SUSTAINABLE OPERATIONS THROUGH INNOVATION AND CONTINUOUS IMPROVEMENT
WHO WE ARE

CANADIAN NATURAL RESOURCES LIMITED (CANADIAN NATURAL) is a senior independent crude oil and natural gas exploration, development and production company based in Calgary, Alberta, Canada. Our strong, diversified asset base is comprised of a balanced portfolio of heavy, light and synthetic crude oil and natural gas.

Canadian Natural operates in Western Canada, the U.K. portion of the North Sea and Offshore Africa. Being a responsible and sustainable energy producer means that we develop long-term relationships in the communities where we operate. Our activities create value by providing employment, business development opportunities and essential resources for public services, including health, safety, education and training.

2015 at a glance

**Economic Contributions**

<table>
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<th>Contributions to Canadian governments:</th>
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<tr>
<td>$775 million Royalties</td>
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<td>$287 million Property taxes</td>
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<td>$86 million Corporate taxes</td>
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<td>$64 million Surface and mineral land leases</td>
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Other investments:

- $527 million Research and development
- $10 billion Goods and services from 11,000+ suppliers worldwide

**Employment creation**

- 60,300 person-years*

Employment created by our Canadian operations and through our capital investment program, in person-years.

- Direct employment = 15,100
- Indirect employment (suppliers) = 30,500
- Induced employment (economy at large) = 14,700

(*) A ‘person-year’ of employment refers to the equivalent of one full-time job for one year.

**Environment**

- 18.5 million tonnes CO₂e conserved in the last 5 years
- 90-99% water recycle rates in our larger thermal and polymer flood operations
- 32% reduction in number of spills across our operations

**Safety & Asset Integrity**

- 22% Total Recordable Injury Frequency reduction company-wide, compared to 2014
- 62% decrease in Lost Time Incident rate since 2011
- 32% health improvement among wellness program participants
- 8% decrease in pipeline leaks/1,000 km at North America E&P

**Community**

- $8.3 million Community investment
- $375 million in contracts to Aboriginal businesses and services
- $14 million Employee training and development
- 7,500+ employees working together and doing it right to safely meet global energy needs
We are pleased to take this opportunity to share the details of our successes from 2015 in the Stewardship Report to Stakeholders. In the pages that follow, you will find some of the highlights that demonstrate our commitment to responsible development and performance in the areas of health and safety, asset integrity, environment, innovation, and community.

2015 was a challenging year for the oil and natural gas industry, made difficult by low commodity prices and fundamental changes to the global industry. Yet Canadian Natural believes it is important to keep our high-performance team together to focus on effective, efficient, and reliable operations as we deliver on our plans. As such, Canadian Natural has not laid off staff due to the economic downturn, and instead reduced senior management and staff salaries. We are proud of our highly skilled workforce that has proven ability to be innovative and leverage technology to create value.

Canadian Natural has additional competitive advantages that position us well to create value. We have a large resource base of long-life, low-decline assets in the oil sands, strong conventional and unconventional crude oil and natural gas assets, as well as mature assets that all provide jobs across our Canadian and international operations. For Canadian Natural to fully realize these advantages, we are adapting to the fundamental transformation that has occurred in the oil and natural gas industry. To create value and maintain investment and jobs, we have been diligently focused on improving the way we do business, while adhering to our core values of safety, asset integrity, environmental stewardship, and working with communities.

Over the course of 2015, we applied innovation to create value, improve our safety and environmental performance, ensure reliable operations, and to become more effective and efficient without wavering on our commitment to core values. For instance, we lowered the Total Recordable Injury Frequency (TRIF) achieving record performance, maintained better than industry average pipeline performance, and advanced a proactive risk management system to prevent facility and equipment failures. You will find many other examples of our strong commitment in this report.

Similarly, we have been working with stakeholders, including municipalities, landowners, and governments to improve the way we do business and find cost efficiencies. In 2015, we worked with more than 35,000 landowners and 55 aboriginal communities across our operations in Canada.

Among the most significant environmental challenges facing industry, governments, and stakeholders, is finding the most effective policies to achieve major greenhouse gas emissions reductions. In 2015, Canadian Natural participated in a collaborative process with other producers and environmental organizations to work together and provide policy advice to the Government of Alberta. In November 2015, Alberta announced a significant Climate Leadership Plan that incents ongoing innovation and technology investment in the oil and natural gas sector. In this way, we will continue to do our part to address climate change while protecting jobs and industry competitiveness. Canadians and international observers can have increased confidence that Alberta is a climate change leader with oil and natural gas resources being developed in a responsible way. In many aspects, Canadian Natural is leading the way. You will see in this report the result of innovative practices that have significantly decreased greenhouse gas emissions intensity across our operations.

At Canadian Natural, we also believe that it is time for a new conversation about how Canada can realize full value for its oil and natural gas production while at the same time addressing environmental concerns, including climate change. New pipeline infrastructure is necessary. We need to make progress on pipeline project approvals so that Canadians can receive the full benefits of supplying oil and natural gas to meet global demand. In a world with abundant supplies, Canada should be a preferred source of environmentally-responsible oil and natural gas to meet this demand.

We do wish to comment briefly on the recent forest fires in Fort McMurray. We are strongly committed to communities where we operate, and Fort McMurray is no exception. We appreciate the commitment and dedication of our teams in response to this disaster and we also wish to thank the firefighters and first responders. Canadian Natural will do our part to help the community recover and rebuild.

As our stakeholders, we invite you to learn more about Canadian Natural’s strong performance. Ultimately, working together will ensure Canadian Natural’s success as a world-class operator.

Canadian Natural’s Mission Statement:
“To develop people to work together to create value for the Company’s shareholders by doing it right with fun and integrity.”

STEVE W. LAUT, PRESIDENT
TIM S. MCKAY, CHIEF OPERATING OFFICER
N. MURRAY EDWARDS, EXECUTIVE CHAIRMAN
At Canadian Natural, safety is a core value that underlies all our activities to reach our ultimate goal of ‘No harm to people; No safety incidents’.

To ensure safe and reliable operations, we have a certified Safety Management System (SMS) in place that aligns with industry’s highest safety standards. Within the SMS, our Safety Excellence program continues to support continuous improvement in our performance. To this end, we set targets, measure our performance and apply innovative practices leading to better results.

Our Safety and Asset Integrity departments integrate Management System frameworks for Personal Safety and Asset Integrity, as well as Process Safety. Process Safety Management (PSM) is a systematic approach to preventing hydrocarbon releases and ensuring safety company-wide. Our management systems are designed to deliver operational excellence through continuous improvement.

**HEALTH AND SAFETY**

**FRONT-LINE DRIVEN SAFETY CULTURE**

Canadian Natural has developed a culture of safety using a combination of front-line driven initiatives, education and feedback from the field to ensure safe and reliable operations for employees, contractors and the communities where we operate. Personalizing safety engages everyone to participate and contribute to a safer workplace. It empowers individuals to watch behaviours, identify risks and ensure mitigation measures are in place for their own safety and the safety of those around them.

Safety as a core value is reinforced from management down to each and every employee and contractor. As a key foundation of our safety culture, our leadership’s commitment to Safety Excellence is demonstrated by having a visible presence in the field. Safety dialogues between our frontline staff and senior management strengthen our culture and encourage valuable feedback.

**SAFETY EXCELLENCE**

Our performance reflects our commitment. Canadian Natural remains a leader in safety performance with the top quartile performance among our peers. Our safety performance has continued to improve in 2015. The positive trends indicate that our SMS and our Safety Excellence initiatives, as verified through leading indicators, continue to prove successful in driving safety performance improvement to achieve our ultimate goal of no harm to people and no safety incidents. Our most successful Safety Excellence initiatives include:

**Safety Excellence Meetings**
Senior management conducts Safety Excellence Meetings for all field operations staff, supervisors, and contractors at all our field districts, offshore platforms and head office in Calgary, Alberta. During 2015, our senior leaders spent many days in the field, conducting a total of 28 Safety Excellence meetings with 3,853 participants across our operations. These sessions reinforce our strong commitment to continuous improvement in our safety performance. For instance, vehicle incidents were an area of focus at the North America Exploration and Production (NA E&P) Safety Excellence Meetings. Simultaneously, we piloted a distracted driving program to address fatigue management, among other issues, that resulted in a 29 per cent reduction of vehicle incidents compared to 2014. Based on this success, the distracted driving program is transitioning to full-scale implementation in our NA E&P operations in 2016.

**Worksite Safety Observations (WSOs)**
This front-line driven process focuses on on-the-job worksite behaviours. Every day, our staff engages in positive discussions with our service providers to assist in the successful completion of the task they are performing without incident. WSOs have played a significant role ensuring safety at our worksites, by reducing injuries and improving our performance across our operations.

A similar behavioural-based observation process called “Doing it Right!” (DiR) is being used in our Canadian Natural Resources International (CNRI) operations. Changes implemented during 2015 in the DiR system are simplifying the process to improve user input and tracking efficiency, as well as more consistent and comprehensive data analysis.

**Contractors Safety Excellence Meetings**
Working with contractors and service providers continues to drive improvements in our safety performance. Management from our service providers and Canadian Natural work together with a focus on incident performance; they identify issues and establish measurable action items to improve worker safety.
Through this collaborative effort, contractor safety performance has improved on a year-over-year basis, which in turn, strengthens our overall performance in reducing corporate injury frequency.

Between 2014 and 2015, we decreased NA E&P and Horizon contractor recordable injury frequency by 50 per cent for those contractors identified with higher than average incident rates. Together with the WSO, contractor meetings continue to be an integral tool to engage in positive communications with service providers to enhance worker safety.

SAFETY PERFORMANCE
Our focus on reducing injuries across the company has resulted in significant improvements. Our recordable injuries decreased by 51 per cent in NA E&P and by 10 per cent at Horizon compared to 2014, as a result of our action plans focusing on the top five causes of injuries, WSOs and supervisor engagement. Our “Don’t Let Your Safety Slip in Winter” campaign has proven successful by reducing the number of incidents (slips, trips and falls) at Horizon by 27 per cent from 2014. At CNRI, we are reducing injuries through coaching and mentorship of our frontline supervisors and working collaboratively with our offshore teams.

Injury reductions across our operations have translated into a decrease in Lost Time Incident (LTI) frequency, as well as a reduction in the severity rate of incidents. LTI is an injury incident where a worker is unable to return to work the next scheduled work day. Our corporate LTI frequency continues to trend down, reaching a record low rate of 0.05 in 2015 — an improvement of 62 per cent since 2011.

All these performance improvements are leading the positive long-term trend in our corporate Total Recordable Injury Frequency (TRIF). Our programs are proving effective in reducing incidents at Canadian Natural and have improved our corporate TRIF performance to an all-time low of 0.57 in 2015. We reduced our NA E&P TRIF by 28 per cent, Horizon’s TRIF by 30 per cent and CNRI’s TRIF by 21 per cent when compared to 2014.

CONTINUOUS IMPROVEMENT IN SAFETY MANAGEMENT
Supervisor safety training is an ongoing priority to reinforce responsibilities and leadership skills. Our Safety Teams provide WSO coaching sessions to our frontline staff to support good quality interventions. Our coaching model is continuously carried out on a daily basis at our operations.

This internal process also supports the annual external Certificate of Recognition (COR) maintenance audit in Canada. In 2015, our NA E&P and Horizon operations renewed the COR and maintained the Partnership in Injury Reduction (PIR) status with the Government of Alberta.
MANAGING EMERGENCY RESPONSE
Continuous improvement of our emergency response processes reinforces our SMS programming and our commitment to the safety of our people and the public. Canadian Natural has a comprehensive corporate Emergency Response Plan (ERP) system that enables quick, appropriate response and management of any incident that might occur at our sites.

Canadian Natural’s corporate ERP system meets regulatory requirements in each jurisdiction, as well as our emergency response needs. Our ERP system works as an Incident Command System (ICS) — it provides a common hierarchy and an integrated organizational structure for all aspects of the response to enable effective and efficient incident management. In 2015, we also reviewed and updated all Emergency Response Plans for our major facilities in North America.

In addition to maintaining our detailed ERP system, training is an important element of preparedness to ensure reliable and effective emergency response. In 2015, we completed all our scheduled ERP training exercises — 118 in our NA E&P operations, 84 at Horizon, 11 in our CNRI onshore offices and 15 in our offshore operations. Federal and provincial regulatory bodies participated in all major ERP exercises and training sessions and concluded that our ERP system met the applicable regulations. Read more in our “Spill preparedness and emergency response” section on page 18.

STRIVE WELLNESS PROGRAM
We take great care to ensure that our people have opportunities to improve their health and wellness. Canadian Natural’s Strive wellness program is now in its fourth year, and well on its way to helping build and maintain a culture of wellness within the Company.

To date, the program has been made available to 7,265 eligible employees in NA E&P, and 418 eligible employees at our International offices in the UK and Africa. Each year, since its launch in 2012, employee participation numbers have grown. Most importantly, a comprehensive evaluation of the impact of the program shows a 32 per cent improvement in employee health and some permanent healthy lifestyle changes for program members.

Strive encourages employees to proactively manage and improve their health and wellness by developing healthy lifestyle behaviours that are sustainable. Participants earn points in recognition of different aspects of healthy living, from exercising and good nutrition, to contributing to community based activities like volunteering. Strive is incentivized and tied to direct benefits where financial rewards are generated and used towards healthcare and wellness expenses.

TRAINING AND COMPETENCY
At Canadian Natural, we know that people are the foundation to our business. Developing people is part of our culture, ensuring we have the right people with the right skills. In 2015, Canadian Natural invested more than $14 million in education and training, including required safety and competency courses, as well as ongoing professional development opportunities. Competency training refers to all job-related skills training that allow workers to complete assigned tasks safely and effectively.

In 2015, Canadian Natural maintained a consistent investment in training, despite the economic downturn, and leveraged opportunities to offer more courses while managing costs, working within benchmarks for competency and safety training. We offered close to 500 safety and competency courses, and recorded more than 87,000 employee and contractor registrations to training events across our operations. That represents an increase of 10,000 courses completed compared to 2014.

To improve our systems to measure and track training, we are advancing the implementation of a centralized Learning Management System (LMS) to provide a single point of access and consistent record management for all training in North America. The LMS rollout was completed for the majority of our Horizon operations during 2015, and will continue in 2016 for the remaining Horizon and NA E&P operating areas. At our UK operations, we use a Competence Management and Development System (CMDS) to track the development of our people.

Visit our website for more details on our training and development management systems.
HEALTH AND SAFETY HIGHLIGHTS

PRIORITIES IN 2015

Safety Management System (SMS)
- Implement unified NA E&P and Horizon SMS.
- Enhance SMS action plans for each division to ensure worker safety.
- Maximize use of reporting software and develop action plans to address areas for improvement in all divisions.
- Provide increased safety, health and environment support to all our business areas across the company.

Achievements in 2015
- Implemented unified NA E&P and Horizon SMS under one SMS for “Canadian Natural North American Operations”.
- Enhanced SMS action plans for each business area and identified action items.
- Used reporting software to focus on issues specific to each local area.
- Incorporated reporting into monthly safety communications for company-wide use.
- With a focus on Offshore Africa operations, supported Côte d’Ivoire offshore drilling operations and conducted impact assessments.

Priorities in 2016
- Embed the unified SMS across North American operations and develop a continuous improvement action plan.
- Complete all SMS action items identified.
- Provide enhanced statistical information and awareness to improve worker safety and regulatory compliance company-wide.

Safety Excellence
- Reduce injuries across all divisions.
- Continue to deliver Safety Excellence Meetings with senior management in all divisions.
- Reinforce safety awareness through industry recognized Safety Stand Down program. Conduct safety inspections and supervisor field visits in NA E&P operations.

Achievements in 2015
- 27% reduction in the number of incidents (slips, trips and falls) from 2014 to 2015 at Horizon as a result of the “Don’t Let Your Safety Slip in Winter” campaign
- 50% reduction in corporate LTI from 2014.
- TRIF reduction of 28% in NA E&P, 30% at Horizon and 21% at CNRI compared to 2014.
- Senior management held 28 Safety Excellence meetings across all our field districts with a total of 3,853 participants.
- Rolled out the 2015 safety theme “Safety is a Journey, not a Destination” to encourage safety discussions between frontline workers and senior executives, through Enform’s Safety Stand Down program.

Priorities in 2016
- Continue to work with all operations to reduce injuries company-wide
- Continue emphasis on incident prevention campaign across our North American operations.
- Continue with Safety Excellence meetings and reinforce our focus on safe, compliant and reliable operations.
- Provide support to frontline staff and operations through Enform’s 2016 Safety Stand Down theme: ‘Keeping “u” Out of Injuries’.

Contractor Safety Management
- Continue with Contractor Safety Excellence meetings program to improve service providers’ safety performance.
- Continue to focus on ‘Safety as a Core Value’ through monthly safety meetings and WSO inspections.
- Develop Hazard Assessment workshop to supplement Safety Leadership and WSO Safety workshops.

Achievements in 2015
- 51% reduction in Contractor TRIF at NA E&P and 50% at Horizon compared to 2014, for contractors who took part in our Contractor Safety Excellence Meetings.
- WSO program continued to be an integral tool of our SMS to enhance on-site employee and worker safety.
- Conducted Leadership Site Supervisor Safety training in all field locations to reinforce frontline workers’ expectations and reduce behavior-based incidents.
- Developed additional safety training to improve hazard identification to reduce causes for potential injury incidents identified at NA E&P and Horizon operations.

Priorities in 2016
- Continue Contractor Safety Excellence meetings program to drive continuous improvements in performance.
- Extend the frontline WSO supervisor coaching across the Operations team.
- Continue to enhance quality of the interventions in our DiR program.
- Update and implement SHE expectations for all major contracts in CNRI, and SHE Improvement Plans.
- Continue to drive the WSO/Dir program through Leadership training.
- Extend hazard identification training to CNRI.

Safety Leadership
- Continue to strengthen leadership engagement to demonstrate ‘Safety as a Core Value’ and reduce incidents.
- Develop quarterly Safety, Health and Environment themes to focus CNRI frontline safety awareness meetings.

Achievements in 2015
- Conducted senior management field visits to reinforce supervisors’ safety responsibilities.
- Completed high-level Supervisor focused version of Site Supervisory Safety Training (SSST) program.
- Developed safety awareness campaigns based on industry themes and standards, focusing on risk and hazard awareness, and clear communication to promote safe behaviours.

Priorities in 2016
- Continue senior management field visits to reinforce supervisors’ safety responsibilities.
- Develop an offshore version of the annual Safety Health Environment Action Committee (SHEAC) meeting materials to ensure CNRI frontline workforce alignment.

Emergency Response
- Continue ERP training exercises with senior management.
- Continue to conduct emergency preparedness exercises at each division.

Achievements in 2015
- Completed all scheduled ERP exercises across our operations with all levels of management.
- Completed 228 ERP training exercises across our operations.

Priorities in 2016
- Continue ERP training exercises with senior management.
- Continue to conduct ERP training exercises at each division focusing on key risk areas.

Wellness
- Complete data analysis to evaluate effectiveness of Strive program.
- Expand program awareness to increase employee participation.

Achievements in 2015
- 32% improvement in participants’ health risks; 48% program members maintained their health at low or moderate risk level.
- Cost of benefits for participants rose at almost half the rate for non-participants.
- Focused on communications and activities targeted at each business area.
- Increased website users as a result of easier online access and enhancements to the site.

Priorities in 2016
- Focus program elements on key areas identified by data analytics (i.e. high risk health areas).
- Continued focus on tailored and targeted communications, and simplifying access and involvement process to increase program participation.
At Canadian Natural, we are committed to high levels of asset integrity to ensure safe, reliable, effective and efficient operations. To support this goal, our Asset Integrity Management System is in place to monitor, audit and review our performance, while driving continuous improvement.

We proactively implement programs to safeguard worker safety and reduce incidents by minimizing the exposure to risks. We complete risk-based evaluations and inspections, and implement appropriate monitoring and mitigation strategies to protect people, the environment, and the integrity of our assets.

To manage the integrity of our operations, we focus on the safety, compliance, and reliability of our pipelines, pressure equipment, tanks, and infrastructure. We operate one of the largest inventories of upstream process equipment within Canada, including over 80,000 kilometres of pipeline and more than 50,000 pieces of registered pressure equipment.

Additionally, Canadian Natural Resources International (CNRI) has facilities located in the United Kingdom (UK) sector of the North Sea and Offshore Africa, including five offshore platforms and four Floating Production, Storage and Offtake (FPSO) vessels.

**PROCESS SAFETY MANAGEMENT**

At Canadian Natural, the integrity of our process equipment and structures across all of our operations is an essential part of ensuring safety company-wide. To do this, we have a Process Safety Management (PSM) system to prevent, minimize, mitigate and address unplanned spills, and loss of pressure containment that could occur. PSM is based on major accident risk management. It integrates and aligns technical, maintenance, operational, organizational and human (leadership and competency) aspects of our business to prevent and manage potential risk to personnel, the environment and the facilities we operate.

We are committed to continuously improving our PSM system and sustaining operational excellence. These were our key initiatives in 2015:

- Enhanced consistency of risk management across all divisions by introducing a unified and enhanced corporate risk matrix.
- Continued to improve front-line employee involvement at Horizon by focusing on Process Safety Event root cause analysis.
- Completed design and operability reviews at all our North Sea producing platforms, and continued to complete these reviews for Horizon major units coming online as part of the plant expansion.

Ongoing efforts to enhance performance through key elements of our PSM system — greater hazard awareness, competency training, incident investigation and implementation of lessons learned, management of change and technical audits — continue to deliver improvements to prevent hydrocarbon releases.

At our CNRI operations, our hydrocarbon releases have decreased by 43 per cent — from 14 releases in 2014 to eight in 2015. We also completed all our annual Technical Authority audits. While no threats to our operations were identified, findings from these audits will be translated into improvement actions for 2016. The audit program included visits to all our North Sea platforms and each of our Offshore Africa operations. These internal audits are necessary to ensure that our Integrity Management System is being implemented effectively. Our follow-up process includes action plans with areas for improvement, and scheduling and tracking actions to completion.

As part of our continuous improvement plans and effectively managing the fitness of our plants and equipment, we conducted a fundamental review of our risk assessment processes, with a particular focus on Operational Risk Assessments (ORA), in our International and Horizon operations. The ORA process is being implemented in our NA E&P operations as the next step of a phased implementation.

Our focused PSM approach continued at our Horizon operations, with the implementation of cross-functional Operations Centered Organization (OCO) teams. The OCO teams work together to identify potential threats to the ongoing safety and reliability of our assets, develop recommendations and implement remedial actions.
Creating value through technical and regulatory expertise

Canadian Natural’s Corporate Integrity Advisory team consists of experienced individuals who are committed to helping the company navigate through the technical challenges associated with managing one of the largest upstream asset networks in Canada. The Corporate Integrity Advisory Team brings a wealth of technical and regulatory expertise and experience in corrosion, materials, inspection, codes and standards, and risk management. The technical skills of this group are employed across our operations to drive a consistent approach to problem solving and align solutions with industry best practices.

PIPELINE INTEGRITY MANAGEMENT

Our goal is to be proactive and prevent pipeline failures by placing a strong focus on proactive risk management, from risk identification to mitigation. We assign a risk value to each pipeline based on the likelihood of failure and the potential consequences of that failure. Our risk-based, comprehensive pipeline integrity management system is built on:

- Proven risk assessment tools to effectively deploy resources and capital to areas of highest risk — includes pipeline risk assessments, detailed evaluations of high consequence pipelines, and a comprehensive Water Crossing Management program.

- Effective and efficient execution of risk mitigation activities — includes ongoing implementation (for new pipelines) and enhancement of corrosion mitigation and monitoring programs, planned inspections and repairs, incident investigations, and program auditing.

- Strong operational, engineering, and regulatory teams focused on working together to meet clearly defined objectives aligned with our Corporate Statement on Asset Integrity.

Our teams work closely to ensure that if a leak or spill occurs, the consequence is minimized through our spill preparedness programs. These programs are subject to regular “table-top” practice exercises to enable effective response in the unlikely event of a spill.

Pipeline In-Line Inspections (ILIs) are one of the tools that allow us to manage risks by identifying opportunities to prevent pipeline failures that may lead to spills or leaks. Proactive risk assessments are used to identify which pipelines require inspections in the upcoming year. In 2015, we completed all required pipeline inspections, to ensure continued safe and reliable pipeline operations.

Pipeline Water Crossing Management

Canadian Natural has a comprehensive GeoHazard Management System that considers long-term geological and environmental conditions for the effective management of our pipelines that intersect water bodies. This system relies on a detailed risk assessment methodology, including: a risk-based inventory of each water crossing, a risk-based prioritization process, likelihood assessment criteria developed by industry-recognized GeoHazard specialists, a stakeholder review process, Engineering Assessment process, specialized monitoring (flood and slope activity) and mitigation process. Our annual field inspection work continues to progress according to the risk-based high consequence water crossings program, and no immediate threats to pipeline integrity were found in 2015.

Pipeline Abandonment Program

Our Abandonment and Discontinuation program is aimed at reducing liabilities and meeting regulatory requirements associated with inactive pipelines. This program ensures pipelines are left in a safe and environmentally sound manner. In 2015, a total of 1,450 pipelines were abandoned or discontinued, minimizing our environmental footprint in Alberta, British Columbia, and Saskatchewan; representing 4 per cent more than 2014 and exceeding our target of 1,300.

Pipeline Performance

We continue to perform better than industry in pipeline leaks per 1,000 km in Alberta, while operating over twice as much pipeline length than our nearest peer. Our focus on pipeline integrity resulted in an 8 per cent reduction in our frequency of pipeline leaks/1,000 km in our NA E&P operations in 2015, down to 1.79 from 1.94 in 2014. Failure Reduction Plans were strategically developed in 2015 and will be enhanced and executed in 2016 to further prevent pipeline leaks.

In 2015, we experienced an unexpected failure of one of our flexible production risers in Offshore Africa. This type of occurrence had not been seen to date in flexible risers used in similar service. The impact to the environment was negligible, and we were able to provide safety assurance with the use of an innovative technology; a flexible riser scanning tool was able to confirm the integrity status of the riser and determine the fitness for continued service of the other flexible risers in the system.

8% DECREASE IN PIPELINE LEAKS/1,000 KM IN NA E&P

1,450 PIPELINES ABANDONED IN NA E&P
**FACILITIES INTEGRITY**

We manage the integrity of our pressure equipment in Canada through our in-house quality assurance programs or PEIMS (Pressure Equipment Integrity Management Systems). Each of the PEIMS in place for our NA E&P and Horizon operations is registered and remains fully compliant with the regional jurisdictions in which we operate, and is subject to periodic audits.

All our Asset Integrity personnel involved in the PEIMS program undergo certification and a rigorous competency assessment so that they can perform pressure equipment inspections effectively and efficiently. To ensure they are properly trained, our PEIMS includes a Competency Based Training Program.

PEIMS continuous improvement initiatives implemented in 2015:

- Added an internal Quality Assurance Program across all of our North American operations to strengthen our internal capabilities and allow our staff to perform maintenance work on mechanically assembled piping systems.
- Continued to integrate new equipment being commissioned for our Horizon expansion projects into our Asset Integrity Management System, to make sure integrity management plans are in place prior to all new units being brought online. This work will continue through 2016 and into 2017.

**Pressure Equipment Assessment**

Our Asset Integrity team continued to advance risk-based assessments to enhance asset integrity and optimize the inspection intervals for pressure equipment in our NA E&P operations. This thorough technical review validates the reliability and facility integrity of our equipment to determine the inspection frequency required. This approach will be extended into our Horizon operations and remains an area of focus in 2016.

In 2015, we also initiated the development of a common pressure safety valve (PSV) risk-based inspection methodology for examination of our equipment across our operations. This methodology will enable a common approach to how we maintain our PSVs, and the optimization of our PSV maintenance schedule.

**Corrosion Under Insulation Inspections**

Our North Sea and Offshore Africa oil and natural gas facilities are subject to intense waves, highly corrosive elements and extreme operating conditions that can present significant challenges to managing infrastructure. Our robust Asset Integrity Management System ensures our assets are fit for purpose over their lifetime.

The Corrosion Under Insulation (CUI) inspections program effectively manages the risks of leaks due to corrosion on our offshore platforms. Our CUI strategy to prioritize inspection and repair requirements continued across all our North Sea facilities throughout 2015. Mechanical and corrosion risk assessments were completed, with no significant threats identified. The inspection program remains an area of focus in 2016.

**Mooring Chain Integrity Program**

Our FPSO vessels in Offshore Africa and Banff (North Sea) are held on location by mooring systems. Mooring systems are critical pieces of equipment as they are the sole means of holding the vessel in place when oil and natural gas production is brought on board for processing and subsequent export.

In 2015, we conducted integrity assessments of the Knock Allan and Banff FPSOs mooring systems. The results of these assessments will be used to enhance our mooring system integrity program following our continuous improvement processes to prevent unplanned failures.

**STRUCTURAL INTEGRITY**

Structural Integrity programs work to maximize the integrity of operational structures through careful design, safe operation and proper maintenance throughout the facilities’ lifecycle. When integrated into our Asset Integrity Management System, these programs ensure arrangements are in place to prevent significant incidents at structures that support our oil and natural gas production facilities. Due to the operating conditions in which they operate, their age and location, our offshore infrastructure is the main focus of our Structural Integrity programs.

In 2015, the introduction of a new technology for our annual subsea inspection program increased our inspection rate and coverage. A diverless remotely operated vehicle (ROV) was deployed from the deck of the Ninian Southern Platform to review critical welds on the underwater jacket structures. This task was previously executed using diver deployed inspection techniques and a dive support vessel. The removal of diver related risk and vessel also resulted in improved cost-effectiveness, while maintaining an equivalent quality of inspection data.

An inspection of the Tiffany Oil Export Pipeline was successfully completed using a new ROV system. Results of the inspection were positive, with no threats found, and will enable pipeline integrity plans to be optimized in line with life of field production requirements.
### Priorities in 2015

**Process Safety Management (PSM)**
- Continue to progress key areas of PSM at our thermal in situ, Horizon and international operations by focusing on competency, hazard identification, cumulative risk, Management of Change (MOC), incident investigation, and Technical Authority (TA) audits.
- Continue to refine KPIs to ensure that they are driving continuous improvement within our programs.

**Facility Integrity**
- Conduct proactive risk assessments to optimize NA E&P Pressure Equipment inspections.
- Develop a plan for commissioning of new equipment coming online during 2015 at Horizon.
- Prepare for 2015 Horizon shutdown and execute risk assessment in support of the turnaround deferral.
- Complete integrity assessment of Banff FPSO mooring system in our North Sea operations.
- Deliver high-level Integrity Statements for each of our North Sea operating assets, including pressure systems, rotating equipment, pipelines and structures.

**Pipeline Integrity**
- Continue focus on pipeline integrity management and continuous improvement initiatives.
- Enhance Pipeline Water Crossing Management to develop an integrated system that can address all threats and mitigation plans.

**Achievements in 2015**

- Implemented internal governance for better accountability. Divisional PSM Steering Committees are reporting into the Senior Management Committee meetings.
- Completed process design updates and operability reviews for new Horizon units and all producing platforms in the North Sea.
- Increased focus on Process Safety Events at Horizon and developed a weekly briefing report to improve awareness.

- Delivered improved process for better visibility and management oversight of proactive pipeline integrity management in our NA E&P operations.
- Delivered highest number of proactive risk-assessments in history of program (621 pipeline systems assessed) in NA E&P.
- Reduced pipeline leaks frequency per 1,000 km in our NA E&P operations while managing the acquisition of over 10,000 km of pipelines.
- Successfully completed Inspection of the Tiffany Oil Export Pipeline using a remotely operated vehicle (ROV) system which allows for reduced risk and cost efficiencies.
- Continuous improvement of water crossing management system, with an enhanced “All Threats” Risk Assessment Tool that provides more rigorous evaluation of high consequence pipelines. The new process is currently being piloted.

- Completed proactive risk-assessments on large facilities in NA E&P to optimize inspection intervals.
- Developed a pressure valve risk-based inspection methodology for maintenance and examination of our equipment across our operations.
- Developed and successfully implemented a plan for commissioning of new Horizon units.
- Completed risk assessments and on-stream inspections in support of the turnaround deferral, and received approval from the Alberta Boiler Safety Association (ABSA).
- Completed audits on the Knock Allan and Banff FPSOs mooring systems.
- Produced high-level Integrity Statements for each of our North Sea assets, providing a focused view and basis for our integrity and maintenance strategy.

**Priorities in 2016**

- Process Risk Management support for the Horizon Turnaround and the commissioning of major units.
- Transition into risk-based inspection (RBI) methodology, to enhance understanding and match inspection timing and techniques with risks.
- Implement the Operational Risk Assessment (ORA) process and tracking system across Horizon and CNRI.
- Continue enhanced oversight of proactive pipeline integrity processes at NA E&P.
- Deliver on targets for continued proactive pipeline risk assessments at NA E&P.
- Deliver enhanced pipeline integrity audit process for our NA E&P operations.
- Complete the pilot of the “All-Threats” Assessment Tool and expand its use to additional high consequence pipelines.
- Continue focus on proactive risk-assessments of our NA E&P operations.
- Develop risk-based inspection strategy for major NA E&P natural gas plants.
- Complete RBI assessment of Horizon’s secondary upgrading area.
- Deliver revalidated inspection plans for static pressure systems at CNRI.
- Implement a plan for commissioning of new units coming online during 2016 at Horizon.
- Execution of Horizon’s Turnaround in July 2016.
- Incorporate mooring system audit results to target areas for improvement.
- Complete biannual reviews of high-level Integrity Statements to ensure continued alignment with our strategic priorities and Life of Field plans of our North Sea operations.
Environmental protection is a core value of Canadian Natural.

At Canadian Natural, we are committed to delivering energy in a safe, effective, efficient, and environmentally responsible way. Our commitment to environmentally responsible operations is incorporated throughout all phases of our projects and extends from planning through design, operation, and final reclamation. To do this, we follow comprehensive environmental practices, drive continuous improvement and invest into research and development.

Our Environmental Management System (EMS) provides the framework for managing each operating area and activity through performance objectives in the areas of air, land and water, as well as ensuring regulatory compliance. This proactive approach is improving our performance and reducing our footprint. In 2015, we reduced greenhouse gas (GHG) emissions, improved water use efficiency, advanced land reclamation and reduced spills.

AIR
We support the Province of Alberta’s ambitious climate plan announced in 2015, as it relates to the oil and natural gas industry, taking strong leadership to reduce oil sands emissions. This new plan, along with stringent climate frameworks in several other Canadian jurisdictions, positions Alberta and Canada among the most responsible oil and natural gas producing jurisdictions globally. Alberta’s climate plan provides a framework for ongoing investment into technology and innovation, which has long been a priority for Canadian Natural and a key part of our GHG emission reduction strategy. We believe that supporting research while developing and adopting innovative technology is the best way to reduce GHG emissions. Technology enables improved environmental performance, which in turn reduces operating costs, allowing us to become more efficient and effective.

Our integrated emissions reduction strategy focuses on conserving energy, reducing emissions intensity, and developing and incorporating technology. This strategy applies to both GHG emissions and air pollutants, such as sulphur dioxide (SO₂) and nitrogen oxide (NOx). We have programs in place to reduce flaring and venting, conserve fuel and natural gas, and maintain high air quality standards. We also share best practices and innovations with industry partners to improve industry-wide environmental performance.

Increasing efficiencies and reducing emissions
Our focus on continuous improvement and innovative solutions has allowed for a number of key achievements in our environmental performance. Over the last four years, we have reduced GHG emissions intensity by 16 per cent in our NA E&P operations and by 19 per cent at Horizon. At CNRI, our GHG emissions intensity decreased by 13 per cent compared to 2014. While emissions intensity decreased in 2015, our corporate absolute GHG emissions increased relative to 2014 due to an increase in production. At our NA E&P Operations, we have decreased GHG emissions intensity through reductions in venting associated with natural gas conservation in our heavy crude oil operations. In 2015, we completed 593 natural gas conservation projects that resulted in a total reduction of 3.3 million tonnes/year of carbon dioxide equivalent emissions (CO₂e). Over the last five years, we have invested more than $102 million in our heavy crude oil and thermal in situ operations to conserve the equivalent of 18.5 million tonnes of CO₂e. This volume of natural gas conserved is equal to removing 782,000 typical passenger vehicles off the road over this time period.

At Horizon, we continue to implement measures that conserve energy and lower GHG emissions, while investing in longer-term technologies aimed at reducing emissions intensity and enhancing tailings performance. Read our Advancing Innovation section on page 16 for more information.

CNRI maintains full compliance with the UK Energy Savings Opportunity Scheme (ESOS). In 2015, we conducted an extensive energy assessment and identified a number of energy saving opportunities that are being evaluated for future implementation. We are reducing diesel consumption in the North Sea, and we have a flaring reduction program in place for both North Sea and Offshore Africa operations.

Historical GHG information is available in our Performance Data section on pages 26 and 27.
WATER
Canadian Natural’s water management strategies maximize water recycle and saline water use while reducing fresh water use.

Water is an important resource, and protecting and using it responsibly is an industry priority. Comprehensive government regulations and industry operating practices are in place to ensure protection of the environment and public safety.

To reduce our overall water requirements, we maintain high produced water recycle rates (90-99 per cent) throughout our larger thermal in situ and polymer flood operations. At our Kirby South thermal in situ oil sands operations, water recycle rates continued to improve in 2015 to 93.8 per cent from 91 per cent in 2014. The use of highly efficient evaporators for water treatment increases the amount of treated water available for re-use as boiler feed water to generate steam for production.

In 2015, we increased the use of saline water, and reduced fresh water usage per barrel of oil produced (bbl) when compared to 2014. The enhanced steam strategy employed at Primrose and Wolf Lake Oil Sands (PAW) thermal in situ operations increased produced water use for boiler feed by 21 per cent, which translates into a 37 per cent reduction in fresh water use/bbl. Fresh water use/bbl was also reduced by 15 per cent at our Pelican Lake polymer flood area, as well as 50 per cent at Kirby South.

At Horizon, our water use management strategies are proving effective. Since the start of operations in 2009, Horizon has decreased its water use intensity by half. We have also increased the availability of recycled water for bitumen processing through the use of CO₂ injection in the tailings pond to settle out the fines. For more details, see our Advancing Innovation section on page 16.

At our North Sea installations, the average oil in water content remains at about half the regulatory compliance limit of 30 mg/l. In Offshore Africa, we are applying the highest North Sea standards to maintain high performance and consistency.

Canadian Natural follows the Hydraulic Fracturing Guiding Principles and Operating Practices developed with industry and the Canadian Association of Petroleum Producers (CAPP). Best practices include the public disclosure of water use and additives used in shale gas hydraulic fracturing fluids.

ABANDONMENT, DECOMMISSIONING AND RECLAMATION
Land use planning is an integral part of our operations. Canadian Natural develops every project with a vision and plan to ensure that all the land that is used in our operations is returned to a healthy ecosystem once our activities are complete. Our land management practices minimize impact and disturbance to land, reduce our operational footprint, and progressively reclaim land throughout our operations.

To achieve this, Canadian Natural manages an industry leading environmental closure program, receiving the greatest number of reclamation certificates of any of our peer companies for the past several years. This program coordinates remediation, abandonment and decommissioning activities so that our unused sites (facilities and wells) move through our process to final reclamation efficiently. This program involves the removal of old equipment and soil clean-up (remediation), suspension and capping of wells and pipelines so that they are left in a safe and environmentally sound manner (abandonment and discontinuation), and returning the sites to forests, crops, wetlands, or recreational and municipal land (reclamation).

We strategically coordinate efforts by grouping wells and pipelines for abandonment and reclamation. This area-based project approach allows us to realize increased efficiencies and reclaim large contiguous areas of land, while managing our site closures cost-effectively.

Highlights of our 2015 abandonment and reclamation program:
• Abandoned 519 inactive wells and submitted 357 reclamation certificates in NA E&P, representing more than 760 hectares (ha) of land.
• Received reclamation certification for 477 ha of land in our NA E&P operations, for a total of 3,208 ha reclaimed from 2010-2016. At Horizon, a total of 330 ha have been reclaimed since operations began in 2009.
• Our major decommissioning project of the Murchison platform in the North Sea is on track, with the final stage of manned operations completed. Facility and component parts will be returned onshore and 90 per cent of project materials recycled.
ENVIRONMENT

Additional remediation, decommissioning, abandonment and reclamation statistics, are provided on pages 24 and 25.

Finding new opportunities to work together with industry peers is also part of our strategy to effectively manage our environmental footprint. Many of Canadian Natural’s investments are in projects where learnings will be shared with Canada’s Oil Sands Innovation Alliance (COSIA). In COSIA’s Land Environmental Priority Area, the focus is on terrestrial and aquatic reclamation research in the oil sands region. Our participation in ongoing research and technology programs helps us learn more about diverse eco-regions and how to best manage each area.

BIODIVERSITY AND WILDLIFE

At Canadian Natural, wildlife management is considered in all phases of our projects to promote a healthy coexistence between our operations and animals that live in or utilize the areas where we operate. Our goals are to reduce disturbance to wildlife and wildlife movement, to protect the habitats where we operate and to maintain the regional characteristics and biodiversity of each ecosystem.

For that purpose, we continue to fund research to improve land reclamation practices, conduct monitoring programs and minimize habituation of local wildlife at our operations. Results of research and monitoring studies are adopted into our wildlife management strategies at our thermal in situ and mining operations.

Canadian Natural also continues collaborative work with industry on woodland caribou habitat restoration using a series of reforestation treatments on linear features (pipelines, roads, etc.) while reclaiming the landscape. During 2014 and 2015, Canadian Natural successfully treated 58 km of disturbed linear corridors, and an assessment of our winter tree planting showed 80-90 per cent survival rate.

Horizon Lake is the first compensation lake in the oil sands region, incorporating traditional knowledge through all design and development phases. Research is ongoing to increase our knowledge of the lake, enhance fish monitoring techniques and further improve habitat. In the summer of 2015, we started a five-year research program with the University of Alberta and Mitacs, a non-profit organization that funds research, to help establish guidelines for sustainable compensation lakes.

SPILL PREVENTION AND REDUCTION

In 2015, we reduced the number of spills by 32 per cent across the company, as a result of an integrated focus on integrity management, spill prevention program and joint efforts from our Environment and Operations groups. In NA E&P, the downward trend continued with a decrease of 27 per cent in the number of spills and a decrease of 56 per cent in volume relative to 2014. At Horizon, we reduced spills by 54 per cent; the volume however increased due to a fresh process water release of 18,760 m³ that was effectively contained, recovered and re-used in our bitumen extraction process. Spills at CNRI decreased by 25 per cent, and although spill volume increased, there were no significant environmental impacts. Detailed 2015 and historical spill information is provided in our Performance Data section on pages 25 and 26.

In May and June of 2013, Canadian Natural discovered four locations with bitumen emulsion at surface within our Primrose and Wolf Lake Oil Sands Project. Canadian Natural has fully cleaned up the flow to surface sites and, on April 1, 2015, we submitted an extensive technical review into the cause of the flow to surface events to the Alberta Energy Regulator (AER). The AER released a final report on March 21, 2016 which is consistent with Canadian Natural’s findings. As a result of extensive data gathering, investigation, analytical analysis and interpretation, Canadian Natural and the industry’s understanding of cyclic steam processes has been enhanced. These learnings have been applied, and our operational practices and strategies have been modified to mitigate the risk of future seepages.

REGIONAL PLANNING AND MONITORING

The Provinces of Alberta, Saskatchewan and British Columbia have established frameworks for the management of air, land and water. Canadian Natural has adopted those frameworks into our operating practices to implement comprehensive mitigation plans for sensitive landscapes, wildlife and aquatic systems. We also participate in research programs for land planning, caribou restoration and reclaimed land.

Environmental monitoring allows us to continually measure our performance, establish targets and work towards improvement. Monitoring of air emissions, water use and land disturbance occurs at our larger facilities. We also participate in local and regional air monitoring programs in Alberta, Saskatchewan and British Columbia.

Regional monitoring of the oil sands is conducted by Alberta Environment and Parks (AEP), to assess the state of the environment and cumulative effects, to maintain ecological functions and restore areas as part of long-term reclamation planning. This includes elements related to air, land and water, all of which are important to stakeholders, including Aboriginal communities.

Canadian Natural works closely with the Fort McKay First Nation, located near our Horizon operations, to improve monitoring on traditional land.
<table>
<thead>
<tr>
<th>PRIORITIES IN 2015</th>
<th>ACHIEVEMENTS IN 2015</th>
<th>PRIORITIES IN 2016</th>
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<tbody>
<tr>
<td><strong>Environmental Management System (EMS)</strong></td>
<td>- Implemented joint EMS for NA E&amp;P and Horizon operations. - 32% reduction in number of spills across our operations through focused work with Operations groups and regulators. - Improved compliance tracking and reporting systems across our operations to ensure timely response to incidents and real-time reporting to senior management. - EMS training for operations staff is improving adherence to procedures and regulatory compliance. - Developed environmental scopes for CNRI’s audit program. - Updated Oil Pollution Emergency Plans (OPEPs) in response to the Offshore Safety Directive.</td>
<td>- Achieve continuous improvement within EMS key areas of air, water and land. - Continue emphasis on reducing reportable incidents. - Complete revision of Ninian Central and Ninian North platforms OPEPs.</td>
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<td><strong>Regulatory</strong></td>
<td>- Maintained leading compliance performance. - Renewed the operating approvals for Horizon, Primrose and Wolf Lake operations under the Environmental Protection and Enhancement Act (EPEA), and the Water Act approvals for another 10-year term based on improved performance. - Completed trial implementation of an Environmental Critical Element (ECE) project on Ninian North.</td>
<td>- Maintain a high compliance rate in all operations. - Continue the implementation of the ECE project across our CNRI operations.</td>
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<td><strong>Water use</strong></td>
<td>- Reduced Horizon’s water use by half since operations startup and continued to increase water recycling from tailings pond. - Maintained produced water recycle rates of 90-99% across major thermal in situ and polymer flood operations. - Reduced use of fresh water in our thermal in situ operations.</td>
<td>- Continue to improve fresh water use efficiency across our operations. - Maintain high water recycling rates in thermal in situ and Horizon operations.</td>
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<td><strong>Reducing emissions</strong></td>
<td>- Reduced GHG emissions intensity by 16% in our NA E&amp;P operations and by 19% at Horizon over the last four years. - Volume of natural gas conserved resulted in 3.3 MT CO2e avoided from our NA E&amp;P operations. - Advanced field construction of CO2 capture facility at Horizon - construction and commissioning work are on track. - 27% reduction in venting and 38% in flaring at NA E&amp;P.</td>
<td>- Continue to reduce GHG emissions through application of innovation and new technology. - Achieve mechanical completion of the hydrogen/CO2 capture plant at Horizon.</td>
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<td><strong>Abandonment and reclamation</strong></td>
<td>- Abandoned 519 wells and submitted 357 reclamation certificates in NA E&amp;P. - Received reclamation certificates on 477 ha of land. - Decommissioned 32 facilities in NA E&amp;P. - Advanced Murchison platform decommissioning and expect to recycle 90% of facility and materials.</td>
<td>- Completion of reclamation earthwork on abandonment and reclamation program initiated in 2015. - Implement learnings from 2015 into 2016 programs for greater efficiencies. - Remove topsides and other modules from Murchison platform for transport and recycling.</td>
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<td><strong>Wildlife management</strong></td>
<td>- Improved effectiveness of waterfowl management at Horizon’s tailings pond with floating and underwater bird deterrents. - Continued work on caribou habitat rehabilitation. - Reduced interactions with bears through improved management practices.</td>
<td>- Continue to evaluate wildlife deterrent system options for the tailings pond. - Continue focus on training to prevent wildlife habitation at Horizon. - Continue to monitor and measure the effectiveness of our reclamation work for wildlife habitat restoration.</td>
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<tr>
<td><strong>Research and Development</strong></td>
<td>- Ongoing research to improve reclamation practices. - Initiated a research project at Horizon Lake to help establish guidelines for sustainable compensation lakes.</td>
<td>- Continue reclamation research at thermal in situ and Horizon operations. - Continue fisheries and ecosystem establishment research at Horizon Lake.</td>
</tr>
<tr>
<td><strong>Collaborative work</strong></td>
<td>- Led 20 projects and participating in another 51 projects at COSIA. Shared with COSIA to date: - $15.7 million worth of reclamation research (26 projects) - $28.4 million worth of GHG research (7 projects) - $27.5 million worth of water technology research (11 projects) - $49.6 million worth of tailings technology research (7 projects) - Continued to advance environmental management frameworks for water, biodiversity, wetlands, GHGs and tailings with regulators, government and industry.</td>
<td>- Continue collaborating with COSIA to accelerate the pace of environmental performance improvement. - Continue to work with regulators, government and industry to advance environmental frameworks.</td>
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Innovation drives continuous improvement across our operations.

As Canada’s leading Research and Development (R&D) investor for the oil and gas sector, Canadian Natural invested over $527 million in 2015 towards research and technologies to enhance resource recovery, operating efficiencies and environmental performance. We believe that supporting research while developing and adopting innovative technology leads to more effective, efficient and sustainable operations.

We are proud of the innovation and technologies that have facilitated a number of key achievements in 2015.

ADVANCING TAILINGS MANAGEMENT TECHNOLOGIES

Canadian Natural has invested more than $1.6 billion in tailings management research and technologies to date. Continuous improvement in our tailings management is an integral component of our successful Horizon Oil Sands mining operation, and demonstrates our approach to R&D and how we take technologies from pilot project to commercialization.

In 2015, we commenced production of non-segregating tailings (NST) at Horizon. NST are tailings that have been significantly treated (dewatered) to form a homogeneous, semi-cohesive mass when deposited. The treatment process includes cyclones, to separate the coarse sand, and thickeners, to capture and remove water from the fines in the tailings streams prior to being sent to the tailings pond. The warm water that is removed and recovered is then re-used in the bitumen recovery process.

The coarse sand and thickener underflow are then mixed and further combined with carbon dioxide (CO₂) to produce NST. The addition of CO₂ to NST has been proven to accelerate the settling of the clay fines in the tailings stream. We have been adding CO₂ to tailings since 2009, to enhance solids settling and accelerate the release of water from the tailings.

The production and deposition of NST is expected to achieve multiple operational and environmental benefits, including:

- GHG emissions reduction – requires less natural gas consumption due to the re-use of warm process water;
- CO₂ sequestration in the tailings pond;
- 30 per cent fresh water use reduction by increasing water recycling, therefore minimizing water intake from the Athabasca River;
- fluid tailings reduction and increased fines capture;
- tailings pond size reduction to approximately half the size it would have been without these technologies; and
- accelerated reclamation timeframe that provides a trafficable landscape and meets regulatory requirements.

The APIC is primarily being used to further develop and enhance tailings management methods, including thickened tailings production, NST, CO₂ sequestration testing, and mature fine tailings (MFT) treatment. This facility also facilitates collaboration on research projects with industry, academia and government.

To monitor the success of the NST and continually enhance tailings performance we created the Applied Process Innovation Centre (APIC). This Canadian Natural initiative is a new 3,600 square foot research facility built at Horizon in 2015, providing a dedicated work space for experts to focus on investigating methodologies that will enhance the effectiveness and efficiency of our operations.

A member of our Process Innovation team conducting tests at the new Applied Process Innovation Centre.

Mature Fine Tailings Reduction Mine Plan (MFTRMP)

We have developed and are executing a plan to further reduce MFT by decreasing the amount of fines going to the tailings pond by using smaller equipment and being more selective during the mining process at Horizon. This selective mining process is achieving significant improvements, including reducing water use, reducing MFT production and ultimately fast-tracking reclamation.

Over the life of the mine, the MFTRMP plan will remove 260 million tonnes of
fines from our process, and reduce our fresh water withdrawal from the Athabasca River by 120 million m³ – which equals 50,000 Olympic-sized swimming pools.

A haul truck carrying a load of mined ore at Horizon. New mining technology is enabling Canadian Natural to selectively mine layers of ore.

Reducing GHG emissions
Horizon’s new CO₂ capture/recovery plant is expected to be completed in late 2016 and will be capable of supplying the required CO₂ for tailings management. With this new plant we will meet operational goals associated with Horizon’s expansion as well as continue to improve our environmental performance.

The plant will have the capacity to recover 438,000 tonnes of CO₂ annually from our hydrogen plant — the equivalent of removing the emissions of 77,000 cars from the road.

To further reduce emissions at Horizon, Canadian Natural has partnered with Williams Energy Canada to capture the off gas (natural gas liquids and olefins) produced at our upgrader. This project is targeted to reduce CO₂ emissions by approximately 200,000 tonnes per year and sulphur dioxide (SO₂) by 2,000 tonnes per year, following Horizon’s expansion to 250,000 bbl/d in 2017.

Electromagnetic scanner for casing integrity inspections
Canadian Natural has been researching an alternative method for casing integrity checks, based on metal thickness detection (MTD) typically used to evaluate corrosion wall loss. Standard integrity checks involve applying pressure on the casing to confirm there are no breaks, which reduces well life, and also require the removal of the tubing. Canadian Natural has worked with the MTD log providers to develop a methodology where casing breaks can be reliably detected. In 2016, we are continuing to gather data and planning to expand the use of MTD logs for our wells in our Primrose operations.

SHARED RESEARCH MOVES INDUSTRY FORWARD
As a founding member of Canada’s Oil Sands Innovation Alliance (COSIA), we continue to work collaboratively with industry partners to accelerate the pace of environmental performance improvement in Canada’s oil sands. COSIA focuses on management of tailings, water, land and greenhouse gases. In September 2015, the US$20 million NRG COSIA Carbon XPRIZE was announced, challenging the brightest minds and innovators across the world to develop new technologies to manage carbon emissions by converting waste carbon/CO₂ into useable products. Over four years, competitors will test their solutions using either a coal or natural gas flue stream at a commercial scale.

The knowledge Canadian Natural gathers from its own testing and research, plus all the information shared by other COSIA members, is factored into our continuous improvement processes. We are currently leading 20 projects out of 51 we participate in. In addition to our tailings management research, below are some of the COSIA projects led by our company.

Increasing steam generation efficiency
We are studying a new approach to steam generation efficiency at our Primrose and Wolf Lake (PAW) facilities, using electrolyte simulation software for real-time steam quality measurement. This method has the potential to boost steam quality by an average of one to two percent, which can translate to an additional 1,000 bbl/d of bitumen production from our operations. It can also improve water management and reduce GHG emissions. Advancing this work had a lot to do with existing research and data made accessible to us through COSIA, and illustrates how COSIA members can access useful research and build upon it, finding solutions that are the best match for their own operations. Our research and experience with the electrolyte based model, as a means of enhancing steam generation efficiency, will also be shared with our fellow COSIA members in the future.

Vegetation research helps shape best practices for reclamation
In partnership with the Canadian Forest Service (CFS), we are conducting research on plant community development and trembling aspen seedling establishment in different soil types at Horizon. Data collected from this reclamation research showed that there are clear differences in the benefits of the varying reclamation soil treatments and that aspen germinates and initially grows best on peat-mineral soils without fertilization. This year we will be building upon that research and monitoring activity, as we seek to develop an effective soil mix for aspen growth.

For more details, read our Innovation stories on our website.
Canadian Natural’s robust management systems ensure we evaluate and mitigate the risk of incidents occurring. Our goal is to be proactive and prevent facilities and equipment failures that could potentially lead to spills or leaks. To support this goal, we place a strong focus on proactive risk management, from risk identification to mitigation across all our pipeline, facility and structural integrity programs.

Our teams work closely to ensure that if a leak or spill occurs, the consequence is minimized through Emergency Response Plans (ERP) and spill preparedness programs.

Canadian Natural has built a spill response structure to manage releases associated with our operations in Canada, the North Sea and Offshore Africa.

In Canada, Canadian Natural has a considerable in-house inventory of spill response supplies and equipment strategically located at our major operations for easy access. The intent of these spill response arrangements is to support immediate, initial response to smaller spills, until other resources can be mobilized to the site. These spill response kits contain materials and equipment — boats, wildlife deterrents, hand tools, safety supplies and absorbent materials — in addition to the resources available through cooperatives in the Western Canadian Spill Services (WCSS).

A ‘tiered’ oil spill response structure at CNRI aligns with internationally agreed terminology and standards, and ensures that the planned response reflects the particular spill risk:

- **Tier 1 – Local.** Resources on-site control small releases or releases that disperse naturally and do not require onshore support.
- **Tier 2 – Regional.** Larger releases that require support from a regional location — provided by a specialized contractor — with support by CNRI’s onshore Emergency Response Teams in Africa and Aberdeen.
- **Tier 3 – National.** A major or large ongoing release requiring mobilization of CNRI’s onshore Emergency Response Teams in Aberdeen and Calgary, and likely to require response assistance at a national/international level.

Tier 1 oil spill response capabilities in both the North Sea and Offshore Africa are provided by dedicated Field Support Vessels (FSV)/Emergency Response and Recovery Vessels (ERRV). CNRI-owned equipment on board includes dispersant spraying equipment, an inflatable boom and a skimmer for removing oil from the sea surface.

Tier 2 and 3 oil spill response capability for CNRI’s operations is provided by our membership of Oil Spill Response Limited, with extensive oil spill response equipment at various locations around the world, which is mobilized globally using their dedicated aircraft.

**Emergency response training**

Our comprehensive ERP system is in place to predict the extent and the magnitude of all risks and manage incidents in a timely manner. In addition to maintaining a detailed ERP system, regular training exercises are an important element of preparedness for effective emergency response. In 2015, we completed all our scheduled ERP training exercises.

Onshore exercises in Canada and CNRI were designed to test Emergency Response facilities, and the response of the ER team and supporting teams to stakeholders (first responders, regulators, families, and media) during a major event.

Offshore ERP exercises at CNRI tested the efficiency of our response to manage major environmental events using available resources on a local and national basis. With the arrival of two drilling rigs in Côte d’Ivoire, a series of emergency response training sessions and exercises were carried out, involving our drilling partners. These exercises tested the understanding of the roles of the different parties within the overall emergency response strategy and how all would work together in response to an emergency scenario. Table-top exercises then followed to review the expected responses to certain scenarios, and finally ‘full scale’ exercises were held involving the offshore installations and the onshore support functions that would mobilize in a real event. CNRI’s Emergency Response Team in Abidjan and Strategic Response Team in Aberdeen were involved as well as our contractors’ Emergency Response Teams, along with support functions such as topside medical assistance providers, standby vessels and helicopter services.

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L: Preparing to deploy the inflatable boom during training exercise, Olowi Field. R: Boom fully deployed.
Every day I am reminded of how our work impacts people. Sometimes, it’s a thank you from a patient’s family. Other times, it’s meeting a patient we’ve carried and hearing his or her story. Recently, a letter came to us from a young woman, thanking us for flying her when she was born prematurely in central Alberta. This young lady waited more than 20 years to share her gratitude. It’s letters like this that bring it all home.

STARS has flown more than 33,000 missions across Western Canada since we launched 30 years ago. But it’s not just about 33,000 missions. It’s about 33,000 families and 33,000 communities. It’s incredible how having the privilege of caring for one individual can touch thousands. We are one component of a safety net and when we impact one life together we all make a difference.

This all began because Dr. Greg Powell, STARS founder, had a vision. He cared for a patient whom he felt would have survived if she’d been delivered to the emergency department sooner. As a result, he was inspired to find a better way. Today, STARS delivers timely care and transport to the critically ill and injured from six bases across three provinces. There is no way we could do this without the support of our partners in the community.

STARS and Canadian Natural have a partnership that dates back to 1990. This relationship has supported STARS through various events and campaigns spanning 25 years. The most recent commitment to STARS of $2.5 million is the single largest corporate gift to STARS in Alberta. A gift like this means STARS can continue to improve, educate and innovate. For instance, we are especially proud of our physician-led model. At STARS, doctors are involved in all aspects of our missions, from deciding which hospitals should receive our patients to advising on ongoing care inside the helicopter.

Our blood on board program, which aims to eliminate delays by stocking blood which can be transfused into any patient, is a Canadian first. The blood products are taken on board the helicopter by the air medical crew when they are dispatched for a call, eliminating any delay in obtaining blood.

Not everyone STARS helps is inside our helicopter, however. Our educators visit communities across Alberta, Saskatchewan, Manitoba and into British Columbia as part of the Mobile Education Unit program — helping health-care workers in those communities build on their skills. We use a human patient simulator to replicate complex medical and traumatic problems, offering medical personnel an opportunity to test and practice their reactions and skills so they are ready if tragedy strikes.

Meanwhile, we monitor about 4,200 industry sites every day, using a sophisticated electronic mapping system that monitors sites in real time. The map has coloured dots on it, signifying the kind of medical expertise available at a remote site. This neighbour-helping-neighbour program allows us to be aware of nearby sites that may have resources available to provide immediate medical support until first responders are able to arrive on scene.

Indeed, Canadian Natural and its employees don’t have to look very far to find one of our top ambassadors. President Steve Laut agreed to be stranded on a mountain to fundraise for STARS during CEO Rescue in the Rockies in 2012. Long before that, Canadian Natural was one of the lead donors in the establishment of the Grande Prairie base in 2006. Our relationship has grown through other events such as the Grande Prairie Petroleum Association Hangar Dance and Canadian Natural’s support of several other grassroots community events across Western Canada.

Canadian Natural has been instrumental in working with STARS to build better communities. When that tiny baby was flown all those years ago, STARS was in its infancy, too. You made it possible for us to hear from that grateful woman today. On behalf of everyone involved in the past 33,000 missions, we thank you.
Canadian Natural works with local stakeholders to build long-term relationships based on mutual respect.

ENGAGING STAKEHOLDERS

Stakeholder engagement at Canadian Natural is an open and ongoing communication process where we work together to identify opportunities to create shared value and mutual benefit.

We work with the communities near our operations in Canada, the UK and Africa to identify opportunities for community investment, education and training, and business development. To meet this goal, we aim to integrate community needs into project design and implementation.

In 2015, we worked with over 35,000 landowners and more than 55 aboriginal communities across our operations in Canada. We engaged with communities regarding more than 250 projects and development plans.

Canadian Natural also works with over 160 municipalities throughout Alberta, British Columbia, Manitoba, and Saskatchewan. In particular, we met with more than a dozen municipalities in Northeast, West-Central, and Southeast Alberta to discuss activity levels, transportation, and current industry challenges.

Other stakeholder engagement efforts in 2015 included:

Working with First Nations Elders

We supported and participated in significant cultural and social events across our operating communities. This included over 40 gatherings and celebrations with Elders and Aboriginal groups, such as the 39th Annual Elders Gathering in British Columbia and the Annual Fall Elders Meeting in Heart Lake, Alberta, where Elders shared stories and knowledge.

Providing tours of our operations

This is another great way to engage with stakeholders and discuss issues that matter to them. For example, representatives from the Fort McKay First Nation visited Horizon's new research facility and gathered at the Wapâwin Sâkahikan (Horizon Lake) stakeholder pavilion to talk about innovation, environmental performance, and the steps Canadian Natural is taking to continuously improve our performance.

Supporting infrastructure projects

Provided in-kind support to road improvements for industry and residents near our areas of operations, such as the County of St. Paul, Alberta.

Partaking in stakeholder synergy groups

Groups included the Calumet Synergy Association (County of Ponoka), West Central Stakeholders Spring Information Night (Rocky Mountain House), Lakeland Industry and Community Association, and Beaver River Watershed Alliance.

INVESTING IN COMMUNITIES

Canadian Natural supports initiatives that add to the quality of life and well-being in the communities where we live and work. Working together with these communities is an important part of our commitment to responsible operations, which also has the benefit of promoting long-term local economic growth and prosperity.

In 2015, we provided $8.5 million in community investments across our operating areas. This includes corporate sponsorships, cash donations, employee giving and corporate matching, in-kind donations, and funding for community-based economic development projects. Our community investments support health and wellness, community events and cultural programs, as well as sports and recreation. Highlights of our community investment include:

Health and wellness

- Supported the Northern Lights Health Foundation, Lloydminster Health Foundation, Heart Lake First Nation Wellness Position, APPLE School Foundation, Stollery Children’s Hospital, Sheldon Kennedy Child Advocate Centre, STARS Foundation, Yorkhill Children’s Charity, and the AREAA school of disabled children in Côte d’Ivoire.

Sports and recreation

- Ongoing support for the Slave Lake Legacy Centre — a new multipurpose, family-oriented centre to help the community rebuild after the 2011 wildfires. Also supported a number of youth sport initiatives such as minor soccer leagues in Fairview and Bonnyville, Alberta, and the National Football School of Port-Gentil in Gabon that trains young talents from impoverished communities, and also provides lodging and schooling.

Cultural

- Participated in and supported significant Aboriginal community and cultural events, including barbecues, Treaty Days and Aboriginal Days.
Employee giving
Despite the challenges facing industry in 2015, Canadian Natural employees continue to show leadership and generosity when it comes to helping the communities where they live.

Canadian Natural’s 2015 United Way campaigns in Calgary, Horizon and Grand Prairie offices together raised over $1.6 million in employee giving and corporate matching combined.

Through our long-standing partnership with Habitat for Humanity, we celebrated the 100th Aboriginal family in Canada to receive keys to a Habitat home. Groups from Canadian Natural have volunteered at various Habitat builds across Alberta since 2002.

Other long-lasting commitments to regional initiatives also illustrate our employees’ spirit of volunteerism. Our Field Corporate Matching Donation Program is another example of an employee-run initiative supported by management that provides direct funding to local agencies identified each year by our field-based staff. This program raised more than $520,000 through employee giving, corporate matching, and contributions from local businesses in 2015. These funds assisted 40 local organizations across Canada and the UK. Recipients included the Fort St. John Hospital Foundation and the Crossroads Women’s Shelter in British Columbia, the Lakeland Humane Society and the Dr. Margaret Savage Crisis Centre Society in Alberta, the Olive Tree and Turtleford Early Learning Centre in Saskatchewan, as well as the Alzheimer’s Scotland and Friends of Roxburghe House in Aberdeen.

To read more about our employee initiatives in the communities, visit our website.

SUPPORTING EDUCATION AND TRAINING
Canadian Natural brings together skilled workers and innovative technologies to help meet the world’s growing energy needs. To this end, we support education and training programs designed to train and employ local people.

To prepare the next generation, we offer summer/co-operative student opportunities as well as provide support for trades and apprenticeships. In 2015, we hired 197 university and college students for summer/co-operative work terms and, of those, 36 received permanent employment.

Likewise, our Canadian Natural Building Futures Scholarship aids students enrolled in industry-related disciplines. We awarded more than $100,000 to 135 students. We also continued to support stay in school programs in several Treaty 8 communities.

Careers in industry
Canadian Natural supports careers, trades and apprenticeships programs to prepare local people to work in the oil and natural gas industry. Some of our long-term commitments include:

- $7 million over five years to the University of Calgary’s “Canadian Natural Resources Limited Engineering Complex”.
- $500,000 over four years to the University of Calgary.

Among other initiatives aimed at reaching out to youth, we sponsored the Alberta Future Leaders program in Fishing Lake Métis Settlement, which provides a wide range of leadership, art, sport, cultural and recreation activities. We also funded the St. Mary’s School outdoor education program in Taber (southern Alberta), focusing on wildlife, environment, resource management, agriculture and outdoor recreation for students in grades 9-12.

At our international operations, we continue to support a scholarship program with the Robert Gordon University and The University of Aberdeen, which provided three students with financial aid, mentoring, and work experience.

“Having a stable home for our children and living our dream is one of the greatest opportunities, and we are very excited to start our future in our new home,” said Lisa.

Ken Krewulak, Slave Lake Field Operations Superintendent of Canadian Natural, presented the house keys to Ben, Lisa and their children — the 100th Aboriginal family to receive a Habitat Home.

Lakeland College Oil and Gas Energy Center (Lloydminster campus), which officially opened in 2015. Through our involvement, we hired two students from Lakeland College into permanent positions in 2015.

- $500,000 over five years to fund the Oil Sands Power and Process Engineering Lab at Keyano College.
- $300,000 over three years to the Northeast Alberta Apprenticeship Initiative (NEAAI), a partnership between First Nations, industry, post-secondary institutions, and government to increase the number of skilled Aboriginal tradespeople in Alberta. In 2015, 29 students graduated from this program.

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• Since 2012, we have sponsored 37 students at the Blue Quills First Nations College Camp Life Training program. All graduates are offered job placements with camp services providers working with the oil and natural gas, and construction sectors.

• Co-sponsored an industry service rig training program for high school students through the Northern Lights School Division (NLSD) in the Lac La Biche and Lakeland region, Alberta, including an in-kind donation of piping for the program.


**Enhancing Local Business Development**

Canadian Natural promotes local and regional business opportunities through the procurement of goods and services for our operations. In so doing, Canadian Natural and the communities where we operate benefit from oil and natural gas development.

We actively engage with community and business leaders to identify economic opportunities. We work with local businesses and contractors to ensure that they are pre-qualified to participate in our contracting and bidding process.

We continue to work closely with the more than 55 Aboriginal communities near our operations in Western Canada to strengthen mutual understanding and cooperation and enhance the opportunities for economic participation in our oil and gas developments.

When working with Aboriginal communities, Canadian Natural works hard to identify business and capacity-building opportunities. Canadian Natural awarded more than $375 million in contracts to Aboriginal businesses and contractors in 2015.

Canadian Natural remains an active member of the Northeastern Alberta Aboriginal Business Association (NAABA) and the Region One Aboriginal Business Association (ROABA).

We also participated in Aboriginal business development efforts with the Lac La Biche Chamber of Commerce and worked with several companies and businesses from First Nations and Métis settlements to continue to enhance local business development.

**Developing Local Staff**

At Canadian Natural, developing people also means promoting people internally, and providing opportunities for on-the-job training and mentorship. In addition to meeting government requirements for local employment in our international operations, we have training programs in place and work together to develop local talent.

As part of our development program, we work with the local community and the education system to identify high potential candidates for advancement. In the same manner, individuals already employed are also identified through the company’s comprehensive performance management process. Those junior candidates are assigned a senior colleague experienced in the same discipline to mentor their development.

Most recently, two local Côte d’Ivoire (CDI) team members were promoted to positions in the Safety, Health and Environment (SHE) team for our CDI offshore operations. Their progression through the company exemplifies Canadian Natural’s commitment to developing people.

Dorgeles Tredou started working with CNRI in 2005 through a student placement. Throughout the last ten years, Dorgeles was mentored and trained to gain operational experience onshore and offshore, including emergency response and regulatory frameworks. He helped to establish SHE management systems and enhance the oil spill response capability of CDI offshore assets. Recently, Dorgeles was promoted to SHE Supervisor and during his first year in this role he will support our offshore drilling campaigns in our Baobab and Espoir fields.

Serge Yao started with us as a SHE Trainee based in the CDI marine base. Under the supervision of SHE Senior staff, he supported our CDI offshore installations in monitoring safety equipment for compliance. Two years later, we appointed Serge into the position of offshore SHE Advisor supporting Espoir drilling operations to continue his development.

Serge Yao started with us as a SHE Trainee based in the CDI marine base. Under the supervision of SHE Senior staff, he supported our CDI offshore installations in monitoring safety equipment for compliance. Two years later, we appointed Serge into the position of offshore SHE Advisor supporting Espoir drilling operations to continue his development.
Celebrating working together
Seven Lakes Oilfield Services is an Aboriginal-owned business operating in the Lakeland region and surrounding areas in Northeast Alberta, providing a range of services, including scaffolding, waste management and general oilfield services.

The company is owned and operated by seven First Nations — Cold Lake, Heart Lake, Frog Lake, Kehewin, Saddle Lake, Goodfish Lake and Beaver Lake, and is a subsidiary of Primco Dene and Pimee Well Servicing Ltd. They currently have 207 employees, 80 per cent of whom are Aboriginal (half of them from the owning Nations).

Canadian Natural has worked with Seven Lakes for the last eight years at our Primrose thermal in situ operations. We are proud to work with a company that shares our strong commitment to people, safety and working together.

“Our main business priority is to provide long-lasting and meaningful employment opportunities for Aboriginal Peoples, to help them succeed in their own territory,” says Mark Larocque, General Manager of Seven Lakes Oilfield Services. “We do this because it is the right thing to do and there is a need for it.”

With people as a priority, their focus on health and safety is another driver of their successful business model. Every morning, employees have a safety meeting to discuss priorities and expectations, with the guidance of their supervisors. These meetings demonstrate the importance of working together and communicating specific issues, further supporting a strong and healthy safety culture. The company’s model is also about growth, engaging employees and building leadership from within.

Seven Lakes received the Eagle Feather Business Award of Distinction category of the Alberta Business Awards of Distinction in 2010 for demonstrating outstanding achievement in business and incorporating entrepreneurial and cultural concepts into our operations for long term success.

Seven Lakes employee recognition celebrating three and a half incident-free years at Primrose South plant in 2015, with members from Seven Lakes and Canadian Natural’s management.

WORKING TOGETHER WITH COMMUNITIES HIGHLIGHTS

<table>
<thead>
<tr>
<th>Engaging Stakeholders</th>
<th>Achievements in 2015</th>
<th>Priorities in 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop district plans for key operating areas to improve engagement.</td>
<td>• Rolled out action plans for all our main operating areas to provide proactive, strategic community engagement.</td>
<td>• Manage action plans for operating communities to continue to provide proactive, strategic community engagement.</td>
</tr>
<tr>
<td>• Maintain timely, accurate, and relevant communication with our stakeholders.</td>
<td>• Engaged regularly with stakeholders, working with more than 35,000 landowners, 160 municipalities, and more than 55 Aboriginal communities across our operations in Canada.</td>
<td>• Maintain timely, accurate, and relevant communication with stakeholders.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community Investment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Invest in priority funding areas: education, health and wellness, sports, recreation and cultural programs.</td>
<td>• Continued to deliver targeted investments to support communities near our operations.</td>
<td>• Invest in priority funding areas: education, health and wellness, sports, recreation and cultural programs.</td>
</tr>
<tr>
<td>• Improve community investment tracking and reporting.</td>
<td>• Provided $8.3 million in community investment.</td>
<td>• Continue to improve community investment tracking and reporting of commitments with operating communities.</td>
</tr>
<tr>
<td>• Provided $8.3 million in community investment.</td>
<td>• Committed $2.5 million over five years to STARS Air Ambulance Service.</td>
<td></td>
</tr>
<tr>
<td>• Continued to identify process improvements for information tracking and reporting.</td>
<td>• Continued to identify process improvements for information tracking and reporting.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education and Training</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Continue to support significant education and training initiatives aligned with future employment opportunities in the oil and natural gas industry.</td>
<td>• Invested in education and training programs that support local employment.</td>
<td>• Continue to support significant education and training initiatives aligned with future employment opportunities in the oil and natural gas industry.</td>
</tr>
<tr>
<td>• 135 students received Canadian Natural Building Futures scholarships to support their career goals.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Development</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Enhance opportunities for local economic participation, including Aboriginal businesses and contractors.</td>
<td>• Awarded over $375 million in contracts to Aboriginal businesses and contractors.</td>
<td>• Enhance the opportunities for economic participation by Aboriginal communities in our regional oil and natural gas operations.</td>
</tr>
<tr>
<td>• Enhanced tracking systems to more accurately capture Aboriginal business and contractor spend.</td>
<td></td>
<td>• Enhance tracking of business spend with Aboriginal businesses and contractors.</td>
</tr>
</tbody>
</table>
ENVIRONMENT

LAND

Well abandonment and reclamation 2012 2013 2014 2015
Number of active operated wells 31,735 36,092 42,279 52,149
Number of inactive operated wells1 12,007 13,580 16,459 18,480
Number of wells abandoned 622 460 545 519
Number of reclamation certificates submitted 374 334 337 357
Hectares reclaimed (reclamation certifications received)2 590 490 760 477

The increase in active operated wells in 2014 and 2015 is a result of asset acquisitions.

(1) We use the AER definition for inactive well sites.
(2) We have reclaimed 3,208 hectares (ha) between 2010-2016.

SAFETY

Recordable injury frequency (TRIF) (employees and contractors) per 200,000 hours worked 2012 2013 2014 2015
North America Exploration and Production 0.61 0.54 0.61 0.44
Horizon Oil Sands Mining 1.53 1.61 0.81 0.57
International Exploration and Production 1.51 1.36 1.84 1.45

Lost Time Incident frequency (LTI) per 200,000 exposure hours 2012 2013 2014 2015
Corporate 0.12 0.10 0.11 0.06

Fatalities – Employees 2012 2013 2014 2015
North America Exploration and Production 0 0 0 0
Horizon Oil Sands Mining 0 0 1 0
International Exploration and Production 0 0 0 0

Fatalities – Contractors 2012 2013 2014 2015
North America Exploration and Production 1 0 0 0
Horizon Oil Sands Mining 0 0 0 0
International Exploration and Production 0 0 0 0

Regulatory inspections compliance (% satisfactory) 2012 2013 2014 2015
Alberta 89.5 89.7 87.4 83.6
British Columbia 70.9 76.6 88.2 81.5

Slight decline from 2015 to 2014, as we work together with the AER through the new requirements resulting from the ongoing transition to a single regulator. We continue to remain above industry average for regulatory compliance.

EMPLOYMENT

DISTRIBUTION OF CANADIAN NATURAL EMPLOYEES

Number of employees 2012 2013 2014 2015
North America Exploration and Production 3,537 3,875 4,751 4,513
Horizon Oil Sands Mining 1,920 2,336 2,486 2,651
International Exploration and Production 401 410 420 404
TOTAL 5,858 6,621 7,657 7,568

Exposure hours (millions) — based on a 12-hour shift 2012 2013 2014 2015
North America Exploration and Production 50.68 52.10 59.14 40.70
Horizon Oil Sands Mining 12.30 18.75 23.08 29.44
International Exploration and Production 4.37 4.69 4.77 5.78
TOTAL 67.35 75.54 86.99 75.92
<table>
<thead>
<tr>
<th>Facility decommissioning</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of facilities removed</td>
<td>41</td>
<td>20</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>Number of site remediations completed and ready for reclamation</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Number of ongoing remediation projects</td>
<td>199</td>
<td>190</td>
<td>204</td>
<td>172</td>
</tr>
</tbody>
</table>

We started reporting this data in 2015, as part of our enhancements to our reporting to address new Global Reporting Initiative (GRI) G4 disclosures.

**WATER**

**Total water withdrawal from source (m³), North America Exploration and Production**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>5,954,975</td>
<td>5,904,805</td>
<td>5,419,975</td>
</tr>
<tr>
<td>Surface water</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Ground water</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Saline (non-potable)</td>
<td>11,944,625</td>
<td>8,727,913</td>
<td>10,582,587</td>
</tr>
</tbody>
</table>

New breakdown is provided starting in 2015 to address GRI G4 disclosures.

**Horizontal Oil Sands Mining**

**Total water withdrawal from source (m³), Horizon**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water (surface water - Athabasca River)</td>
<td>22,942,743&lt;sup&gt;1&lt;/sup&gt;</td>
<td>18,222,541&lt;sup&gt;1&lt;/sup&gt;</td>
<td>21,409,907</td>
</tr>
<tr>
<td>Saline (non-potable)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>290,689</td>
<td>462,934</td>
<td>797,719</td>
</tr>
</tbody>
</table>

(1) Fresh water withdrawals remain well below authorized withdrawal limits.

(2) Saline water is a byproduct of our mining operations and used for depressurization; it is later added into the tailings pond for subsequent recycling.

(3) Numbers were restated due to corrections.

**Total water discharge (tonnes), International Exploration and Production**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Sea</td>
<td>32,145,535</td>
<td>29,092,883</td>
<td>20,609,657</td>
</tr>
<tr>
<td>Offshore Africa</td>
<td>2,130,935</td>
<td>2,105,733</td>
<td>1,841,600</td>
</tr>
</tbody>
</table>

**Oil in water content (mg/l), International Exploration and Production**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Sea</td>
<td>14.31</td>
<td>14.66</td>
<td>15.81</td>
</tr>
<tr>
<td>Offshore Africa</td>
<td>15.79</td>
<td>16.62</td>
<td>13.47</td>
</tr>
</tbody>
</table>

(1) Oil in water content remains within internal targets, and well below regulatory requirement of < 30 mg/l.

**SPILLS**

**Number of reportable spills**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td>358</td>
<td>331</td>
<td>376</td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>81&lt;sup&gt;1&lt;/sup&gt;</td>
<td>126&lt;sup&gt;2&lt;/sup&gt;</td>
<td>84&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>7</td>
<td>13</td>
<td>16</td>
</tr>
</tbody>
</table>

(1) Reported to regulatory agency, according to jurisdictional requirements; including oil, produced water and refined products.

(2) Majority are from tailings lines and consisted of water, sand, silt, and trace oil – in contained areas.

**Volume spilled (m³)**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td>4,638</td>
<td>3,597</td>
<td>3,151</td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>18,679&lt;sup&gt;2&lt;/sup&gt;</td>
<td>6,731&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3,690&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>11</td>
<td>2</td>
<td>0.3</td>
</tr>
</tbody>
</table>

(1) Reported to regulatory agency, according to jurisdictional requirements; including oil, produced water and refined products.

(2) Majority are from tailings lines and consisted of water, sand, silt, and trace oil – in contained areas.

(3) Includes fresh water release of 18,760 m³ that was effectively contained and pumped back into our bitumen extraction process.

**Number of spills and leaks/production (MMBOE)**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td>1.86</td>
<td>1.71</td>
<td>1.60</td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>2.57&lt;sup&gt;1&lt;/sup&gt;</td>
<td>3.44&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2.07&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>0.33</td>
<td>0.67</td>
<td>0.94</td>
</tr>
</tbody>
</table>

(1) Majority are from tailings lines and consisted of water, sand, silt, and trace oil – in contained areas.
### WASTE

#### Weight of waste

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North America Exploration and Production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous waste (tonnes)</strong></td>
<td>116,337</td>
<td>76,264</td>
<td>50,258</td>
<td>55,997$^1$</td>
</tr>
<tr>
<td>Fluid Waste (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>37,794</td>
</tr>
<tr>
<td>Solid Waste (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>2,166</td>
</tr>
<tr>
<td><strong>Non-hazardous waste (tonnes)</strong></td>
<td>1,153,075</td>
<td>713,747</td>
<td>925,169</td>
<td>1,566,725$^1$</td>
</tr>
<tr>
<td>Produced sand disposed at third party landfill (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>324,490</td>
</tr>
<tr>
<td>Produced sand disposed in cavern facilities (owned and third party) (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>348,633</td>
</tr>
<tr>
<td>Produced water disposed at third party facilities (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>191,636</td>
</tr>
<tr>
<td>Fluid Waste (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>137,410</td>
</tr>
<tr>
<td>Other Solid Waste (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>376,048</td>
</tr>
<tr>
<td><strong>Horizon Oil Sands Mining</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous waste (tonnes)</strong></td>
<td>1,118</td>
<td>535</td>
<td>947</td>
<td>116$^1$</td>
</tr>
<tr>
<td>Fluid Waste (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>28</td>
</tr>
<tr>
<td>Solid Waste (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>76</td>
</tr>
<tr>
<td><strong>Non-hazardous waste (tonnes)</strong></td>
<td>9,833</td>
<td>8,680</td>
<td>10,898</td>
<td>20,377$^1$</td>
</tr>
<tr>
<td>Fluid Waste (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1,483</td>
</tr>
<tr>
<td>Solid Waste (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>18,267$^2$</td>
</tr>
<tr>
<td><strong>International Exploration and Production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous waste (tonnes)</strong></td>
<td>628</td>
<td>190</td>
<td>871</td>
<td>1,082$^1$</td>
</tr>
<tr>
<td>Fluid Waste (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>194</td>
</tr>
<tr>
<td>Solid Waste (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>582</td>
</tr>
<tr>
<td><strong>Non-hazardous waste (tonnes)</strong></td>
<td>2,010</td>
<td>1,494</td>
<td>1,294</td>
<td>5,812$^1$</td>
</tr>
<tr>
<td>Fluid Waste (m³)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>253</td>
</tr>
<tr>
<td>Solid Waste (tonnes)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>5,198$^3$</td>
</tr>
</tbody>
</table>

The 2015 new breakdown for waste reporting addresses GRI G4 disclosures. Hazardous waste includes streams such as tank clean out fluids and sludge, wastewater treatment and solids, filter cake, spent lubricating oil and filters and other substances. Non-hazardous waste includes oilfield waste such as hydrocarbon and salt impacted soils, drilling waste and produced sand.

(1) Totals include fluid and solid waste based on a conversion of all volumes to tonnes.

(2) Increase in Horizon non-hazardous solid waste due to maintenance shutdown.

(3) Increase in non-hazardous waste is related to Murchison's decommissioning work scope (3,576 tonnes of scrap metal being recycled onshore).

NA = not available (new breakdown initiated in 2015).

### AIR AND GHG EMISSIONS

The Company’s GHG emission estimates are prepared internally using reported production volumes and generic emission factors. Only a portion of the estimated emissions have been verified externally.

<table>
<thead>
<tr>
<th>Direct GHG emissions from fuel consumption (million tonnes CO₂e)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North America Exploration and Production</strong></td>
<td>7.29</td>
<td>6.82</td>
<td>7.65</td>
<td>7.44</td>
</tr>
<tr>
<td><strong>Horizon Oil Sands Mining</strong></td>
<td>2.06</td>
<td>2.28</td>
<td>2.27</td>
<td>2.31</td>
</tr>
<tr>
<td><strong>International Exploration and Production</strong></td>
<td>1.30</td>
<td>1.27</td>
<td>1.12</td>
<td>1.21</td>
</tr>
</tbody>
</table>
### Indirect GHG emissions (million tonnes CO₂e)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity consumption (TWh)</td>
<td>1.76</td>
<td>1.70</td>
<td>2.26</td>
<td>2.46</td>
</tr>
<tr>
<td>Indirect GHG emissions¹</td>
<td>1.73</td>
<td>1.17</td>
<td>1.52</td>
<td>1.47</td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity consumption (TWh)</td>
<td>0.064</td>
<td>0.114</td>
<td>0.239</td>
<td>0.403</td>
</tr>
<tr>
<td>Indirect GHG emissions¹</td>
<td>0.068</td>
<td>0.084</td>
<td>0.177</td>
<td>0.298</td>
</tr>
</tbody>
</table>

(1) Does not include GHG emissions generated from cogeneration plants (included as direct emissions).

### Direct GHG emissions (million tonnes CO₂e)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.93</td>
<td>11.75</td>
<td>14.14</td>
<td>13.75</td>
<td></td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>3.56</td>
<td>3.75</td>
<td>3.69²</td>
<td>3.92</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>1.75</td>
<td>1.61</td>
<td>1.62</td>
<td>2.11</td>
</tr>
</tbody>
</table>

Direct GHG emissions increased due to increase in flaring at Horizon, and in Olowi and Ninian South platforms.

(1) Includes total direct emissions from combustion, flaring, formation CO₂, and other venting and fugitive leaks from equipment.
(2) Restated.

### EMISSIONS INTENSITY

### Direct GHG emissions intensity (tonnes CO₂e/BOE)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td>0.067</td>
<td>0.061</td>
<td>0.060</td>
<td>0.056</td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>0.103</td>
<td>0.094</td>
<td>0.084</td>
<td>0.080</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>0.082</td>
<td>0.084</td>
<td>0.094</td>
<td>0.082</td>
</tr>
</tbody>
</table>

(1) Includes total direct emissions from combustion, flaring, formation CO₂, and other venting and fugitive leaks from equipment.

### FLARING AND VENTING

### Total natural gas flared (10³m³)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>78,912</td>
<td>131,006</td>
<td>132,917</td>
<td>81,947</td>
<td></td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>46,397</td>
<td>45,593¹</td>
<td>32,942</td>
<td>95,406</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>197,157</td>
<td>307,482</td>
<td>188,073</td>
<td>354,775</td>
</tr>
</tbody>
</table>

(1) Restated due to error in calculation.

### Total natural gas vented (10³m³)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>299,813</td>
<td>238,746</td>
<td>259,283</td>
<td>190,301</td>
<td></td>
</tr>
</tbody>
</table>

### NOx emissions (tonnes)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27,011</td>
<td>36,035</td>
<td>46,178¹</td>
<td>52,288</td>
<td></td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>3,330</td>
<td>3,935</td>
<td>4,696</td>
<td>5,954</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>2,117</td>
<td>3,184</td>
<td>2,186</td>
<td>2,349</td>
</tr>
</tbody>
</table>

(1) Increase in emissions due to natural gas asset acquisitions.
(2) UK only.

### SOx emissions (tonnes)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Exploration and Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6,950</td>
<td>6,132</td>
<td>5,567</td>
<td>5,633</td>
<td></td>
</tr>
<tr>
<td>Horizon Oil Sands Mining</td>
<td>2,427</td>
<td>4,060</td>
<td>2,993</td>
<td>3,968</td>
</tr>
<tr>
<td>International Exploration and Production</td>
<td>247</td>
<td>263</td>
<td>260</td>
<td>210</td>
</tr>
</tbody>
</table>

(1) UK only.

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Many of the photographs in this report were provided by Canadian Natural employees. We would like to thank Kenneth Cheung, Kevin Gill, Douglas Kurek, Dorian Londo and John Webber.
Our 2015 Report to Stakeholders includes consolidated social, economic and environmental disclosures from the Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines and the Oil and Gas Sector Supplement. For additional GRI disclosures, a GRI content index and more details on our sustainability reporting, please refer to the Corporate Responsibility section of our website at www.cnrl.com.

We welcome your suggestions on this report.

Canadian Natural also produces a separate Annual Report, which is also available on our website.