018 Proxy Statement, p. 35
102-42	Identifying and selecting stakeholders	pp. 36-37, 102-103
102-43	Approach to stakeholder engagement	pp. 9, 36-37, 102-103
102-44	Key topics and concerns raised	pp. 9, 30, 36-37, 102-103
102-45	Entities included in the consolidated financial statements	2017 Form 10-K, pp. 1-6

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
102-46	Defining report content and topic boundaries	p. 9 We determined the content for this report based on the issues we understand to be most important to our company and our stakeholders. We conducted an analysis of our most important issues following the Global Reporting Initiative's materiality guidance as laid out in GRI Standard 101: Foundation, 2016. We also followed GRI's principles for stakeholder inclusiveness, understanding sustainability context and completeness. We determined the boundary for each of our material topics based on where the impact occurs, either through the direct actions of our own organization or indirectly through a business partner.
102-47	List of material topics	p. 9
102-48	Restatements of information	Information about any restatements is provided in the footnotes to the relevant data.
102-49	Changes in reporting	None
102-50	Reporting period	Data provided in the report cover the period from January 1 to December 31, 2017. Some additional information on important sustainability-related activities that occurred in 2018 before publication of the report is also included.
102-51	Date of most recent report	October 2017
102-52	Reporting cycle	Annual
102-53	Contact point for questions regarding the report	Rajesh Sharma, Corporate Secretary, Apache Corporation, 2000 Post Oak Blvd., Suite 100, Houston, TX 77056-4400
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option.
102-55	GRI content index	This index
102-56	External assurance	p. 8 Some financial data included in our annual Form 10-K has been externally assured, as noted in the 10-K.

GRI 201: ECONOMIC PERFORMANCE (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-2	The management approach and its components	2017 Form 10-K, pp. 24-31 All management approach disclosures – identified in this index with the Disclosure numbers 103-1, 103-2, and 103-3 – are from GRI Standards 103: Management Approach (2016).
103-3	Evaluation of the management approach	pp. 31-33 2017 Form 10-K, pp. 24-31
201-1	Direct economic value generated and distributed	p. 107 2017 Form 10-K, pp. F-47-51
201-2	Financial implications and other risks and opportunities due to climate change	pp. 18-19
201-3	Defined benefit plan obligations and other retirement plans	2017 Form 10-K, pp. F-37-41

GRI 203: INDIRECT ECONOMIC IMPACTS (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-1	Management approach	pp. 9, 46-47, 105-113 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 34-35, 39, 105-113
103-3	Evaluation of the management approach	pp. 31-33, 105-113
203-1	Infrastructure investments and services supported	pp. 102-103, 105-113
203-2	Significant indirect economic impacts	pp. 24-27, 46-47, 107

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
GRI 204: PROCUREMENT PRACTICES (2016)		
103-1	Management approach	pp. 9, 46-47, 107 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 31-33, 39, 107
103-3	Evaluation of the management approach	pp. 31-33, 107
204-1	Proportion of spending on local suppliers	p. 107
GRI 205: ANTI-CORRUPTION (2016)		
103-2	The management approach and its components	pp. 31-34 Code of Business Conduct and Ethics
103-3	Evaluation of the management approach	pp. 31-34
205-2	Communication and training about anti-corruption policies and procedures	pp. 33-34, 97 Code of Business Conduct and Ethics
GRI 302: ENERGY (2016)		
103-1	Management approach	pp. 9, 64-69 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 33, 39, 64-69
103-3	Evaluation of the management approach	pp. 31-33, 64-69
302-1	Energy consumption within the organization	pp. 66-68, 116
302-4	Reduction of energy consumption	pp. 66-68
GRI 303: WATER (2016)		
103-1	Management approach	pp. 9, 55-57 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 33, 39, 55-57
103-3	Evaluation of the management approach	pp. 31-33, 55-57
303-1	Water withdrawal by source	pp. 60-61, 116, 118
303-3	Water recycled and reused	pp. 57, 60-61, 116
GRI 304: BIODIVERSITY (2016)		
103-2	The management approach and its components	pp. 33, 39, 70-72
103-3	Evaluation of the management approach	pp. 31-33, 70-72
304-2	Significant impacts of activities, products and services on biodiversity	pp. 49, 70-72
304-3	Habitats protected or restored	pp. 49, 70-72
GRI 305: EMISSIONS (2016)		
103-1	Management approach	pp. 9, 64-69 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 33, 39, 64-69
103-3	Evaluation of the management approach	pp. 31-33, 64-69
305-1	Direct (Scope 1) GHG emissions	pp. 64-69, 116
305-2	Indirect (Scope 2) GHG emissions	p. 116
305-4	GHG emissions intensity	pp. 64-69, 116
305-5	Reduction of GHG emissions	pp. 64-69, 116

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION

GRI 306: EFFLUENTS AND WASTE (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-1	Management approach	pp. 9, 55-62, 73-75, 83-84 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 33, 39, 55-62, 73-75, 83-84
103-3	Evaluation of the management approach	pp. 31-33, 55-62, 73-75, 83-84
306-2	Waste by type and disposal method	pp. 74-75, 116
306-3	Significant spills	pp. 73, 116

GRI 307: ENVIRONMENTAL COMPLIANCE (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-1	Management approach	pp. 9, 33, 39, 52-75 Issue boundary – inside the organization
103-2	The management approach and its components	pp. 33, 39, 52-75
103-3	Evaluation of the management approach	pp. 31-33, 52-75
307-1	Noncompliance with environmental laws and regulations	We report all material legal matters and fines in our annual Form 10-K. 2017 Form 10-K, pp. F-34-36

GRI 308: SUPPLIER ENVIRONMENTAL ASSESSMENT (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-2	The management approach and its components	pp. 81, 97
103-3	Evaluation of the management approach	pp. 81, 97
308-1	New suppliers that were screened using environmental criteria	pp. 81, 97 All field-based contractors are screened on environmental criteria.

GRI 403: OCCUPATIONAL HEALTH AND SAFETY (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-1	Management approach	pp. 9, 39, 76-85 Issue boundary - inside and outside the organization
103-2	The management approach and its components	pp. 30-33, 76-85
103-3	Evaluation of the management approach	pp. 30-33, 76-85
403-2	Types of injury and rates of injury, occupational diseases, lost days and absenteeism, and number of work-related fatalities	pp. 82, 117

GRI 411: RIGHTS OF INDIGENOUS PEOPLES (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-2	The management approach and its components	pp. 34, 104 Statement on Indigenous Peoples
103-3	Evaluation of the management approach	pp. 31-33, 104

GRI 412: HUMAN RIGHTS ASSESSMENT (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-2	The management approach and its components	pp. 34, 104 Statement on Indigenous Peoples Human Rights Principles
103-3	Evaluation of the management approach	pp. 31-33, 104

GRI 413: LOCAL COMMUNITIES (2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
103-1	Management approach	pp. 9, 101-107, 110-122 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 33, 36-37, 39, 102-103, 105-113
103-3	Evaluation of the management approach	pp. 31-33, 36-37, 102-103, 105-113
413-1	Operations with local community engagement, impact assessments and development programs	pp. 36-37, 102-103, 105-113
413-2	Operations with significant actual and potential negative impacts on local communities	pp. 40-51, 102-103, 105-113

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE/OMISSION
GRI 414: SUPPLIER SOCIAL ASSESSMENT (2016)		
103-2	The management approach and its components	pp. 81, 97, 104
103-3	Evaluation of the management approach	pp. 81, 97, 104
414-1	New suppliers that were screened using social criteria	pp. 81, 97, 104 All field-based contractors are screened on health, safety and environmental criteria.
GRI 415: PUBLIC POLICY (2016)		
103-1	Management approach	pp. 9, 35 Issue boundary – inside and outside the organization
103-2	The management approach and its components	pp. 33, 39, 35 Policy on Political Contributions and Lobbying
103-3	Evaluation of the management approach	pp. 31-33, 35
415-1	Political contributions	p. 35 2017 Political Contributions

Sustainability Accounting Standards Board's Oil and Gas Exploration and Production Sustainability Accounting Standard

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE
ACTIVITY METRICS		
EM-EP-000.A	Wellhead production	2017 Form 10-K, p. 31
EM-EP-000.B	Number of offshore sites	2017 Form 10-K, pp. 28-29
EM-EP-000.C	Number of terrestrial sites	2017 Form 10-K, pp. 28-29
GREENHOUSE GAS EMISSIONS		
EM-EP-110a.1	Gross global Scope 1 emissions	pp. 64-67, 116
EM-EP-110a.2	Gross global Scope 1 emissions by source	p. 116
EM-EP-110a.3	Emissions reduction plans, targets and performance	pp. 64-69, 116
WATER MANAGEMENT		
EM-EP-140a.1	Freshwater withdrawal and consumption, including in regions of high baseline water stress	pp. 48, 55-61, 116, 118
EM-EP-140a.3	Percentage of wells with disclosure of fracturing chemicals	p. 58
BIODIVERSITY IMPACTS		
EM-EP-160a.1	Environmental management practices for active sites	pp. 70-73
EM-EP-160a.2	Number and aggregate volume of hydrocarbon spills	pp. 73, 116
SECURITY, HUMAN RIGHTS & RIGHTS OF INDIGENOUS PEOPLES		
EM-EP-210a.3	Engagement and due diligence practices on human and indigenous rights	p. 104
COMMUNITY RELATIONS		
EM-EP-210b.1	Process to manage risks and opportunities associated with community rights and interests	pp. 36-37, 101-103
WORKFORCE HEALTH & SAFETY		
EM-EP-320a.1	Safety performance and training	pp. 78-82, 117
EM-EP-320a.2	Management systems used to integrate a culture of safety	pp. 78-82
BUSINESS ETHICS & TRANSPARENCY		
EM-EP-510a.2	Prevention of corruption and bribery throughout the value chain	p. 34
CRITICAL INCIDENT RISK MANAGEMENT		
EM-EP-540a.1	Tier 1 loss of primary containment events	pp. 73, 116

IPIECA Oil and Gas Industry Guidance on Voluntary Sustainability Reporting, 3rd Edition (Revised 2016)

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE
ENVIRONMENTAL ISSUES		
IPIECA E1	GHG emissions	pp. 64-68, 116
IPIECA E5	Biodiversity and ecosystem services	pp. 70-73
IPIECA E6	Fresh water	pp. 55-62, 116, 118
IPIECA E9	Spills to the environment	pp. 73, 116
HEALTH AND SAFETY ISSUES		
IPIECA HS1	Workforce participation	pp. 78-82
IPIECA HS3	Occupational injury and illness	pp. 82, 84, 117
SOCIAL AND ECONOMIC ISSUES		
IPIECA SE1	Local community impacts and engagement	pp. 36-37, 102-103, 105-113
IPIECA SE2	Indigenous peoples	Statement on Indigenous Peoples Human Rights Principles
IPIECA SE4	Social investment	pp. 107-113
IPIECA SE5	Local content practices	pp. 26-27, 107
IPIECA SE6	Local hiring practices	pp. 26-27, 107
IPIECA SE8	Human rights due diligence	p. 104 Human Rights Principles
IPIECA SE11	Preventing corruption	pp. 33-34 Code of Business Conduct and Ethics
IPIECA SE14	Public policy and lobbying	p. 35 Policy on Political Contributions and Lobbying
IPIECA SE16	Workforce engagement	p. 96
IPIECA SE17	Workforce training and development	pp. 78-80, 90-95
IPIECA SE18	Nonretaliation and grievances	pp. 33-34 Code of Business Conduct and Ethics

Disclosing the Facts 2019

DISC. #	DISCLOSURE TITLE	LOCATION IN REPORT/RESPONSE
WATER AND WASTE MANAGEMENT		
DTF-1	Assessment of well integrity	pp. 20, 48, 56
DTF-3	Tracking of near misses	pp. 78-79
DTF-4	Minimizing risks from nearby wells	p. 56
DTF-5	Avoiding seismic activity	p. 63
DTF-6	Pre-drilling groundwater assessment	p. 56
DTF-7	Post-drilling groundwater assessment	p. 56
DTF-8	Operating in water-scarce areas	pp. 20, 48, 55, 118
DTF-9	Water used for operations	p. 118
DTF-10	Percentage water sourced from fresh water and nonfresh water	p. 118
DTF-11	Water sources by type	pp. 116, 118
DTF-12	Percentage of produced water reused	p. 116
DTF-13	Practices for reducing use of fresh water	pp. 48, 55-56
DTF-14	Volume of wastewater generated	pp. 116, 118
DTF-15	Produced water storage	pp. 56, 61
DTF-16	Reducing potential for spills, leaks, emissions, and wildlife hazards associated stored produced water	pp. 56, 74
DTF-17	Use of closed-loop systems for drilling residuals	pp. 48, 74
DTF-18	Managing NORMs	p. 74 Handling of NORM waste by Apache or its contractors requires state licensing. NORM waste handling, transport and disposal is covered by state and/or federal regulations regarding waste tracking, worker exposure and method of disposal. All NORM waste is tracked by shipping manifest from generation point to transportation to disposal in government-approved facilities.
DTF-19	Practices for managing inactive wells	We follow state regulations when closing wells. Apache must get a well abandonment plan approved by state regulators prior to beginning work on a new well. We submit a final well abandonment report to state regulators after completing well closure as part of our compliance with these plans. The abandonment method used for each well depends on well characteristics.
DTF-20	Use of wastewater	p. 56 We do not reuse produced water or waste products (including solids) for any purposes other than EOR, secondary recovery or hydraulic fracturing.
TOXIC CHEMICALS		
DTF-21	Quantitative reduction in toxic chemical use	p. 58
DTF-22	Use of dry fracturing chemicals	p. 58
DTF-23	Practice of not using BTEX in fracturing fluids	p. 58
DTF-24	Notice of potential confidential business information (CBI)	p. 58
DTF-25	Reducing CBI claims	p. 58

Forward-Looking Statements and Risk

This report includes "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements other than statements of historical facts, including information about sustainability goals and targets and planned social, safety and environmental policies, programs and initiatives, are forward-looking statements. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to have been correct. Important factors that could cause actual results to differ materially from our expectations are included in the company's annual and quarterly reports filed with the Securities and Exchange Commission.

Apache

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