

# 2020 Sustainability Report

We transform...  
**opportunity**  
**energy**  
**value**

# A Message to Our Stakeholders

At Murphy, we believe in providing energy that empowers people. We recognize that we need to provide this energy safely and in a more sustainable manner, so that we can continue as an industry leader and achieve our vision of positively impacting lives for the next 100 years. We have significantly increased our disclosures for our second annual Sustainability Report, which we hope will be insightful to our stakeholders and shed light on our path forward as we deepen our focus on environmental, social and governance (ESG) matters.

## Our Response to COVID-19

The COVID-19 pandemic has created a sharply unique situation for our industry, and our team worked quickly to establish protocols for maintaining the safety of our office and field employees, including testing those working at our offshore operations sites. We met this year's challenges by putting our business continuity plan into action, flexing our technology systems, and activating our incident and crisis management teams to manage this risk and keep our workforce safe. Murphy is proud to say we are working through these situations successfully, and that we are an industry leader in maintaining a low case count across our operations. This could only be achieved through our value of staying with it, as our team persevered and rose to the occasion when presented with this challenge.

## Taking the Right Steps

These additional sustainability disclosures provided in this report take into consideration various third-party ESG reporting standards and ratings, including Sustainability Accounting Standards Board, International Petroleum Industry Environmental Conservation Association and Global Reporting Initiative. Further, our climate change strategy section aligns with the Task Force on Climate-Related Financial Disclosures. We are reporting significantly more SASB performance metrics this year compared to our inaugural 2019 report.

We have greatly expanded our environmental section to highlight the company's efforts on topics such as water and wastewater management, biodiversity and land use, and offshore well management. Our 2020 Sustainability Report also includes case studies spotlighting several ways we have reduced our impact on the environment, specifically through the implementation of state-of-the-art technology, as well as overall biodiversity protection.

Further, our social segment now includes specific references to our actions regarding community relations and human capital, such as workforce development programs and expanded diversity disclosures.

Within the company, Murphy has established additional board and managerial oversight of our sustainability efforts with the formation of the ESG Executive Committee (comprised of executive management), along with the creation of a director of sustainability role within the Technical Services Department and a dedicated diversity and inclusion resource within the Human Resources Department. With the appropriate people in their positions, the company can move forward on developing an expanded sustainability strategy to tackle the issues relevant to our industry.

## 2019 Company Highlights

Last year, we transformed into a Western Hemisphere-focused, oil-weighted company with the sale of our Malaysian operations and acquisition of domestic assets in the Gulf of Mexico. The Malaysian divestiture was particularly beneficial to the company from a sustainability standpoint.

Further, deepwater has been cited by The Edge, a product of Wood Mackenzie, as the lowest carbon emitting oil and natural gas operation – and this now comprises nearly a quarter of our 2019 proved reserves and almost half of our total production.

To reduce vented methane emissions from our North American onshore assets, we replaced certain equipment with newer, state-of-the-art alternatives across our operations. We also shifted exclusively to a bi-fuel fracturing fleet in onshore Canada, thereby relying on natural gas rather than diesel consumption, and are exploring opportunities to use electric fracturing units in the Eagle Ford Shale.

Overall, our 2019 total company emissions intensity reduced nearly 20 percent year-over-year. In our continued commitment to becoming a more sustainable business, we intend to further reduce our emissions intensity by 15 to 20 percent by 2030 from 2019 levels, excluding Malaysia.

The safety and security of our employees and contractors is always top priority at Murphy. Inclusive of contractor

hours, the year-on-year improvement in our Lost Time Incident Rate (LTIR) was 55% in 2019, with a reduction from nine lost time incidents in 2018 to four lost time incidents in 2019. We also maintain a five-year average corporate Total Recordable Incident Rate (TRIR) of 0.36. In 2019, at 0.52, we were below our expectation. Our team remains focused on improving these figures further, with the launch of Life Saving Rules and Hand and Finger targeted campaigns in 2020 to address the largest component of injuries that occurred in 2019. This year, to-date we have already seen a marked improvement in this metric. Murphy maintains TRIR and spill rate goals as part of its compensation plan, and targets top quartile performance amongst our peers.

As alluded to earlier, Murphy expanded its workforce development and benefits programs last year, and now offers enhanced parental benefits as well as paid personal time, in addition to the existing vacation policy. Supplementary external training programs are now offered on topics such as unconscious bias and creating a respectful and harassment-free workplace. Further, we have extended our recruitment efforts to include outreach to various diversity- and inclusion-focused organizations as we work to improve our diversity and inclusion. In total, more than 350 professional development courses and 450 technical courses were offered to our workforce during the year.

The company partners in communities where we work to be a good corporate citizen through volunteer efforts, corporate donations and other community contributions. In 2019, Murphy matched nearly \$1 million of employee donations to various causes. Our United Way campaign remains our strongest contribution company-wide, with close to \$1 million additionally raised across our North American locations in 2019 through our employees' generosity and Murphy's gift matching program. Murphy also remains committed in supporting the El Dorado Promise program, which provides tuition scholarships to Arkansas' El Dorado High School graduates. To-date, it has benefitted more than 2,600 students and achieved a college enrollment rate higher than state and national levels.

Moving forward, we have enacted a new policy at Murphy in 2020 – the Indigenous Rights Policy. Further, in an effort to be more transparent, we have now publicly disclosed our Anti-Bribery and Corruption Policy.

## Financial Sustainability

As part of operating sustainably and protecting the environment, our employees and the communities in which we work, Murphy is responsible for maintaining financial stability through the changing energy landscape.

The company reported several achievements in 2019, including:

- Completing a \$500 million share repurchase program;
- Extending the corporate debt maturity profile with the issuance of \$550 million in senior notes due 2027, using proceeds to repurchase an aggregate \$521 million of senior notes due in 2022; and
- Establishing top-quartile performance amongst its peers by generating \$1.5 billion of adjusted EBITDA, or nearly \$24 per barrel of oil equivalent sold.

## Our Efforts

Murphy remains committed to operating in a conscientious and sustainable manner as we strive to do better. We seek to support and protect our employees, contractors and the communities in which we work. We will continue to expand our efforts through our new ESG Executive Committee, which will in part enable us to more closely monitor various metrics like carbon emissions, suggest improvements to reduce carbon intensity, and provide guidance in future goal-setting with regards to compensation and carbon targets.

While the timing remains uncertain, we know that there will be a recovery in oil demand. People across the globe rely on oil and natural gas in their everyday lives, and Murphy intends to be there for that recovery.

Sincerely,



**Roger W. Jenkins**  
President and Chief Executive Officer

# Our Reporting Standards

The Murphy Oil Corporation 2020 Sustainability Report contains information regarding the environmental, social and governance (ESG) issues essential to our business.

Our disclosures take into consideration various third-party ESG reporting standards and key environmental, social and governance ratings, including:



As this is an area of continual improvement across our industry, we strive to evolve our disclosures in line with operating developments and with emerging best practice ESG reporting standards.

# Murphy Oil Corporation at a Glance

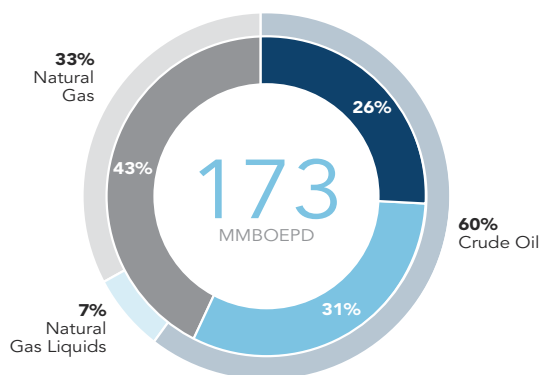
Murphy Oil Corporation is an independent exploration and production company with onshore and offshore oil and natural gas operations in the [United States](#) and [Canada](#). In 2020, we relocated our headquarters to Houston, Texas from El Dorado, Arkansas and we had over 800 employees around the world as of year-end 2019.

The company's roots date back to the early 1920s, when Charles H. Murphy, Sr. shifted the focus of the family business from banking and timber to oil. As it expanded, the company went public in 1956, later moving its listing to the New York Stock Exchange in 1961. From the beginning, we have remained committed to the highest standards of social and environmental performance in all our operations.

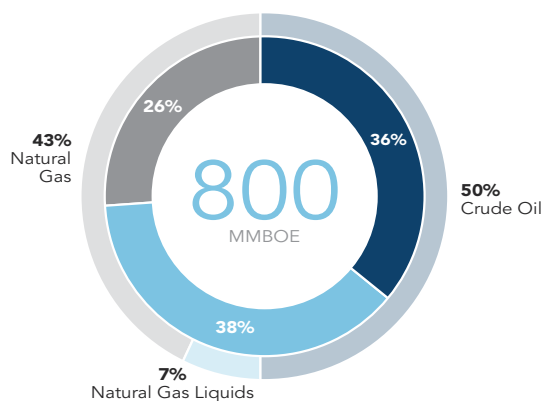
Murphy's company-wide [Health, Safety and Environmental \(HSE\) Policy](#) provides clear and consistent direction, to comply with environmental laws and standards and create safe and rewarding workplaces while making positive contributions to the community. This steadfast commitment, along with our operational capabilities, makes Murphy a preferred partner in all communities in which we operate, as well as a welcomed partner with both independent and national oil companies.

## Production, Reserves and Exploration Footprint

### 2019 Fiscal Year Production



### 2019 Proved Reserves



● US Onshore ● Canada Onshore ● North America Offshore

## Exploration Projects



Our current proved reserves is a near-even division between US and Canada as well as between proved developed and proved undeveloped reserves.

Murphy is currently undertaking exploration projects and evaluating offshore development opportunities in the US Gulf of Mexico, offshore Mexico, Brazil and Vietnam.

# Our Purpose, Mission, Vision, Values and Behaviors

Charles H. Murphy, Sr. instilled within the company a strong commitment to integrity and doing what's right. This is still evident today in the high standards we set for ourselves regarding our commitment to the environment and our community. In 2018, the company, with the

support of our Board of Directors (Board), outlined a concrete mission and vision, achieved through the below behaviors, in order to accomplish our purpose of providing energy that empowers people.

## OUR PURPOSE

We believe in providing energy that empowers people.

## OUR MISSION

We challenge the norm, tap into our strong legacy and use our foresight and financial discipline to deliver inspired energy solutions.

## OUR VISION

We see a future where we are an industry leader who is positively impacting lives for the next 100 years and beyond.

## OUR BEHAVIORS

### DO RIGHT ALWAYS

- Respect people, safety, environment and the law
- Follow through on commitments
- Share openly and accurately
- Make it better

### STAY WITH IT

- Show resilience
- Lean into challenges
- Support each other
- Consider the implications

### THINK BEYOND POSSIBLE

- Offer solutions
- Step up and lead
- Don't settle for "good enough"
- Embrace new opportunities



# Governance at Murphy

Our Board assumes an active role in providing oversight of our management team in developing and executing on our business strategy. The Board is led by strong independent leadership in the form of an independent Chairman, and 92% of our directors are independent. Our Board has adopted governance practices that promote direct accountability to shareholders, including annual election of each of our directors and the requirement to receive majority support.

The Board believes it is their duty to act as fiduciaries on behalf of its shareholders and that it is important for directors to possess a diverse array of backgrounds, skills and achievements. Our directors' qualifications include experience in finance/banking, human capital/compensation, accounting/audit, law, government relations/public policy, risk management and business development & corporate strategy. In addition, 77% of our directors have experience in the areas of environmental protection and health and safety. Finally, 85% of our directors have expertise in the oil and natural gas industry. All of these areas are crucial to lead the company in challenging times for the energy industry. For more information on board diversity, and to view our Skills Matrix, please see our [2020 Proxy Statement](#).



## Expert and Independent Board

12 out of 13 directors are independent

Separate CEO and Chairman

Board of Directors elected with average vote of 99% over past 5 years

Long-term industry, operating and HSE expertise

The Health, Safety, Environment and Corporate Responsibility Committee holds oversight responsibility for the company's approach to sustainability. The Committee oversees not only compliance with, and responses to, applicable laws and regulations, but also the evolution of trends and emerging issues as the company develops, reviews and assesses leading practices that drive the company's commitment on principles of sustainability.

92%

INDEPENDENT

85%

OIL AND NATURAL GAS  
EXPERIENCE

31%

TENURE OF 5 YEARS  
OR LESS

15%

WOMEN

# Board and Managerial Oversight of Sustainability

Our Board of Directors and executive leadership team are committed to sustainable business practices, which are premised on our company's purpose, mission, vision, values and behaviors.

Environmental, social and governance issues are a formal part of every Board meeting. Furthermore, the Board is responsible for overall risk oversight of the company, which includes certain environmental, social, supply chain and governance matters.

Murphy's executive management team, with the guidance and support of our Board, implements, monitors and, if necessary, adjusts our sustainability efforts in a manner that best serves the long-term interests of the company and its stakeholders, including the communities in which we operate.

Beginning in 2019, our President and Chief Executive Officer formalized the process by which sustainability risks and opportunities are monitored and managed through the following:

## ESG Executive Committee

Chaired by President and Chief Executive Officer

### Current members:

President and Chief Executive Officer  
Executive Vice President, Operations  
Senior Vice President, General Counsel and Corporate Secretary  
Senior Vice President, Technical Services  
Vice President, Human Resources & Administration  
Vice President, Investor Relations & Communications  
Director, Governance & Legal Services  
Director, Sustainability

## Sustainability Report Working Group

Reports to ESG Executive Committee  
Chaired by Director of Governance and Legal Services

### Representatives from the following business units:

Compliance	Investor Relations
Exploration	Land
Finance & Treasury	Law
Government Affairs	Operations
Health, Safety, Environmental	Risk Management
Human Resources	

# Our Values to Promote Ethical Business Conduct

In conjunction with Murphy's core mission, vision, values and behaviors is the long-established Murphy [Code of Business Conduct and Ethics](#), which provides clear direction to all employees and suppliers on the requirement that everyone working for and with Murphy behaves ethically and in accordance with our policies and standards.

Specifically, the Code of Business Conduct and Ethics applies to all directors and employees of Murphy Oil Corporation and its subsidiaries, as well as all contractors who perform work for Murphy, work in Murphy's facilities or otherwise perform work on behalf of Murphy. Upon hire and throughout their time in their role, each individual is required to complete training on the Code of Business Conduct and Ethics, as well as other topics including anti-bribery and corruption (to maintain compliance with the Foreign Corrupt Practices Act, or FCPA), ethics and anti-harassment.

Our management team is trained on and expected to adhere to an enhanced code, which holds an important and elevated position within corporate governance. This additional code is designed to protect and preserve stakeholders' interests.

The Code of Business Conduct and Ethics is designed to emphasize the commitment necessary for those working for Murphy to act with integrity, including:

- Commitment to corporate citizenship requires compliance with applicable laws and regulations
- Commitment to each other promotes Murphy as a safe place to work, including freedom from discrimination and harassment
- Commitment to global business laws emphasizes that antitrust and other competition laws are adhered to and relationships with government officials throughout the world are properly managed
- Commitment to shareholders ensures transparency in public disclosures and the protection of confidential information and intellectual property

The Code of Business Conduct and Ethics also address the need to avoid conflicts of interest and prohibits competitive relationships, misuse of company assets and inappropriate gifts and favors.

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Due to its importance, specific prohibited conduct constituting bribery and corruption is addressed in Murphy's [Anti-Bribery and Corruption Policy](#).

We take violations of our policies seriously, and inform employees that it is their duty to report suspected violations since it can damage all employees and shareholders. Employees are encouraged to report infractions of the Code of Business Conduct and Ethics, and have the ability to do so anonymously through a third-party ethics hotline. Employees may contact the Audit Committee directly for violations involving accounting, internal accounting or auditing matters. We assure employees that there will be no retaliation for reporting suspected problems in good faith, and those who retaliate will face disciplinary action.

Murphy's internal audit team undertakes periodic reviews to ensure compliance with our Code, and hotline and other reports of potential misconduct are regularly monitored for evidence of non-compliance. Violations of any of these standards are investigated and, when necessary, disciplinary or corrective action is applied.



# Protecting Our People

Murphy is committed to conducting business in a manner that protects the health, safety and security of all personnel, including employees, contractors and partners, as well as the communities in which we work.

We uphold this responsibility through our comprehensive [HSE Policy](#) and HSE Management System (HSE-MS), which apply to all Murphy operations worldwide.

Murphy's HSE Policy and HSE-MS are based upon industry practices and our extensive experience as we strive to deliver top quartile safety performance among our industry peers.

## Health and Safety Oversight

In 1993, the Murphy Board of Directors established what is now known as its Health, Safety, Environment and Corporate Responsibility (HSE&CR) Committee to govern the company's health, safety and environmental activities. The HSE&CR Committee meets at least twice annually to receive relevant updates and review policies, compliance reports, goals and performance data. In addition, HSE updates are provided at each Board meeting. Further detail on the HSE&CR Committee and corporate oversight of climate change initiatives can be found on pages 19-20 of this report.

Responsibility for the execution of Murphy's HSE Policy lies ultimately with the President and Chief Executive Officer. That responsibility is supported by the HSE Executive Advisory Committee (EAC) comprised of the Executive Vice President, Operations; Senior Vice President, Technical Services; Vice President, Health, Safety and Environment; and General Manager, Drilling and Completions. The EAC works to ensure that the company has appropriate management systems in place to monitor and review compliance with applicable rules, regulations, industry standards, protocols and international conventions. The President and Chief

Executive Officer and the EAC set goals for continuous improvement and receive updates on implementation and progress made on these initiatives.

Implementation of Murphy's HSE Policy is assigned to the Vice President, Health, Safety and Environment. This role reports to the Senior Vice President, Technical Services, who reports directly to the President and Chief Executive Officer. Altogether, Murphy executives receive weekly reports on HSE activities and results.

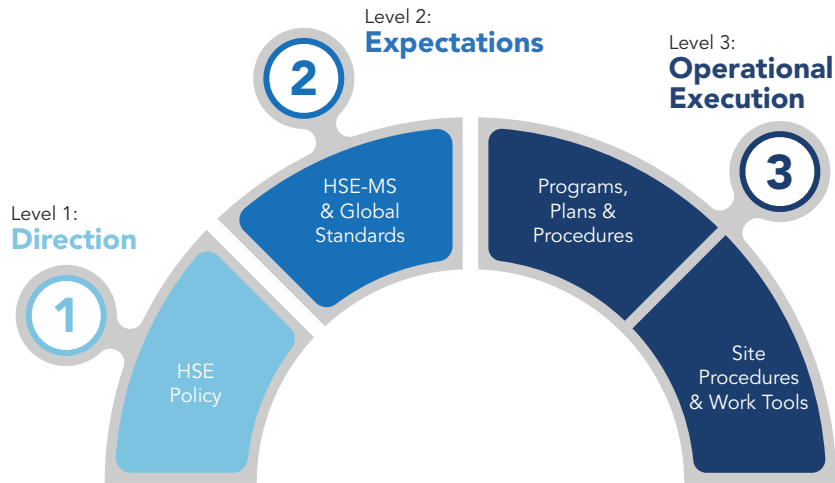
Under our executive compensation plan, Murphy added a safety metric to its annual incentive plan performance metrics in 2008. In 2019, the safety weighting was 7.5% for the company's Total Recordable Incident Rate (TRIR) and the environmental weighting for our global spill rate was 7.5%. Metrics are set to deliver top quartile industry performance, and inclusion of these metrics reinforces the company's commitment to safe and environmentally sound operations. Further, management is working on a plan with our Executive Compensation Committee for appropriate ESG goals to be included as a metric for executive compensation in the future.

# Health and Safety Management System (HSE-MS)

We strive to achieve incident-free operations through continuous improvement processes managed by Murphy's HSE-MS, which engages all personnel, contractors and partners associated with Murphy operations and facilities, and provides a consistent method for integrating HSE concepts into our procedures and programs.

## The HSE-MS consists of three levels

- **Level 1** – Direction is provided by Murphy's HSE Policy
- **Level 2** – Expectations are articulated in an HSE-MS framework document and associated global standards
- **Level 3** – Operational execution ensures implementation of the expectations



## The HSE-MS framework is organized around 11 elements

Within each element is a set of expectations. Many of these expectations are supported by global standards and detailed programs, plans, procedures and work tools. Elements include management and employee commitment, contractor management, training, emergency response, incident reporting and investigation, and evaluation and improvement.



## Contractor Management

Contractors play a significant role in performing the work to deliver on our operational goals and represent more than 75% of the workhours performed. Selecting and collaborating with our contractors is vital to ensure a unified commitment to maintaining a safe place to work, and ultimately improving our HSE performance.

Before choosing to partner with a service provider, Murphy utilizes ISNetwork (ISN), a global leader in supplier and contract management, to assist in prescreening contractor service providers to assess their HSE policies, performance and internal HSE management systems. For select major contractors, Murphy takes this a step further and performs a detailed bridging process, through which all of the service provider's HSE policies and procedures are individually evaluated against Murphy's policies and procedures, and the highest level of HSE performance standards are followed for workplace execution.

Murphy requires contractors and subcontractors entering Murphy-operated locations to have the same safety industry training certifications as employees. All personnel,

including contractors and subcontractors, working at Murphy locations must have basic industry safety training certifications such as SafeLandUSA for US onshore, plus SafeGulfUSA and HEUT Water Survival for US offshore. In addition, contractors must attend Murphy's HSE Orientation prior to starting work at a Murphy location. Murphy maintains a Qualified Supplier List (QSL) for each business unit to identify service providers that are permitted to work at Murphy locations.

Throughout the year, Murphy hosts contractor engagement sessions with service providers across each of our business units. The objectives of these structured workshops are to review HSE performance, develop joint performance goals and share lessons learned. To further promote safe and environmentally compliant performance, Murphy has established key performance indicators (KPIs) with a number of major service providers, which are continuously reviewed throughout the duration of their contracts. Additionally, third-party vendor audits are regularly conducted by Murphy HSE personnel and ISN.



## Health and Safety Certification and Audit

The Murphy HSE Management System and Global Standard for Evaluation and Improvement require each Murphy business unit to conduct internal HSE field audits every three years.

Onsite HSE inspections are conducted frequently and, in many cases, daily. Opportunities for improvement are identified during the process and related actions are addressed. Any non-conformance is also identified, and improvement actions are submitted to business unit leadership.

At our US offshore facilities, a third-party audit is conducted as part of the requirements for the Center for Offshore Safety's Safety and Environmental Management System (SEMS) Certification. The most recent audit was completed in January 2019, in accordance with the regulatory three-year requirement.

The Bureau of Safety and Environmental Enforcement (BSEE) conducts regular inspections of our offshore facilities and drilling rigs to ensure safety and environmental compliance across our Gulf of Mexico operations.

Murphy contracts with independent, third-party rig quality assurance audit companies who advise on HSE risk mitigation. Specific actions undertaken by expert third parties include:

- Perform electrical and mechanical inspections of key drilling machinery and components on the rigs
- Inspect key safety components of the control systems on the rigs
- Review any current acceptance test plans and determine relevant sections for software, network, and controls testing
- Ensure that vendors' changes to software and related control systems have been documented, and that backups are available
- Ensure compliance with software configuration processes

Murphy's Canadian HSE Management System has received a Certificate of Recognition (COR) from Energy Safety Canada (formerly Enform Canada). Energy Safety Canada is the certifying partner for the Canada Partnership in Injury Reduction (PIR), established through the Canada Workers Compensation Board (WCB).

The COR process results in improved worker safety and reduced costs due to lost productivity, replacement worker training, property damage and incident investigation, as well as reducing legal risk exposure. COR has become the benchmark for safety performance nationally in Canada. Now certified, Murphy will perform annual internal validation audits, with an external audit cycle every three years.



## Safety Performance Monitoring and Measuring

In 2019, we achieved excellent safety performance across our global offshore business. In the Gulf of Mexico, we realized a record of more than 500 days without a recordable incident and incurred only one recordable injury for the entire calendar year. Our Total Recordable Incident Rate<sup>1</sup> (TRIR), inclusive of actual contractor hours worked, for the Gulf of Mexico was 0.11 TRIR compared to a business unit target of 0.32 TRIR. This represents an outstanding performance as we transitioned our offshore portfolio and integrated new assets into our Western Hemisphere offshore operations without incident, conducted complex drilling and completions activities, and executed various development projects to grow the business.

Inclusive of contractor hours, our Lost Time Incident Rate (LTIR) showed a positive reduction from 2018 to 2019. The year-on-year improvement in LTIR was 55%, with a reduction from nine lost time incidents in 2018 to four lost time incidents in 2019.

Our average corporate TRIR (including contractor hours) over the past five years is 0.36, with a TRIR for 2019 of 0.52.

We remain focused on continually improving safety performance across our worldwide operations, and in recent years have implemented several initiatives in addition to our regular training and exercise drills, including:

- **Safety Observation Program (SOP)** – The SOP is a smartphone-based application that allows workers to record and document safety observations real-time in the field. This repository of data provides the basis to analyze safety trends across our field operations and allows us to focus our repairs and maintenance, training and prevention efforts to improve overall safety performance. We have seen an increase in SOPs of 51% in 2019 from the prior year.
- **Hazard Hunts** – We initiated multi-discipline, business unit specific Hazard Hunts to identify and mitigate potential safety and environmental hazards in the workplace. As part of these Hazard Hunts, we held a “Safety Blitz” in the US and “Powerplay” in Canada, implementing a field-level competition whereby teams submitted safety observations across our operations
- **Safety Leadership Training** – The company engaged in a third-party training program titled “Safety Excellence for Supervisors, Managers and Workers” for our North America onshore operations. In addition, we developed an in-house Safety Leadership program instructed by the HSE department

- **Safety Stand Downs** – We have incorporated global Safety Stand Downs as a means for bringing senior management, employees and contractors together to demonstrate a unified commitment to safety in our business. We also utilize safety stand downs on a location-specific basis to address any immediate concerns or issues
- **Contractor Engagement** – Contractors consistently makeup over 75% of our workhours in performing the critical tasks necessary to deliver upon our operation goals. Our focus and commitment to our employees and contractors is to provide a safe working environment where everyone goes home safe at the end of the work shift. We focus on contractor engagement at two levels: (i) executive level, where Murphy's senior leadership meets with key contractors to set clear expectations of our commitment to safety in the workplace, and (ii) small group contractor engagement sessions in the office and field locations to provide the same message at the field level, while also creating an opportunity to receive feedback and input from our contractors on how we can all work together to improve our safety performance
- **Process Safety Management (PSM)** – Asset integrity is at the core of our PSM program and plays a key role in preventing serious incidents with more than 835 miles of pipelines and gathering systems across our North American onshore business, 1,470 pressure vessels across over 30 onshore central facilities and five operated major offshore facilities. We established a baseline by measuring our Tier 1, 2 and 3 PSM events, and are now implementing a program to measure and record the Tier 4 events, which are important leading indicators to preventing serious incidents from occurring

In addition to reporting our Total Recordable Incident Rate (TRIR), Lost Time Incident Rate (LTIR) and number of fatalities, we also internally track the following safety performance indicators to drive continual improvements in safety performance:

- First aid incidents
- Near miss incidents (including high potential near misses that trigger formal incident investigations)
- Non-occupational incidents
- Dropped objects
- US Onshore Preventable Vehicle Incident Rate (PVIR)
- Process Safety Management Metrics (PSM)

<sup>1</sup> Number of OSHA recordable injuries and illnesses throughout the year per 200,000 actual hours worked

In addition to these initiatives, Murphy targets safety improvements and efficiency gains throughout our operations with tactics such as data sharing and machine learning, which optimize field development programs and thereby reduce potential safety hazards and environmental impacts and waste. Technologies such as managed-pressure drilling and automated rig technology, which focuses on components such as safety alerts, total on-bottom time and real-time directional drilling, achieve lower maintenance needs and ultimately safer operations. Further detail on Murphy's technologies can be found on pages 24-25 under Digital Innovation.

Future Plans – in addition to our many HSE initiatives, we plan to launch “Life Saving Rules (LSR)” in 2020 to include the nine IOGP Life Saving Rules and adding a tenth rule, Fitness for Duty, to the program. In addition, we are implementing a “Hand and Finger” campaign to focus attention on preventing hand and finger injuries across the company. Hand and finger injuries represented the largest component of our recordable injuries in 2019 at more than 40%. In an effort to focus on the severity and risk of incidents incurred or having the potential to incur, we are now internally tracking DART (Days Away, Restricted or Transferred) and looking at the SIF (Serious Injury and Fatality) rate of the incidents across our business.

## Technology and Innovation

Digital excellence, innovation and cybersecurity are the core pillars of Murphy Information Technologies (IT) vision and mission, and they set the tone for enabling business success. From accurately capturing field sensor data in well pads to dynamically analyzing terabytes of seismic data, technology is an integral part of our daily operations. As a result, it is critical that our IT applications and systems function properly and data is secured, regardless of natural disasters or global events.

At Murphy, we take the security and safety of our employees, partners and customers seriously. To combat rapidly evolving cyber threats, we have established an Adaptive Security model, which enables continuous monitoring and analytics for protection across all layers of IT. We have also implemented a comprehensive cybersecurity framework based on leading industry standards and leverage it to integrate good cyber-hygiene across key processes. Further, we have enhanced our security awareness and education initiatives by targeting all user

groups, including third parties, via multiple communication modes on an ongoing basis. To enhance the visibility of cyber security risk, cybersecurity is now routinely included in Board meeting presentations.

To enhance collaboration and productivity, and lay the foundation for the modern workplace, we have adopted leading cloud offerings such as Office 365 and the SAP cloud platform. Our goal was to ensure our users could securely access business-critical systems and data from anywhere, any place and at any time. Additionally, to ensure these business-critical systems are available 24/7/365, we shifted to a proactive disaster avoidance strategy by focusing on resilience rather than recovery. By building effective redundancy in our business-critical systems, we have significantly reduced the recovery time of these systems and mitigated negative business risks. We regularly review these solutions for areas of improvement and relevance.





# Environmental Protection and Conservation

Murphy has a long history of conducting our business in a manner that protects and conserves the environment.

Protecting and preserving the environment is a longstanding and deep-rooted principle for everyone at Murphy. [Charles H. Murphy, Jr.](#) was a forerunner in the environmental awareness movement, and his tireless efforts helped to create standards and practices for the oil and natural gas industry.

For his work in bringing together oil industry leaders and national leaders of the environmental movement, Mr. Murphy was honored with the National Wildlife Federation's citation for outstanding individual service. In 1999, he became the first oil industry executive to receive the prestigious Chevron Conservation Award.

Our environmental initiatives continue to build on the legacy of Charles H. Murphy, Jr., and are directed by our HSE Policy and implemented according to our comprehensive HSE Management System (see page 11).

Our strategic initiatives over the past decade have led to a transformation of the company into a focused E&P player which has resulted in a more sustainable business and a significantly reduced emissions footprint. During this period we have exited high emissions intensity assets in Malaysia, refining, oil sands and heavy oil. We have increased our operational exposure to unconventional assets in Canada, which has some of the world's most comprehensive environmental regulations, and in the

US Gulf of Mexico which can deliver some of the lowest-emission barrels in the industry.

Murphy continues to improve existing assets by making significant investments in equipment upgrades and new technology to monitor, measure and continuously improve our environmental performance.

We focus on reducing greenhouse gas (GHG) and other air emissions, increasing energy efficiencies, protecting water resources and ecosystems, and managing waste and land impact.

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We are proud of our heritage and actively seek opportunities to honor our commitment to protect and conserve the environment.

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## Emissions

The commitments that Murphy has made to environmental protection and minimizing environmental impact have helped to achieve reductions in total GHG emissions and emissions intensity from 2015 to 2019. In 2019, Murphy executed two strategic transactions that materially impacted our portfolio. In June 2019, we acquired primarily operated deep water Gulf of Mexico assets, and, in July 2019, we fully divested our operations in Malaysia. These transactions also resulted in a material change in our total GHG emissions by divesting high-intensity assets and acquiring low-intensity assets. The impact is reflected in the graph below. We have lowered our total company GHG emissions intensity by over 15% from our 2015 levels. Based on our transformed portfolio excluding Malaysia, the reduction is 35% from our 2015 levels.

In addition to monitoring total GHG emissions intensity, Murphy also tracks methane-specific intensity.

### Reporting GHG Emissions and Setting Targets

Murphy is committed to reporting its GHG emissions. Since 2001, Murphy has maintained an inventory of GHG emissions. Starting in 2019, our GHG data was included in the annual Sustainability Report.

We prepared an Internal Annual Worldwide GHG Emissions Report from 2001 through 2017 (disclosures in that report are now integrated into our annual Sustainability Report) and have continually refined our emission surveys as we strive for improved measuring and tracking of our GHG emissions. We report emissions on an operated basis per IPIECA/API/IOGP Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions, and in accordance with regulation of local countries and provinces:

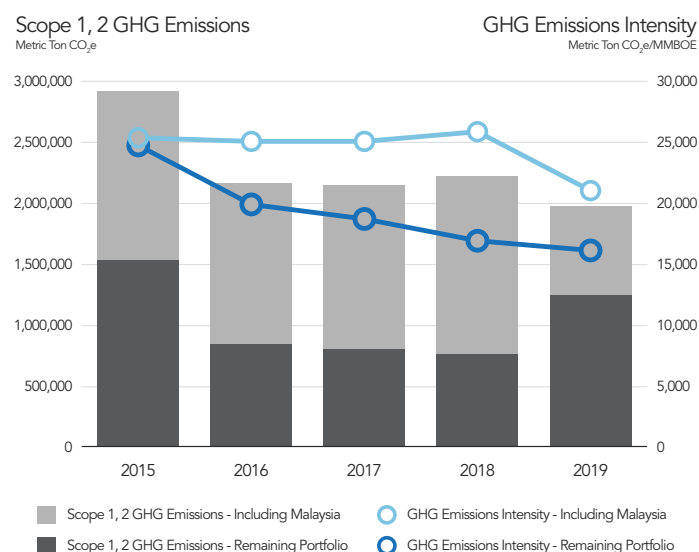
- **United States** – Environmental Protection Agency (EPA) GHG Mandatory Reporting Rule
- **Canada (British Columbia)** – Greenhouse Gas Industrial Reporting and Control Act: Greenhouse Gas Emission Reporting Regulation, British Columbia Reg. 249/2015
- **Malaysia** – API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry
- For other overseas operations, a simplified version of EPA's reporting created for our GHG inventory was used
- Where necessary, additional source types were added to all assets (e.g., indirect emissions) for consistency across the inventory

In 2017, we established internal annual GHG emissions targets for our operating business units, which are re-set every year. This year, as we persevere to reduce our emissions intensity further, we have set a 2030 reduction target of 15 to 20 percent versus our 2019 levels, excluding Malaysia.

### Improving Emissions Performance

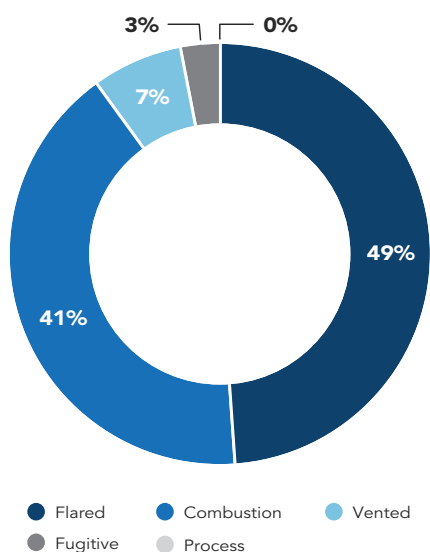
Murphy has made a significant investment to reduce GHG and other emissions, with environmental expenditures totaling approximately \$100 million from 2015 to 2019. Murphy has not only implemented several emissions-reducing technologies, we have also established technical sharing sessions to communicate these best practices and provide a forum to evaluate applicability across our business units and functions. We have a rigorous preventative maintenance program to keep operations running clean and efficiently, and we work with operations and facility design to incorporate GHG reduction technologies and practices into our existing operations as well as new facilities. By understanding the sources of emissions, Murphy has been focusing our efforts on reducing emissions generated from combustion sources and processes that emit predominantly methane.

#### Total GHG Emissions and GHG Emissions Intensity



GHG Emissions and GHG Emissions Intensity	2015	2016	2017	2018	2019
Total Direct + Indirect GHG Emissions <small>Metric Ton CO<sub>2</sub>e</small>	2,926,301	2,167,726	2,140,554	2,225,723	1,974,879
GHG Emissions Intensity <small>Metric Ton CO<sub>2</sub>e/MMBOE</small>	25,645	25,388	25,124	25,912	21,271

Distribution of 2019 Scope 1 GHG Emissions



### Improving Emissions Performance: Methane

Murphy understands that as a GHG, methane is very impactful to the climate due to its Global Warming Potential (GWP). As a result, the company is targeting its efforts to reduce methane emissions and has invested in technologies and redundant pipeline access that reduce venting and fugitive emissions, including:

- Electrification of facilities, pumping units and instrument air compressors
- Replacing high-bleed pneumatic controllers with fuel gas to low-bleed and instrument air actuated controllers at well sites and facilities
- Solar-powered chemical pumps and batteries
- Process efficiencies to reduce venting and flaring
- Pipeline infrastructure to reduce venting and flaring at legacy assets
- Leak detection and repair (LDAR) – utilize forward-looking infrared (FLIR) cameras to reduce methane leaks by routine monitoring and repairing

### Improving Emissions Performance: Combustion

Murphy understands that a large source of emissions across our operations is associated with combustion. Improving our practices not only reduces associated GHG emissions, but also nitrogen oxide (NO<sub>x</sub>), sulphur oxide (SO<sub>x</sub>) and volatile organic compounds (VOC). In fourth quarter 2019, Murphy shifted exclusively to a bi-fuel fracturing fleet in Canada, which replaces diesel consumption with natural gas (field gas where readily available or combustible natural gas). This is expected to reduce both GHG and NO<sub>x</sub> emissions. In the Eagle Ford Shale, Murphy is currently evaluating the use of electric fracturing units.

To further lower combustion emissions, Murphy has reduced truck transportation by connecting production in our operating fields via pipelines whenever practical and cost-efficient, and utilizing layflat hose to transport freshwater and temporary high-density polyethylene (HDPE) pipelines to move non-fresh water through the field, where applicable. Going forward, we will continue to seek opportunities to partner with service providers on emission-reducing innovations.

## DO RIGHT ALWAYS

### Reducing Methane

In an effort to reduce vented methane emissions, high-bleed pneumatic controllers have been replaced with newer, low-bleed alternatives or removed entirely across Murphy's onshore operations. Overall, 118 high-bleed controllers have been replaced or removed (81 controllers from the Kaybob Duvernay and Tupper Montney in Canada, 37 in the Eagle Ford Shale). This has reduced our annual GHG emissions by 7,289 tonnes CO<sub>2</sub>e (2,828 tonnes CO<sub>2</sub>e from the Kaybob Duvernay and Tupper Montney in Canada, 4,461 tonnes CO<sub>2</sub>e in the Eagle Ford Shale). Moreover, we are conserving marketable natural gas that would have been otherwise vented to the atmosphere. Based on the success of this program, we are evaluating additional opportunities to reduce emissions from high-bleed controllers and pneumatic pumps.



Murphy is one of the 26 founding members of The Environmental Partnership (EP), launched by the API in 2017. The EP includes 65 participating oil and natural gas producers. Its focus is on voluntarily reducing emissions from oil and natural gas production.

## Climate Change

We at Murphy know that the world's population and standard of living is growing steadily along with the demand for energy. We recognize that this generates increasing amounts of GHGs, which raise important climate change concerns.

As a company, we are focused on reducing our GHG emissions, and on understanding and mitigating our climate change risks. To guide our climate change strategy, Murphy has adopted a set of [climate change guiding principles](#).

In addition, we work to assess our governance, strategy, risk identification, and management and measurement of climate risks in order to remain in alignment with the Task Force for Climate-Related Financial Disclosures (TCFD) core elements below.

### Core Elements of Recommended Climate-Related Financial Disclosures



Source: [www.fsb-tcfd.org](http://www.fsb-tcfd.org)

#### **Governance**

The organization's governance around climate-related risks and opportunities

#### **Strategy**

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

#### **Risk Management**

The processes used by the organization to identify, assess, and manage climate-related risks

#### **Metrics and Targets**

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

#### **Governance**

At Murphy, we have successfully evolved our business through numerous changes in the external macro environment over the decades. We continue to evolve, thanks to the strategic risk oversight of our Board and management, who stay informed by obtaining input from experts on critical issues such as climate change.

#### **Board Oversight**

The Board of Directors actively oversees climate-related risks and executive management in its assessment, agenda-setting and strategic initiatives. Established processes for performance and risk assessments are in place and are informed by experts from within and outside the organization, as well as by executive management.

Climate-related information is reviewed during the bi-annual meeting of the HSE&CR Committee, as well as through frequent updates on climate policy from Government Affairs to the Board. Annually, we schedule outside experts to present to the Board on a broad range of topics relating to climate and sustainability. Additionally, our own internal resources from enterprise risk management, corporate planning and HSE provide updates on relevant topics, including but not limited to:

- Strategy and initiatives relating to climate change policy
- Significant legislation or regulations, treaties, conventions or other agreements, public policies or scientific developments involving environmental matters
- Significant risks to, and the physical security of, the company's facilities
- Annual GHG inventory

The HSE&CR Committee assists the Board on matters related to:

- The company's compliance with environmental, health and safety laws and regulations and developments at the global, national, regional and local level;
- The company's response to the above-mentioned laws and regulations as part of the company's business strategy and operations;
- The company's general strategy and response to evolving public issues affecting the company in the realm of health, safety, the environment; and
- The company's consideration of evolving matters regarding the climate, responsible business conduct, the community, review of the company's sustainability reports and other ESG issues and concerns that could affect the company's business activities. This includes recommendations to the Board regarding the company's sustainability reports and ESG matters.

### Management's Role

Our management team has the knowledge, tools and experience to effectively oversee climate-related risks and opportunities at the company. Our HSE Executive Advisory Committee includes the President and Chief Executive Officer and senior executives and is responsible for providing executive direction on environmental sustainability. We have an investment committee made up of the President and Chief Executive Officer; Executive Vice President and Chief Financial Officer; Executive Vice President, Operations; Senior Vice President, General Counsel and Corporate Secretary; and senior finance leaders who oversee capital allocation. Additionally, members of the Risk Committee include the Executive Vice President and Chief Financial Officer; Senior Vice President, General Counsel and Corporate Secretary; Executive Vice President, Operations; and other senior executives who identify, prioritize and assign owners to risks, including climate-related risks, with reporting lines up to the Board or applicable Board committee(s).

### Strategy

Murphy believes that oil and natural gas will continue to be a vital part of energy consumption for the long term. However, as we seek to understand the changes in energy demand, our Board, relevant Board committees and management team consider several future energy demand and pricing scenarios to support our strategic decision making. In particular, we focus on the work of the International Energy Agency (IEA) and their Stated Policies and Sustainable Development transition scenarios, as presented in the World Energy Outlook 2019, to inform our strategy.

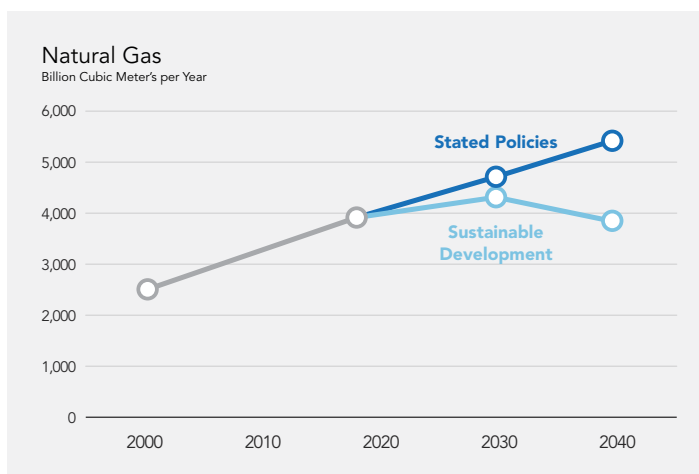
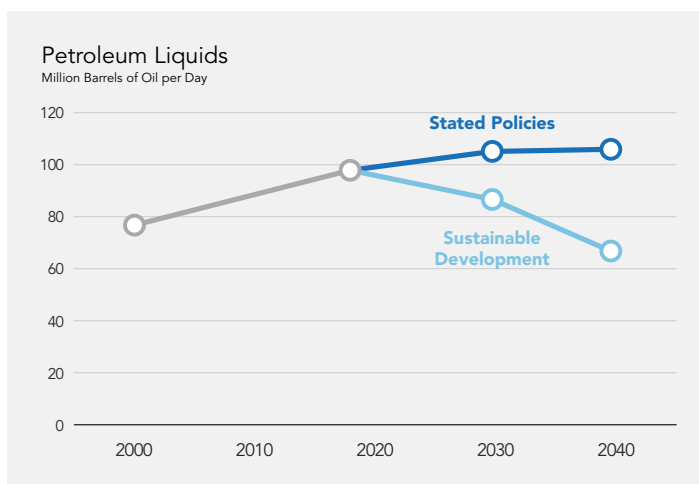
The Stated Policies scenario assumes that, in aggregate, the nations of the world meet their voluntary commitments – Nationally Determined Contributions (NDC) – in the Paris Accords. This scenario presents a future in which

the demand for crude oil stabilizes in the 2020s at around 10% above current levels and does not begin to decrease until after 2040. The demand for natural gas grows more robustly through 2040.

The Sustainable Development scenario assumes the world's energy system changes much more rapidly to meet the 2°C goal. It would require oil consumption to decrease by more than 30% before 2040. Natural gas consumption, after rising for about the next decade, would have to return to roughly the current level by 2040. However, even in this scenario, the IEA emphasizes that a large investment in new oil and natural gas production is needed in the coming decades to offset the natural decline rates of existing wells which far outstrip the consumption decline rates required by the 2°C goal.

Both scenarios require a significant portion of the future global energy demand to be provided by oil and natural gas. Our strategy is to help meet this demand through efficient and sustainable crude oil and natural gas development and exploration.

### Sustainable Development Transition Scenarios



## Scenario Analysis

The two IEA transition scenarios, among others that have been published by industry participants and information providers, set the context for the analysis we perform on our strategy.

As disclosed in the Risk Factors of our [2019 Annual Report](#), our risks fall into the following broad climate-related issues most relevant to our business model:

- **Regulatory** – Policies and regulations related to GHG emissions and climate change
- **Market** – Global demand changes towards non-fossil fuel energy sources
- **Physical** – Severe weather events

Elements of the above described issues manifest themselves over different time horizons. Our short-term time horizon is one to three years which includes our annual budget and reporting period and allows for the realization of near-term operational decisions. Our medium-term time horizon is four to eight years, which includes our planning cycle and captures strategic initiatives such as the materialization of exploration ventures and further capital allocation into our larger assets. Our long-term time horizon is beyond eight years, and is evaluated more fully against the external scenarios that represent alternate transition pathways and the underlying policy, technical and market assumptions such as those defined by IEA.

In addition to the risks, we see opportunities over similar time horizons – some of which we highlighted in earlier sections. Short-term opportunities include fulfilling our commitments to The Environmental Partnership, as well as identifying electrification and infrastructure opportunities throughout our operations. Medium-term opportunities include the portfolio changes we have made in the past and will continue to evaluate in the future. In the past four to eight years, we have divested high-intensity businesses such as our refining business, Malaysia assets and resources such as heavy oil and oil sands in Canada. In addition, this time-frame allows for evaluating design concepts for new offshore facilities that improve emissions intensity over the life of the facility. Longer term, our natural gas assets in Canada are material to our portfolio and provide a low-intensity resource. Our long-term strategy is to allocate capital to investments in resources that will remain economically attractive under various transition pathways.

## Assessing Transition Pathways

We currently view the IEA Stated Policies scenario as the most likely case, while the IEA Sustainable Development

scenario is treated as an alternate outcome. Both scenarios reflect oil price forecasts that are above those we apply internally for short-, medium- and long-term investments. This year, Murphy's Enterprise Risk Management (ERM), Corporate Reserves Management (CRM) and Corporate Planning teams produced a pilot study of applying a carbon price to both long-term oil and natural gas production and investment forecasts. The carbon, oil and natural gas price assumptions were consistent to the IEA Stated Policies and Sustainable Development scenarios. The outcome resulted in no material impact to our year-end 2019 proved reserves. ERM, CRM, executive management and the Board all recognize the potential risk that a carbon price may pose, and are supplementing external data with proprietary internal assessments to help us understand, manage and plan for this possible outcome. The insights gained from the pilot will be used to refine future analysis and disclosure.

## Risk Management

### Identifying Climate Risks

Enterprise Risk Management at Murphy Oil Corporation is carried out as an integrated function by an executive-level Risk Committee and an enterprise risk manager, together reporting to the Board. The Risk Committee has primary responsibility for understanding and managing the risks affecting the company's ability to achieve its objectives, and for keeping the Board informed of the nature of these risks and how they are being managed.

The Risk Committee and enterprise risk manager meet regularly to discuss Murphy's risk register, which is a list of significant enterprise-level uncertainties. Enterprise-level risks are evaluated for both likelihood and significance on qualitative scales, and mitigating strategies are associated with each. The Board receives a comprehensive annual report, along with periodic updates regarding emerging risk information and new mitigation efforts.

In order to stay abreast of climate change issues that may impact our company, its employees and the communities in which we work, Murphy participates in a number of industry associations, such as American Association of Petroleum Geologists (AAPG), American Petroleum Institute (API), Energy and Geoscience Institute (EGI), The Environmental Partnership (EP), Canadian Association of Petroleum Producers (CAPP), Center for Offshore Safety (COS), International Petroleum Industry Environmental Conservation Association (IPIECA), National Ocean Industries Association (NOIA), National Petroleum Council (NPC), and South Texas Energy and Economic Roundtable (STEER). We have also been a sponsor of the MIT Joint Program on the Science and Policy of Global Change since 1998.

## Managing Climate Risks

As we seek to maximize the long-term value of our assets, we know that we must manage foreseeable short-, medium- and long-term risks, including those related to climate change. Through our ERM process, we have identified the following climate change risks that might impact our strategy, and are actively managing mitigation efforts.

- **Regulatory Risk** – Critical components of our strategy in managing regulatory risk are HSE management, reducing GHG emissions, and monitoring climate-related policies/regulations and reporting obligations. Murphy has developed four focus areas to streamline our approach:
  - Increasing **internal awareness and transparency** aims to increase communication both within and across business units, ensuring cross-functional disciplines are aware of their contribution to emissions and opportunities for improvement
  - Enhancing **data quality and tracking** to provide higher quality data, processes and consistency for improved benchmarking and setting KPIs and emissions reduction targets
  - Improving **external reporting and disclosure** to highlight to our employees, shareholders, in addition to our other stakeholders our understanding of and commitment to climate change initiatives
  - Formalizing a process for **evaluation and innovation**, ensuring our technical experts have access to the latest technological advancements, opportunities for participation in research and development, and to increase our ability to effectively evaluate solutions and act quickly upon opportunities

For more information, see Improving Emissions Performance on pages 17-18 of this report.

- **Market Transition Risk** – Murphy has identified three key climate-related issues related to the risk of the market transitioning away from fossil fuels and into lower carbon-emission sources. These are:
  - **Fossil Fuel Business Model Disruption** – Technologies for using energy from non-emitting sources have been developing rapidly over the last two decades and, in some cases, the usage cost has been decreasing at a noticeably faster rate than previously anticipated. We recognize there is a large range of uncertainty regarding future rates of change and timing is unknown.
  - **Price Volatility** – Potential long-term demand destruction as a result of consumers embracing

less carbon-intensive energy sources and carbon pricing could significantly impact long-term net oil and natural gas prices. While there are numerous uncertainties right now, we have an analytical framework to help us understand and manage this risk.

- **Reserves Estimation** – The rules governing the public reporting of proved reserves currently make no provision for the inclusion of contingencies regarding carbon pricing when determining if specific resources can be economically developed and produced. As previously mentioned, our risk, reserves and planning functions work collectively with management and the Board to understand the potential impacts of carbon prices on future reserve calculations.

Additionally, we continue to investigate low-carbon technologies that complement our existing assets, strategy and competencies. The IEA alternative transition pathways highlight that oil and natural gas will continue to play a significant role in future energy demand. We will remain disciplined in our capital allocation to ensure our future investments are competitive using these various pathways.

- **Physical Risk** – Our US and international operations are exposed to different types of physical risks, such as tropical systems, floods and other forms of severe weather. We manage their impact by having robust safety protocols in place, as well as maintaining thorough emergency response and crisis management plans. As described in a later section, Murphy performs exercises and drills based on different scenarios for all our businesses. Additionally, we have experience in responding to actual events, such as the devastating floods experienced in Houston by Hurricane Harvey in 2017.

## Metrics and Targets

One of the core behaviors that underpins our values is that we don't settle for "good enough". This carries through with our aim to improve our assessment and management of climate-related risks and opportunities.

Since 2001, Murphy has maintained and disclosed a worldwide emissions inventory of direct (Scope 1) GHG emissions from sources that are owned or under operational control. Last year we also included indirect (Scope 2) emissions. This year, we have prepared our report to more closely align to the SASB Standard for Oil & Gas – Exploration & Production disclosure topics and accounting metrics, which extend beyond emissions data.

We incorporated safety and spill performance metrics into our company's remuneration policies several years ago, and we are exploring how to integrate climate, asset integrity and other sustainability metrics into our policies. The evaluation will be performed by the Executive Compensation Committee with the support of a third-party advisory firm. Specific recommendations will then be submitted to the Board for consideration.

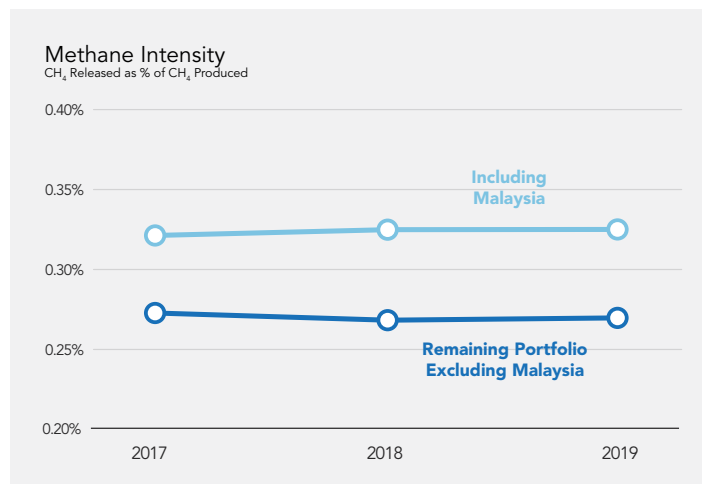
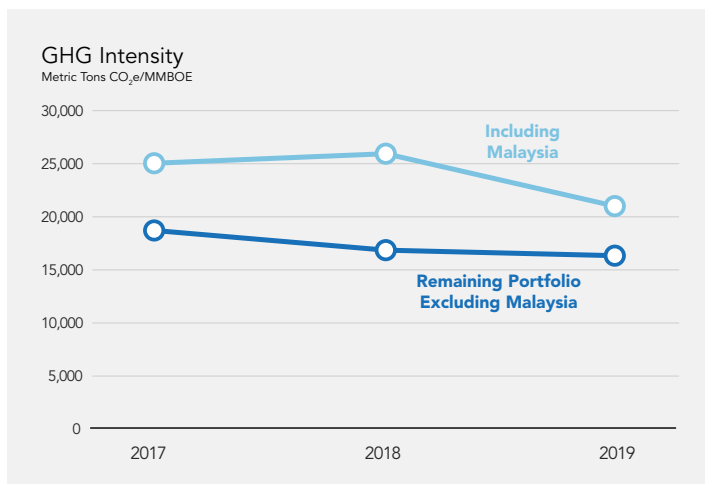
Murphy uses historical emissions data to increase our understanding of sources and associated trends. This understanding has allowed us to prioritize large emission sources, forecast emissions through the medium-term and focus reduction efforts on activities that will have the most significant impact. Because of this, several years ago we set internal emissions targets for our business units. In addition, our business units track metrics that are material to their operations, such as flaring and methane. At the company level, we primarily focus on total GHG emissions intensity.

Year-over-year, Murphy has achieved a reduction in total company intensity of over 15% primarily through divesting

high-intensity assets in Malaysia and acquiring low-intensity assets in the Gulf of Mexico. However, we have seen a similar and more consistent improvement in the remaining portfolio, even with Malaysia excluded.

Methane intensity remains a focus for improvement and compares favorably to stated targets of certain industry groups. We anticipate further reductions from the remaining portfolio with the divestiture of Malaysia.

We have successfully reduced our total company GHG emissions intensity by over 15% from our 2015 levels. Based on our remaining portfolio excluding Malaysia, the reduction is over 35% from our 2015 levels. This year, as part of our annual goal setting process, we set an intensity-based emissions target focused on direct (Scope 1) gross emissions under our operational control. By 2030, we intend to reduce our emissions intensity by 15 to 20 percent using 2019, excluding Malaysia, as a baseline. We believe our continued focus on intensity is the most effective metric to enhance the sustainability of our business.



## Spills Management

Managing spill risk is a critical element in reducing our environmental impact, and procedures to minimize such incidents are covered by our HSE Policy and HSE-MS, asset integrity management and internal annual targets.

Murphy tracks its hydrocarbon spills throughout the year and evaluates the data for preventative measures and continual improvement. Historically, internal targets were set based on the number of spill events in any year, utilizing the International Association of Oil and Gas Producers (IOGP) calculation of hydrocarbon spill events of more than 1 barrel outside secondary containment.

In 2019, we modified our spill metric target to focus on minimizing our overall hydrocarbon spill volumes rather than just events. We set the metric by reviewing industry peer data and setting a target we believe reflects favorable performance relative to the industry as a whole.

The efforts of our employees, contractors and those performing work at Murphy-related operations helped achieve a spill rate of 1.2 BBLS per MMBOE for 2019, which was well below our target of 5.4 BBLS per MMBOE. This rate is calculated as the total hydrocarbon spill volume of more than 1 barrel outside secondary containment per

million barrels of oil equivalent of operated production. The spill rate of 1.2 BBLs per MMBOE is the result of one IOGP spill event in 2019, with a total of 84 barrels spilled during the year, compared to 380 barrels released from five spill events in 2018.

## Digital Innovation

Murphy utilizes predictive analysis, big data and artificial intelligence as part of a technological-based approach to preventing and managing spills, maintaining assets, and conducting drilling and completions operations. Through a collection of mobile-based applications, as well as our onshore Remote Operation Center, the company works to address real-time situations, including remote shutdowns, with operator route optimization. These applications achieve increased response times given automatic field task scheduling through GPS-tracked vehicles, and provide remote troubleshooting and training via Augment Reality (AR) technology to technicians as needed. Further, by addressing issues through these applications, the team reduces emissions and safety risk by minimizing overall drive time. Enhanced computer models and databases further assist in managing risk-based asset integrity, along with proactive repairs when recurrent issues are identified.

In addition to other ongoing projects, Murphy is developing a way to share drilling performance data across multiple rigs to enable real-time optimization, rather than waiting until the wells are drilled. This further enhances our existing machine learning, which improves predictions and optimizes field development programs, including well targeting and spacing through fiber optics, micro seismic, seismic inversion and fully coupled 3D models.

Murphy also works to improve rig efficiency both onshore and offshore through technologies such as managed-pressure drilling and automated rig technology, which focuses on components such as safety alerts, total on-bottom time, tripping and connection time. As a result, we are able to lower maintenance needs and conduct safer operations.

### Remote Operation Center

Murphy's 24-hour Remote Operations Center (ROC) enables automatic KPI tracking and analytics of its onshore operated production facilities and wells, along with managing task assignments and route optimization with field operators and maintenance through the Integrated Operations Platform (IOP). By having a centralized location for onshore drilling and well management, safety is improved with reduced driving times, while potential environmental impacts are lessened through faster response times.

More notably, Murphy has not had an offshore spill volume of greater than one barrel since first entering deepwater operations in 2003. While our impact has certainly improved, we remain focused on minimizing spill risk across our operations.

Through this center, real-time frac optimization is achieved, along with multi-disciplinary interaction, with a focus on completions and minimizing impacts between the original "parent" well and infill "child" wells. Technicians monitor managed-pressure drilling and casing flotation for challenging wells, along with re-fracs, pre-loads, sequencing and potential cube development to enhance well designs and continually improve execution.

Murphy's IOP is a proprietary tool created in-house for onshore task management, Permit to Work and Job Safety Analysis on mobile devices. Through this app, the ROC technician assigns tasks to specific field operators and maintenance based on location and expertise, prioritizing responses to safety, environmental and production impacts, and monitors their progress. This further helps to improve the company's safety culture, reduces downtime and provides valuable insights into making the business more efficient.

### Offshore Real Time Monitoring

During offshore rig operations, real-time data is generated and collected on the rig and used by personnel in the decision-making process. Critical operations and parameters that are monitored include Subsea and Surface BOP control systems, the rig's active fluid circulating system, and the well's downhole conditions. Murphy has developed a plan to monitor and store this data per BSEE requirements for providing technical support and access to onshore expertise while maintaining situational awareness on the offshore facility.

### Murphy Labs

Murphy Labs, known as mLabs, is a centralized portal that uses virtual project teams to globally integrate individual expertise, particularly as it pertains to technology. This portal provides a collection of cross-discipline, cross-functional solutions for various business units through dashboards, apps, videos and tutorials created to resolve problems identified by employees and contractors within the Murphy network. Ultimately, these creations improve operational efficiency and increase awareness of safety hazards for people to work smarter and accomplish tasks in less time. Murphy's production dashboard is a tool created

in-house for production surveillance. The tool encompasses several dashboards that allows the engineers to accurately monitor well performance across all assets in GOM. Using this tool the production engineers are able to see performance trends that allows for quick decision making and further analysis where appropriate utilizing nodal analysis in GAP / Prosper and Pipesim to evaluate well and integrated flowline performance for our fields. Network models are currently in place for all critical subsea assets and expected to be in place for all assets by year end.

One of the innovations developed through mLabs, and as discussed on page 14, the HSE Safety Observation Program (SOP) is a mobile platform for workers to document safety observations real-time while in the field. This data is then processed to assist in identifying hazards, predict trends, take corrective action and reinforce positive behaviors while improving overall safety performance.

## Waste Management

### Onshore

As part of our strategy to minimize the impact on the environment and our commitment to responsible drilling practices, Murphy utilizes specific fluids, as well as water-based mud systems that source non-potable water as the base fluid. After drilling, these fluids are separated from drill cuttings to be re-used in the process, resulting in improved fluid recovery and a reduction in required total volumes while optimizing the overall well control process. This is considered a closed-loop system, which is found on every drilling rig contracted by Murphy.

Consistent with laws, regulations and industry standards, all generated drilling waste is disposed of or treated at compliant facilities, leaving zero residual waste from drilling fluids or cuttings at the site when the rig is removed from location. These facilities conduct proper reclamation procedures and follow local rules and regulations regarding solids re-use, if permitted, at the end user's discretion, such as for road construction. Murphy maintains an internal approved facility list, and both pre-screens and audits the locations to verify proper handling of disposed fluids and solids.

### Offshore

Waste generated from offshore operations is managed in accordance with multiple regulations, including the Clean Water Act (CWA), National Pollutant Discharge Elimination System (NPDES) and Resource Conservation and Recovery Act (RCRA). Food waste from the galley is macerated on the platform or vessel and discharged overboard in compliance with international regulations (MARPOL Protocol). Black water is treated using a marine sanitation device, which is inspected and certified annually in accordance with US Coast Guard regulations.

Waste generated from operations is segregated based on the categorization outlined in the federal RCRA regulations. Depending on the components within this material and the process in which they are generated, we manifest and ship these items for onshore disposal as hazardous or non-hazardous. The onshore disposal facilities are audited by Murphy to ensure that correct handling measures are being taken and that disposal is compliant with state and federal regulations.

Drilling and production stream wastes are managed in accordance with NPDES parameters, which include daily visual monitoring and periodic sampling. Compliance with this system is reported quarterly to the EPA.

Specific drilling fluids that are less harmful for the environment are utilized in our offshore drilling operations. These fluids undergo regular testing and certification. In addition, the drill cuttings are processed offshore in order to reduce retention on cuttings prior to overboard discharge.

## Water Management

### Onshore

We focus on minimizing the impact our water use has on regions where we operate. We start by ensuring onshore operations avoid wetlands, streams, ponds and lakes, waters of the US (WOUS) or US Army Corps of Engineers (USACE) waterbodies as well as areas with higher water scarcity. We have analyzed our operations and determined that we have no operational activities in locations with medium-high (2-3), high (3-4) or extremely high (4-5) overall water risk, as defined by the World Resources Institute's Water Risk Atlas tool (Aqueduct).

As part of our planning process before a new development, we work with third-party biologists and ecologists to conduct environmental site assessments to establish pad staking and pipeline locations that are in accordance with all laws and requirements mandated by any jurisdictional agency that has governmental authority, along with other precautionary measures to protect water sources.

When considering a water source for drilling and completions activities, we undertake assessments of fresh and alternative water sources, as well as supply/demand risk analysis, to identify, characterize, assess and summarize all available options. Alternative sources are considered, with analysis focused on material freshwater offset, potential stakeholder concerns and technical feasibility, including groundwater (non-saline and saline), recycled flowback, municipal wastewater and other collaborative opportunities. Where risks or concerns are identified, Murphy prepares mitigation plans with potentially affected stakeholders.

Through drilling and completions programming and the alternative water source assessment process, Murphy ensures that the environmental flow needs (the volume and timing of water flow required for the aquatic ecosystem to function properly) of the chosen water source are met. The team also works to maintain available free allocation for other water users, adhere to the necessary set-back distances and protect riparian habitat areas.

With adequate and built-out water infrastructure such as pipelines and freshwater impounding storage reservoirs, we strategically withdraw and store water when there is an abundance of volume such as during annual spring

rise of streams in cold climates as a result of snowmelt. Additionally, we monitor water levels and flow rates for some of the surface water bodies from which we pull. Within Canada specifically, trained natural resource specialists apply scientific and technical rigor to manage and protect water resources, and review and adjudicate applications before any water can be used.

### THINK BEYOND POSSIBLE

#### Water Management

In the Tupper Montney field of British Columbia, Murphy has constructed and commissioned a 472,000-barrel saline water reservoir. Essentially a produced water storage pond, this allows us to recycle up to 100% of saline water produced in drilling, including amounts generated during frac flowback operations that would otherwise be disposed, and ultimately reduces our reliance on freshwater for operations.

Where practical, Murphy works with other oil and natural gas companies in the area to share saline water in further efforts to eliminate the need for disposal and to further increase recycling efforts.

As an internal best practice and in accordance with legislative requirements, we track and report water metrics across all our onshore business units. These figures include freshwater consumption, alternative water consumption, alternative water sharing volumes and freshwater use intensity (barrel per lateral length and barrel per frac stage). This practice helps us drive process improvements, maintain compliance and facilitate transparency.

At some sites, storage and conveyance restrictions limit our ability to economically reuse flowback and produced water. Across our onshore operations, we have successfully recycled 12% of our produced water in 2019. We continue to explore opportunities to improve these efforts, and for example, with the addition of produced water storage capacity were able to reuse over 50% of our produced water in our Tupper Montney field.

## Offshore

Unlike our onshore operations, our offshore business does not use fresh water for oil and natural gas production. Uses are for functions typical to marine environments, including ballast systems, machinery cooling and potable water.

All water provided to facilities for the process stream are sourced from seawater and are either untreated or treated with metal ions. Potable water for hygiene and galley use is generated through reverse osmosis, and then returned to the sea through overboard discharges, with regular monitoring for low oil content and toxicity to ensure no impact to aquatic environments. When discharging water offshore, we comply with the National Pollutant Discharge Elimination System (NPDES), managed and regulated by the US Environmental Protection Agency (EPA).

## MAKE IT BETTER

### Water Management

Murphy belongs to and is an active participant in several stakeholder and industry initiatives that aim, in part, to mitigate water risks. These groups include the Offshore Operators Committee (OOC) Water Subcommittee, Montney Water Operators Group (MWOG), Fox Creek Operators Group (FCOG) Water Management Subcommittee and the South Texas Energy & Economic Roundtable (STEER) Water Committee. At the core, their initiatives provide a forum to allow exploration and production companies to work together, cooperate and facilitate responsible development through water sharing, alternative non-freshwater source research and development, infrastructure sharing and best operating practice discussions. Murphy continually strives to reduce its freshwater footprint and looks to established and emerging technologies, subject matter experts and novel strategies to assist in this endeavor.

## Well Integrity

Murphy is committed to protecting the environment, both on the surface and below, by maintaining wellbore integrity throughout the entire life cycle of a well.

### Engineering Design

This begins before a well is permitted. Geologists and engineers evaluate formation depths, pore pressures, and rock fracture gradients in order to prevent loss of well control and in the case of onshore wells, to ensure the protection of freshwater aquifers. We place steel casing and then pump cement to protect the steel and provide multiple isolation barriers for each steel casing run in the well. During this process, zones with potential drilling hazards (such as hydrogen sulfide, carbon dioxide or high pressure) are identified and ANSI/NACE standards are utilized to select proper materials and chemicals to ensure integrity of the wellbore and surface equipment to prevent corrosion for the life of the well. When engineering casing designs, considerations such as temperature, pressure, bending, cementing, running casing, shock loading, pressure testing, lost circulation, buckling and well testing loads are utilized. Additional safety factors are applied for various load conditions such as burst, collapse, tension, compression and triaxial stresses.

### Drilling and Completions

Murphy is committed to conducting business in a manner that ensures its wells are designed, drilled, completed and maintained to high and consistent

standards, complying with all relevant laws and regulations, and compatible with the balanced economic and environmental needs of the community. Murphy's Worldwide Drilling and Well Operations Policy Manual provides guidelines for the well construction process, including design, risk management, installation, testing verification and operational procedure management.

Murphy contracts with drilling rig quality assurance audit companies that create value through the expertise of highly skilled consultants who advise on HSE risk mitigation and optimization of rig equipment performance. Their goal is to assist clients in achieving their objectives of working safely with no incidents, accidents or injuries and recognizing issues that will reduce non-productive time while lowering overall cost.

As part of the completions process, physical isolation devices are put in place to ensure that activities are executed in a flow-controlled and safe manner. Murphy requires multiple isolation devices, all of which are tested and capable of operating both independently and simultaneously throughout the lifecycle of a well, including BOPs (blow out preventers), wellhead, casing, cement, packers and bridge plugs. Before completions, pressure tests are performed to ensure integrity of all the casing strings installed. During completion pumping operations,

pressures are monitored to see potential communication between casing strings and existing offset wells. Additionally, the onshore ROC monitors dashboards for offset frac mitigation while hydraulic fracturing operations are ongoing.

### Production Operations

All well performance data is centrally stored in WellView®, a drilling and well operations data management software, to maintain downhole well records as part of knowledge management. Once an onshore well is brought online, its parameters such as flow and pressures can be monitored remotely 24/7 in our manned ROC.

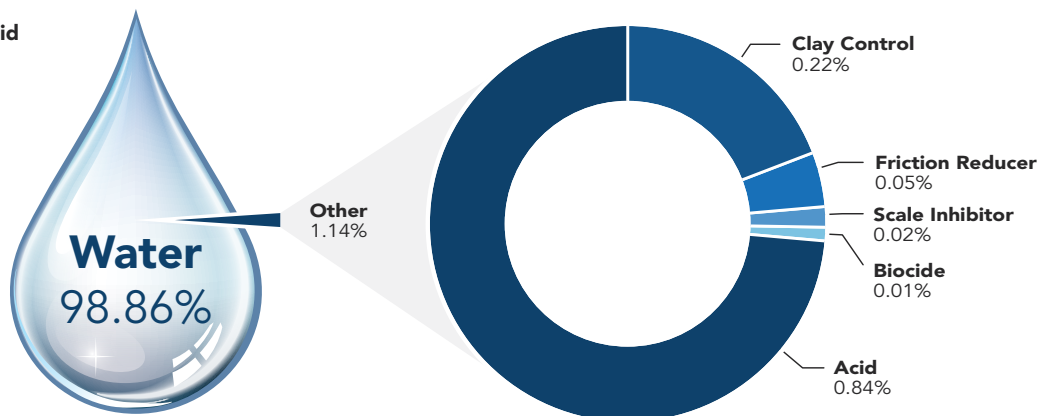
Offshore wells are continuously monitored on location in our control rooms to ensure all wellbore parameters stay within engineered wellbore design limits, ensuring wellbore integrity. All prescribed regulatory testing is adhered to and verified by the regulatory body. Testing includes, but is not limited to, surface-controlled subsurface safety valves, underwater safety valves and boarding shut-down valves.

## Chemical Stewardship

On a typical onshore unconventional hydraulic frac job, 99% of frac fluid that Murphy pumps is composed of water and sand, with the remainder being additives. Murphy does not pump any fracturing fluids downhole that contain diesels or other heavy metals.

While these chemicals are not stored on location, they are blended in real-time on site as needed and as such, Safety Data Sheets (SDS) are located at Murphy work sites and available for all personnel. Supplied by pumping service providers, SDS include physical, health and environmental hazards, as well as protective measures for proper handling, storing and transportation of each chemical.

**Average Onshore Hydraulic Fracturing Fluid Composition**



### Well Abandonment

Murphy performs well abandonments as per federal or state laws and regulations, ensuring downhole isolation of hydrocarbon and sulphur zones, protection any freshwater aquifers, and to prevent migration of formation fluids within the wellbore or to the seafloor.

### Industry Participation

In 2018, Murphy participated in the update of the Well Control/BOP Industry Standard (API Standard 53). Representatives sat on various committees, provided engineering and operational expertise and advice to API and other industry associations.

We are also members of the Center for Offshore Safety (COS). The COS is an industry-led initiative to promote continuous safety improvement for offshore drilling, completions and operations through effective leadership, communication, teamwork, disciplined management systems and independent third-party auditing and certification. COS draws on expertise and input from the US oil and natural gas offshore industry and the regulatory community.



Additionally, and in accordance with US and Canadian regulatory bodies, we utilize and require our pumping service providers to utilize FracFocus, a US online chemical disclosure registry, to publicly disclose the chemicals used to hydraulically fracture our unconventional wells, while protecting trade secrets and confidential information.

## Seismicity

Induced seismicity refers to earthquakes that are caused by human activity. Although the risk and occurrence are generally low, in unconventional oil and natural gas fields induced seismicity can be associated with hydraulic fracturing operations and wastewater disposal sites. With regard to Murphy's unconventional operations, we actively assess the risk, monitor for anomalous induced seismicity and mitigate in full compliance with regulatory agency standards:

- **Alberta Energy Regulator (AER)** – Kaybob Duvernay operations are governed by Subsurface Order Number 2
- **British Columbia Oil and Gas Commission (BCOGC)** – Tupper Montney operations are conducted outside the BCOGC induced seismicity traffic light protocol areas
- **Texas Railroad Commission (Texas RRC)** – Although the Texas RRC has no induced seismicity regulations for the Eagle Ford Shale, Murphy has voluntarily adopted the Texas Oil & Gas Association (TXOGA) recommended best practices initiative on induced seismicity

Murphy is an active participant in industry associations that support knowledge sharing and induced seismicity research. In Canada, Murphy is aligned with the Canadian Association of Petroleum Producers (CAPP) and participates in their induced seismicity working groups for both the Kaybob Duvernay and Tupper Montney. In Texas, Murphy is one of the founding members of the Eagle Ford Induced Seismicity Working Group. Murphy also supports three-way collaboration among industry, regulatory and academia participants, which furthers the understanding of potential causes and mitigation steps to manage induced seismicity.

From continual sharing of information, along with hands-on experience operating in the Kaybob Duvernay where anomalous induced seismicity occurs, Murphy has developed a robust Induced Seismicity Protocol to manage induced seismicity and ensure continued safe and responsible operations. The operational procedures documented in the protocol are updated for each pad in the Kaybob Duvernay and applied more regionally in the Tupper Montney and Eagle Ford Shale.

### Induced Seismicity Protocol

Three-Fold Risk Assessment:

- **Area-Specific** – Based on historical induced seismicity compiled from public and industry sources
- **Pre-Operations** – Based on 3D seismic where available and specific geologic conditions encountered while drilling the well
- **Frac Operations** – Risk levels are continually evaluated and updated in near-real time based on recorded induced seismicity

**Monitoring Plan** – Seismic monitoring provides 24/7 coverage during frac operations, and allows detection and location of anomalous induced seismicity

**Communication Plan** – Process to manage efficient communication between operations staff and industry, including regulators as required

**Completions Mitigation Plan** – Outlines potential adjustments to the completion program to manage and further reduce or eliminate induced seismicity



## Emergency Response and Preparedness

At Murphy, we work hard to minimize all environmental and safety risks and hazards. However, it is critical that we prepare for events that have the potential to negatively impact our employees and contractors, facilities, operations, the environment or the general public and other stakeholders.

Any stakeholder can report an emergency, and emergency phone numbers are posted at every field location.

We have developed an Emergency Response and Crisis Management plan that applies to any emergency event. As part of this plan, Murphy has a dedicated Manager of Emergency Response and Security, who is responsible for all emergency preparedness and response-related activities.

We have developed and implemented a three-tiered approach to emergency response:

1. Emergency Response Teams at the field level
2. Incident Management Team at the mid-senior management level in the office
3. Crisis Management Team at the executive level

Every operating office location maintains an Incident Management Team, and Well Containment Teams are developed for all active wells.

A Public Information Officer (PIO) is part of the Incident Management Team structure. This person prepares messages, communications and press releases per the needs of the team. For emergency messages, we utilize a proprietary communication system called Murphy Alert (MIR3). This system allows us to use a combination of text, email and voice notifications, and allows for responses.

We recognize that our emergency response plans are most effective when accompanied by regular and comprehensive training. We maintain a global training and drill schedule across all business units, providing well containment and spill exercises, Incident Command System (ICS) training and business continuity planning exercises. Training and drills comply with all relevant regulations and engage local emergency response groups. In 2019, we conducted more than 10 regular training and exercise drills across our business.

In 2019, as part of our emergency preparedness program, we conducted active assailant training in all of Murphy's North American office and field locations.

## Helix Well Control Group, Spill Response, and Emergency Preparedness

Murphy is an active member of Helix Well Control Group (HWCG), a consortium made up of 14 operating companies, that provides rapid access to well containment resources and mutual aid personnel. This group also shares access to source control containment equipment and resources (capping stacks and associated equipment) for the US Gulf Of Mexico. In addition, HWCG provides training and practical knowledge opportunities for its members through yearly well containment drills and workshops.

In addition to the HWCG exercise, Murphy also conducts its own annual drills and training of our internal source control and spill response teams in order to demonstrate our ability to respond to any incident, both onshore and offshore. These drills comply with all relevant regulations in countries where we operate and engage local emergency response groups such as Clean Gulf Associates (CGA), Marine Spill Response Corporation (MSRC), and Oil Spill Response Ltd. (OSRL), as well as other key third party specialists.

## Biodiversity Protection

We are committed to protecting biodiversity at all operating locations and at all stages of the project lifecycle. From planning through execution, the Subsurface, Construction, Environment and Land teams collaborate to minimize project footprint and impacts to water, soil, archeology and wildlife. At the end of every project, the HSE team is responsible for implementing a decommissioning, remediation and restoration standard, which is part of the Murphy HSE-MS.

We provide a variety of channels for stakeholders to engage with us regarding concerns of biodiversity protection. In Canada, external stakeholder engagement is a required component of permit issuance for all well sites, pipelines and any other facilities. Soils, archeological, wildlife and vegetation studies are also required. When permit applications are filed, contact information for any stakeholder concerns are provided in the public notification letter. In the US, even though external stakeholder engagement is not always required, Murphy routinely involves its surface stakeholders in the development process to ensure surface land concerns are fairly balanced against ongoing production and development operations. This balancing process includes all surface operations – well sites, pipelines (water, oil and natural gas) and production gathering facilities. Once locations are identified on the surface of the land for use in operations, studies such as soil sampling, wildlife and archeological are conducted and documented. Prior operations' soil sampling is important so that when operations have concluded, Murphy is aware of the standard for which it needs to return the surface of the property once impacted by operations.

Murphy stakeholders can raise biodiversity concerns or grievances via the following methods:

- **By Phone or Website** – We have a dedicated center to process and document any concerns or comments raised by phone or via the website. The call center refers comments to the Land Department, which is responsible for recording, referring, monitoring and ultimately resolving all queries.
- **Surface Land** – Every Murphy landowner is provided with a dedicated surface landman that they can call for any issue. The landman is responsible for ultimate issue resolution.

## Fox Creek Operators Group, Canada

Approximately 40% of our current proved reserves is in Canada, which has some of the world's most comprehensive environmental regulations at the federal, provincial and territorial level. We are proud to operate in full compliance with all laws that govern our operations, including those that protect land use and biodiversity.

The Fox Creek Operators Group (FCOG) is a committed group of exploration and production companies working together to ensure the responsible development of the Kaybob Duvernay play in Alberta, Canada. Murphy, along with six other member companies, participate in FCOG. We have a joint responsibility to identify opportunities for collaboration and together we work to identify operating efficiencies, thereby providing long-term value in the Fox Creek region.

Reducing our operating footprint, and therefore our impact on the land and wildlife, is a core focus of the group. Footprint reduction successes as a result of collaborations include:

- Sharing roads to access water sources, water storage facilities and water intake facilities
- Multi-user road upgrades to enable access to water infrastructure and well sites
- Infrastructure sharing agreements to use existing approved permanent water diversion points, pipeline infrastructure and storage facilities. These reduced the following:
  - Activity in the river and at river's edge
  - Surface operations due to proximity to permanent infrastructure
  - Risk of safety incidents related to the activities associated with temporary surface lines and equipment



# Investing in Our People

At Murphy, we believe one of our greatest strengths is our people. We believe in creating an inclusive culture where our workforce supports and respects each other. As reflected in our company values, we actively encourage and value everyone’s perspective.

## Workforce

We prioritize hiring locally, which allows us to contribute to the communities in which we operate. For our operations outside the US, the majority of our workforce is employed from the local host country. When immediate talent is not available, we ensure proper training is offered so that we may work toward nationalizing positions.

To ensure that our human capital investment and development programs are effective, we track global voluntary employee turnover, broken down by geography. This data is shared on a regular basis with our leadership

team, who use it to develop our human capital strategy. In 2019, the company’s global voluntary turnover rate was 10% as compared to the industry average of approximately 17%, based on industry survey data.

We believe this turnover rate is low in part due to frequent communication between executives and employees through quarterly Town Hall meetings, the Ambassador Program, employee recognition programs, and platforms for open Q&A and benefits discussions.

Workforce Metrics	2017	2018	2019
Headcount (Total Company)	1,128	1,108	823 <sup>1</sup>
Median Age	43	42	41
Employee Turnover (Voluntary)	7%	8%	10%

<sup>1</sup> The headcount reduction in 2019 is primarily driven by the divestment of our Malaysia business.

## Diversity and Inclusion

At Murphy, we believe the rich experiences and backgrounds of our employees strengthen our company, create a productive workforce and drive our success. We have made progress in our diversity and inclusion efforts and will continue in our commitment to foster a diverse and inclusive work environment.

We partner with various organizations to increase the number of diversity candidates in our talent pipeline. All of our open positions are sent through eQuest, which distributes the roles to various diversity and inclusion organizations. Going forward, we will be posting our open positions on a variety of job posting sites such as the Veteran Job Listing, the Society of Women Engineers (SWE) and the National Society of Black Engineers (NSBE) to attract diverse candidates.

As part of our commitment to promote workforce diversity and inclusion, we track age, gender and race/ethnicity for all full-time employees to ensure diverse representation.

The decrease in the percentage of women from 2018 to 2019 is related to our divestiture in Malaysia. In addition, focused hiring efforts in our field operations, which historically attracts a male dominated applicant pool, contributed to the overall decrease. Murphy continues to be committed to increase our representation of women throughout the company and have partnered with organizations to support our efforts.

<b>Women Representation</b> US and International	<b>2017</b>	<b>2018</b>	<b>2019</b>
Executive and Senior Level Managers	17%	17%	14%
First- and Mid-Level Managers	20%	23%	22%
Professionals	41%	44%	34%
Other (Administrative Support and Field)	26%	20%	20%
<b>Total</b>	<b>32%</b>	<b>32%</b>	<b>27%</b>

<b>Minorities Representation</b> US-Based Only	<b>2017</b>	<b>2018</b>	<b>2019</b>
Executive and Senior Level Managers	5%	9%	10%
First- and Mid-Level Managers	20%	24%	24%
Professionals	28%	25%	29%
Other (Administrative Support and Field)	30%	32%	36%
<b>Total</b>	<b>26%</b>	<b>27%</b>	<b>29%</b>

In 2019, we strengthened our commitment to inclusion by offering external training programs on topics such as unconscious bias and creating a harassment-free workplace, while an online training course on Creating a Respectful Workplace was mandated for all employees. In addition, one of our senior leaders received recognition

as one of the top Latino leaders in corporate America (Latino Leaders Magazine). We continue to build upon our diversity and inclusion efforts, with a focus in 2020 on building strategic recruiting relationships, training and development opportunities, and exploring partnerships with minority and women-owned businesses.

## Benefits and Pay Equity

Murphy provides a comprehensive benefits package designed to drive employee wellness and preparedness for their future. This includes excellent health coverage — medical, dental and vision — for employees and their family.

We are especially proud to have begun offering the following enhanced benefits in 2019:

- **Birth or Adoption of a Child** – In addition to 8 weeks of paid maternity leave, birth mothers, fathers or adoptive parents receive 4 weeks to bond with their child
- **Personal Time Off** – Each employee is given 1 week of paid personal leave. Personal time may be used for matters such as caring for an ill family member, attending school functions or other related needs.

In further support of employee wellness, Murphy sponsors employees and contributes to various events throughout the year such as the Chevron Houston Marathon, Movember and HealthyWage Challenge.

### Pay Equity

Murphy conducts a bi-annual process to evaluate base pay equity across the organization by position with a specific focus on equity across gender and race/ethnicity diversity. Murphy quickly works toward closing gaps if any issues are identified.

### Additional Benefits Include:

- + Retirement Benefits for All Eligible Employees
- + 401(k) Savings Plan with Company Match in the US
- + Defined Contribution Pension Plan with Company Match in Canada
- + Employee Assistance Program
- + Employee Educational Assistance
- + Flexible Health Spending Account
- + Life and AD&D Insurance
- + Long-Term Disability
- + Occupational Accidental Death
- + Service Awards
- + Travel Assistance Program

## Workforce Development

To help our employees develop and expand personal and professional skills, Murphy offers a variety of enrichment opportunities and job-related training throughout the year, including in-house, external and virtual seminars and workshops. Additionally, we sponsor employee participation in industry and professional organizations.

Leadership and professional development investments in 2019 included:

- Executive Leadership Program for high potential employees
- CERAWEEK for nominated participants
- Harvard Leadership Program for mid-level managers

- Nautilus Training Alliance for subsurface technical training
- Online My Murphy Learning programs for all employees
- Opportunities for all employees focused on increasing productivity and improving effectiveness

Murphy employees represent the company through a number of professional networks, affording them an opportunity for learning and development, sharing best practices and expertise throughout the industry and supporting sustainable development in our local communities. Examples include:

- American Association of Petroleum Geologists (AAPG)
- American Chamber of Commerce (AmCham)
- American Petroleum Institute (API)
- Calgary Exchange Group (CEG)
- Canadian Association of Petroleum Producers (CAPP)
- Greater Houston Partnership
- Greater Houston Women's Chamber of Commerce
- Hay Upstream Network
- Houston Business Journal Diversity Events
- International Petroleum Industry Environmental Conservation Association (IPIECA)
- National Oceans Industries Association (NOIA)

- Oil and Gas Diversity Council
- Society of Exploration Geophysicists (SEG)
- Society of Petroleum Engineers (SPE)
- South Texas Energy and Economic Roundtable (STEER)
- Women's Energy Network (WEN)

In 2019, through My Murphy Learning, our internal Learning Management System, we offered our workforce more than 369 professional development courses and 463 technical courses online, with training time totaling 11,560 hours for a total spend of approximately \$180,000.

Murphy leadership strongly believes in encouraging and supporting its people who wish to continue their education. Murphy offers an Employee Educational Assistance Program, through which the company contributes towards the cost of tuition, textbooks and some required fees incurred at accredited colleges, universities or trade schools.

## Employee Engagement

In 2019, Murphy launched a Speaker Series for all employees to hear from and engage with influential business and thought leaders who share their valuable insights and experience. Aligned with Murphy's Mission, Vision, Values and Behaviors, the Speaker Series is intended to improve engagement and performance through enriched learning and development and by providing timely and relevant topics.

Murphy also has an Ambassador Program, comprised of employees from different locations and roles throughout the organization who serve as a representative for all employees. The mission of the Ambassadors is to be the voice of every employee, to live out the Mission, Vision, Values and Behaviors of Murphy, and to empower other employees to do the same. The Ambassadors help create a sense of community and strengthen the company culture by championing company initiatives, assisting in the dissemination of information and constructively circulating feedback from employees to the executive team.





# Community Engagement

At Murphy, we understand that having good relations with the local communities in which we work is critical to our operations. Where we have assets located in populated areas, or on land that provides resources to local communities, we undertake various efforts to participate in constructive community engagement and minimize negative impacts. Where indigenous people are members of the local community, our actions are guided specifically by our [Indigenous Rights Policy](#).

Before we make an investment or commence with any new operations, we apply several key processes and practices to ensure we have identified local community and stakeholder concerns and are effectively mitigating any known associated risks.

Murphy communicates with a variety of host country stakeholders, including regulators, non-governmental organizations and other policy influencers, to better understand the issues applicable to our operations and to mitigate potential risks to the company's license to operate. This engagement is done in accordance with Murphy's Code of Business Conduct and Ethics.

We have a new country entry process that helps to assess the non-technical, above-ground risks when evaluating operating opportunities in a new country. This includes an assessment of key demographics, geography, economic standing and outlook, geopolitical relations and political system, regulatory and fiscal regime, and political and security risks.

Negotiating and entering production-sharing contracts or other agreements with international host countries often presents opportunities to support the local community through:

- Prioritization of local suppliers
- Investment opportunities for local content
- Specifications for local companies or workers
- Commitments to social investment programs, to address the development needs of the community and/or contribute to education improvement and work skill development of host country populations

In the US, we undertake a wide range of industry collaboration and corporate citizenship initiatives, which are described in detail in the sections following. Community stakeholders can raise concerns or grievances directly to the Land Department via an owner relations number and website. Murphy landowners are assigned a surface landman for any concerns, and landowners can also reach out directly to their respective landman to address any issue.

In Canada, community stakeholders can raise concerns or grievances directly to the Land Department team members, and via an emergency contact telephone number maintained by Murphy. The Land Department is responsible for collecting, recording and assessing all community and stakeholder concerns or grievances, and the surface land team maintains responsibility for response and resolution, as per OGC and AER public consultation guidelines.

In Mexico, Murphy has conducted a social impact assessment and has established responsibilities that are aligned with regulatory requirements, including

regular interface with community members, and building consensus on an approach to improve the overall welfare of the communities impacted by our operations.

## Industry Collaboration

Murphy is a founding member of the South Texas Energy & Economic Roundtable (STEER) program in the Eagle Ford Shale. STEER was created in large part to support positive developments that are beneficial for the communities that have nurtured and maintained this region for decades, and to successfully integrate the oil and natural gas industry into the region.

STEER focuses on several critical community issues, including availability of housing, healthcare services and infrastructure, road safety, local skills development and environmental protection.

For example, in 2018, STEER worked with the Texas Water Development Board to complete the Evergreen Aquifer Water Study, equipping the Evergreen Underground Water Conservation District with better data, science and decision-making tools. In 2019, STEER conducted a study to identify protected mussel species in the Eagle Ford Shale in order to develop avoidance and mitigation strategies. STEER also participated in the Texas Oil & Gas Association (TXOGA) sponsored Mobile Oilfield Learning Unit, a traveling exhibit of science and technology stations. The unit provides fifth through eighth grade students career experience in the oil and natural gas industry.

In January 2020, STEER completed its merger with TXOGA.

Murphy is also an active member of API, NOIA and local chambers of commerce and business councils.

In Canada, we have implemented a rigorous community consultation process that is regulated by the Alberta Energy Regulator (AER) in Alberta and the Oil and Gas Commission (OGC) in British Columbia. Implementation of the process is undertaken by our surface land team. Members of the surface land team actively participate on three community relations committees: Canadian Association of Petroleum Landmen (CAPL) Field Acquisition Management (FAM) Committee, the Fox Creek Operators Group (FCOG) Communications Committee and the Fox Creek Synergy (FCS) Partnership.

The CAPL FAM Committee's purpose is to bring together operators in British Columbia, Alberta and Saskatchewan to collectively address issues being encountered by the surface land groups of various operators, and collectively finding solutions to those issues. The participating operators also discuss continuous improvement and best practices for the industry as it relates to surface land. FCOG Communications Committee and the FCS Partnership each are made up of operators in Alberta and are focused on community engagement, including community and government updates to industry activities, community events (e.g. Day of Caring) and community investment.

## United Way Partnership

In the US and Canada, Murphy employees annually participate in a campaign to raise funds for the United Way. Murphy's long-term partnership with the United Way began over 50 years ago and has served to increase employee awareness of the needs of their fellow citizens. Over the last 20 years, Murphy and its employees contributed a total of more than \$15 million to benefit United Way organizations, including the Salvation Army, the American Red Cross, and the Boys and Girls Clubs of America.

Murphy's locations across North America have historically led their respective towns in fundraising for the United Way. In 2019, 100% of El Dorado employees contributed a total of approximately \$224,000, inclusive of the company's gift

match, to the local campaign. In Houston, 93% of employees plus the gift matching totaled \$446,000 in contributions, while 95% of Calgary employees donated nearly \$85,000 with the match. In total for 2019, Murphy's North American locations contributed close to \$1 million to United Way through its employees' generosity and gift matching, with 2018 contributions totaling more than \$850,000.

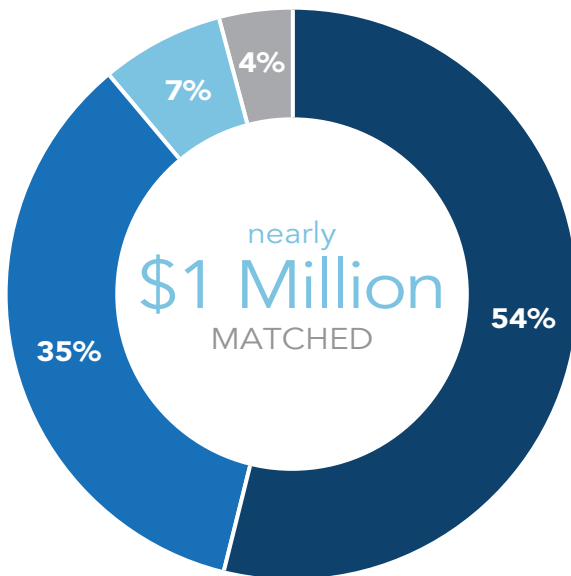


## Corporate Citizenship

For more than half a century, Murphy has been committed to exceptional corporate citizenship. Corporate contributions have spanned from donations to the Calgary Health Trust and Alberta Children’s Hospital Foundation in Canada, to supporting social development programs for underprivileged communities in Malaysia. The company has carefully, thoughtfully and successfully built partnerships with educational, civic and charitable initiatives in the communities in which it operates.

Murphy recognizes and applauds the positive impact its employees make. From volunteering as youth sports coaches to working at women’s shelters, building homes and planting trees, and serving on city government commissions, school boards, chambers of commerce, etc., Murphy employees give enthusiastically of themselves, and of their time, to strengthen their communities.

In addition to volunteerism, Murphy encourages its people to donate personal funds. The Employee Gift Matching Program offered to employees in North America matches qualified donations on a dollar-for-dollar basis. In 2019, Murphy matched nearly \$1 million of employee gifts.



- Education
- Health & Human Services
- Civic & Community
- Culture & Arts



## Passionate About Education

Murphy has built a legacy of contributing to educational institutions and programs. Through the Employee Gift Matching Program, the company increases its match of employee contributions to 2:1 for educational institutions.

In El Dorado, Arkansas, where Murphy was founded, the company has historically sponsored two programs to encourage academic success.

The Murphy Education Program, established in 1997, awards El Dorado Public School students with monetary prizes for outstanding scores on benchmark tests. This program also makes awards to El Dorado High School students for excellence on advanced placement (including an award to the AP teacher), ACT and SAT tests, and for qualifying as a National Merit semifinalist or finalist. Since the program

began, we have issued more than 14,000 awards totaling over \$3 million. The Murphy Education Program also awards academic letter jackets for students who maintain a cumulative grade point average of 3.75 or higher.

In 2007, Murphy established the El Dorado Promise Scholarship Program. Through a \$50 million commitment from the company, the Promise enables graduates of El Dorado High School, who have been enrolled in the school district since at least the ninth grade, to have their college tuition and mandatory fees paid at any, public or private, regionally accredited university in the US (capped at the highest annual resident tuition at an Arkansas public university). Because of this special scholarship program, the college enrollment rate of El Dorado High School graduates has surpassed state and national levels.

More than 2,600 students have received the Promise since it began in 2007. They have used their scholarship at 145 different schools in 31 states. Studies done by the Office for Education Policy (OEP) at the University of Arkansas in 2018 indicate that there was a 16.5 percent increase in college enrollment after the announcement of the Promise, keeping El Dorado School District enrollment on the rise while all nearby communities have declined.

The OEP also found that the Promise was associated with an overall 10.7 percent increase in bachelor's degree completion and a 12.7 percent increase in bachelor's degree completion for Promise scholars whose high school grade point average was in the top 50% of their class.



more than  
**2,600**  
students have been placed in the  
El Dorado Promise scholarship program

.....  
**145**  
colleges and universities have accepted  
the graduates of El Dorado High School



**EL DORADO  
PROMISE**

# Performance Data

	Units	2019	2018	2017	2016	2015
<b>Safety</b>						
Fatalities - Employees + Contractors	#	0	0	0	0	0
Fatality Rate Employees	per total number employees	0	0	0	0	0
Fatality Rate Contractors	per total number contractors	0	0	0	0	0
Workforce Total Recordable Incident Rate - Employees + Contractors	per 200,000 work hrs	0.52	0.40	0.40	0.19	0.28
Total Recordable Injury Rate (TRIR) Employees	per 200,000 work hrs	0.35	0.21	0.07	0	0.06
Total Recordable Injury Rate (TRIR) Contractors	per 200,000 work hrs	0.57	0.45	0.50	0.26	0.33
Workforce Lost Time Incident Rate - Employees + Contractors	per 200,000 work hrs	0.08	0.15	0.12		
Near Miss Frequency Rate Employees	per 200,000 work hrs	1.50	1.86	1.27		
Near Miss Frequency Rate Contractors	per 200,000 work hrs	1.37	1.29	1.09		
Average Hours of Health, Safety and Emergency Response Training - Employees (Based on Total Employee Headcount as at Year-End 2019)	per total number employees	14				
Average Hours of Health, Safety and Emergency Response Training - Contractors (US-Based Only)	per total number contractors	18				

<b>Greenhouse Gas Emissions</b>						
Operated Direct GHG Emissions (Same as Gross Global Scope 1 Emissions)	metric ton CO <sub>2</sub> e	1,935,611	2,174,224 <sup>1</sup>	2,086,208 <sup>2</sup>	2,062,920	2,689,920
Amount of Gross Global Scope 1 Emissions from Flared Hydrocarbons	metric ton CO <sub>2</sub> e	939,599	1,108,320	1,067,788		
Amount of Gross Global Scope 1 Emissions from Other Vented Emissions	metric ton CO <sub>2</sub> e	131,113	112,065	99,719		
Amount of Gross Global Scope 1 Emissions from Combustion	metric ton CO <sub>2</sub> e	789,781	807,735	782,996		
Amount of Gross Global Scope 1 Emissions from Process Emissions	metric ton CO <sub>2</sub> e	7,965	7,617	7,893		
Amount of Gross Global Scope 1 Emissions from Fugitive Emissions/Leaks	metric ton CO <sub>2</sub> e	67,153	138,487	127,812		
Operated Direct GHG Emissions (Scope 1) by Source						
Direct GHG Emissions - Flaring/Venting	%	55.3%	56.1%	56.0%	49.7%	44.6%
Direct GHG Emissions - Fuel Combustion	%	40.8%	37.2%	37.5%	33.7%	37.2%
Direct GHG Emissions - Other	%	3.9%	6.7%	6.5%	16.6%	18.2%

Note: Data not available where none indicated.

	Units	2019	2018	2017	2016	2015
<b>Greenhouse Gas Emissions (cont.)</b>						
Gross Global Scope 1 Emissions from Methane	%	15.5%	16.2%	15.4%		
Gross Global Scope 1 Emission Covered under a Regulatory Program	%	3.8%				
Operated Indirect GHG Emissions (Scope 2 Emissions)	metric ton CO <sub>2</sub> e	39,268	51,499 <sup>1</sup>	54,346 <sup>2</sup>	104,806 <sup>3</sup>	236,381 <sup>3</sup>
GHG Emissions Intensity	metric ton CO <sub>2</sub> e/MMBOE	21,271	25,912 <sup>1</sup>	25,124	25,388	25,645
Total Operated Direct + Indirect GHG Emissions	metric ton CO <sub>2</sub> e	1,974,879	2,225,723 <sup>1</sup>	2,140,554	2,167,726	2,926,301
Gross Operated Production	MMBOE	92.84	85.89 <sup>1</sup>	85.20	85.38	114.11

<b>Air Emissions</b>						
Nitrogen Oxide (NO <sub>x</sub> ) Emissions	metric tons	3,196	2,667	2,215		
Sulfur Oxide (SO <sub>2</sub> ) Emissions	metric tons	798	547	576		
VOC Emissions	metric tons	2,368	2,638	1,536		
Particulate (PM) Emissions	metric tons	307	236	233		

<b>Water<sup>4</sup></b>						
Total Freshwater Use (Same as Total Fresh Water Withdrawn)	thousand cubic meters	5,246	4,248	4,674	2,410	4,329
Groundwater	thousand cubic meters	3,869	2,189	1,745	2,028	4,112
Municipal	thousand cubic meters	0	0	0	0	0
Surface Water	thousand cubic meters	1,377	2,059	2,929	382	217
Total Fresh Water Withdrawn in Regions with High or Extremely High Baseline Water Stress	%	0%				
Volume of Produced Water and Flowback Generated	thousand cubic meters	2,624				
Produced Water and Flowback Discharged	%	25%				
Produced Water and Flowback Injected	%	67%				
Produced Water and Flowback Recycled	%	9%				
Hydrocarbon Content in Discharged Water	metric tons	9.05				
Hydraulically Fractured Wells for Which There Is Public Disclosure of All Fracturing Fluid Chemicals Used	%	100%				
Hydraulic Fracturing Sites Where Ground or Surface Water Quality Deteriorated Compared to a Baseline	%	0%				

<sup>1</sup> 2018 numbers reported last year were preliminary. These have been updated to reflect actuals.

<sup>2</sup> Changed definition of indirect and direct emissions (previous report categorized D&C emissions as 'indirect', these have been moved to 'direct' for this year's report)

<sup>3</sup> Previously reported 2015 and 2016 indirect emissions updated

<sup>4</sup> Changes to water metrics reflect year-over-year continuous improvement processes and data capture

	Units	2019	2018	2017	2016	2015
<b>Spills<sup>5</sup></b>						
Hydrocarbon Spills (Same as Number of Hydrocarbon Spills)	#	1	5	4	8	24
Hydrocarbon Spills (Same as Aggregate Volume of Hydrocarbon Spills)	barrels	83	380	1,475	668	2,126
Volume of Hydrocarbon Spills in Arctic	barrels	0	0	0	0	0
Volume of Hydrocarbon Spills Near Shorelines With ESI Rankings 8-10	barrels	0				
Volume Recovered	barrels	0				
Proved Reserves in or Near Sites With Protected Conservation Status or Endangered Species Habitat	%	1%				
Probable Reserves in or Near Sites With Protected Conservation Status or Endangered Species Habitat	%	N/A				
Process Safety Event (PSE) Rates for Loss of Primary Containment (LOPC) of Greater Consequence (Tier 1)	rate	5				

### Human Rights and Community Relations

Proved Reserves in or Near Areas of Conflict	%	0%				
Probable Reserves in or Near Areas of Conflict	%	0%				
Proved Reserves in or Near Indigenous Land	%	0%				
Probable Reserves in or Near Indigenous Land	%	0%				
Number of Non-Technical Delays	#	N/A				
Duration of Non-Technical Delays	days	N/A				

### Reserves Valuation and Capital Expenditures

Amount Invested in Renewable Energy	\$	53,000				
Revenue Generated by Renewable Energy Sales	\$	0				

### Business Ethics and Transparency

Proved Reserves in Countries That Have the 20 Lowest Rankings in Transparency International's Corruption Perception Index	%	0%				
Probable Reserves in Countries That Have the 20 Lowest Rankings in Transparency International's Corruption Perception Index	%	0%				

<sup>5</sup> Spill event ≥ 1 BBL and outside of containment

	Units	2019	2018	2017	2016	2015
<b>Activity Metrics</b>						
Production of Oil	thousand barrels per day	103.5 <sup>6</sup>	91.0	90.4	103.4	126.4
Production of Natural Gas	million cubic feet per day	350 <sup>6</sup>	422	384	378	428
Production of Synthetic Oil	thousand barrels per day	N/A				
Production of Synthetic Gas	million cubic feet per day	N/A				
Number of Offshore Sites	#	76 <sup>7</sup>				
Number of Terrestrial Sites	#	1,514 <sup>7</sup>				

<sup>6</sup> Total excludes noncontrolling interest, and represents Murphy's true net equity production

<sup>7</sup> Gross wells producing or capable of producing at December 31, 2019

# Content Indices

## Sustainability Accountability Standards Board (SASB)

Code	Metric	Location
<b>Greenhouse Gas Emissions</b>		
EM-EP-110a.1	Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	Performance Data, page 40
EM-EP-110a.2	Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions	Performance Data, page 40
EM-EP-110a.3	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Improving Emissions Performance, page 17
<b>Air Quality</b>		
EM-EP-112a.1	Air emissions of the following pollutants: (1) NO <sub>x</sub> (excluding N <sub>2</sub> O), (2) SO <sub>x</sub> , (3) volatile organic compounds (VOCs), and (4) particulate matter (PM <sub>10</sub> )	Performance Data, page 41; Improving Emissions Performance - Combustion, page 18
<b>Water Management</b>		
EM-EP-140a.1	(1) Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Performance Data, page 41; Water Management, pages 26-27
EM-EP-140a.2	Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	Performance Data, page 41
EM-EP-140a.3	Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used	Performance Data, page 41
EM-EP-140a.4	Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline	Performance Data, page 41
<b>Biodiversity Impacts</b>		
EM-EP-160a.1	Description of environmental management policies and practices for active sites	Biodiversity Protection, page 31
EM-EP-160a.2	Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume impacting shorelines with ESI rankings 8-10, and volume recovered	Performance Data, page 42
EM-EP-160a.3	Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	Performance Data, page 42

Code	Metric	Location
<b>Human Rights &amp; Community Relations</b>		
EM-EP-210a.1	Percentage of (1) proved and (2) probable reserves in or near areas of conflict	Performance Data, page 42
EM-EP-210a.2	Percentage of (1) proved and (2) probable reserves in or near indigenous land	Performance Data, page 42
EM-EP-210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	Community Engagement, pages 36-37; <a href="#">Indigenous Rights Policy</a> on website
EM-EP-210b.1	Discussion of process to manage risks and opportunities associated with community rights and interests	Community Engagement, pages 36-37
EM-EP-210b.2	Number and duration of non-technical delays	Performance Data, page 42

<b>Workforce Health &amp; Safety</b>		
EM-EP-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training for (a) full-time employees, (b) contract employees, and (c) short-service employees	Performance Data, page 40; Safety Performance Monitoring & Measuring, pages 14-15
EM-EP-320a.2	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	HSE – Management System, page 11

<b>Reserves Valuation &amp; Capital Expenditures</b>		
EM-EP-420a.1	Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions	Assessing Transition Pathways, page 21
EM-EP-420a.3	Amount invested in renewable energy, revenue generated by renewable energy sales	Performance Data, page 42
EM-EP-420a.4	Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets	Climate Change – Strategy, pages 20-21

<b>Business Ethics &amp; Transparency</b>		
EM-EP-510a.1	Percentage of (1) proved and (2) probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Performance Data, page 42
EM-EP-510a.2	Description of the management system for prevention of corruption and bribery throughout the value chain	Ethical Business Conduct, page 9

<b>Management of the Legal &amp; Regulatory Environment</b>		
EM-EP-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	Climate Change - Risk Management, page 21; Industry Collaboration, page 37

Code	Metric	Location
<b>Critical Incident Risk Management</b>		
EM-EP-540a.1	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1)	Performance Data, page 42
EM-EP-540a.2	Description of management systems used to identify and mitigate catastrophic and tail-end risks	Well Integrity, pages 27-28; Chemical Stewardship, page 28; Seismicity, page 29; Emergency Response and Preparedness, page 30

<b>Activity Metric</b>		
EM-EP-000.A	Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas	Performance Data, page 43, <a href="#">2019 Form 10-K</a>
EM-EP-000.B	Number of offshore sites	Performance Data, page 43, <a href="#">2019 Form 10-K</a>
EM-EP-000.C	Number of terrestrial sites	Performance Data, page 43, <a href="#">2019 Form 10-K</a>

## Task Force on Climate-Related Financial Disclosures (TCFD)

Element	Disclosure	Location
<b>Governance</b>	Describe the board's oversight of climate-related risks and opportunities.	Climate Change, pages 19-20
	Describe management's role in assessing and managing climate-related risks and opportunities.	Climate Change, page 20
<b>Strategy</b>	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Climate Change, pages 20-22
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Climate Change, pages 20-22
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Climate Change, pages 20-22
<b>Risk Management</b>	Describe the organization's processes for identifying and assessing climate-related risks.	Climate Change, page 21
	Describe the organization's processes for managing climate-related risks.	Climate Change, page 22
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Climate Change, pages 19-22
<b>Metrics and Targets</b>	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Climate Change, pages 22-23
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Climate Change, pages 22-23; Performance Data, pages 40-41
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Climate Change, pages 22-23

## Assurance

Information in this report has been subject to internal review and we believe it to be correct at the time of reporting.

## Forward-Looking Statements and Risks

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are generally identified through the inclusion of words such as “aim”, “anticipate”, “believe”, “drive”, “estimate”, “expect”, “expressed confidence”, “forecast”, “future”, “goal”, “guidance”, “intend”, “may”, “objective”, “outlook”, “plan”, “position”, “potential”, “project”, “seek”, “should”, “strategy”, “target”, “will” or variations of such words and other similar expressions. These statements, which express management’s current views concerning future events or results, are subject to inherent risks and uncertainties. Factors that could cause one or more of these future events or results not to occur as implied by any forward-looking statement include, but are not limited to: macro conditions in the oil and natural gas industry, including supply/demand levels, actions taken by major oil exporters and the resulting impacts on commodity prices; increased volatility or deterioration in the success rate of our exploration programs or in our ability to maintain production rates and replace reserves; reduced customer demand for our products due to environmental, regulatory, technological or other reasons; adverse foreign exchange movements; political and regulatory instability in the markets where we do business; the impact on our operations or market of health pandemics such as COVID-19 and related government responses; other natural hazards impacting our operations or markets; any other deterioration in our business, markets or prospects; any failure to obtain necessary regulatory approvals; any inability to service or refinance our outstanding debt or to access debt markets at acceptable prices; or adverse developments in the US or global capital markets, credit markets or economies in general. For further discussion of factors that could cause one or more of these future events or results not to occur as implied by any forward-looking statement, see “Risk Factors” in our most recent Annual Report on Form 10-K filed with the US Securities and Exchange Commission (“SEC”) and any subsequent Quarterly Report on Form 10-Q or Current Report on Form 8-K that we file, available from the SEC’s website and from Murphy Oil Corporation’s website at <http://ir.murphyoilcorp.com>. Murphy Oil Corporation undertakes no duty to publicly update or revise any forward-looking statements.

## Your Feedback Is Welcome

For questions or feedback on our 2020 Sustainability Report, please contact us at [sustainability@murphyoilcorp.com](mailto:sustainability@murphyoilcorp.com).

## Additional Information

Visit [www.murphyoilcorp.com](http://www.murphyoilcorp.com) for additional information.





## OUR PURPOSE

We believe in providing energy that empowers people.

## OUR MISSION

We challenge the norm, tap into our strong legacy and use our foresight and financial discipline to deliver inspired energy solutions.

## OUR VISION

We see a future where we are an industry leader who is positively impacting lives for the next 100 years and beyond.

## OUR BEHAVIORS

### DO RIGHT ALWAYS

- Respect people, safety, environment and the law
- Follow through on commitments
- Share openly and accurately
- Make it better

### STAY WITH IT

- Show resilience
- Lean into challenges
- Support each other
- Consider the implications

### THINK BEYOND POSSIBLE

- Offer solutions
- Step up and lead
- Don't settle for "good enough"
- Embrace new opportunities

**MURPHY OIL CORPORATION**  
9805 Katy Freeway  
Suite G-200  
Houston, Texas 77024  
(281) 675-9000

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