

A person wearing a yellow hard hat and a high-visibility safety vest is seen from behind, standing in a field of tall green plants with many small yellow flowers. The sky is bright blue with scattered white clouds. The overall scene suggests an outdoor work environment, possibly related to agriculture or environmental monitoring.

Synocrude

*ARE THE OIL  
SANDS BEING  
RESPONSIBLY  
DEVELOPED?*

# *LET'S EXAMINE THAT QUESTION FROM TWO PARALLEL PERSPECTIVES*

TO ARRIVE AT A COMPLETE ANSWER TO THE QUESTION OF WHETHER THE OIL SANDS ARE BEING RESPONSIBLY DEVELOPED, IT'S IMPORTANT TO BALANCE THE VIEWS AND OPINIONS OF OUR STAKEHOLDERS WITH THE PERFORMANCE OF OUR OPERATION.

WE HAVE LINKED THESE TWO CONVERSATIONS TOGETHER THROUGHOUT THE SUSTAINABILITY REPORT IN ORDER TO CLARIFY THE ISSUE AND DEMONSTRATE HOW SYNCRUDE IS RESPONDING.

# 1

## STAKEHOLDER PERSPECTIVES

From tailings management to water use, business development to community support, stakeholders are looking for responsive and responsible actions from the oil sands industry.

# 2

## OPERATIONAL PERSPECTIVES

Building on over 30 years of continuous improvement throughout our operation, Syncrude is taking further strides in managing our sustainability risks and improving our performance.

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07.30.2012 @ Syncrude Technology Centre, Keyano College

## Scott Sullivan

PRESIDENT AND CEO

“The oil sands are a great resource for Canada, but our operation does have an impact on the environment, and I think it’s very important that we return it to its natural state when we’re done.

*Land reclamation and tailings are at the heart of the oil sands discussion, and stakeholders are rightly interested in our strategies for managing these.*

I think we can meet their expectations. We have an active, focused research program and also a very active implementation plan at our site. We’re developing landscape features very consistent with what we found at the beginning of development. What’s more, we’re working with Syncrude’s owners on a nearly \$2 billion tailings management strategy and this will allow us to effectively manage our tailings for many years to come. Late in 2012, we’re starting up a \$1.6 billion facility that will reduce our total sulphur emissions by about 60 percent. This will have a positive impact on regional air quality.”

# SCOTT

## LEADERS LETTER

*Marcel Coutu & Scott Sullivan*

Are the oil sands being responsibly developed?

At Syncrude, we believe they are. Our hope is, upon reading this report, you too will recognize the progress we continue to make toward harnessing the value of one of Canada's greatest natural resources in a way that's accountable to both the environment and our stakeholders.

We're proud of our past and confident in our future. Syncrude was incorporated 48 years ago with a focus on researching the most sustainable means of tapping the oil sands. This included establishing our environmental group to conduct regional baseline studies long before site construction even began. Since starting operations in 1978, we have continued a relentless pursuit of innovation in order to realize an operation that is not only safe, reliable and responsible, but also a generator of significant economic and social benefits.

To mention several examples, over 3,100 hectares of mined lands have been reclaimed and planted with six million trees and shrubs. Another 1,200 hectares are ready for revegetation. Emissions of sulphur have been reduced while crude oil production increased. Recycle water rates have improved. Safety performance is industry-leading and many thousands of people are gainfully employed. Billions of dollars have been spent with suppliers across the country, further billions paid in royalties and taxes, and many millions invested in local communities.

Our focus now – more than ever – is squarely on applying all we've learned to address today's sustainable development priorities. A 2011 risk analysis identified numerous areas to focus on – such as land and water use, biodiversity and labour supply. Through collaborations with academia, industry and other research-oriented organizations, we are making significant progress but recognize there is more we can do as our capabilities and technologies expand.

For instance, over the next several years, additional steps will be taken on fen wetland reclamation, with a research project now underway in our former East Mine. This project will help guide the entire industry towards creating healthy and productive wetlands.

Another example lies in our people initiatives. We will continue to invest in developing, attracting and retaining a skilled labour force, while providing a work environment where people are safe, empowered and rewarded. In addition, the continued implementation of ExxonMobil systems will help our employees reach the full potential of the operation, including its environmental performance.

Toward these outcomes, we continue to be guided by Syncrude's Vision and Values which remain largely unchanged from when they were first articulated over two decades ago. In fact, the only major alteration came early in 2012, with the added reference about our desire to be a responsible operator which, although not previously stated, has always been a goal.

Guidance is also provided through the Board of Directors' Safety, Health and Environment Committee which, in 2011, expanded its mandate to formally include corporate sustainability. The committee's work will ensure appropriate governance for the management of sustainability-related challenges, risks and opportunities going forward.

We recognize Syncrude's sustainability path is a journey on which we can always improve – and our stakeholders will rightly challenge us to do so. We hope the information in this report creates more understanding of our commitment and encourage you to take a few moments to provide your opinion through our on-line feedback card. Your perspectives will help guide future reporting.

We appreciate your interest and look forward to sharing our continued progress with you in the years ahead.

Signed

**Marcel Coutu**  
*Chairman*

Signed

**Scott Sullivan**  
*President and CEO*

# VISION & VALUES

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WE ARE: SECURING CANADA'S ENERGY FUTURE.

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WITH THE:

- Vision to Lead
  - Knowledge to Succeed
  - Commitment to Do Better
  - The Heart to Win the Race
- 

WE WILL DO THIS BY:

- Encouraging learning and innovation in everything we do
  - Pushing the limits of what technology can accomplish
  - Being a responsible operator in all that we do
  - Working together to make Syncrude the best place to work
- 

IN THIS WAY:

- We will be safe, reliable, responsible and profitable
  - All of our stakeholders will want to invest in our future
-



08.13.2012 @ The Snye, Downtown Fort McMurray

## Kara Flynn

VICE PRESIDENT, GOVERNMENT & PUBLIC AFFAIRS

“There’s a lot of interest in our operations from stakeholders with diverse perspectives and different priorities for us to pursue. We seek feedback from all levels of governments, Aboriginal communities, our employees and environmental organizations. We also gauge broad public opinion through media coverage. All these responses told us the key areas to address were managing tailings, land reclamation, Aboriginal relations and the growing regulatory framework on the industry. Now, we’re vetting our management systems to ensure we have appropriate programs, policies and performance targets to address potential issues. Doing this will help ensure Syncrude remains a sustainable, transparent and responsible oil sands operation that is supported by our stakeholders and the broader public.

*“People in this region, in Alberta and beyond enjoy the economic benefits of oil sands development but they expect us to protect the environment while doing it.”*

# KARA

## OUR SUSTAINABILITY PATH

In 2011, Syncrude embarked on a strategic evaluation of our sustainability activities, performance and path forward. A significant governance outcome was the decision to expand the role of the Board Safety, Health & Environment Committee to include corporate sustainability. A community advisory panel was convened to review and provide feedback on Syncrude's 2008-09 sustainability report. As well, a sustainability risk analysis identified and ranked existing and emerging strategic issues to the company.

Work continues on a more thorough analysis of our material risks and opportunities and how they will be addressed at the corporate and operations levels. Progress and updates will be reflected in subsequent reports.

### Board of Directors Sustainability Oversight

In 2011, the SH&E Committee broadened its mandate to incorporate safety, health, environment and corporate sustainability. This agenda now contains topics that will help the Committee understand Syncrude's existing framework for identifying and assessing all sustainability risks. As well, the Committee will ensure Syncrude is managing its risks and issues and will review performance and trends through the tracking of key performance indicators.

### Community Advisory Panel

The Community Advisory Panel was convened in 2011 to help ensure our sustainability report reflects the priorities and interests of key stakeholders. The Panel reviewed and provided comment on the relevance, quality, usability and credibility of our 2008-09 report. Its 10 members had diverse interests and areas of expertise reflecting regional perspectives and the socio-economic and environmental issues we face. Panel members participated in two meetings – a conference call and an in-person meeting.

Panel Members included:

- **Allan Adam**, Chief, Athabasca Chipewyan First Nation
- **Julie Desjardins**, President, Desjardins and Associates
- **Ann Dort-McLean**, President, Fort McMurray Environmental Association
- **Kevin Nagel**, President and CEO, Keyano College
- **Nick Sanders**, 2nd Vice President, Fort McMurray Chamber of Commerce
- **Judith Sayers**, Associate Professor, Faculty of Business and the Faculty of Law, University of Victoria
- **Diane Shannon**, Executive Director, United Way of Fort McMurray
- **Todd Zimmerling**, President and CEO, Alberta Conservation Association (ACA)

Institutional investors were also represented.

Each participant received an honourarium, which s/he could decline or direct to a registered charity as a donation. Syncrude paid for all meeting-related travel expenses.

The meeting was also attended by three members of Syncrude's Executive team, and was facilitated by Stratos Inc., a sustainability consultant.

The Panel did not review, endorse or have direct input on the 2010-11 report.

In regards to the 2008-09 report, Panel members felt overall the report contained a wealth of information. The summary of issues, actions and expected results was viewed as a good feature, but the Panel recommended to more clearly define what sustainability means to Syncrude and to articulate a stronger vision and strategy. The Panel also felt the report should communicate material issues, problems and challenges more explicitly while demonstrating how Syncrude is responding.

## Material Issues Analysis

Syncrude embarked on a structured analysis to identify material sustainability risks and opportunities, and assess issue priorities early in 2012. The analysis, which was done with the assistance of an external consultant, helped focus the mandate for an expanded Board SHE & Corporate Sustainability Committee and inform business decisions.

The materiality analysis was informed by desktop research on stakeholder interests and interviews with Syncrude senior management on the business consequences of various sustainability issues. Issues were then categorized and grouped, and ranked based on both stakeholder interest and business impact. The results were validated in a workshop with management. The high and medium priority issues are reflected in our sustainability path.

Analysis Ranking		Issue	Actions	Expected Results
High	<b>Land use and Biodiversity:</b> <i>Healthy ecosystems and productive landscapes</i>	<ul style="list-style-type: none"> <li>Ability to meet evolving expectations, standards and regulations to protect against biodiversity loss and cumulative effects, and reclaim land successfully.</li> </ul>	<ul style="list-style-type: none"> <li>Accelerate pace of land reclamation, including over 200 hectares and one million trees in 2012.</li> <li>Complete planting of vegetation at fen research project in 2012.</li> <li>Continue collaborative research on reclamation and biodiversity with other oil sands operators, government and academia.</li> <li>Seek ongoing guidance from Aboriginal Elders.</li> <li>Implement industry-leading waterfowl deterrent systems and research additional technologies.</li> </ul>	<ul style="list-style-type: none"> <li>Land reclamation progress and productivity consistent with closure plans, and endorsed by stakeholders and regulators.</li> <li>Model established for reclamation of wetlands in oil sands region.</li> <li>Reduced impacts to indigenous and migrating wildlife.</li> <li>No long-term, permanent impacts on local ecosystems.</li> </ul>
High	<b>Water:</b> <i>Protect &amp; conserve water</i>	<ul style="list-style-type: none"> <li>Continued access to water resources and protection of resource quality.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to identify opportunities to reuse and recycle more water.</li> <li>Research viable treatment technologies for re-use or potential discharge of process water.</li> <li>Support science-based water quality monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>Optimized and responsible use of fresh water resources.</li> <li>No impacts on local water systems or water-dependent communities.</li> </ul>
High	<b>Tailings:</b> <i>Develop and implement solutions</i>	<ul style="list-style-type: none"> <li>Ability to remediate tailings and address stakeholder concerns regarding long-term liabilities.</li> </ul>	<ul style="list-style-type: none"> <li>Manage volumes of fluid fine tailings (FFT) by using new technologies, including start-up of commercial-scale centrifuge demonstration in 2012.</li> <li>Continue research of additional remediation technologies, including accelerated dewatering, and participate in industry collaboration.</li> <li>Commission industry's first commercial-scale demonstration of water capping technology in 2012.</li> </ul>	<ul style="list-style-type: none"> <li>A multi-pronged approach to tailings management and reclamation which meets long-term intent of Directive 074 regulation.</li> <li>Successful reclamation of East Mine area with composite tailings as the landform foundation.</li> <li>Successful reclamation of West Mine area into a lake through water capping of fluid fine tailings (FFT).</li> </ul>

Analysis Ranking		Issue	Actions	Expected Results
High	<b>Aboriginal Relations:</b> <i>Respectful and mutually beneficial relationships</i>	<ul style="list-style-type: none"> <li>Relationship-building and effective understanding and management of concerns related to the impacts of our project.</li> </ul>	<ul style="list-style-type: none"> <li>Continue focus on six key commitment areas of our Aboriginal Relations program:               <ul style="list-style-type: none"> <li>Corporate Leadership</li> <li>Employment</li> <li>Business Development</li> <li>Education</li> <li>Community Development</li> <li>Environment</li> </ul> </li> <li>Continue dialogue and cooperation on operations, environmental stewardship and development plans.</li> </ul>	<ul style="list-style-type: none"> <li>Increased secondary and post-secondary graduation rates.</li> <li>Increased Aboriginal representation in the workforce.</li> <li>Continued development of Aboriginal businesses.</li> <li>Traditional environmental knowledge incorporated into reclamation plans.</li> </ul>
High	<b>Regulatory and Government Relations:</b> <i>Earning approval</i>	<ul style="list-style-type: none"> <li>Impact of emerging and potential regulations on operations.</li> </ul>	<ul style="list-style-type: none"> <li>Finalize regulatory strategies for reclamation plans, water return and possible future expansion projects.</li> <li>Monitor evolving regulations, such as those related to greenhouse gas emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Plans that meet with approval from regulators.</li> </ul>
Medium	<b>Employment and Labour:</b> <i>Job opportunities and rewarding careers</i>	<ul style="list-style-type: none"> <li>Quality and quantity of workforce needed to support ongoing operations and future growth.</li> </ul>	<ul style="list-style-type: none"> <li>Create and support strategic awareness, education and training programs.</li> <li>Implement workforce attraction and retention strategies.</li> <li>Provide supportive work environment.</li> <li>Implement strategic workforce reorganization over 2012-14 timeframe.</li> </ul>	<ul style="list-style-type: none"> <li>Workforce sustainability through awareness, education and training initiatives that create qualified new employees, retain current employees, and provide stable access to skilled labour.</li> </ul>
Medium	<b>Community:</b> <i>Infrastructure that supports quality of life</i>	<ul style="list-style-type: none"> <li>Ability of local community to build infrastructure and provide services and amenities for a growing population.</li> </ul>	<ul style="list-style-type: none"> <li>Continued work with regional associations and governments to create public infrastructure and services needed to support a growing local community.</li> <li>Ongoing investments in our communities, including \$6 million in 2012.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate infrastructure for health, education, roads and recreation.</li> <li>Enjoyable quality of life in the Wood Buffalo region.</li> </ul>

Analysis Ranking		Issue	Actions	Expected Results
Medium	<b>Air Quality:</b> <i>Protecting the regional airshed</i>	<ul style="list-style-type: none"> <li>Impacts of emissions on regional air shed and local communities.</li> </ul>	<ul style="list-style-type: none"> <li>\$1.6 billion emissions reduction project operating by 2012.</li> <li>Minimize odours through reliable operations.</li> <li>Continue to support regional air quality monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in total SO<sub>2</sub> emissions by 60% from current approved levels and reduction in particulate matter by 50% when Emissions Reduction Project is operating to specification.</li> <li>No odour complaints attributable to Syncrude operations.</li> <li>Increased stakeholder confidence in our ability to operate responsibly.</li> <li>Continued good regional air quality.</li> </ul>
Medium	<b>Energy and Climate Change:</b> <i>Minimize growth in GHG emissions</i>	<ul style="list-style-type: none"> <li>Balancing societal expectations and growing energy needs.</li> </ul>	<ul style="list-style-type: none"> <li>Achieve 2012 energy efficiency target of 1.24 MBTU per barrel.</li> <li>Explore energy efficiency improvements at all levels of the operation.</li> <li>Research technology that will improve energy efficiency for future projects.</li> <li>Continue to monitor viability of large-scale carbon capture and storage.</li> </ul>	<ul style="list-style-type: none"> <li>Continued reduction in energy use per barrel of production.</li> <li>Further reductions in emissions of CO<sub>2</sub>e per barrel of production.</li> </ul>
Medium	<b>Safety and Health:</b> <i>Injury-free workplace</i>	<ul style="list-style-type: none"> <li>Minimizing worker and process safety incidents.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate year-over-year improvement in safety performance.</li> <li>Continue implementation of Operations Integrity Management System (OIMS) to manage safety.</li> <li>Continue to invest in training, awareness activities, incentives and other initiatives to further improve workplace safety.</li> <li>Recognize worker safety performance achievements.</li> </ul>	<ul style="list-style-type: none"> <li>Workforce committed to a safety culture.</li> <li>Progress toward our long-term objective of an injury-free workplace.</li> <li>Safety performance that continues to lead Alberta industry.</li> </ul>

A photograph of Pierre Gratton, President and CEO of the Mining Association of Canada, standing on the stone steps of the Canadian Parliament Grounds. He is wearing a dark suit, a white shirt, and a red and white patterned tie. The background shows the Gothic architecture of the Parliament buildings under a clear blue sky.

08.16.2012 @ Canadian Parliament Grounds

## Pierre Gratton

PRESIDENT AND CEO, MINING ASSOCIATION OF CANADA

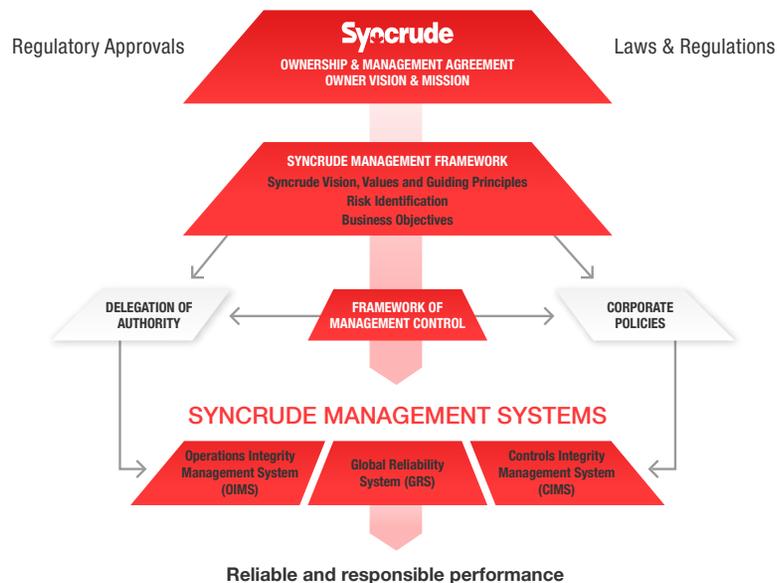
“Our association represents the mining industry on the national stage but we also bring together the industry to collectively address performance issues, reputation and social license. We started the Towards Sustainable Mining (TSM) program in 1999. TSM is a performance-based risk management program that includes annual public reporting and third-party assurance of that performance. TSM is mandatory for our association’s members. Syncrude provided a great deal of leadership in championing and developing TSM. Leaders like that make a difference. A lot of Syncrude staff contributed to developing TSM’s protocols, particularly in tailings management, community outreach and Aboriginal relations, where Syncrude had already established best practices for the rest of the industry to emulate. We’re always reviewing TSM to stay current.

*It is a best practice program so we need to make sure they remain best practices as we learn new things, address changing priorities and continue to drive better performance.”*

# PIERRE

# SUSTAINABILITY MANAGEMENT SYSTEMS

## Syncrude's Sustainability Management Framework



## Managing Toward Sustainability

The graphic above shows how Syncrude manages its business toward sustainable outcomes.

**Internal inputs** start with Syncrude's Joint Venture owners, who oversee and provide direction to Syncrude's sustainability work through the Board of Directors' Safety, Health, Environment & Corporate Sustainability Committee. At the operational level three key management systems provide the strategy, tools and discipline needed to focus on priority areas. A comprehensive Research and Development program enables innovation and continuous improvement (see [Research and Development](#) chapter). Some aspects of employee compensation are also tied to achievement of sustainability metrics.

**External inputs** include all applicable laws and regulations, and stakeholder expectations, which are formed in part by the findings of independent environmental monitoring programs. Industry best practices also feed into Syncrude's pursuit of continuous improvement in all aspects of our business. Of these, Syncrude participates in three formal stewardship programs: the

Toward Sustainable Mining program of the Mining Association of Canada; the Responsible Canadian Energy program of the Canadian Association of Petroleum Producers; and the Progressive Aboriginal Relations program of the Canadian Council for Aboriginal Business.

**Our key SH&E sustainability policy** states our expectations for safety, health and environmental performance. Our corporate code of ethics and business conduct policies guide employee actions.

## Safety, Health and Environment Policy

At Syncrude we are committed to protecting and promoting the safety and well-being of our employees, our contractors, our communities and our environment.

We believe excellence and continuous improvement in safety, health and environmental performance are in the best interest of all of our stakeholders. Our corporate success depends upon it.

Our desired outcomes are a workplace where everyone upholds [Syncrude's Vision, Values and Guiding Principles](#), a workplace that fosters the emotional and physical well-being of employees, a workplace where incidents that could harm people or the environment do not occur, and a workplace where all employees and contractors demonstrate personal commitment to operational excellence. Toward this:

- **we aim for a safe and reliable operation** where all risks that could compromise the health and safety of workers, or the environment, are identified, understood and managed;
- **we meet all regulated standards** for safety, health and environmental performance as the minimum expectation;
- **we learn from best practices** applied elsewhere and endeavour to incorporate such lessons into our practices and procedures;
- **we integrate safety, health and environment** considerations, along with economic factors, into all business decisions; and
- **Syncrude management takes a leadership role** in advocating workplace health and safety, and environmental sustainability, in appropriate regional, provincial and national forums.

Through the efforts and collective experience of our employees and contractors, Syncrude will be an acknowledged leader in safety, health and environmental performance. We will continue to improve by working together and sharing responsibility for a healthy environment, as well as the safety and well-being of our co-workers, our families, our communities and ourselves.

## Code of Ethics and Business Conduct

Syncrude's Code of Ethics and Business Conduct policies are designed to foster the high level of ethical conduct expected by our many internal and external stakeholders. We steward the application of these policies and report periodically to the Board of Directors' Audit and Business Controls Subcommittee and make representations to the Board to confirm compliance.

All employees are formally trained in these matters every four years, most recently in 2010. Training is also done at the time of hiring. All employees must sign a certification stating they understand the policies – Administrative, Professional and Technical employees certify annually based on their increased exposure to potential situations, while Occupational employees certify every four years. All employees receive an annual letter from the President and CEO as a reminder of these policies.

In addition to internal processes, Syncrude has an external system for the reporting of concerns about corporate conduct. Employees, contractors and members of the public may file their concerns anonymously and confidentially through [EthicsPoint](#), or 1-800-493-1866. This information is available internally to all staff and through Syncrude's external website at [www.syncrude.com](http://www.syncrude.com).

## Management Systems

### Operations Integrity Management System (OIMS)

Adoption of ExxonMobil's [Operations Integrity Management System \(OIMS\)](#) continues throughout the Syncrude organization. The new system is expected to be fully implemented by 2013. It aims to make the safety of people, facilities and the environment the centre of all decision making. It establishes expectations and requirements for addressing safety, security, health, environmental and social risk.

OIMS consists of 11 elements that address specific aspects of management common to all ExxonMobil operating facilities. From these, supplemental guidelines relevant to Syncrude's operations are being developed.

ExxonMobil reviews the overall effectiveness of OIMS every five years and makes enhancements accordingly. Lloyd's Register Quality Assurance, Inc2. (LRQA) attests that OIMS meets the requirements of the standard for environmental management systems (ISO 14001:2004) and the Occupational Health and Safety Assessment Series for health and safety management systems (OHSAS 18001:2007).

### Global Reliability System

Syncrude has begun implementing ExxonMobil's Global Reliability System (GRS) to our operations. It is expected to be fully implemented by the end of 2013. GRS is based on the principles of reducing reliability incidents, reducing costs and improving safety. Its 20 elements provide a common framework for work practices and processes, and facilitate best practice sharing across our operations. This allows us to apply developed practices quickly and consistently.

### Controls Integrity Management System

Syncrude's commitment to conducting business in a well-controlled manner includes establishing effective controls, monitoring and enforcing compliance continuously, and resolving control weaknesses promptly. The ExxonMobil Controls Integrity Management System (CIMS) provides a structured, common process for Syncrude to meet this commitment. It is based on the principles and standards in Syncrude's Framework of Management Control and provides the key attributes of an effective control system designed to meet certain regulatory requirements. These controls meet or exceed the requirements of the Sarbanes-Oxley Act in the United States and Bill C-198 in Canada.

### Employee Compensation System

Variable incentive pay for Syncrude employees is tied to the achievement of certain corporate metrics, including sustainability factors. The Impact 21 program, for example, rewards employees for achieving targets in safety, production, net production costs and energy utilization. It reinforces to all employees how their contributions are critical to meeting overall sustainability goals. Senior leaders, managers and executives are rewarded based on a broader array of metrics including community relations, business controls, environmental performance and tailings management.

## Regulatory Oversight

Syncrude is subject to federal and provincial regulation. These regulations require Syncrude to secure various approvals and provide for restrictions and prohibitions on releases or emissions of various substances produced or used in association with our operation. Legislation also requires that our facilities and sites be reclaimed to the satisfaction of provincial authorities. A breach may result in fines and penalties.

Environmental compliance is primarily governed by the [Alberta Environmental Protection and Enhancement Act](#). It imposes certain environmental responsibilities on Syncrude and, in certain instances, also imposes penalties for violations. Syncrude currently has all approvals required to operate.

Additional regulatory scrutiny is expected when the Lower Athabasca Regional Plan is implemented under the [Land-use Framework](#) by the Alberta government. It will be binding on provincial regulators and municipalities. The current draft plan, issued in 2011, includes proposed regulations and management frameworks for air, groundwater and surface water quality management. It considered input from an appointed advisory council, as well as from the public, municipalities, stakeholders and First Nations and Métis communities in the region. As with all such regulatory obligations, Syncrude will work to ensure compliance with the requirements of this Framework.

## Environmental Monitoring Programs

Syncrude's sustainability efforts are informed by inputs from a variety of external environmental monitoring programs. These have been subject to much public scrutiny in recent years, with reviews by science leaders and some stakeholders suggesting that more integration, and more and better data, are needed in order to understand and manage ecosystem effects. Work toward this goal progressed during the reporting period.

The federal and Alberta governments both appointed expert advisory panels in late 2010 and early 2011, and then came together in February 2012 to announce a joint federal-provincial science-based oil sands emissions monitoring program. It is to be implemented over three years and the estimated \$50 million per year cost is to be borne by industry.

The program will more than double to 170 the number of monitoring sites in and downstream/downwind of the oil sands region, including sites in the Northwest Territories and Saskatchewan. It will examine hundreds of contaminants that are

not tested under existing programs, increase monitoring frequency and calculate cumulative effects. It is to be peer-reviewed and all data and reports are to be made public in a timely way. The Program began in the spring of 2012 and is co-managed by the federal and provincial governments with a view to becoming governed independently.

Syncrude understands stakeholders expect effective, credible monitoring of our industry and we welcome a new system that can instill public confidence in our efforts toward responsible development.

## Industry Best Practices

### Mining Association of Canada – Towards Sustainable Mining

As a member of the Mining Association of Canada (MAC), Syncrude benefits from the development and exchange of best practices regarding sustainable growth and development.

Participation in the Towards Sustainable Mining (TSM) initiative is a condition of membership in the association. TSM is a set of guiding principles and performance indicators that govern key activities of companies in the mining and mineral-processing industry. Developed in collaboration with communities of interest and key stakeholders, these principles are mandated across the industry and are embedded throughout Syncrude's management systems.

Specific measurement criteria in tailings management, energy and greenhouse gas emissions management, Aboriginal and community outreach and crisis management planning is reported annually, externally verified and issued publicly. Safety and health and biodiversity conservation will be reported starting in 2013. Indicators specific to mine closure are under development.

Syncrude was the only oil sands operator to receive a TSM Award for our 2010 performance, recognizing achievements in tailings management, external outreach and crisis planning. Our progress summary is available [here](#).

## Canadian Association of Petroleum Producers – Responsible Canadian Energy Program

As a member of the Canadian Association of Petroleum Producers, Syncrude participates in the [Responsible Canadian Energy \(RCE\) program](#), which requires members to report their performance and progress in the areas of environment, health, safety and social stewardship.

RCE provides common metrics for performance measurement and reporting, supporting CAPP members in the design and implementation of their internal systems and processes. It also enables sharing of success stories and best practices to elevate overall industry performance.

An annual progress report updates stakeholders on issues and performance. It is reviewed by an external advisory group which provides feedback on the key performance indicators as well as overall structure and content.

## Canadian Council for Aboriginal Business – Progressive Aboriginal Relations Program

The [Progressive Aboriginal Relations \(PAR\) Program](#) is Canada's only certification program with an exclusive focus on Aboriginal relations. It was developed as a framework for companies to measure progress on developing progressive Aboriginal relations and considers corporate efforts in Aboriginal employment, Aboriginal business development, building individual capacity and enhancing relations with Aboriginal communities. Certification includes independent verification and review by a jury composed of Aboriginal business people. Syncrude currently holds Gold Level PAR distinction, and has been accredited at this level five times.



08.14.2012 @ WBEA Air Monitoring Station

## Diane Phillips

SR. ENVIRONMENTAL SCIENTIST

PRESIDENT, WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

“There is a long history of ambient air monitoring in the oil sands region, and I have worked in this area for 32 years. Monitoring and reporting is currently being done by the multi-stakeholder Wood Buffalo Environmental Association; WBEA has a history of providing high quality data, as verified by independent auditors.

*Because stakeholders need accurate information about air quality, we've increased our programs within WBEA—we're measuring for more pollutants and we've expanded our network of monitoring stations.*

While regional air quality is generally better than the rest of the province, stakeholders have expressed concerns about odours, so we're studying technologies that will help us track, understand and manage these odours. We're also trying to link air emissions from oil sands operators with vegetation and receptor modelling in the field; this should allow us to attribute the presence of a chemical in, say, lichen to a source, with a 90 percent accuracy rate. It's important that we take a more holistic approach to linking air emissions with environmental effects on water and land.”

# DIANE

# AIR QUALITY

## Performance Overview

- 2011 SO<sub>2</sub> emissions intensity the lowest in Syncrude's operating history
- Less than 10 percent of all 2011 ambient air exceedances in region attributed to our operations; zero in 2010
- \$1.6 billion emissions reduction project nears completion for start-up in 2012

## Our Commitment

Syncrude is committed to managing and monitoring air emissions to protect the residents and ecological health of the region. Syncrude appreciates that the Wood Buffalo region enjoys good air quality, and we will responsibly manage our operations toward maintaining this in the years ahead.

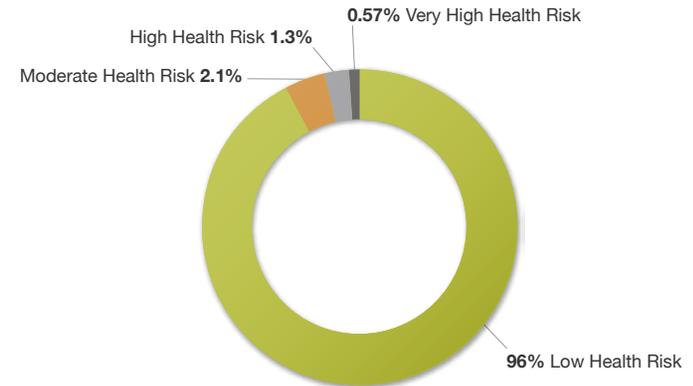
## Regional Air Quality Continues to Be Above Average

The Wood Buffalo Environmental Association (WBEA) is a multi-stakeholder, not-for-profit, science-based monitoring organization that independently monitors air quality and terrestrial environmental effects in the region. WBEA is headquartered in Fort McMurray and comprises environmental non-government organizations such as the Pembina Institute, the Fort McKay First Nation, government, health agencies and industry.

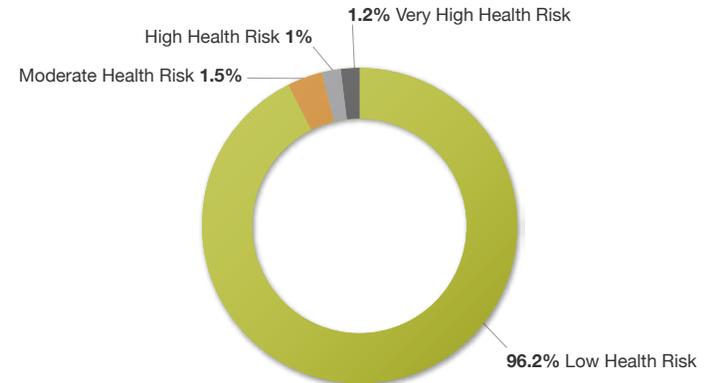
Monitoring results continue to show that the region's overall air quality compares very well to other regions of Canada, and better than cities such as Edmonton, Toronto and Vancouver. The association notes that odours are the most common concerns from residents, but occurrences have been decreasing.

In 2011, Alberta adopted the Air Quality Health Index (AQHI), which helps people better understand air quality and its connection to human health. It is a scale from 1 to 10 to determine the health risk for the general population and for those with respiratory conditions. The lower the number is, the lower the health risks. WBEA's website calculates the AQHI for four areas within the local region—Fort Chipewyan, Fort McKay, Fort McKay South and Fort McMurray. More communities will be added in the near future.

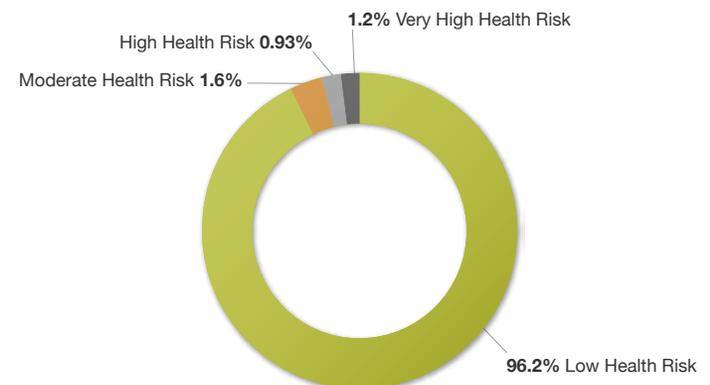
### Fort McMurray



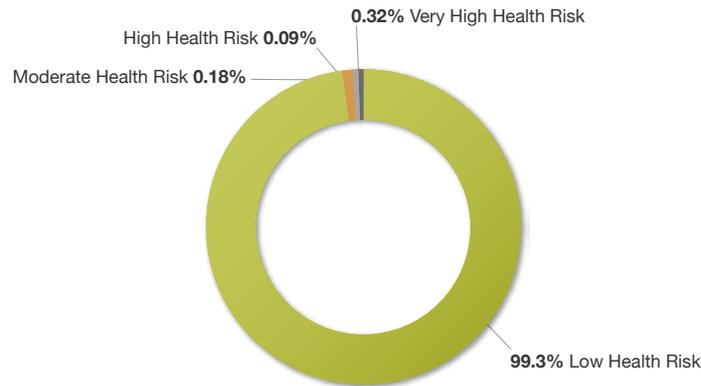
### Fort McKay



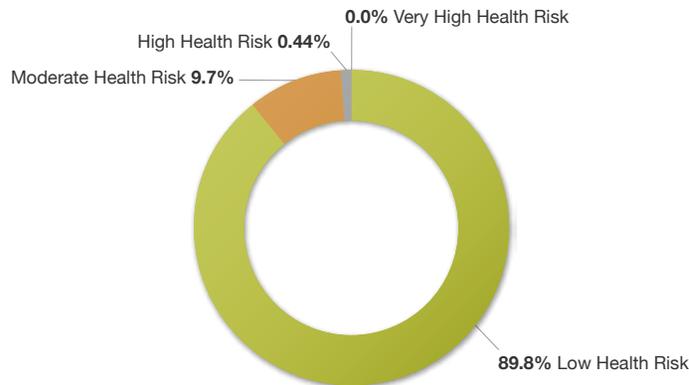
### Fort McKay South



## Fort Chipewyan

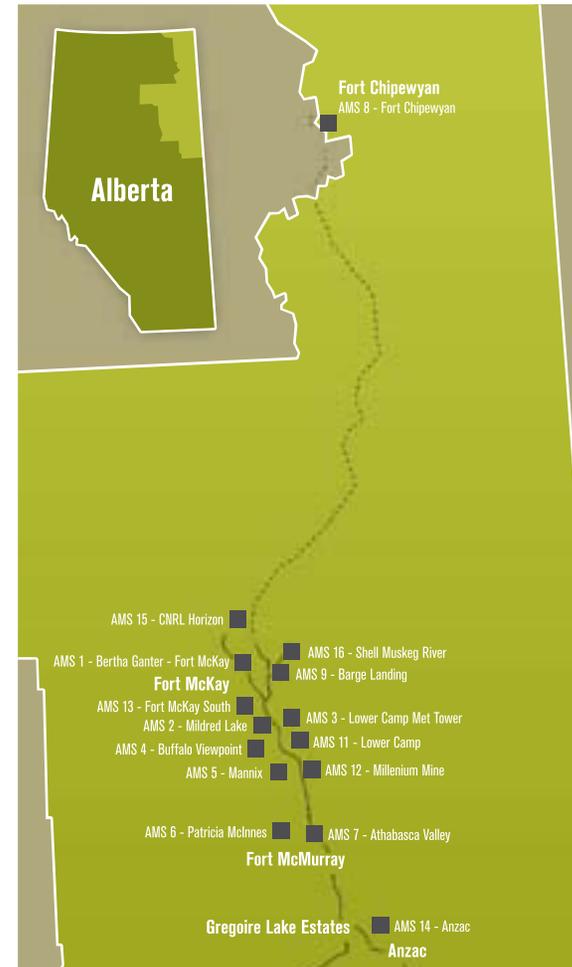


## Edmonton



Source: Wood Buffalo Environmental Association (WBEA). Charts depict the percent of 2011 hourly AQHI values within each of the four risk categories – low, moderate, high and very high – calculated for four local WBEA stations, as well as an Edmonton station. Almost all hours in the local region with AQHI values recorded in the moderate to high risk categories – and all hours within the very high risk category – occurred during the extended period of the McClelland Lake fire. At the time, extremely high concentrations of fine particulate matter were also measured, as well as occasional elevated levels of ground level ozone. Fort McKay and Fort McKay South stations are shown here for their close proximity to the Syncrude operation. Visit [www.wbea.org](http://www.wbea.org) for complete details on pollutants measured by AQHI.

## Regional Air Monitoring Stations



The Wood Buffalo Environmental Association operates the most extensive ambient air network in Alberta with 15 air monitoring stations and 20 passive monitoring stations.

The WBEA appointed Dr. Kevin Percy as its new executive director in 2011. Dr. Percy brings with him over 35 years in air pollution research with the Canadian Forestry Service and from appointments with the International Union of Forest Research Organizations (IUFRO), the world's largest forest NGO. Syncrude welcomes Dr. Percy to his new position and thanks retiring director Carina MacEachern for her leadership and contributions.

In the fall of 2010, a partnership began between community members of Fort McKay and WBEA's Terrestrial Environmental Effects Monitoring (TEEM) program. In this joint venture, Fort McKay community members are engaged in an ongoing berry monitoring study, during which they will share their observations and pass on their traditional knowledge of regional berry health to WBEA.

## Sulphur Dioxide (SO<sub>2</sub>) Emissions

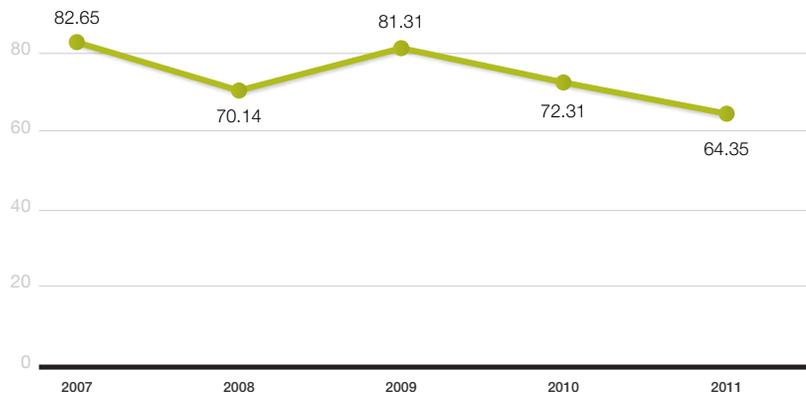
Emissions from Syncrude of sulphur dioxide (SO<sub>2</sub>) originate mainly from two fluid cokers built in the 1970s as part of our original plant. Emissions from a third coker are routed through a flue-gas desulphurization unit (FGD). Other sources of SO<sub>2</sub> include flaring and diverter stacks which are used only during coker unit or plant upsets.

Emissions of SO<sub>2</sub> were lower over the last two years due to a combination of coker outages and better reliability of the FGD unit. In 2011, emissions per thousand barrels produced were the lowest in our operating history.

When it is necessary to flare or divert gas, we take every possible action to reduce the duration of each incident. We will also decrease the amount of bitumen feed into the coker in order to minimize emissions. Through focused efforts to maintain stable and reliable operations, flaring has dropped by almost 50 percent over the last five years. We are optimistic this can continue.

Syncrude remained compliant with government regulations during the reporting period.

### SO<sub>2</sub> All Sources (thousand tonnes per year)



*Our Emissions Reduction Project will continue our decrease in SO<sub>2</sub> emissions to around 60 percent of 2005 levels.*

## Investigating Flue-Gas Desulphurization Unit Performance

As part of the upgrader expansion in 2006, Syncrude introduced a flue-gas desulphurization (FGD) unit to capture and convert SO<sub>2</sub> emissions into ammonium sulphate, which is then used to produce fertilizer at an on-site third-party facility.

The unit uses a wet process to remove SO<sub>2</sub>. As a result, a high amount of water vapour travels through the stack. SO<sub>2</sub> recovery, however, is excellent, reaching as high as 96 percent. SO<sub>2</sub> and other pollutants, such as ammonia, that were unrecovered in the process are emitted in trace amounts through the vapour.

In response to stakeholder concerns regarding the vapour plume, investigations are underway to assess the best technological or process solution to improve the unit's performance and further increase emissions recovery.



*The flue-gas desulphurization unit captures and converts sulphur dioxide (SO<sub>2</sub>) emissions into ammonium sulphate, which is then used to produce fertilizer.*

## **Syncrude Emissions Reduction Project Nears Start-Up**

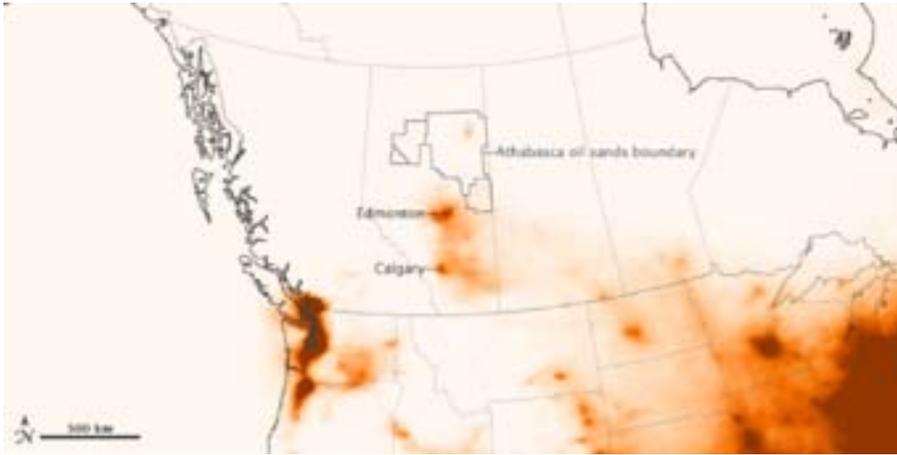
We recognize that local residents expect good air quality. Towards this, we have invested \$1.6 billion on emissions abatement technologies, which are expected to reduce SO<sub>2</sub> emissions to an annual average of less than 100 tonnes per day. Facilities will be tied into our two original coker units. We are thoroughly reviewing all aspects of the facility to ensure a smooth start-up and reliable operation. Start-up is scheduled for 2012.



*Around \$1.6 billion is being invested to further reduce sulphur dioxide (SO<sub>2</sub>) emissions from the Syncrude operation.*

## **Nitrogen Oxide (NO<sub>x</sub>) Emissions**

A research study by Environment Canada published in Geophysical Research Letters in early 2012 reported that the level of nitrogen dioxide (NO<sub>x</sub>) emissions from the oil sands industry is comparable to those of large power plants or medium-sized cities. Nitrogen oxide is created as a result of combustion required to provide power, heat and steam for process units, as well as from mining fleet vehicle emissions.



NASA observatory photo depicting nitrogen dioxide emissions in Western Canada and northwestern United States. Source: <http://earthobservatory.nasa.gov/IOTD/view.php?id=77283>

Our primary goals with respect to minimizing NO<sub>x</sub> emissions are to move the maximum volume of material while consuming the least amount of fuel and to have engines that continue to reduce emissions per litre of fuel consumed. To achieve these goals, we focus on fuel quality, engine selection, operating and maintenance practices, and mine plan efficiency.

The installation of NO<sub>x</sub>/PM after-treatment devices on the medium-duty support equipment has resulted in a significant decrease (more than 8 percent) in the site-wide mobile NO<sub>x</sub> emission intensity value over the last five years.

## Other Air Emissions

Volatile organic compounds (VOCs) can contribute to poor air quality. Sources of VOCs at Syncrude include naphtha losses to our Mildred Lake tailings settling basin and hydrocarbon vapours from storage tanks.

To reduce naphtha losses, wastewater streams are directed through two Naphtha Recovery Units (NRUs), a technology developed by Syncrude in the mid-1980s. We remain within government regulations for naphtha losses and continue to examine how we can improve recovery in the future. Naphtha recovery over the reporting period averaged 85 percent.

A leak detection and repair program has been in place at Syncrude since 1992. As required by our government operating approval, this program was modeled to monitor for leaks according to the [Canadian Council of Ministers of the Environment \(CCME\) Code of Practice](#). The system enables the identification and repair of vapour leaks, which minimizes VOC releases.

Significant efforts are also being made to reduce ambient air exceedances through reliability and stable operations, and less plant upsets. In 2011, there were 196 exceedances reported by air monitoring stations operated by the Wood Buffalo Environmental Association. Of these, 18 were attributable to Syncrude.

WBEA communication protocols inform Syncrude immediately of any ambient air exceedances. This notification triggers a site-wide investigation into any possible Syncrude sources that may be contributing to elevated readings. If one is identified, mitigative procedures are implemented to minimize air quality impacts. A follow-up report is submitted to regulators within seven days.

We conduct ongoing maintenance to heating and ventilation systems, air conditioners and cooler units to help prevent the release of ozone-depleting substances (ODS) to the atmosphere. Releases over the reporting period were investigated and repairs made to the source units. Currently, we are in the process of replacing all units with those that operate on non-ozone depleting refrigerant.

## Odours

Local stakeholders report the presence of any odours to the 24-hour Alberta Environment hotline at **1-800-222-6514**. Government authorities then notify local industrial operators of the complaint and require them to assess their operations for possible sources of odours and take remediating action. The regulator informed Syncrude of two odour complaints from the public during the reporting window which we investigated and promptly resolved.

In the event of an operational upset or scheduled maintenance, which could cause odours or affect air quality, we update the public through the Wood Buffalo Air Information Line. The line also provides the Alberta Environment hotline and Health Link Alberta telephone numbers for those residents who have environmental or health related concerns. The information line was developed by the Wood Buffalo Environmental Association and supported by its members. It is accessed by calling **1-866-685-3699**.

## Air Emissions

	Unit	2007	2008	2009	2010	2011
Ozone-depleting substances <sup>1</sup>	kg of CFC11 equivalent/yr	1,366	1,629	1,066	1,316	1,653
Sulphur dioxide	thousand tonnes/year	82.65	70.14	81.31	72.31	64.35
Sulphur dioxide emission intensity	kg/m <sup>3</sup> production	4.63	4.12	4.93	4.19	3.82
Sulphur dioxide emission intensity	tonnes/KBbls	0.74	0.66	0.78	0.67	0.61
Nitrogen oxides	thousand tonnes/year	25.39	26.11	28.41	30.85	30.65
Nitrogen oxides emission intensity	kg/m <sup>3</sup> production	1.42	1.53	1.72	1.79	1.82
Nitrogen oxides emission intensity	tonnes/KBbls	0.23	0.24	0.27	0.28	0.29
Volatile organic compounds (VOCs) <sup>1</sup>	thousand tonnes/year	28.16	13.90	13.60	13.80	12.41
VOC emission intensity <sup>1</sup>	kg/m <sup>3</sup> production	1.58	0.82	0.83	0.80	0.74
VOC emission intensity <sup>1</sup>	tonnes/KBbls	0.25	0.13	0.13	0.13	0.12
NPRI on-site releases <sup>1</sup>	thousand tonnes/year	NPRI	NPRI	NPRI	NPRI	NPRI
Sour gas diverting	tonnes per day SO <sub>2</sub>	1.8	0.6	2.0	0.4	0.9

<sup>1</sup> Detailed breakdown at [www.ec.gc.ca/pdb/npri](http://www.ec.gc.ca/pdb/npri)

## Key Air Indicators

	Unit	2007	2008	2009	2010	2011	2012 target
Diverter stack usage	hours per year	261.26	129.16	265.82	56.28	122.83	< 292
Sour gas flaring	tonnes per day SO <sub>2</sub>	4.3	7.3	3.2	2.4	3.8	<5
Main stack sulphur dioxide	hours greater than 16.4 tonnes per hour	3	3	0	2	0	0
Main stack sulphur dioxide	90-day rolling average >245 tonnes	0	0	0	0	0	0
Main stack nitrogen oxides	# of hours >1.5 tonnes per hour	0	0	0	0	0	0
Main stack opacity	# hours > 40%	27	84	22	5	9	< 5
Ambient air exceedances H <sub>2</sub> S hourly	#	17	55	5	0	14	0
Ambient air exceedances H <sub>2</sub> S 24-hour period	#	3	9	1	0	4	0
Ambient air exceedances SO <sub>2</sub> hourly	#	2	1	0	0	0	0
Ambient air exceedances SO <sub>2</sub> 24-hour period	#	0	0	0	0	0	0
Odour incidents	# attributed to SCL	10	3	1	0	2	0

A photograph of Pierre Gratton, President and CEO of the Mining Association of Canada, standing on the stone steps of the Canadian Parliament Buildings in Ottawa. He is wearing a white dress shirt and a red and white patterned tie. The background shows the grand Gothic Revival architecture of the Parliament Hill under a clear blue sky.

08.16.2012 @ Canadian Parliament Grounds

## Pierre Gratton

PRESIDENT AND CEO, MINING ASSOCIATION OF CANADA

“The Mining Association of Canada’s Towards Sustainable Mining (TSM) program is a risk management approach to ensuring the responsible development of our industry. It includes annual performance-based public reporting and third-party assurance. Some of the areas covered include tailings management, energy use and GHG emissions, and Aboriginal and community outreach.

*We added a biodiversity protocol a couple of years ago because our Community of Interest Advisory Panel recognized it as an emerging issue.*

We want our industry to respond to it proactively by setting up a system to measure a company’s impact on biodiversity, the steps taken to mitigate that impact, and actions taken to promote biodiversity in their operations. Syncrude’s work with wood bison and land reclamation are good examples of the directions we want to go with this protocol. The mining industry practices the highest environmental standards with a deep commitment to sustainable development. A commitment to biodiversity conservation is essential.”

# PIERRE

# BIODIVERSITY

## Performance Overview

- Paid a creative sentence of \$3 million related to 2008 waterfowl incident; significant improvements made to deterrent system
- 460 waterfowl died on Syncrude site as a result of regional freezing rain storm in October 2010; other oil sands operators also affected
- Initiated three-year study with Keyano College to investigate activity of large terrestrial mammals on our site
- Commenced songbird research through the Institute for Bird Populations Monitoring Avian Productivity and Survivorship (MAPS) program

## Our Commitment

Syncrude's commitment to environmental stewardship encompasses specific programs aimed at ensuring our operations do not have a long-term, permanent impact on local ecosystems and, upon project completion, to re-establish a diversity of wildlife and fish habitats similar to those that existed prior to disturbance of the area.

## Our Adherence to Mining Association Standards

As a member of the Mining Association of Canada, we adhere to the principles outlined in the [Towards Sustainable Mining](#) initiative. This includes a protocol on biodiversity conservation which Syncrude assisted to develop. As stated in the protocol, we recognize that "access to land and a company's social license depend upon responsible social, environmental and economic practices and that there is a strong business case for supporting biodiversity conservation. MAC members believe that mining, conducted in consultation with communities of interest, can co-exist with biodiversity conservation."

## Biodiversity Planning and Reporting

Syncrude operations must adhere to environmental regulations, including the Alberta [Environmental Protection and Enhancement Act](#), and [Alberta Wildlife Act](#). As well, every 10 years, Syncrude must obtain operating approval by submitting a detailed plan outlining how the organization will steward to government requirements regarding environmental protection, reclamation and mine closure. Compliance reporting and amendments are submitted midway through the reporting period.

Our plan includes an overview on biodiversity establishment and monitoring. It outlines how we incorporate biodiversity into the various aspects of reclamation, including landscape formation, soil placement, vegetation, fish and wildlife.

Many of our practices lead to enhanced opportunities for biodiversity in the reclaimed landscape. For example, we place coarse woody debris in selected areas to provide cover for small mammals and nesting birds. Landforms are also designed with physical/topographical diversity to accommodate both terrestrial and wetland habitats.

Our reclamation specialists contribute to ongoing improvements in biodiversity planning and monitoring in the region through a specialized task group of the CEMA Reclamation Working Group.

## Regional Involvement and Biodiversity Initiatives

Several programs and research initiatives have been established in northeastern Alberta to assess and monitor the cumulative environmental effects of industrial development at a regional scale. This work is undertaken by government and stakeholders such as Aboriginal communities, industry, environmental advocacy groups, and health organizations. Syncrude funds and/or provides staff expertise to the following:

**[Alberta Biodiversity Monitoring Institute \(ABMI\)](#)** – measures and reports on the health of ecosystems in the province. Operating at arm's length from government, industry and environmental groups, it provides peer-reviewed data that will be used to improve resource management through the provincial government's Land-use Framework.

In 2010, the ABMI launched the Ecological Monitoring Committee for the Lower Athabasca region to oversee customized monitoring programs for rare species. This includes marsh birds, amphibians, owls, caribou and numerous plants. Among the collaborators are Alberta Innovates - Technology Futures, the University of Alberta, Royal Alberta Museum, Alberta Conservation Association and Environment Canada.

### **The Canadian Oil Sands Network for Research and Development**

**(CONRAD)** – supports a broad range of research projects in environmental and reclamation science through its Environmental and Reclamation Research Group (ERRG). Research focuses on a variety of disciplines, from wildlife biology to hydrogeology and toxicology. Grants are typically used to fund university and research organizations aimed at improving existing practices.

### **Cumulative Environmental Management Association (CEMA)**

– established to assess cumulative environmental effects from industrial development and provide recommendations to regulators on how to best manage these issues. It is governed by 44 members representing all levels of government, industry, regulatory bodies, environmental advocacy groups, Aboriginal communities, academic institutions and the local health authority. Since its inception, the association has delivered over 10 major management frameworks on ozone, acid deposition, trace metals, nitrogen, ecosystems and water. The association includes a reclamation working group and traditional environmental knowledge advisory committee through which Aboriginal stakeholders share biodiversity perspectives.

**Regional Aquatics Monitoring Program (RAMP)** – an environmental monitoring program established in 1997 to assess the health of rivers and lakes in the oil sands region. RAMP collects and analyzes data from aquatic environments to better understand the oil sands area, and to identify and address the potential impacts of development.

**Wood Buffalo Environmental Association (WBEA)** – a multi-stakeholder environmental monitoring program that operates similar to, and works jointly with, RAMP. WBEA monitors and reports on air quality in the region and the effects of air quality changes and deposition on terrestrial resources. The association operates 15 ambient and 20 passive air-monitoring stations throughout the region.

These regional initiatives, research projects and biodiversity monitoring programs all use multi-stakeholder and interdisciplinary strategies to monitor the environment and provide recommendations to government for environmental sustainability. The objectives of each of these regional programs include understanding the natural condition of wildlife habitat, reclaiming wildlife habitat, and maintaining biodiversity in the region.

## **Wildlife Movement and Corridors**

We do not view our active mining operations suitable for wildlife. We discourage wildlife movement through the area and do not have any crossing structures or corridors on our developed leases. Wildlife presence is also discouraged in active areas to decrease interactions with staff.

As well, in constructing access roads and right-of-ways, we follow existing linear corridors to the greatest extent practical in order to reduce vegetation clearing and habitat fragmentation.

Our operations are not located within the range of Alberta's woodland caribou herds or the proposed protection zones of the draft [Recovery Strategy for the Woodland Caribou, Boreal Population](#). As such, we do not participate in multi-stakeholder groups formed to research and monitor this issue. However, we do keep informed of policy development at the provincial and federal levels regarding any potential impact on our business or land closure requirements.

In 2009, Syncrude, in partnership with the CONRAD Environmental and Reclamation Research Group, commenced a research program into wildlife habitat effectiveness and connectivity in the Athabasca river valley. The program finished Phase 1 and found no current evidence of wildlife corridors within the river valley. The program has moved into Phase 2 and has expanded to include wolves.

There will be no habitat barriers on our reclaimed lands at mine closure.



*As part of a CONRAD study on the health of moose populations, cameras with motion sensors were located throughout the oil sands region, capturing numerous photographs of moose with calves. Credit: University of Alberta*

## Wildlife Protection

Syncrude operates within a large tract of wilderness in northern Alberta's boreal forest and employs a number of strategies to deter wildlife from our sites. These include our waterfowl protection plan, and restrictions on the handling of food and food waste.

We are required by law to report sightings and wildlife incidents occurring on our site to regulators. We are also responsible for reporting those that occur off our site on adjacent highways and roads, such as collisions with vehicles. These are included in our overall number of incidents. In situations where distressed wildlife is found, the animal is assessed and appropriate action is taken under the guidance of Alberta Sustainable Resource Development officials.

Regular reminders are communicated to employees and contractors outlining the danger of feeding wildlife and improper disposal of refuse. Other measures used to deter wildlife include regular garbage pick-up and scare cannons. In addition, in 2010, we reached an agreement with the regional municipality to start transporting non-hazardous waste to the municipal landfill. This has reduced the number of seagulls and predators, such as bears, wolves and coyotes, attracted to this area.

In terms of non-avian wildlife mortality incidents, including those related to natural causes, there were 16 in 2010 and 12 in 2011.

## Waterfowl and Bird Protection

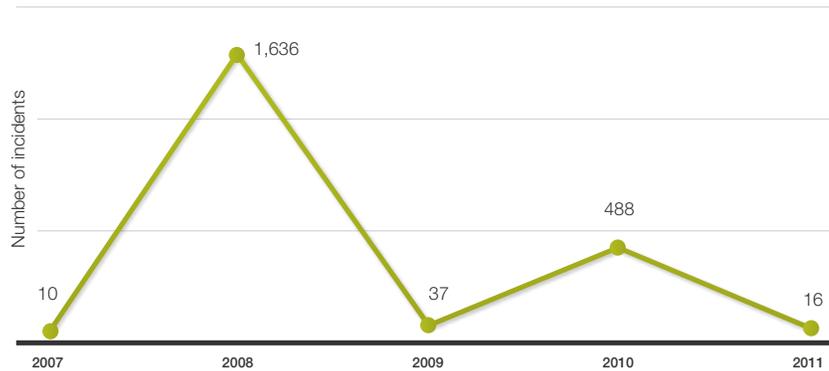
Measures are in place to protect local birds and deter migrating waterfowl from our site. For example, no vegetation is cleared during the migratory songbird nesting and rearing season unless survey and field checking indicate an absence of nesting activity.

We also follow a number of procedures to deter waterfowl and other birds from coming in contact with bitumen on our process ponds and tailings areas. Propane-fired cannons and effigies are placed in the water and on the shoreline of ponds. Monitoring occurs on a full-time basis throughout the migration period and, if necessary, pyrotechnic flare guns, airhorns and boat movement are also used. Radar monitoring systems, similar to those used at airports, are also in place which automatically activate our deterrent system when birds are detected in the area.

In 2011, we continued to improve the program through the deployment of floating and shore-based modules equipped with falcon effigies and sound effects, propane cannons and strobe lights. As well, we tested Hyperspike acoustic devices capable of projecting precise, directional sound towards areas of bird activity detected by radar. Field studies are underway regarding the effectiveness of laser deterrents.

Significant progress is also being made in the development and implementation of technologies to accelerate tailings ponds reclamation. See the [Tailings Management](#) chapter for more detail.

## Avian Incident Tracking



Includes all bird and waterfowl mortalities related to oiling. Incidents are reported to the Alberta Government Sustainable Resource Development department.



Falcon Effigy

## Update on 2008 and 2010 Waterfowl Incidents

In 2008, over 1,600 birds landed on a settling basin during spring migration and died after becoming coated in bitumen. In 2010, Syncrude was convicted on environmental charges and agreed to a creative sentencing which resulted in the payment of \$3 million, of which more than \$2 million now supports three environmental initiatives:

- [University of Alberta Research on Avian Protection Project \(RAPP\)](#) to study migratory bird populations in the region and the effectiveness of bird-deterrent technologies;
- [an Alberta Conservation Association habitat conservation project](#) in the Cooking Lake Moraine area; and
- development of wildlife management courses at [Keyano College](#).

Syncrude has always accepted responsibility for this incident and, as outlined above, we have taken considerable measures to prevent a similar occurrence. However, despite these efforts, another incident did occur in October 2010 when a freezing rain storm made it difficult for birds to fly. Birds landed and were sighted on oil sands operations throughout the region, including Syncrude. Birds appeared exhausted and were easily approachable. Regulators were contacted immediately.

Our deterrent system was fully operational at the time and additional staff and resources deployed. Sadly, 460 waterfowl were lost. A full investigation into the incident was completed by Syncrude and the Alberta government. At the time of this report's preparation, we await the results of the government investigation.

Both of these incidents were deeply disappointing. We hope further learnings can be achieved through RAPP and the funding provided by our creative sentence.

## Wildlife Monitoring

There are a number of initiatives underway to monitor wildlife throughout the oil sands region, including Syncrude reclamation areas. For example, we continue to support the [Alberta Biodiversity Monitoring Institute](#) and the projects developed through the Ecological Monitoring Committee for the Lower Athabasca Planning Region. As well, through CEMA's Wildlife Task Group, we participate in the Early Successional Wildlife Monitoring Program on Reclaimed Plots in the Oil Sands program.

In addition, during consultations on a permit change to our sand storage facility, we were asked by our Aboriginal stakeholders to investigate the presence of large terrestrial mammals on the site and compare it with surrounding areas. In response, we initiated a project with Keyano College to study the area over a three-year period, ending in 2012.

Further research began in 2011 with the [Institute for Bird Populations' Monitoring Avian Productivity and Survivorship \(MAPS\)](#) program. This program monitors numbers, habitat development, bird reproduction and survivorship in reclaimed areas and compares it with natural habitats. Preliminary results indicate a healthy presence of songbirds in our reclaimed areas. Studies will continue in 2012.

We also monitor the wildlife that has returned to our reclaimed land to ensure restoration practices are creating attractive habitat for species to return. Regulators require this data as part of the government certification process.



*Songbirds like warblers frequent Syncrude's reclaimed oil sand mine sites. Syncrude has engaged the Institute for Bird Populations' Monitoring Avian Productivity and Survivorship (MAPS) program to help examine their migration patterns through the region.*

## Parks and Protected Areas

Syncrude's operations are not located on, or adjacent to, any protected area, park or nature reserve. There are however a number of [protected parks and areas](#) throughout the boreal forest of northeastern Alberta, including [Wood Buffalo National Park](#) – the largest national park in the country and a UNESCO World Heritage site – located approximately 200 kilometres north.

08.14.2012 @ De-Sanding Pilot Test Facility

## Robert Siy

SENIOR RESEARCH ASSOCIATE

“Syn crude has developed a new technology that removes settling solids from our oil sand slurry and we’re testing it in this field pilot. It has great potential to simplify mining, extraction, tailings management and land reclamation. It will make it much easier to transport slurry and recover bitumen. This means we will use less energy for pumping and extracting the bitumen, along with less chemicals and water. We also expect to help reclaim land and water more quickly.

Canadians expect us to responsibly manage our business and this is something that could have a significant positive change.

## Ron Cleminson

TECHNOLOGY DEVELOPMENT ASSOCIATE

Continuous technology improvement is good for the company and the industry as a whole. Oil sand de-sanding is a technology innovation that could mean higher production yield at a lower unit cost, along with associated environmental benefits. Even if it does not turn out as hoped, there will be lessons learned, which in turn will move us forward toward achieving the same goals.”



# ROBERT / RON

# CLIMATE CHANGE

## Performance Overview

- Energy intensity averaged 1.27 million BTUs per barrel
- Greenhouse gas emissions intensity averaged 0.104 tonnes CO<sub>2</sub>e per barrel
- Paid \$38 million to Alberta Government Climate Change and Emissions Management Fund over reporting period

## Our Position

The global need for energy is growing and all sources, including conventional oil, oil from oil sands and renewable energy forms, will be needed. As a contributor to this energy mix, Syncrude recognizes public concerns related to the greenhouse gas emissions (GHGs) stemming from oil sands development and believes every sector of our economy needs to do its part to help Canada realize its objectives in reducing our carbon footprint.

Our focus on energy efficiency and conservation will minimize the growth of GHGs that stem from production of synthetic crude oil at our operations. We will achieve this through operational reliability, as well as continued investment in research to develop incremental and breakthrough technologies that reduce our GHG emissions per barrel.

## Energy Efficiency Stewardship

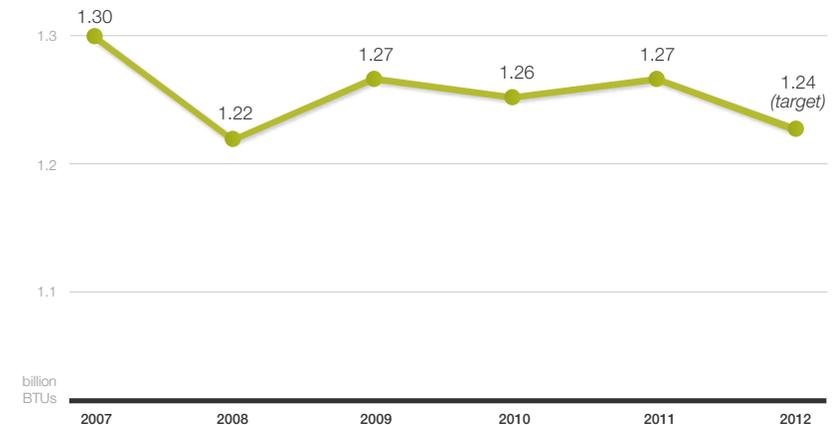
Syncrude has a long history of energy conservation. For example, our operations incorporate extensive cogeneration processes in order to recover waste heat for reuse. We also developed [oil sands hydrotransport and low energy extraction](#). These processes enabled us to move away from the energy-intensive draglines and bucketwheel reclaimer system, and reduce extraction water temperatures by around 50 percent.

These types of step-change advancements not only improve our energy efficiency, while correlating directly to lower greenhouse gas emissions, they also provide significant benefit to the bottom line. As we continue to pursue the next generation of oil sands technologies and reliability improvements, energy efficiency remains a key factor when evaluating capital and maintenance projects.

As part of our adoption of ExxonMobil processes, Syncrude is currently implementing new operations management systems – the Operations Integrity Management System (OIMS) and the Global Reliability System (GRS) – to improve reliability and environmental performance. Regarding specific energy efficiency projects, our current focus is on improved monitoring of Key Energy Variables (KEVs), which typically are instrument tags or process parameters that panel operators and contact engineers can use to identify energy conservation opportunities. Additional initiatives include optimizing furnace operations, reducing flaring and repairing steam leaks. Our 2012 energy use target is 1.24 million BTUs per barrel.

Energy management is a component of variable incentive compensation for executive and senior leaders. It is also incorporated into our Impact 21 program in which employees are financially rewarded for achieving goals in operational performance areas. For further information, see discussion on [Management Systems](#).

## Energy Conservation – Energy Intensity



Syncrude generates its own electricity and is a net exporter to the Alberta grid. In fact, we exported an average 237,000 MWh annually over the last two years – enough to supply the city of Calgary’s electrical needs for 10 days.

## Energy Conservation

	2007	2008	2009	2010	2011
Total energy consumption (billion BTUs)	146,647	131,028	131,247	136,883	134,970
Energy intensity (million BTUs per barrel)	1.30	1.22	1.27	1.26	1.27
Energy intensity improvement (% as compared to year prior)	11.6	6.3	-3.5	0.3	-0.9
Energy return ratio (million BTUs of SCO product per million BTUs of energy consumed)	4.3	4.6	4.4	4.4	4.4

## Greenhouse Gas Emissions

	2007	2008	2009	2010	2011
GHGs – millions of tonnes (as per Environment Canada quantification guidelines) <sup>1,4</sup>	12.736	11.775	11.666	12.721	12.873
GHGs – millions of tonnes (as per Specified Gas Emitters Regulation) <sup>2,3,4</sup>	11.097	10.404	10.007	11.091	11.236
GHGs – tonnes CO <sub>2</sub> e per barrel produced <sup>2,3,4</sup>	0.099	0.095	0.097	0.102	0.106

*1 As reported to Environment Canada. Emission calculations for the purpose of provincial and federal regulatory reporting will differ, as certain sources of emissions are excluded.*

*2 CO<sub>2</sub> equivalent emissions reported include all Syncrude sources (net of industrial process, biomass, and waste and wastewater emissions) as reported to the Government of Alberta under the Specified Gas Emitters Regulation (SGER). These estimates have been restated from previous years due to Alberta Environment calculation methodology changes. At the direction of the Climate Change Secretariat, Syncrude estimated the amount of hydrogen that was either vented, flared, or combusted and reallocated emissions attributable to the production of hydrogen.*

*3 Syncrude's GHG emission estimates were subject to two independent audits in 2009, the first by the Alberta Auditor General and the second to satisfy the 'Third party Review' required by the SGER.*

*4 Syncrude is a large producer of electricity and is a net exporter to the Alberta grid. Syncrude exported 274,000 Megawatt hours of electricity in 2010 and 201,000 hours in 2011. Emissions from electrical power generation are included in the Syncrude total and are part of the intensity calculated on a per-barrel produced basis.*

## Alberta Carbon Tax and Off-Set System

The [Alberta Specified Gas Emitters Regulation](#), established in 2007, set aggressive intensity targets for Large Final Emitters of carbon dioxide. It requires Syncrude to reduce per barrel emissions of greenhouse gases by 12 percent from the average of per barrel emissions between 2003 and 2005. If Syncrude does not meet this target in any reporting year, we must purchase offset credits or pay into a government fund dedicated to the development of emissions reduction technology. Both these options are assessed at \$15 per tonne of CO<sub>2</sub> that is in excess of reduction targets.

Syncrude did not meet the reduction target for 2010 or 2011. We offset the remainder by purchasing \$16 million and \$22 million respectively in Government of Alberta Technology Fund Units.

## Monitoring Development of Federal Regulations

To date, the Canadian government has pursued a sector-by-sector approach to climate change regulation, beginning with the electricity and transportation sectors. No broad climate change legislation has been introduced yet that focuses on the oil sands sector.

Syncrude believes every sector of our economy will need to do its part to help reduce our nation's carbon footprint, and the oil sands industry should neither receive preferential or detrimental treatment in any legislation. The evolution of climate change policy in Canada and North America is actively monitored by our Joint Venture participants, and developments are reported through the Syncrude Management Committee.

## Creating and Sharing Best Practices

Toward sustained progress in energy conservation and reduced GHG emissions, Syncrude draws on the experience and expertise of others through its participation in the following external groups:

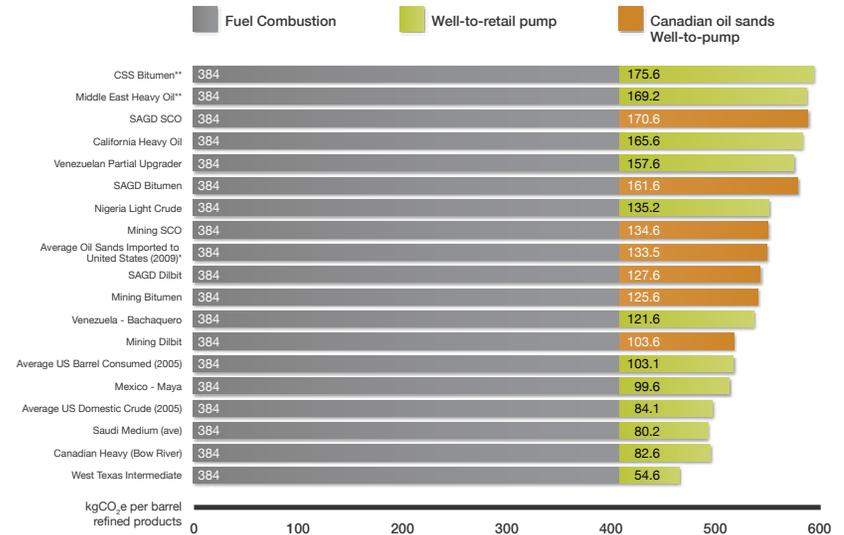
- **Canadian Industry Program for Energy Conservation (CIPEC).** This collaboration between government and business is aimed at improving the energy efficiency of industries across the country. Syncrude is one of two oil sands industry members.
- **Mining Association of Canada, Towards Sustainable Mining (TSM).** Syncrude reports its progress on energy and greenhouse gas emissions management annually. Results are externally verified once every three years.
- **Integrated CO<sub>2</sub> Network (ICO<sub>2</sub>N).** This industry association represents a cross-section of western Canada's industrial CO<sub>2</sub> emitters; Syncrude is a Tier 2 member. ICO<sub>2</sub>N provides input to government policy about carbon capture and storage (CCS) and advocates for CCS as a part of Canada's climate change plans. The group is also helping shape a regulatory framework for CCS.

## Oil Sands Emissions Comparable to Other Crude Oils

An independent study by IHS CERA ([www.ihs.com](http://www.ihs.com)) estimates the well-to-wheels life-cycle GHG emissions of crude oil from the oil sands are in the same range as those of the other crude oil products refined in the United States. The studies found that direct greenhouse gas emissions from oil sands are similar to other heavy oils and about six percent higher than emissions from the U.S. crude supply average.

About 20 to 30 percent of GHG emissions from a barrel of oil are created during the production, refining and transportation to market of the product while 70 to 80 percent comes from consumption.

## Well-to-Wheels Greenhouse Gas Emissions for Oil Sands and Conventional Crude Oils



Source: IHS CERA

Results of a meta-analysis of 13 publicly available life-cycle studies.

Assumptions:

\*Assumes 55 percent of exports to the United States are dilbit blends and 45 percent are SCO (source: NEB 2009 oil sands exports).

\*\*Steam injection is used for projection.

\*\*\*Assumes SOR of 3.35.

12 percent loss of volume upgrading bitumen to SCO.

All SAGD crude production cases assume an SOR of 3.

All oil sands cases marked "Dilbit" assume that the diluent is consumed in the refinery, with no recycle of diluents back to Alberta, and only 70 percent of the barrel is from oil sands.

All oil sands cases marked "Bitumen" assume that the diluent is recycled back to Alberta, and all of the barrel processed at the refinery is from oil sands.

As an integrated mining and bitumen upgrading operation, Syncrude's greenhouse gas emissions profile most closely correlates to Mining SCO on the above chart.

## A Perspective on GHGs

The oil sands account for approximately seven percent of Canada's total GHG emissions and 0.1 percent, or 1/1000th, of global emissions.

08.13.2012 @ Sandhill Fen

## Lynne Barlow

PROJECT MANAGER, SANDHILL FEN

“Syn crude aims to develop a variety of landscapes on the land we reclaim, all of which will be interconnected. We’ve been filling in the old East Mine since 2000, and the landform is now beginning to take shape. This is a very large area. Part of it will be upland forest and part will be wetlands such as this 17-hectare area where we are working to create the conditions needed to establish a fen. A fen is a peat wetland where the water is at or near the surface and they are found naturally in the region.

■ *Stakeholders want to see these re-established in areas affected by oil sands mining.*

Experts from various universities worked with our reclamation research scientists to design the fen. Because this has never been tried before there was nothing to draw on, so we’ve worked together to figure it out. This is very much a research area; it will be monitored for up to 20 years and the lessons learned will help increase the pace of reclamation in the future.”

A woman wearing a red safety vest, a blue long-sleeved shirt, grey pants, yellow gloves, and an orange hard hat stands in a wetland area. The background shows a vast, flat landscape with patches of green grass and water under a blue sky with scattered clouds. The word "LYNNE" is written in large, white, serif capital letters across the bottom left of the image.

# LYNNE

# LAND RECLAMATION

## Performance Overview

- Surpassed reclamation target for 2011
- Planted over 600,000 shrub and tree seedlings
- Topsoil material placed in fen wetland research area as part of reclamation of former East Mine

## Our Policy

Syncrude will ensure the land disturbed by our operation is returned to a stable, safe condition that is capable of supporting biologically self-sustaining communities of plants and animals. Our long-term vision is to create a landscape that sustains an integrated mosaic of land uses that meet stakeholder expectations.

Our policy adheres to the [Alberta Environmental Protection and Enhancement Act](#) which requires Syncrude to return the land we use to a productive capability equivalent to that of the pre-disturbance landscape.

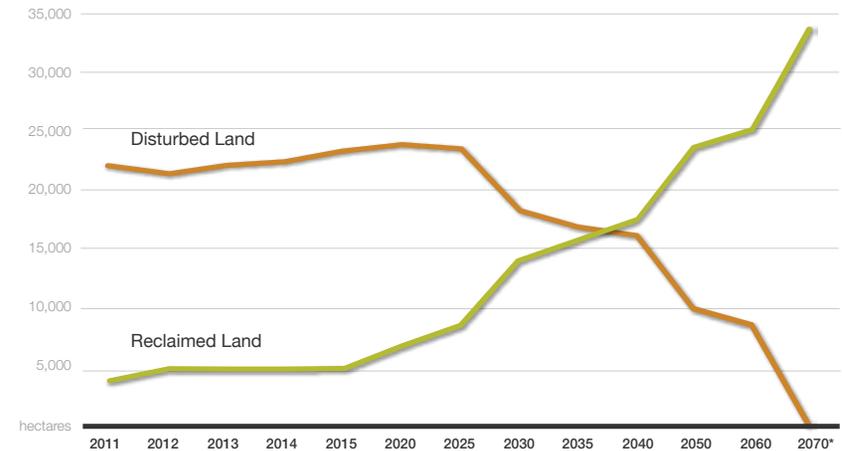
## Reclamation Plan Provides Outlook to 2080

Syncrude is required by Alberta legislation to submit a reclamation and closure plan every 10 years, with a mid-term update provided five years after the submission. We provided our update to regulators in 2011. This plan is separate from, but consistent, with our [ERCB Directive 074](#) submission which outlines our [tailings management plan](#).

The reclamation plan outlines in detail the various elements involved in closure of our operation up to end-of-mine life for our Mildred Lake site and Aurora North site, around 2080 and 2050 respectively. It includes information on our regulatory framework, regional planning, consultation, landform design, water management, soil conservation and management, materials balance, forest resources and timber salvage, upland vegetation, wetland reclamation, biodiversity establishment and monitoring, and reclamation monitoring and research.

The closure plan also provides an overview and update on modelling and activities to improve and develop reclamation science, addressing key issues such as landform evolution, water management, salts and their effects on soils, vegetation and surface water, and ecosystem design for establishing natural plant and animal communities.

## Reclamation Progression, 2011–2070



\* Approximate end-of-mine life.

## Creating a Self-Sustaining Landscape

Our reclamation goals are to ensure the final reclaimed landscape:

- has capability equivalent to that existing prior to development;
- is integrated with the surrounding area;
- establishes boreal forest upland and lowland communities;
- yields water suitable for return to the natural environment; and
- is planned in direct consultation with local, directly affected stakeholders, such as neighbouring Aboriginal communities and the Regional Municipality of Wood Buffalo.

Performance objectives include that the land will be suitable for commercial timber production, extensive areas are returned to a natural state and suitable for traditional land uses (hunting, trapping, fishing and harvesting of traditional plants), and wildlife habitat is deemed to be within the natural variability in the region.

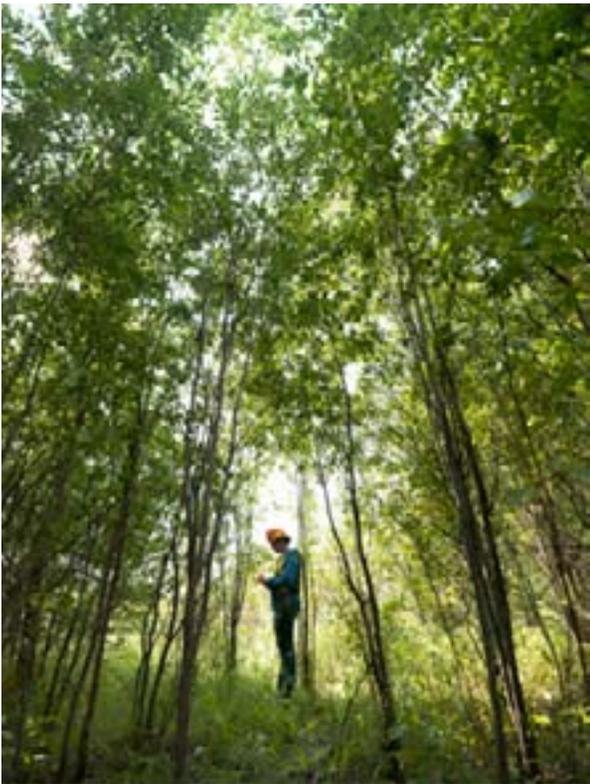
To ensure a regional approach to reclamation, and to foster the use of reclamation best practices, Syncrude regularly consults with other operators and openly shares the results of our environmental research.

## Ongoing Reclamation Activities

Reclamation of our former East Mine area is ongoing. This area is approximately 11.5 square kilometers in size and is bordered by Highway 63 south of our main plant site and upgrader. It was part of our original operation when Syncrude began production in 1978. Reclamation began in 2000 using composite tails technology.

In our former West Mine area, also part of our original operation, reclamation will begin in late 2012 using the method of capping fluid fine tails with water.

Further discussion on reclamation of these areas can be found in the [Tailings chapter](#).



*A reclaimed area once part of our former West Mine.*

## Mine Financial Security Program

Alberta's new [Mine Financial Security Program](#) for oil sands mines and coal mines was introduced in 2011 through amendments to the Environmental Protection & Enhancement Act. The two primary purposes of the program are to incent ongoing reclamation as soon as practical and to ensure adequate security in the event of premature mine closure or abandonment. It accomplishes those objectives through a series of measures, including:

- The retention of financial security posted by all oil sands and coal operators prior to 2011 under the old Reclamation and Remediation Regulation, totalling approximately \$1 billion, to provide care and custody security.
- The requirement to prepare and file three-year reclamation plans once lands are available to be reclaimed, and to impose financial penalties if reclamation is not performed in accordance with those plans.
- The requirement for each project to generate at least \$3.00 in net revenue for every \$1.00 of reclamation liability and to post security in the event project revenues fall below that ratio.
- At 15 years from end-of-mine life, the requirement for each project to determine the remaining reclamation costs (including post-closure reclamation and monitoring expenses). The project must also post financial security equal to 10 percent of that amount in each of the first 10 years, so that closure liabilities will be fully secured five years prior to end-of-mine life.

If a project operator defaults in any of the security requirements, the government will have the ability to implement appropriate enforcement measures, including the seizure of mine site assets. This program was developed over several years through an extensive consultation process with input from various financial experts and industry associations, including the [Alberta Chamber of Resources](#) (of which Syncrude is a member), with a view to ensuring the development of the province's mine resources without exposing Albertans to undue risk.

Each Syncrude owner is liable for its share of financial security regarding the operation's closure obligations. Currently the Province holds letters of credit in the amount of \$205 million in respect of the Syncrude Project.

## Research on Soil Containing Hydrocarbons

Pre-disturbed soil conditions in the area of our Aurora North Mine have resulted in unique vegetation communities, which Aboriginal stakeholders expect us to return after mining. The soil also contains extensive, naturally occurring petroleum hydrocarbons, such as “tarballs,” which may present unique reclamation challenges. In 2010, construction began on a 40-hectare watershed research project to evaluate these challenges and the most effective salvage and soil cover design strategies for reclamation. The study is a multi-disciplinary, collaborative project involving research scientists from Syncrude, the University of Alberta, University of Saskatchewan, consultants and industry partners through the Canadian Oil Sands Network for Research and Development (CONRAD).

## Watershed Research

Research continues on a number of watersheds established on our reclaimed land. Syncrude contributes financial grants to Canadian and U.S. universities to conduct research on these watersheds. This supports the long-term data collection, instrument maintenance and database management of soil, climate and hydrology monitoring of these areas.

Research results are used extensively in closure modelling, landscape and soil cover design, and revegetation practices. For example, the construction experience from the fen pilot project will contribute to the reclamation plans of the remaining East Mine area. Additionally, the results from these watersheds inform updates of all the reclamation guidance documents in the region as well as the knowledge base of reclamation practitioners at Syncrude and other oil sands operators.

## Bioengineering Helps Control Erosion

In early 2011, we explored the use of large machinery to assist in our bioengineering activities around erosion control. A wood harvester – one of only six in North America – was sourced and used to harvest willow and poplar while still dormant. These species have the ability to shoot roots and stems from cuttings and were intended to become live stakes and bundles called “live fascines.” The fresh tops of aspen and spruce trees, left after removing the limbs from merchantable timber, were also formed into bundles and placed. By using both the live and dead material, we are able to slow down the flow of water on the reclaimed landscape.

Over 8,000 live stakes of balsam poplar and various species of willows, and over 300 dead bundles, were harvested to create 55 live fascines that will continue to grow. The effectiveness of using the wood harvester is under evaluation.



Wood harvester bundling tops from slash piles (left) and live willows and balsam poplar (right) on Syncrude site.



Fascine placed in west swale perpendicular to the flow of water (left). Fascine being covered with soil with excavator (right). Live stakes were placed alongside the dead fascine.

## Rough Mulching Aids Reclamation Efforts

A new salvaging technique developed by Syncrude is helping to avoid soil compaction on reclamation areas and create diverse microsites for plants and animals.

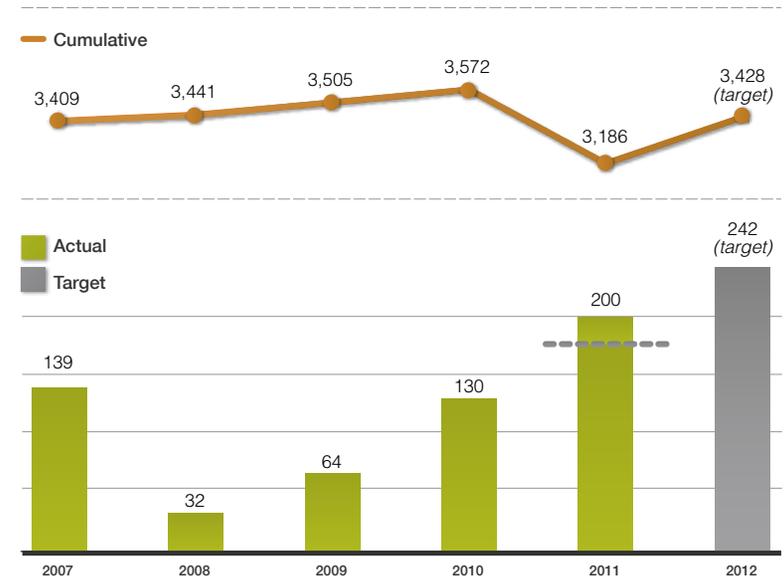
Before soil salvage, the tops and stumps of non-merchantable trees are recovered using a method called “rough mulching.” This adds large pieces of woody debris into the cover soil. When soil is being placed, this coarse material creates surface roughness. This, in turn, creates microsites and moisture traps for vegetation and erosion control. There is also faster self-establishment of native plant species from the seed bank and various propagules present in the soil.

This technique was piloted for three years on small-scale projects, and then integrated into all reclamation activities starting in 2011.



Example of rough mulching at fen reclamation project.

## Permanent Land - Reclaimed



## Land Use

	2007	2008	2009	2010	2011
Total land disturbed – mine and plant site footprint (cumulative hectares)	20,565	21,912	24,289	25,265	25,858
Soils placed – land available for revegetation (hectares) <sup>1</sup>	–	–	1,025	1,216	1,202
Temporary reclamation (hectares) <sup>2</sup>	–	–	452	422	690
Permanent land reclaimed (hectares per year) <sup>1</sup>	139	32	64	130	176 (target) 200 (achieved)
Permanent land reclaimed (cumulative hectares) <sup>1,3,4</sup>	3,409	3,441	3,505	3,572	3,186
Tree and shrub seedlings planted (annual)	459,075	161,780	142,970	249,821	355,780

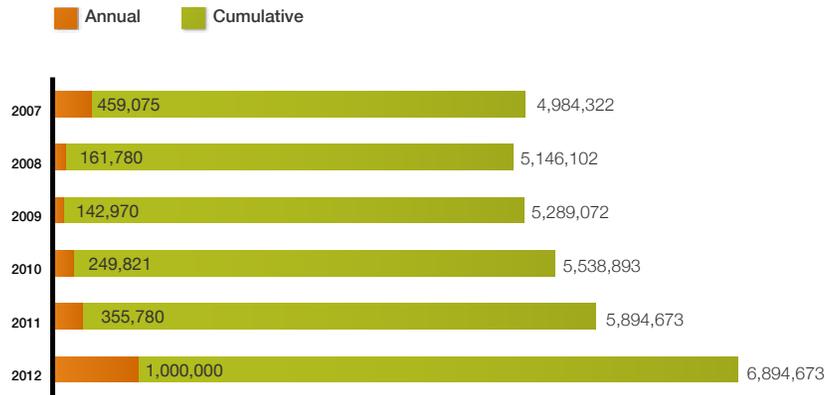
<sup>1</sup> In 2010, the Government of Alberta established a new definition for “*permanent reclamation*.” For an area to be considered reclaimed, the definition states it must be revegetated in accordance with government-approved plans. Syncrude’s prior definition of a reclaimed area was land that, at a minimum, had been shaped, formed, capped with soil and ready for revegetation. This change resulted in the reclassification of land previously reported by Syncrude in our reclamation numbers. We have amended our reclamation numbers to ensure consistency with government reports.

<sup>2</sup> In 2011, 338 hectares of bison pasture land formerly considered permanent reclamation were reclassified as temporary reclamation.

<sup>3</sup> Includes land certified by the Alberta Government.

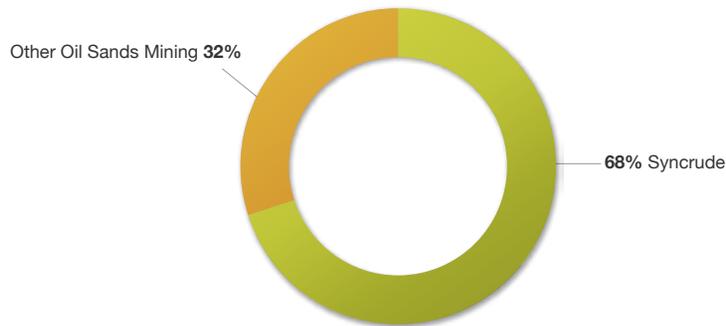
<sup>4</sup> Numbers include the addition of all newly reclaimed areas as well as any reclamation losses due to redisturbance that may occur. Every effort is made to minimize disturbance of reclaimed areas; however, by progressively reclaiming we may reclaim areas that are later required for operations.

## Tree and Shrub Seedlings Planted (cumulative)



## Oil Sands Reclamation (permanent and certified)

Permanent and certified



Syncrude has completed over 68 percent of the reclamation in the oil sands mining industry. Data source: Government of Alberta [Regional Reclamation and Disturbance Tracking by Company, to December 31, 2011](#)

## Oil Sands Mining Active Footprint (hectares)



Syncrude operations comprise 34 percent of the total active footprint in the oil sands mining industry. Data source: Government of Alberta [Regional Reclamation and Disturbance Tracking by Company, to December 31, 2011](#)

## Families Dig Tree Planting Day

Each year, Syncrude hosts a family Tree Planting Day for staff. In 2011, over 150 people participated in planting 600 white spruce and various indigenous shrubs on an area undergoing reclamation.



A woman wearing an orange hard hat, safety glasses, an orange high-visibility vest over a white long-sleeved shirt, and yellow gloves stands on a grassy hill overlooking a large body of water. The sky is blue with light clouds.

07.30.2012 @ Base Mine Lake

## Samantha Tavener

ENVIRONMENTAL SCIENTIST

“As part of our reclamation plan, Syncrude is creating an aquatic reclamation area using a technology called water-capped tailings. Basically, we’ve put fine tailings into one of our former mine pits. As the fine tailings settle and slowly densify, pore water from in between the fines moves upwards into the lake water. There, it mixes with additional water that will flow in and out of the lake.

■ *Our stakeholders want the lake to support a variety of aquatic plants and insects.*

Syncrude has spent more than 20 years studying this technology in smaller ponds and through numerous other studies. We will track the progress of the developing aquatic ecosystem and I am very confident about its success.”

# SAMANTHA

# TAILINGS MANAGEMENT

## Performance Overview

- Founding member of the Oil Sands Tailings Consortium to share research and development of tailings management technologies
- Performed commercial-scale demonstration of underwater placement of composite tailings to increase fines capture
- Investing almost \$2 billion on commercial-scale centrifuge plant
- Site preparation begins for \$800 million composite tails plant at Aurora Mine

## Our Position

We recognize stakeholders' interest regarding the pace of reclamation and are vigorously pursuing strategies to accelerate our reduction of fluid fine tailings volumes, and dry tailings into a more solid form, which can then be incorporated into our reclaimed landscapes. In addition, we will continue to share knowledge and actively work with industry partners and the scientific community towards further solutions.

## Adherence to Mining Association Standards

As a member of the Mining Association of Canada, we adhere to the principles outlined in the Towards Sustainable Mining (TSM) initiative. This includes guidance on managing tailings facilities in a safe and environmentally responsible manner through the entire life cycle – from site selection and design, through construction and operation, to eventual decommissioning and closure. Syncrude's [performance results](#) are reported annually. These are externally verified every three years and reviewed by the TSM Community of Interest Advisory Panel.

## What are Tailings?

At Syncrude, tailings are a byproduct of our process to extract bitumen from oil sand. Tailings are composed of a mixture of water, sand, clay, fine solids, residual hydrocarbon and salts – all of which are naturally found in oil sands deposits.

Tailings are placed in large landforms commonly referred to as settling basins or tailings ponds. Tailings ponds serve two uses – one, as the recycled water source for our plants and, two, as a containment area which enables tailings to segregate prior to further dewatering for use in reclamation activities.

The primary tailings management challenge is the long period of time it takes for some solid components to settle. While the sand settles rapidly, clay and fine solids (together called fluid fine tailings or FFT) can take decades to settle on their own.

In the settling process, water rises to the top of the tailings pond and is then reused in the bitumen extraction process. Over 85 percent of the water we use is recycled from our settling basins. The Mildred Lake Settling Basin and Aurora Settling Basin are the main sources of recycled water for our operation.

Tailings also contain bitumen that is not recovered in the extraction process. As the bitumen is released, it floats to the top of the settling basin and can appear as an oily slick on the water surface. Bird deterrents are in place year-round to discourage waterfowl from landing (see discussion in [Biodiversity chapter](#)).

Bitumen is a valuable natural resource and, while recovery is about 90 percent, we are studying new technologies and processes to increase this even further. This will reduce the amount of bitumen lost to tailings (see discussion in [Research and Development chapter](#)).

## Tailings Dam Safety

Settling basins are dam structures licensed and regulated through [Alberta Environment](#), Alberta Environment Dam Safety Branch and the [Energy Resources Conservation Board \(ERCB\)](#). Designs comply with Alberta Dam Safety Branch standards, and guidelines of the [Canadian Dam Association \(CDA\)](#) and [Mining Association of Canada](#).

All designs are reviewed by an external Geotechnical Review Board (GRB). CDA guidelines also require a dam safety review to be conducted for each structure by an independent external consultant every five to seven years. In addition, staff conduct formal inspections each quarter and informal inspections throughout the year. Regulators also conduct their own inspections, typically on an annual basis. Procedures are tested in simulations and table top exercises.

Around 3,000 instruments are in place to monitor our tailings structures and up to \$11 million is spent annually on their maintenance and installation.

Interceptor ditches and sumps collect and pump seepage or precipitation run-off back into the pond. We also maintain a network of surface water sampling points and groundwater monitoring wells to ensure tailings water does not impact local watercourses. For example, there are 170 wells throughout the Mildred Lake mine site area monitoring environmental compliance.

## Transforming Tailings into Reclaimed Landscapes

We believe our multi-pronged approach to tailings management will enable us to meet the long-term intent of the [Energy Resources and Conservation Board \(ERCB\) Directive 074](#). This Directive, established in 2009, specifies performance criteria for the reduction of fluid tailings and the formation of trafficable deposits. Our submission was one of the first to be approved by the ERCB.

As we work towards achieving our plan, three technologies are now being deployed: water capping, composite tails and centrifuging. At the same time, we continue to research additional methods while also participating in the Oil Sands Tailings Consortium, which exchanges findings amongst industry operators.

### Water Capping

[Water capping](#) involves the placement of a layer of water over a deposit of fluid fine tails to form a lake. Syncrude began researching this technology in the 1980s and has demonstrated its viability through laboratory testing and eleven test ponds of various sizes. Results have shown these lakes will evolve into natural ecosystems and, over time, support healthy communities of aquatic plants, animals and fish.

We are commissioning the industry's first commercial-scale demonstration of water-capped end pit lake technology in late 2012. It will be used to evaluate the large-scale viability of water capped tailings as a remediation strategy for both fluid fine tailings and oil sands process-affected water. It will be monitored intensively for about 20 years following commissioning to demonstrate that the lake is developing into a viable ecosystem and to prove that this technology can be used on other oil sands leases. It is anticipated that long-term monitoring will continue after this demonstration period is complete.



*Eleven test ponds were utilized over the last two decades to research the water capping method.*



*The industry's first demonstration of the water capping technology will be commissioned in the former West Mine area in late 2012.*

## Composite Tails

Composite Tails (CT) combines fluid fine tails with gypsum and sand as tailings are deposited in a mined-out area. This mixture causes the tailings to settle more quickly and release water. CT is then capped with sand and soil, enabling the development of landscapes that support grass, trees and wetlands. This technology is now being used at the Mildred Lake site and will be implemented at the Aurora North Mine starting in 2013.

CT is being used to reclaim our former East Mine. Placement began in 2000 and was complete in 2011. Sand capping to established closure drainage is ongoing. A [54-hectare fen wetland](#) research project is already under construction at the northwest end of this area. Soil and woody debris have been placed and locally-collected seeds spread throughout the area. Vegetation planting on the fen will be complete in 2012-13, at which time active research will begin on hydrology, wetland and terrestrial plant response, and climate conditions. A 65-hectare area directly east of the fen project will be permanently reclaimed in 2015.

Fens are an important type of peat land found in the boreal forest. This large-scale reconstruction effort is the first of its kind in the world and underscores our commitment to return the land we disturb to a condition similar to that prior to disturbance.

We are also working to improve CT deposition and increase fines captured through a technique which places CT under a layer of water in the mined-out area. Sand is then added and the water later pumped out and recycled. This leaves a landform base which can be capped with soil, and reclaimed. Results from a commercial-scale test are being evaluated.



*A 54-hectare fen wetland research project is under construction at the northwest end of our former East Mine area. Composite tailings was used to fill up the mine pit and form the landscape foundation.*

## Centrifuged Tails

We have successfully piloted the [use of centrifuges](#) to remove the water in fluid fine tails. This technology produces a soft, clay-rich material that can be used as the landform foundation in oil sands reclamation areas. We are planning to implement this technology in two stages – a commercial-scale demonstration plant beginning operations in 2012 and a \$1.9 billion full-scale commercial plant in 2015.



*A commercial-scale demonstration of using centrifuges to dewater fluid fine tailings will begin operations in 2012.*

## The Quest for New Solutions

We are currently researching a number of additional technologies, which could be used to supplement existing remediation methods and reduce bitumen in tailings ponds. These include:

### Accelerated Dewatering

Also referred to as rim ditching, [accelerated dewatering](#) is based on methods used in the Florida phosphate industry. It involves depositing fine tailings in a shallow containment structure and removing the water from the surface as it is released. Initial tests have shown a reduction in FFT volume by 50 percent in three to five years. Further study continues on a larger scale.



*Accelerated dewatering field demonstration, 2009.*

### Overburden Mixing

This method proposes mixing fluid fine tails with overburden and placing the resulting material into mined-out pit areas for incorporation into reclamation landscapes. Research is underway to better understand water absorption into the overburden clays.

### CO<sub>2</sub> Addition

Microbes living in our tailings ponds have reduced fluid fine tails volume by more than 25 percent over the past 15 years through bio-densification. Syncrude researchers are now studying how to mimic microbial activity and replicate this process through the direct addition of CO<sub>2</sub> into fluid fine tails.

### Thickened Tails

Under evaluation for over a decade, this technology accelerates the settling of the fluid fine tailings by adding an organic thickening agent after bitumen extraction. The released water is still warm and can be recycled immediately back into the process. The thickened tailings are transferred directly to a mined-out area and deposited on a thin slope which allows excess water to drain and be recovered. Reclamation can then follow. This technology could reduce energy needs, speed up reclamation and result in smaller tailings ponds.

### Bitumen Removal from Tailings Streams

Our extraction process recovers around 90 percent of the bitumen in the oil sand. The remaining bitumen is lost to the tailings stream and enters the settling basin. Recovery of this bitumen represents a significant economic opportunity and addresses key stakeholder and environmental concerns regarding potential risks to waterfowl. Bitumen recovered from either the tailings stream directly or from existing tailings areas would then be processed into crude oil product.

## Collaboration Key to Advancements

We work collaboratively with other operators through the [Oil Sands Tailings Consortium \(OSTC\)](#) which was established in 2010. Through this group, we are sharing the results from our past efforts and cooperating on research and development activities going forward. This initiative foregoes intellectual property rights on technologies and makes \$400 million of past industry research available to all parties. It will be managed through the [Canadian Oil Sands Innovation Alliance \(COSIA\)](#).

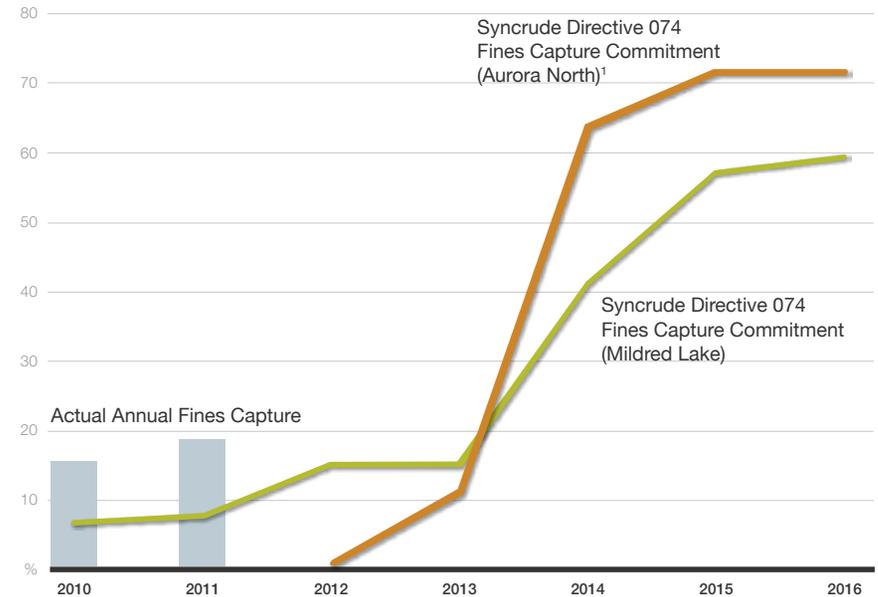
## Directive 074 Commitment

As of 2015, Syncrude expects to meet the conditions outlined in the Energy Resources and Conservation Board (ERCB) Directive 074 which requires a minimum 50 percent tailings fines capture. The ERCB approved our plan in 2010, allowing us to construct facilities and implement the proven technologies necessary to ensure full compliance by 2015.

We surpassed our fines capture targets during the reporting period, achieving 15.7 versus 7.2 percent in 2010 (Q3 and Q4 only as per Directive) and 18.8 versus 8.2 percent for 2011 (full calendar year), for the Mildred Lake site. Fines capture at the Aurora mine operation commences in 2013 with the start-up of a commercial-scale composite tailings facility.

We are investing significant capital and resources to attain future targets, and are committed to the long-term intent of the Directive.

## Fines Capture



<sup>1</sup> Fines capture at the Aurora Mine operation commences in 2013 with the start-up of a commercial-scale composite tailings facility.

\*Graph reflects actual fines capture at Syncrude's Mildred Lake site against regulatory approval related to Directive 074, which requires operators to reduce fluid fine tailings. Syncrude's tailings management plan was approved by regulators in 2010. The first quarterly fines capture report was as of Q3 2010, per Appendix B of ERCB Directive 074. The Directive also requires Dedicated Disposal Areas (DDAs) to be formed in a manner that ensures trafficable deposits. The performance criteria are based on the strength of the deposit. Syncrude will incorporate this performance data into future reporting.



07.31.2012 @ Filtration Test Ponds

## Gail Buchanan

SR. TECHNOLOGY DEVELOPMENT ENGINEER

“Syn crude first explored granular activated carbon treatment in tailings water in 1989; using it to treat other kinds of water was already well established. What’s changed is the notion that we can use our own petroleum coke, which is a byproduct of our production process, as the treatment agent. This pilot test aims to determine how long the adsorption process takes until you achieve the desired water quality. Then, we can develop the parameters to design it to commercial-scale.

## Warren Zubot

RESEARCH ASSOCIATE

*Stakeholders want us to be responsible and innovative when it comes to the management of our resources.*

Over the last five years that we’ve been studying this technology, we’ve learned that this is a very good application of using an upgraded byproduct to treat tailings water. We’ve learned that the treated water does support aquatic life—it’s clean and clear with no hydrocarbons, suspended solids or dissolved organic compounds. The strongest points of the technology are its simplicity and the coke availability; these two features actually make it very promising from an implementation perspective.”

# WARREN/GAIL

# WATER MANAGEMENT

## Performance Overview

- 88 percent of water used in 2011 was from recycled sources
- No reportable spills to local water bodies
- Water treatment research continues; coke byproduct filters tailings water and removes naphthenic acids
- University research chair established to explore additional methods of cleaning tailings water

## Our Commitment

Water is essential to Syncrude's operation and plays a key role in our production processes. We recognize that water is a limited resource that must be managed carefully. Our commitment is to take prudent steps to manage and conserve the water we use and to protect the health of regional water bodies, including groundwater.

Syncrude's water management practices are based on the objectives of minimizing the withdrawal of fresh water from the Athabasca River, maximizing reuse of process-affected water, and responsibly managing its storage.

## Using Water Wisely

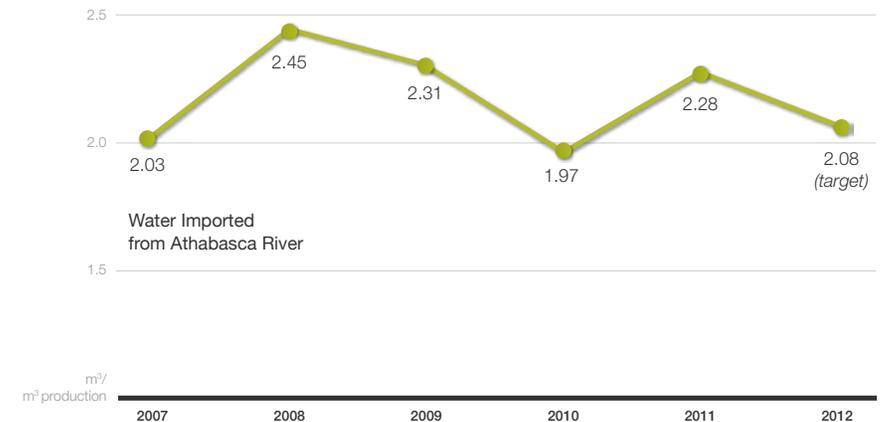
The Athabasca River is our main source of fresh water. It provides about 15 percent of our total water needs. Water imported from this river is used to cool process water, generate steam and as potable water. The remaining 85 percent of water used is recycled from our settling basins, also known as tailings ponds, and used in bitumen extraction processes. In 2011, 88 percent of the water used was recycled from these sources.

Our water license, granted to Syncrude in the 1970s, permits us to withdraw 61.7 million cubic metres of fresh water annually. In 33 years of operation, we have always operated well within these limits. Currently, we withdraw about 0.2 percent of the river's average annual flow. At the river's lowest flow – during the winter – our withdrawal is about 0.5 percent.

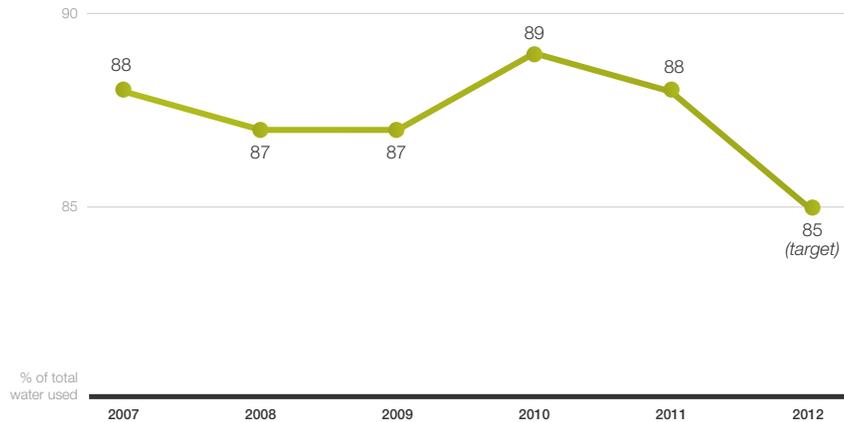
We are committed to water conservation and have historically demonstrated continuous improvements. In fact, we have reduced the water intensity of our processes by about 60 percent from levels in the early 1980s. Today, we require about two cubic metres of fresh water to produce a cubic metre of crude oil.

Syncrude has been in operation for over three decades. Throughout those years, many considerable gains were made in water conservation. Now, work is underway to define a water strategy going forward. This will examine how we can continue to make improvements in our processes over the short-term while engaging our research department towards developing new technologies that will further minimize our import of fresh water in the future.

## Water Use Intensity



## Process Water Recycled



## Releases to the Environment

Alberta Environment prohibits the release of any water that does not meet quality regulations. Syncrude does not discharge process-affected water, waste water or any industrial run-off into local water bodies. The only discharges to the Athabasca River are treated sanitary sewage similar to that discharged by municipalities, diverted clean surface (muskeg) water and basal water from the Aurora Mine via Stanley Creek, and clean surface water from a gravel pit.

During the reporting period, there were no spills to local water bodies. However, there were four occurrences in 2011 when water discharges from Aurora did not meet government quality standards; three related to elevated Total Suspended Solids and one of elevated Biochemical Oxygen Demand. We reported these incidents to regulators. The water was natural and did not contain any process constituents. It was similar to water quality during spring run-off or periods of heavy rain.

## Advances in Tailings Water Treatment

We recognize that, by not releasing water, we are creating an increasing storage challenge that is not acceptable to our stakeholders. As well, from a reclamation perspective, it is necessary to build a final landscape with a hydrology that connects seamlessly to the surrounding environment. Towards this, we have conducted research on tailings water treatment using coke, a byproduct of our process. The treatment is similar to using a home water filter. The coke, which is almost pure carbon, acts as a filter that captures contaminants and, most importantly, naphthenic acids. Bench-scale research shows the treated water is able to support aquatic life. We are running a pilot-scale plant in 2012 which will answer further technical questions and provide the design requirements for possible commercial-scale implementation.



*A research project has shown that tailings water can be treated with coke, a byproduct of our process which is almost pure carbon. The treatment is similar to using a home water filter. Pictured here, tailings water before (left) and after (right) coke filtration.*

Furthermore, Syncrude announced funding in 2011 towards a [new research chair](#) at the University of Alberta that will explore additional methods of tailings water treatment. Led by Dr. Mohamed Gamal El-Din, the five-year funding will help identify, evaluate and develop new management solutions. Approximately one dozen graduate students, as well as two postdoctoral fellows, will be working on projects through this chair.

## Our Support for a World-Class Regional Water Monitoring System

Alberta Environment monitors the Athabasca River and its tributaries at 11 sites in the region. In addition, the [Regional Aquatics Monitoring Program \(RAMP\)](#) does extensive monitoring of climate and hydrology, water quality, benthic invertebrate communities, sediment quality, fish populations and fish health, and lakes sensitive to acidity in the Lower Athabasca region. RAMP's 2010 and 2011 technical reports are available [on-line](#).

According to regulators, monitoring stations downstream of oil sands operations do not detect any industrial impacts when compared to historical readings of naturally occurring compounds. Because the river cuts through the oil sands deposit, bitumen is often exposed along the banks and then seeps into the water.

In 2010, the [Royal Society of Canada](#) commissioned an Expert Panel of Canadian Scientists to review and assess evidence relating to several perceived environmental impacts of the oil sands, including regional water supply. According to their assessment, current evidence does not suggest a threat to the viability of the regional aquatic ecosystem. However, stakeholders remain concerned about downstream impacts.

To address ongoing concerns, a government-sponsored contaminant load study is currently underway that is examining how air particulates, land disturbance and drainage may affect water quality. Also, in early 2012, the Alberta and Canadian governments announced a [joint implementation plan](#) for integrated environmental monitoring in the oil sands region. The plan builds on monitoring already in place and outlines a phased, adaptive implementation approach to monitoring over the next three years. Through the Canadian Association of Petroleum Producers, we are providing our input on this new system and support a credible, transparent and science-based approach that can guide us effectively on responsible water management in the future.

## Water Use

	Unit	2007	2008	2009	2010	2011
Imported from Athabasca River	million m <sup>3</sup>	36.0	41.2	37.5	34.1	38.5
Imported from Athabasca River	m <sup>3</sup> /m <sup>3</sup> production	2.03	2.45	2.31	1.97	2.28
Water returned to the Athabasca River – treated sanitary	thousand m <sup>3</sup>	261	233	270	320	321
Water returned to the Athabasca River – other (Aurora diversion)	thousands m <sup>3</sup>	1.9	2.5	4.9	10.5	7.9
Process water recycled	millions m <sup>3</sup>	256	268	258	278	270
Process water recycled	% of total water used	88	87	87	89	88
Water discharge quality exceedances (treated sanitary)	# of incidents	1	0	0	0	0
Water discharge quality exceedances (industrial process)	# of incidents	0	0	0	0	0
Reportable spills to natural water bodies	m <sup>3</sup>	0	0	0	0	0

## Water Perspective

In 2010, the oil sands industry represented about seven percent of the total provincial allocations for fresh water.



09.25.2012 @ Lion's Park, Fort McMurray

## Barb Jewers

MANAGER, TAILINGS AND LEASE DEVELOPMENT  
PRESIDENT, FORT MCMURRAY UNITED WAY BOARD OF DIRECTORS

“Fort McMurray is recognized as the most caring community in Canada in terms of per capita donations to the United Way. And oil sands companies are key contributors to that achievement. They not only generate great excitement about our annual fundraising campaign at their workplaces, but also help to communicate to their employees the value of giving and how their contributions greatly benefit our communities. Every effort counts. In fact, at designated recycling bins across the site, Syncrude collects around \$5,000 in returns from empty bottles and cans each year.

*This money is donated to the United Way, which then helps support 70 local programs and 27 agencies, including the Salvation Army, SPCA and the Boys and Girls Club. It's an easy way to give that adds up in a really big way.”*

# BARB

# WASTE MANAGEMENT

## Waste Management Guidelines

Syncrude is committed to the proper handling and disposal of waste materials from our operations. The objectives of our waste management program are to continually reduce the quantity of waste generated and to examine each waste stream with the view to reduce, reuse or recycle materials where possible. Syncrude also aims to ensure compliance with all applicable legislation regarding the disposal and recycling of waste materials. We recognize that many waste materials contain substances that could contaminate the environment and pose risk to human health if they are not properly managed.

We **Reduce** waste through the use of an inventory management system that records and accounts for raw materials and process chemicals on-site. Waste reduction is also achieved through process changes, operational changes and equipment modifications. Through these means we endeavour to use less hazardous substitutes for toxic materials, change procedures that generate waste, and look for new methods or technologies to better capture hazardous waste.

We **Reuse** waste by finding new uses for it (for example, oily rags collected from Syncrude laboratories and shops are cleaned and reused). As well, our asset recovery program redistributes materials such as protective clothing and janitorial equipment.

We **Recycle** waste by gathering used materials so they can be reclaimed and reprocessed by recyclers. Examples include paper, vehicle batteries, scrap metals, catalysts and beverage containers. Used lubricating oil is recycled on site.

## By Practicing the 3Rs, Syncrude:

- Saves on raw material and production costs;
- Reduces waste disposal cost;
- Assumes less risk of liability for future cleanup;
- Reduces movement of waste on public roads;
- Encourages resource conservation and recovery; and
- Demonstrates environmental leadership.



## Waste Management

	2007	2008	2009	2010	2011
Major waste recycled or reused – solid (tonnes) <sup>1</sup>	12,079	9,150	20,563	32,663	32,923
Minor waste recycled or reused – solid (tonnes) <sup>2</sup>	219	255	210	270	503
Major waste recycled or reused – liquid (m <sup>3</sup> ) <sup>3</sup>	2,653	3,680	3,439	3,992	3,172
Waste – solid hazardous or potentially hazardous materials sent for off-site treatment or destruction (m <sup>3</sup> )	19	11	68	11	110
Waste – liquid hazardous or potentially hazardous material sent for off-site treatment or destruction (m <sup>3</sup> )	4.0	4.6	2.1	1.4	1.1
Waste disposal – on-site industrial, non-hazardous (tonnes)	16,862	20,431	21,775	41,278	17,807
Waste disposal – on-site sanitary non-hazardous (tonnes)	1,712	2,137	2,354	1,027	720
Waste disposal – off-site sanitary non-hazardous (tonnes) <sup>4</sup>	–	–	–	874	1,098

1 Includes catalyst, scrap metal, tires, conveyor belting and batteries.

2 Includes solid recycled materials such as aerosols, oil/fuel filters, oily rags, refrigerant, plastic and metal drums, electronic waste, fluorescent tubes, kitchen grease, paper/cardboard/newsprint, beverage containers and printer cartridges.

3 Includes used oil and used solvents.

4 In August of 2010, Syncrude began sending most of the sanitary waste generated at Syncrude to the Regional Municipality of Wood Buffalo's landfill.

## Recycling Programs

**Hazardous Waste Roundup** – Syncrude annually holds a roundup to collect hazardous wastes on our site. The wastes are transported off-site and sent to approved recycle and disposal facilities. In 2011, over 17 tonnes of waste was collected. Items included paint, solvents and flammable liquids.

**Oil Filters** – these are shipped off-site and the used oil in the filters is recovered.

**Used Motor Oil** – used motor oil is recycled on-site and processed into Syncrude crude oil.

**Other Waste Hydrocarbons and Solvents** – These are recycled on-site and reprocessed into Syncrude crude oil.

**Cardboard and Paper** – Recycling bins are located throughout Syncrude to promote recycling.

**Cell Phones** – All cell phones, cell phone batteries and chargers are collected on-site and sent for recycling.

**Beverage Containers** – Beverage containers are returned to a recycling depot and all cash from container deposits is donated to the United Way.

**Printer Cartridges** – Used printer cartridges are sent back to the vendors for recycle.

**Fluorescent Tubes** – Fluorescent tubes are crushed and the crushed glass is sent to a retort for mercury recovery; the aluminum end caps are separated and recycled.

**Aerosols** – Any gases remaining in aerosols are disposed of or recycled appropriately and the metal containers are recycled.

**Electronics** – all discarded computers and related equipment, and other electronics, are sent for off-site recycling.

**Plastic and Steel Drums** – Reusable drums are returned to the original suppliers for recovery of residual deposits and recycling of the drums.

07.30.2012 @ Municipal Building, Fort McMurray

## Melissa Blake

MAYOR, REGIONAL MUNICIPALITY OF WOOD BUFFALO

“At the municipality, we hope to achieve sustainability by making sure today’s decisions don’t compromise future choices. This has been a challenge as Wood Buffalo has grown tremendously in the past decade and there’s no sign of this slowing down. Syncrude has been a community mainstay long before this period and continues to help us with decisions on everything from the municipal development plan to city centre redevelopment to bus lanes that move commuters more quickly and efficiently. Syncrude is at the table and is making a difference in how we execute those plans.

*The property taxes paid by Syncrude and other industry members enable us to do tremendous things in terms of the infrastructure that’s required.*

The other area where Syncrude has helped is through investing directly in the community. Facilities such as the Syncrude Sport and Wellness Centre and the Syncrude Timberlea Athletic Park improve the quality of life in the community.”



# MELISSA

# COMMUNITY INVOLVEMENT

## Performance Overview

- Distributed \$10 million in total donations in key areas in 2010-11
- Key 2010 donations included support for children's health, cancer care, child literacy, ski hill upgrades and a new aquatic centre in Fort McMurray
- Key 2011 donations included support for science learning programs, a new Science and Technology Centre at a Fort McMurray high school, cancer care for women, and an engineering university transfer program
- Corporate campaign in 2011 recognized employee volunteers and engaged employees in voting a total of \$50,000 in donations for their charities of choice

## Corporate Giving Policy

In order to enrich the lives of our employees and improve the well-being of the communities where our people live and we do business, Syncrude provides funds to support community activities meeting specific criteria. Our corporate giving is designed to help us continue to earn our social license to operate and enhance our corporate reputation as well as our ability to attract and retain qualified employees.

Complete details on our policy and program guidelines are available at [www.syncrude.com/community](http://www.syncrude.com/community).

## Focus Areas for Giving

Syncrude's giving in the Wood Buffalo region focuses on participating in community initiatives that help build our reputation and enhance employee retention. In Edmonton, our giving focuses on initiatives which serve that community and also benefit people living in northern Alberta communities, for example, health care services. Investments are made in both markets that help build training and education capacity to support long-term recruitment needs.

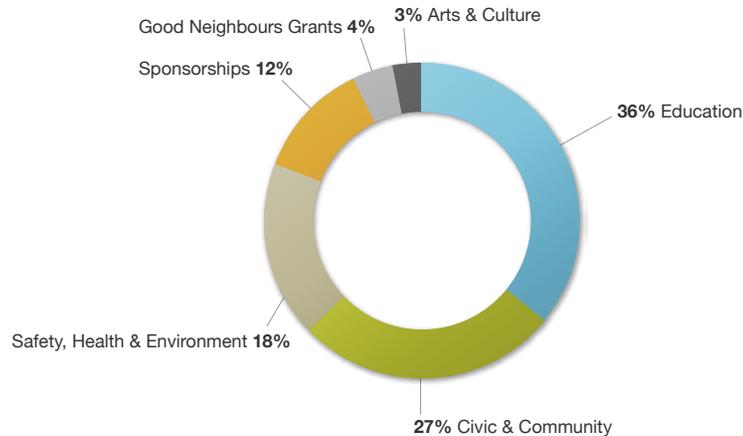
In 2010, the programs and projects we supported helped enhance quality of life and education in Wood Buffalo. Programs and projects supported in 2011 helped build capacity for science, engineering and technology education.

## Corporate Donations

	2007	2008	2009	2010	2011	2012 Target
Corporate giving <sup>1</sup> (\$ millions)	4.2	3.2	4.3	5.0	5.0	6.0

<sup>1</sup> Includes donations made under the Community Investment Program, Aboriginal Community Investment Program, sponsorships and gifts-in-kind.

## Community Investment by Category



## Investing in Education, Training and Future Careers

- **\$1 million over four years to help establish a new Science and Technology Centre at Fort McMurray's Father Patrick Mercredi High School.** The project is valued at \$4 million and aims to help local students develop technology skills needed by local employers. Two new labs focused on engineering technologies and industrial trades will provide hands-on learning opportunities that will give students a competitive advantage when applying for post-secondary training and apprenticeships.
- **\$80,000 over three years to support six literacy programs at the Fort McMurray Public Library.** The programs focus on improving the literacy skills of toddlers and young children.

- **\$500,000 to the University of Alberta to support delivery in the Wood Buffalo region of the DiscoverE and WISEST (Women in Scholarship, Engineering, Science and Technology) programs.** DiscoverE introduces students to engineering, science and technology, while WISEST is a summer program that places students in research lab roles that are not typical for their gender.



*Syncrude president and CEO Scott Sullivan talks with students about their marble maze at a DiscoverE camp.*

- **\$250,000 to MacEwan University to support the Bachelor of Science in Engineering Transfer Program.** This program enables the first year of a Bachelor of Science in Engineering degree to be taken at MacEwan. Upon successfully completing the first year, students are guaranteed entrance to the second year program at the University of Alberta.

## Our Support for Health Programs and Initiatives

- **\$2 million over five years to the Northern Lights Health Foundation** for programs and equipment that support women's health.
- **\$250,000 over five years to the Stollery Children's Hospital Foundation** to expand the emergency room, which will help increase capacity and access to services, including for patients from the Wood Buffalo region needing specialized care.
- **\$150,000 over three years to the Alberta Cancer Foundation** to establish a Fort McMurray-based nurse navigator to guide cancer patients through their treatment.
- **\$30,000 over three years to the Alberta Council of Women's Shelters** for its new Family-Business Connect Program. The program encourages local businesses to become partners in confronting the challenges of domestic violence.
- **\$250,000 over five years to the Compassion House Foundation** to expand its Edmonton-based facility that provides accommodation and supports to northern Alberta women who must travel to the city for breast cancer treatments.
- **\$110,000 to Ronald McDonald House Northern Alberta** to aid in the provision of accommodation and supports to northern Alberta children and their families who must travel to Edmonton for medical treatments.



Ronald McDonald House Quilt Room, supported by Syncrude.

## Helping to Build Local Sports and Recreation Opportunities

- **\$1,000,000 over four years to MacDonald Island Park for programs at the Syncrude Aquatic Centre**. The centre includes a 10-lane, 50-metre pool, waterslides and a spray park.
- **\$500,000 over five years to Vista Ridge All Seasons Park** to support its ski hill expansion project. Syncrude's support enabled the construction of a new chair lift and three new runs.



Billboard promoting new chairlift at Vista Ridge ski hill.

- **\$450,000 over three years to sponsor the Syncrude Boreal Open Canadian professional golf tour event in Fort McMurray, in 2011, 2012 and 2013**. The tour event brings world-class golf to the community and also raises funds for KidSport, a local charity that provides financial support to children so they can participate in organized sports.



## Enhancing Quality of Life Through Arts and Culture

- **\$300,000 over three years to Events Wood Buffalo to enhance the WinterPlay Festival** and enable its expansion to all Wood Buffalo communities. Some of the funds will support the organization's other events, including InterPlay, Canada Day celebrations, and the Santa Parade.



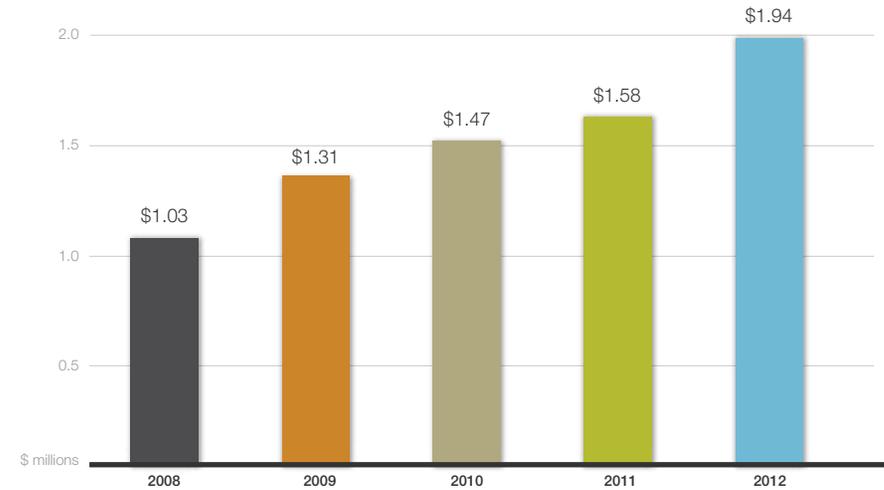
Mushers in the WinterPlay Three Forts Sled Dog Race endured a 176-mile journey, following an old mail delivery route from Fort McMurray to Fort Chipewyan. Credit: WinterPlay

- **\$200,000 over three years to Keyano College to renew Syncrude's presenting sponsorship of Syncrude Arts Alive**, a series of live theatre and music experiences at Keyano Theatre, in Fort McMurray.

## Employees Respond to United Way Campaign

Syncrude employees once again responded generously to Fort McMurray's annual United Way campaigns in 2010 and 2011, helping the city retain its status as Canada's most giving United Way community on a per capita basis for six consecutive years. Syncrude's 2010 workplace campaign raised a record \$1.58 million while \$1.94 million was raised in 2011.

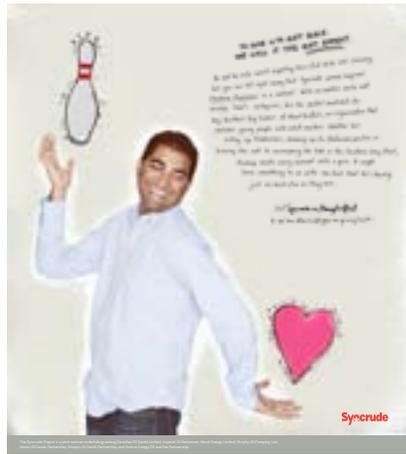
## Corporate and Employee Contributions to the United Way



Syncrude's 2011 United Way campaign raised \$1.94 million for local charities and community services groups.

## Campaign Salutes Community Volunteers and Engages Employees in Corporate Giving

A 2011 campaign to recognize and promote employee volunteerism also succeeded in its secondary goal of engaging employees in learning about the work of community not-for-profit agencies through a \$50,000 choose-your-charity give-away contest. Nearly 1,600 employees participated in the on-line campaign, selecting [KidsForever](#) as the \$25,000 winner, and five other agencies as recipients of \$5,000 each; they are [Big Brothers Big Sisters of Wood Buffalo](#), the [Centre of Hope](#), the [Fort McMurray Chinese-Canadian Cultural Society](#), [Sanatan Mandir Cultural Society](#) and the [Fort McMurray SPCA](#).



## Good Neighbours Program Benefits Local Charities

Syncrude's Good Neighbours employee volunteerism grant program enjoyed expanded participation in 2010-11. The program recognizes and incents employees to engage in community volunteerism by awarding \$500 grants to the organizations for which they volunteer. A total of \$205,000 was awarded in 389 individual grants during the two reporting years, as compared to \$180,000 in 359 grants in 2008-09. Many of the same organizations also shared in a total of \$170,000 in Good Neighbours busing grants (\$2,000 each), which help offset the cost of travel to out-of-town events, such as sports tournaments. Click [here](#) for more information on this program.

## Hitting the Right Notes

His son's involvement in a school band program prompted Syncrude employee Lance Ferriss to make the program more accessible to students facing financial barriers. Lance spearheaded an effort to collect, repair and donate used instruments to students in need. Thus far, more than twenty refurbished instruments have been donated to budding young musicians.



## Program Helps Develop Community Leaders

In 2011, Willis Doiron became the latest Syncrude employee to graduate from [Leadership Wood Buffalo](#), a development program that aims to create a new generation of community builders. Doiron went on to serve as co-chair of Syncrude's 2011 United Way workplace campaign. Two other employees, Sana Elach and Lynn Joyce, currently serve on Leadership Wood Buffalo's Board of Directors.

*Marlene Lane (left) and Willis Doiron are both graduates of Leadership Wood Buffalo. Sana Elach (centre) chairs the program.*



## Forester Stewards Natural Places

Moving to Fort McMurray in 2005, Syncrude forester Eric Girard and his wife, Sophie, have enjoyed the boreal forest that surrounds the community. So much so, that they formed the Wood Buffalo Adventure Club, which now boasts 100 members. The group participates in many outdoor activities and takes care of the local Birchwood Trail System. It also provides input to local and provincial plans for parks and recreation spaces.



08.13.2012 @ Syncrude Upgrader

## Narry Ramnath

SAFETY, HEALTH & ENVIRONMENT COORDINATOR

“I’ve been with Syncrude for over 10 years and can attest that the safety of employees is the organization’s most important priority. I’ve worked in safety for three years and prior to that I was a front line supervisor, so safety has always been at the forefront of everything I do. Safety is everybody’s responsibility and it’s something that we have to make sure is a fundamental cultural value; that everyday workers are looking out for one another and that leaders are ensuring their workers are following the proper procedures and requirements. At the same time, employees are encouraged to provide feedback to their leaders about what is working well or what may need improving.

*It’s great to work for a company that listens and has the best interests of its employees in mind.”*

# NARRY

# PEOPLE

## Performance Overview

- Recognized as one of Alberta's top employers and best workplaces
- \$2 million in scholarships awarded to children of employees
- President and CEO holds town hall meetings with over 5,000 employees
- 2011 employee attrition lowest in five years

## Our Commitment

Syncrude's over 5,000 employees are key to our success and are our most valued asset. We encourage their achievement of high quality results by creating an environment that fosters teamwork, mutual respect and measured risk-taking. We make every effort to acknowledge their contributions and celebrate successes through highly competitive compensation, recognition and development programs.

## Labour Pool Initiatives

Syncrude has a multi-staged approach to address its workforce needs.

It begins by raising awareness of career opportunities in the oil sands by participating in such initiatives as school and campus presentations, career fairs and other special events, and trades development programs like those promoted by [CAREERS: The Next Generation](#).

This is followed by support for initiatives that develop the available pool of skilled labour through college, technical and university-based programs. This then provides the foundation for comprehensive recruitment plans to address our ongoing labour requirements.

To address a shortage of available workforce skills caused by changing workforce demographics and a robust local economy, Syncrude is continuing its longstanding work to build workforce capacity. We focus on collaborative partnerships with educational institutions, businesses, industry associations and governments.

## Process Operator Training

Syncrude's entry-level Process Operator Trainee Program encourages candidates to consider a career as a process operator. Developed by Syncrude in association with the [British Columbia Institute of Technology](#), the program consists of two months of intensive training, six months of evaluation in field-training situations, and two more months in the classroom. The experience rewards students by hiring them as paid casual employees during training, and as full-time permanent employees after successful completion of the program.

## Oil Sands Extraction Process Program

This program, launched in the spring of 2010 with participating employees from Syncrude and another oil sands developer, aims to help increase the pool of talent in the region by enhancing the knowledge and skills of bitumen extraction process operators. The two developers worked with [Keyano College](#) to build the program and it continues to be adapted with a view to accommodating participants who are not currently employees of the partnering companies. The aim is to offer learning opportunities to both experienced and aspiring process operators. Since the program's inception, more developers have joined as program partners. Graduates earn an Extraction Technician Certificate.

## High School Technology Centre

Supported by Syncrude, a technology centre that opened in September 2011 at Fort McMurray's [Father Patrick Mercredi High School](#) is enabling students to access equipment and learning opportunities not usually offered at the high school level. The centre gives the students insight into various engineering specialties and works to influence their future career path decisions. In particular, students can receive credits toward a high school diploma while, at the same time, have the opportunity to meet requirements for a 4th Class Power Engineering certificate.

## Apprenticeships

Apprenticeships in recognized trades and technologies can be accessed through Syncrude directly or via two widely available programs in which Syncrude participates. The Community Cooperative Apprenticeship Program is an industry-driven education partnership providing training through annual rotating work

placements. The *Registered Apprenticeship Program* is offered to high-school students in the form of work experience courses, Career and Technology Studies courses, and part-time employment.

Introduced in 2009, the *Syncrude Aboriginal Trades Preparation Program* prepares participants to pursue trades apprenticeship training through academic upgrading and work experience placements at our operation. Upon successful completion, students are eligible to become indentured apprentices at Syncrude. The program is available at Keyano College in Fort McMurray, as well as learning centres in Janvier, Fort Chipewyan and Fort McKay. It is sponsored by Syncrude, Alberta Employment & Immigration (AEI), Alberta Human Services (AHS), Rupertsland Institute, Chipewyan Prairie First Nation, Fort McMurray #468 First Nation, Fort McKay First Nation and the Mikisew Cree First Nation. It has also received additional support from the Athabasca Tribal Council, the Métis Locals, and Alberta Apprenticeship & Industry Training.



The 2011 graduating class of the Syncrude Aboriginal Trades Preparation Program. Credit: Keyano College

## Co-Op/Discipline students

Every year, Syncrude provides work terms of varying lengths for about 200 co-op/discipline students, who come to Syncrude from post-secondary schools across Canada. About 60 students are on-site at any given time. During their time with Syncrude, the students gain valuable work experience in their field of study, and work alongside knowledgeable experts. In addition to competitive wages, the students also receive paid transportation to and from Fort McMurray; along with paid accommodation, internet and cable.

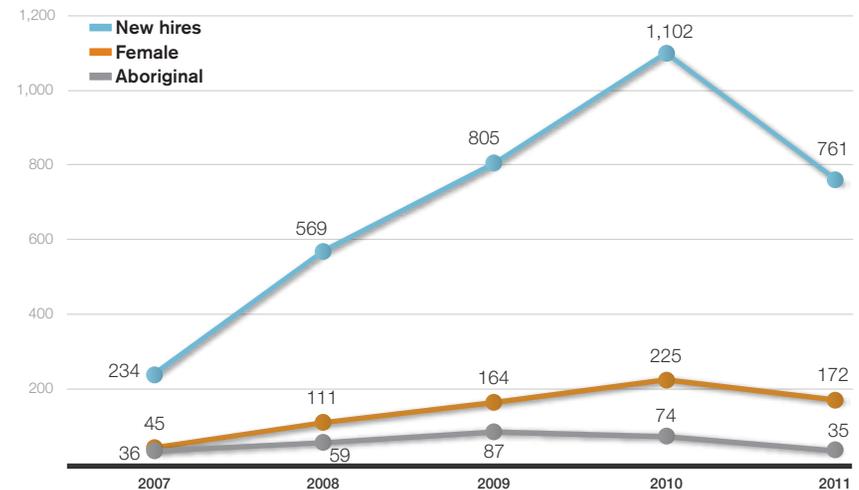


Each year, around 200 university students from across Canada have work terms in varied disciplines at Syncrude, including engineering and environmental sciences.

## Syncrude Higher Education Awards Program

Children of Syncrude employees can qualify for up to \$2,400 for each year of their post-secondary degree or diploma education. About \$2 million in program scholarships was granted to 871 applicants (returning and new) in 2008-09, with another \$2 million to 924 applicants in 2010-11.

## New Employees - Diversity



Syncrude invests in programs aimed at increasing the number of Aboriginal and female employees in our workplace. This includes the Aboriginal Trades Preparation Program at Keyano College and the Women in Scholarship, Engineering, Science and Technology program through the University of Alberta.

## Workplace Development and Retention Initiatives

Syncrude offers a variety of education and training opportunities, and incentive programs, to our employees. These encourage people to commit to a career with the organization, and develop the specific skills that we need to run our operation.

### Initial Professional Development Program

IPDP is a core Syncrude workforce strategy and opportunity for new employees to grow. It provides a better career development experience for the approximately 120 new graduates who join Syncrude each year. IPDP comprises networking opportunities with management and leaders, as well as mentoring, orientation and development assignments.

### Education Tuition Refund Program

This program supports professional development for regular employees who desire learning opportunities in fields of study that are relevant to Syncrude's business. It provides a 100 percent refund on tuition, textbooks and materials, and mandatory fees for approved post-secondary courses.

### Leadership Development Program

A new Leadership Excellence Training program was launched at Syncrude in 2009. This program is delivered in seven days over five months and aims to provide leaders with the skills needed to lead their departments effectively, model best practices and attitudes, inspire and communicate shared goals, challenge and improve processes, enable team members by delegating effectively, and offer timely encouragement and recognition. The program uses both real and hypothetical situations as learning tools.

### Housing Support Program for Fort McMurray Employees

Syncrude launched a housing support program in June 2009 to help improve its ability to attract and retain employees in Fort McMurray, where the labour market is competitive and accommodation costs are high when compared to other regions in Alberta. The five-year program provides up to \$60,000 to eligible employees to offset the cost of mortgage interest. Eligible employees who rent accommodation may receive up to \$30,000 in rental cost offsets. To earn the maximum benefit employees make the commitment to stay with Syncrude for 10 years.

### Impact 21 Incentive Program

Syncrude's Impact 21 program motivates all employees to reach business goals by paying financial rewards to them when corporate targets in safety, reliability, production, costs, energy efficiency and environmental performance are achieved or surpassed.

### Retention Program for Fort McMurray Employees

To help secure and retain the skilled workforce required to sustain its operation, and to reward existing and future employees for their commitment and contributions to Syncrude, Syncrude has a retention program for Fort McMurray-based employees. It gives eligible employees three annual payments of 20 percent of their day-base salary up to a maximum of \$20,000 before statutory deductions, per program year. All Fort McMurray-based employees also receive a salary uplift of 14 percent over employees working in other locations.

## CEO Engages with Employees

Syncrude President and CEO Scott Sullivan, who joined the company in July 2010, engaged with the company's entire employee population over the course of 23 meetings held in early 2011. The sessions were designed to foster feedback from employees as much as share information about corporate direction, goals and challenges. Employees raised a range of issues, including commuting, compensation and benefits, career development, plant reliability, environmental performance and future growth plans. In response, three committees were formed to assess and propose solutions to the issues most commonly raised: commuting & transportation; career and succession planning; and leadership communication. A second series of sessions occurred in early 2012 to provide an update on the work of these committees and to encourage continued dialogue.



*Syncrude President and CEO Scott Sullivan speaks to employees at the 2011 forum.*

## Workforce by the Numbers

	2007	2008	2009	2010	2011
Total permanent workforce	4,733	5,284	5,580	5,689	5,515
% under age 20	0.2	0.4	0.2	0.1	0.1
% age 20-24	6.2	8.0	7.6	6.9	5.2
% age 25-29	12.9	13.1	13.9	14.2	14.3
% age 30-34	11.8	12.2	14.0	14.1	14.5
% age 35-39	10.6	11.6	11.5	12.1	11.8
% age 40-44	13.4	12.3	12.1	12.0	12.4
% age 45-49	15.4	14.2	14.1	13.7	14.0
% age 50-54	18.3	16.2	15.2	15.2	14.8
% age 55-59	8.9	9.4	9.1	9.0	10.9
% over age 60	2.3	2.3	2.4	2.6	2.1
Workforce – temporary and casual	144	160	109	102	145
Employees covered by collective bargaining agreements (%)	0	0	0	0	0
Permanent employees – all categories					
New permanent employees – all categories	761	1,102	805	569	234
Trades and operators	529	817	539	395	172
Administrative, professional & technical	232	285	266	174	62
New employees – diversity					
Aboriginal	35	74	87	59	36
Female	172	225	164	111	45
Recruiting effectiveness					
New hire acceptance rate	77	80	88	88	89
Local hires (% of all new hires)	70	68	68	72	71
Job applications received (#)	49,564	70,257	47,302	44,343	25,452 <sup>1</sup>
Ratio of standard entry level wage to minimum wage <sup>2</sup>	3.3	3.5	3.5	3.6	3.5

<sup>1</sup> Fewer applications in 2011 reflect a reduced number of job postings during the year.

<sup>2</sup> Based on basic wage for entry level trades/operators position and Alberta hourly minimum wage of each reporting year.

## Human Resources Score Card

	2007	2008	2009	2010	2011
Employee productivity					
Thousand barrels of SSB per employee	23,525	20,029	18,309	18,815	19,075
Average employee service (in years)	11.3	10.1	9.4	9.2	9.6
Leadership development					
% of leaders completed Leadership Excellence Program	79	78	53	57	60
% of leaders completed Diversity Workshop	78	55	61	64	69
% of leaders completed Harassment & Discrimination Workshop	65	53	51	64	73
Diversity					
Aboriginal representation:					
Number of employees	413	435	479	484	492
% of permanent Syncrude workforce	8.6	8.1	8.4	8.4	8.6
% of new hires	4.6	6.7	10.8	10.4	15.4
Aboriginal leaders (% of permanent Syncrude leaders)	6.0	5.6	5.9	5.8	5.5
Female representation:					
Number of employees	880	991	1,036	1,011	950
% of permanent Syncrude workforce	19.6	19.3	19.2	18.9	18.6
Female leaders (% of permanent Syncrude leaders)	10.1	10.6	9.8	10.6	11.8
Attrition (% of Syncrude workforce)					
All employees, including retirements	11.7	10.6	9.0	8.0	5.5
Employee initiated termination	7.4	7.2	4.2	4.0	2.6
Retirements	3.2	2.1	3.5	2.7	1.9
Aboriginal	9.8	11.9	9.8	10.2	5.6
Female	13.1	12.6	10.2	10.1	6.5
Trades and operators	10.8	10.0	9.1	6.9	4.9
Administrative, professional & technical	13.5	11.3	8.9	9.4	6.3
Employee & Family Assistance Program (EFAP) utilization					
# of clients as % of Syncrude workforce	11.2	7.3	13.7	16.7	18.5
Training					
% hours in training per employee/per annum	1.4	1.3	1.1	1.1	1.0
Employee recognition					
# of recognitions to employees <sup>1</sup>	9,971	10,902	12,143	5,912	6,415
Ethics					
Anonymous submissions to EthicsPoint	16	10	11	16	13

<sup>1</sup> Includes service and safety awards.

## Scholarships, Bursaries and Endowments

	2007	2008	2009	2010	2011
Annual scholarships, bursaries and endowments (\$)	930,000	858,000	1,018,000	1,054,800	940,415
Number of employee student scholarships	395	443	428	461	516
Number of tuition refunds to Syncrude employees	153	155	82	84	144

## Employee Awards & Appointments

Syncrude employees serve the community in many different ways and in many areas of need. Listed here are a selection of those who serve or have been recognized by their professions.



**Kim Farwell** was elected President of the Association of Professional Engineers, Geologists and Geophysicists for a one-year term in June 2010. A Syncrude Chemical Engineer and Organizational Effectiveness Advisor, Farwell has been a longtime volunteer with the organization and was awarded an honorary life membership in April 2011.

**Mark Johnstone** was honoured by the Alberta Apprenticeship and Industry Training Board as Alberta's Top Apprentice for 2010 in the Power Systems Electrician Trade. Johnstone has been a Syncrude employee since 2006.

**Mel Holloway** was honoured by the Canadian Society of Safety Engineering for his longtime service to the organization and his dedication to promoting safety awareness in the workplace, at home and in the community. Holloway is a Syncrude Safety, Health and Environment Coordinator who has played a key role in the development of various training programs, and organized an annual local safety conference with the Alberta Construction Safety Association.



**Brent Hilscher** was appointed Chair of the Canadian Mineral Processors Society Alberta/Northwest Territories/Nunavut Branch for a two-year term in June 2010. Hilscher is a Syncrude Senior Technology Development Engineer who has worked to raise the profile of oil sands operations in the mineral processing industry.

## Corporate Awards

Syncrude is proud to have received several corporate awards in 2010-11. These reinforce our efforts to be a favoured employer and a responsible oil sands producer.



### Canada's Top Employers of Young People 2011 –

adjudicators cited our apprenticeship, training & development programs, summer work placements for high school students, mentoring program and excellent starting benefits.

**Canada's Top Employers of New Canadians 2010 & 2011** – adjudicators cited Syncrude for recognizing the foreign education and experience of qualified immigrants, its support of local English as a second language courses, and the assistance given to employees in obtaining Canadian professional accreditation.



### Alberta's Top Employers 2010 & 2011 –

Syncrude was cited for hiring incentives, flexible health benefits, savings plans, maternity leave coverage, helping employees balance work and personal life, and encouragement of employee development through training, mentoring and scholarships.



### Alberta Venture Magazine Best Workplaces Awards 2011 –

Syncrude earned honourable mentions in the categories of Best Workplace for Working Parents and Best Workplace for Diversity. For the former, judges cited company policies for parental leave and other programs; for the latter, judges cited programs to recruit and integrate immigrants, Aboriginal people and people with special needs.

### Alberta Business Award of Distinction for Aboriginal Relations 2010 –

Syncrude's commitment to working with First Nations and Métis communities in the Wood Buffalo region earned recognition from the Alberta Chambers of Commerce. Adjudicators cited Syncrude for establishing and meeting commitments in six priority areas, including employment.

## Syncrude Department Introduces *Pay It Forward* Award

Recognizing the value of peer-to-peer recognition, leaders in Syncrude's Mine Mobile Maintenance department introduced a Pay it Forward Award to recognize employees for going beyond their duties and providing outstanding leadership. Award winners get to choose the next recipient. One winner, Keith Maclean, says, "It's an honour to be recognized by my peers for the work I am doing in my area and through the team's efforts."



07.31.2012 @ Syncrude Fabrication Shop

## Tabitha Quintal

GRADUATE, SYNCRUDE ABORIGINAL TRADES PREPARATION PROGRAM  
APPRENTICE INSTRUMENTATION TECHNICIAN

*“I’m from Conklin and was raised in this area. I decided to go back to school because in my previous work I wasn’t going to go any further. I decided to explore a trades occupation because I have family in the oil sands industry and I’ve been exposed to it my entire life.*

*The Syncrude Aboriginal Trades Preparation Program was a lot of hard work. What helped get me through was the prize at the end—a career with Syncrude.*

I get hands-on training and help from mentors like Melissa; because of that, I feel that I’m more than prepared for the next step, which is achieving my journeyman ticket as an instrumentation technician.

## Melissa Harasym

INSTRUMENTATION TECHNICIAN

In instrumentation, it’s very important that we are detailed and thorough, and do it right the first time. That’s why I believe Tabitha will succeed. She’s willing to put in the time to learn her trade and has all the markers of being a good journeyman.”

# TABITHA / MELISSA

# LABOUR RELATIONS

## Performance Overview

- Continued \$2 million commitment to Aboriginal Trades Preparation Program at Keyano College
- \$1 million donation to Father Mercredi High School Technology Centre develops future workforce
- Continued joint industry and union collaborations to address future labour shortages

## Our Commitment

When Syncrude has a need for skilled labour, our commitment is to employ Albertans and Canadians first. If unions are unable to source Canadian workers, they will then seek tradespeople in the United States, and then, if needed, other countries. Syncrude makes every effort to treat these workers with respect and to instill our three key values of safety, productivity and schedule among all those who contribute to our project-related work.

## Addressing the Availability of Skilled Labour

In addition to our regular workforce, Syncrude relies on a large contingent of skilled tradespeople who contribute to many functions at our site, including major maintenance turnarounds and construction of new projects. These workers are primarily sourced through the [Building Trades of Alberta](#), which represents 16 trade unions and 60,000 union members, and has the ability to draw from union halls across Canada. In the event that workers cannot be found in Canada, the Building Trades then sources from the United States and Ireland where skills and certifications are comparable to those in Canada. For example, on our major 2011 turnaround, less than one percent were brought in from outside of Canada.

Our demand for skilled tradespeople is taking place in a highly competitive environment for labour resources. Overall, labour needs at Syncrude and elsewhere in Alberta and Canada are expected to grow significantly between 2012 and 2020. At the same time, many workers will retire during this period. Without active labour market intervention, demand will likely exceed market supply capacity. By actively working with our partners, we are pursuing a number of initiatives to further develop more skilled workers in Canada. As well, we

continue to focus on making strategic investments that encourage youth to choose trades as a career, such as the [Father Patrick Mercredi High School Science and Technology Centre](#), [CAREERS: The Next Generation](#), and program development at [Keyano College](#).

## Management Approach

The Syncrude Labour Relations Executive Steering Committee, composed of senior Syncrude leaders, assesses our labour workforce needs and develops short- and long-term strategies to meet those needs. This committee also oversees Syncrude's engagement with several external stakeholder organizations that are working to influence labour market outcomes. They include:

### Construction Owners Association of Alberta

The COAA provides leadership to enable the Alberta heavy industrial construction and industrial maintenance industries to be successful in safe, effective, timely and productive project execution. A Syncrude leader serves on its Board of Directors. In 2011, the Association issued a position paper on Heavy Industrial Construction and Maintenance Workforce Challenges in Alberta. It forecast a national scarcity of skilled trades that will be most acutely felt in Alberta's heavy industrial construction and maintenance industries. The paper sketched a vision for the Alberta workforce of the future and provided recommendations for a combination of near-term and medium-term actions. View the [paper](#).

### National Owners Forum

This group of major construction project owners from across Canada, including Syncrude, convened in 2010 to develop a five-year strategy for 2011-16 to cooperatively address the workforce challenges facing the construction industry. The strategy set out a 26-point implementation plan for owners, industry, educators and trainers, governments and other stakeholders to address the issues identified by the group. View the [strategy](#).

### Alberta Owners/Building Trades Canadian Executive Board Partnership

This group is comprised of construction project owners and labour representatives (unions). It is co-chaired by a Syncrude leader on behalf of the project owners and by the president of the Canadian Executive Board on behalf

of the union affiliates. The group's vision is for Alberta to have a safe, effective, productive and high value-added construction and maintenance industry. Toward this, it engages in dialogue, information sharing and the exploration of ways to effect continuous improvement. It develops and implements strategies for priority areas and collaborates with others on complementary initiatives.

### **Alberta Council of Turnaround Industry Maintenance Stakeholders**

ACTIMS is comprised of owners, labour providers and contractors. It works to ensure an adequate and properly trained workforce for major industrial maintenance turnarounds in Alberta. The group is working to identify needed worker volumes, skill sets and qualifications; improve communication with labour providers regarding project plans and labour needs; develop standardized worker training and worksite protocols; and recruit new apprentices.

### **Construction Industry Stakeholders Association of Alberta**

This group is comprised of construction project owners, labour providers and contractors, and is chaired by a Syncrude leader. It works to ensure an adequate and properly trained workforce for major industrial construction work in Alberta by identifying the quantities, skill sets and qualifications of needed workers; and by improving communication with labour providers with regard to project plans and labour needs. It also develops standardized worker training and worksite protocols, and recruits new apprentices.

## **Finding Common Ground**

The construction industry stakeholders discussed earlier agree on the common themes that need to be addressed to provide a sustainable construction workforce that is able to meet short-, medium- and long-term industry needs. Working committees from the various groups focus on these issues and, where there is opportunity, federal and provincial agencies are also engaged in sustainment work. Themes include:

- continually monitor supply and demand situation;
- refine demand forecasting and work specifications for skilled trades;
- implement initiatives to improve workforce productivity;
- enhance interprovincial labour mobility;
- train more apprentices & increase training capacity;
- enhance outreach about skilled trades careers to junior high & high schools;
- enhance recruitment from non-traditional sources: women and Aboriginals;
- improve access to temporary foreign workers;
- increase immigration of skilled workers;
- spread workloads through modularization to off-site (i.e.: less remote) fabricators in different jurisdictions; and
- coordinate turnaround activities to minimize labour demand conflicts.

## **Treatment of International Workers**

Skilled tradespeople sourced from outside of Canada and who work at Syncrude are protected by all Canadian labour regulations, as well as the respective collective agreements Syncrude contract companies have with various unions. They are treated and compensated the same as any domestic worker, and the federal government provides assurance of this through unannounced visits to the workplace. Sponsoring unions also conduct their own independent audits and assessments.

07.30.2012 @ Municipal Building, Fort McMurray

## Melissa Blake

MAYOR, REGIONAL MUNICIPALITY OF WOOD BUFFALO

“Since I entered public office, the region has gone through an incredible period of growth, and the potential in the future is even greater.

*To help properly manage the issues associated with growth, it's integral the municipality walks hand in hand with industry and maintains very strong partnerships with the oil sands operators.*

Certainly I know that companies are very interested in ensuring a good quality of life in order to attract and retain their employees. And companies like Syncrude continue to play a major role in that endeavour. I believe the extensive plans the municipality has for the future will see our region become a global model for sustainable living in the north. It's something we truly believe in and know we can't do alone. By working together with our citizens and with industry, we can make sure this vision comes to fruition.”

# MELISSA

# STAKEHOLDER RELATIONS – NON ABORIGINAL

## Performance Overview

- Liaising with Alberta Government regarding our proposed tailings management technology platform
- Continued participation in the Oil Sands Developers Group; active on committees related to transportation, health care, municipal affairs and Aboriginal relations
- Contributed to dialogue with the local Municipality for the development of express bus lanes entering Highway 63 from two Fort McMurray subdivisions

## Our Communications and Stakeholder Relations Policy

Attaining objectives in social, economic and environmental performance from current operations and potential growth opportunities can only be achieved by earning and maintaining the consent and support of our stakeholders.

Syncrude will actively seek to establish long-term relationships with our stakeholders through consultation, collaboration and the provision of information, and will manage these processes with honesty and integrity.

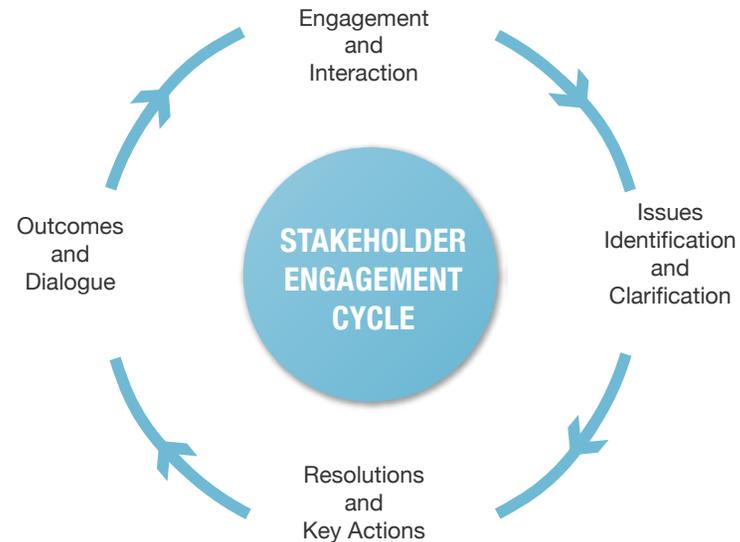
Syncrude will foster an environment that actively seeks stakeholder ideas, input and feedback in order to develop mutual trust and cooperation. We will participate in collaborative stakeholder processes to promote sustainable development and manage the cumulative impacts of industrial development. In addition, stakeholders will be encouraged to define the manner in which they wish to be consulted. Those acting on behalf of Syncrude will be receptive to stakeholder input and, where appropriate, will act on it, even if it necessitates changing our plans. When disagreements occur and remain unresolved, Syncrude and its employees will always demonstrate respect for the views presented.

Syncrude will engage with employees, contractors and the public, including governments and media, on a professional level, and be responsive to issues and provide information and insight as appropriate. Syncrude will also take a proactive approach to these relationships, as required, to ensure necessary information and understanding is fostered with our stakeholders.

Employees are a key stakeholder group for Syncrude. As such, we are committed to fully communicating business-related information that provides employees with an understanding of goals, plans and performance that enables them to function effectively in their roles.

Syncrude is committed to encouraging and sustaining the growth and well being of the communities in which it does business and in which our employees live. As such, Syncrude will make contributions to projects that enhance the quality of life, primarily within the Regional Municipality of Wood Buffalo and northeastern Alberta.

## Stakeholder Engagement Cycle



## Direct Stakeholder Engagement

Syncrude directly engaged with the following groups during the reporting period:

**Alberta Conservation Association:** this group received funds from Syncrude after Syncrude was directed to pay a creative sentence for environmental offences arising from the 2008 waterfowl incident on our site. The funds were used to purchase Alberta habitat for migrating waterfowl.

**Government of Alberta:** In response to the government's Directive 074 on tailings management, Syncrude is liaising with officials at Alberta Environment about our proposed tailings management technology platform and on a broader tailings management framework for the mineable oil sands industry.

**Government of Alberta:** Syncrude is in preliminary discussions with provincial regulators about our proposal to expand an area known as the W4 Dump, and to use it for long-term storage of centrifuged tailings reclamation material.

**Regional Municipality of Wood Buffalo:** Syncrude, along with two other oil sands operators, engaged with the Municipality to advance a proposal for the development of express bus lanes entering Highway 63 from two Fort McMurray subdivisions. The proposal was successful and one bus lane is now operating; the other remains under discussion.

Syncrude is also involved on the Municipality's Stakeholder Advisory Committee. This group meets several times per year to ensure exchange of information on key regional topics such as transportation, infrastructure planning, the Municipal Development Plan and sustainability initiatives. It is managed by the Municipality and includes participants from the Chamber of Commerce and the Oil Sands Developers Group.

**Local School Boards and Keyano College:** Syncrude had discussions with representatives from the local education community to learn about program and infrastructure need and opportunity areas. The dialogue helped identify projects Syncrude is supporting through our Community Investment program. (see [Community Involvement](#) chapter).

## The Oil Sands Developers Group

Syncrude engaged with various stakeholders during the reporting period through our participation in the [Oil Sands Developers Group \(OSDG\)](#), which is a non-profit, industry-funded association that works to foster responsible oil sands development. Syncrude provides leadership to OSDG at the Board and Committee level to identify, advocate and champion solutions on various issues related to the regional impacts of oil sands development. Kara Flynn, Syncrude Vice President of Government and Public Affairs, serves as Vice-Chair of the OSDG Board. Syncrude employees also chair, or are active, on the following committees:

- **Transportation** works to identify issues and needs related to impacts of resource development on transportation within the Regional Municipality of Wood Buffalo, and recommend and implement strategies to address these. Syncrude is one of two OSDG representatives on the Government of Alberta's recently established Transportation Coordinating Committee, which is working under Ministerial appointment to identify long-term transportation needs in the Athabasca Oil Sands region.
- **Health Care** aims to promote mutual understanding of health care delivery issues and oil sands development impacts and to explore possible synergies between OSDG members and Alberta Health Services. The committee is currently seeking clarity from the Alberta government on the issue of health impacts caused by blowing tailings sands, and how this issue will be dealt with through the Alberta Occupational Health and Safety Act.
- **Municipal Affairs** works to develop sustainable policy frameworks in Wood Buffalo by engaging and partnering with a variety of stakeholders, including the Regional Municipality of Wood Buffalo, the Government of Alberta, the Fort McMurray Chamber of Commerce, the Canadian Association of Petroleum Producers, and the Canadian Property Tax Association.
- **Aboriginal Affairs** identifies issues related to the impacts of resource development on Aboriginal Peoples living within the Regional Municipality of Wood Buffalo, and recommends strategies to address Aboriginal issues.

- **Co-generation/Transmission** looks at accessing and addressing the electricity transmission needs of the oil sands producers in region and its linkages throughout the province. The committee provides a forecast report each year on co-generation and power infrastructure.
- **Communications** strives to create understanding and support for the OSDG among key stakeholders and to ensure that the OSDG is a credible, accurate, current and accessible source of information on oil sands development.
- **Regional Environmental & Regulatory Affairs** provides an industry member forum to discuss issues related to potential environmental impacts of oil sands development within the Regional Municipality of Wood Buffalo. It develops common industry positions on environmental and regulatory issues that arise over time.

## The Canadian Association of Petroleum Producers

[The Canadian Association of Petroleum Producers \(CAPP\)](#) is the voice of Canada's upstream oil, oil sands and natural gas industry. It works to enhance the economic sustainability of the Canadian upstream petroleum industry in a safe and environmentally and socially responsible manner, through constructive engagement and communication with governments, the public and stakeholders in the communities in which we operate.

Syncrude is a member of its Executive Policy Group on Communications, which oversees the communications and reputation management strategy CAPP is executing on behalf of the oil sands industry.

CAPP also led the work toward the 2011 creation of the Canadian Oil Sands Innovation Alliance (COSIA), whose mandate to accelerate the pace of improvement in environmental performance in Canada's oil sands through collaborative action and innovation is supported by Syncrude. The alliance is focusing on the four environmental priority areas of tailings, water, land and greenhouse gases.

CAPP also leads industry efforts with respect to influencing climate change policy at the provincial and federal levels.

## The Mining Association of Canada

[The Mining Association of Canada \(MAC\)](#) works to ensure the continued strength and sustainability of Canada's mining industry by representing a broad array of organizations spanning many sectors, either directly or indirectly associated with mining and mineral processing. Gord Ball, Syncrude Vice President of Strategic Projects, serves on its Board of Directors and Governance Team. Jim Carter, former Syncrude President and Chief Operating Officer, is an Honorary Life Director.

MAC executes much of its work through committees comprising functional experts from across the mining industry. They provide oversight and governance that guide mining-related policy and support continued innovation and alignment around programs such as the [Towards Sustainable Mining \(TSM\)](#) responsible development initiative. Kara Flynn, Syncrude Vice President of Government and Public Affairs, chairs the Public Affairs Committee and represents the organization on the TSM Initiative Leaders Committee. Syncrude employees are also active on the Environment and Science committees.

In the reporting period, MAC engaged with the Government of Canada on proposed changes to the Fisheries Act and the Canadian Environmental Assessment Act.



07.31.2012 @ Syncrude Fabrication Shop

## Tabitha Quintal

APPRENTICE INSTRUMENTATION TECHNICIAN

“I heard about the Syncrude Aboriginal Trades Preparation Program at Keyano College through my Aunty Marty who also works at the company. I had brought the kids over to her place for a play date and she casually brought it up that Syncrude was offering this course where you can learn a trade, get a paid work placement, and if successful, get a guaranteed job at the company when you graduate.

I found it was a lot of hard work and it took a lot of dedication to get through it, but it's paid off. It's been absolutely rewarding and, as a graduate, I would definitely recommend the program to others. I love getting up every morning and coming to work.”

# TABITHA

# ABORIGINAL RELATIONS

## Performance Overview

- The first ever Good Neighbour Agreement between Syncrude and Métis Local 1935 was signed in December 2010
- A bilateral agreement with Fort McMurray 468 First Nation was signed in April 2011
- Regular consultation meetings were held with all five of the region's First Nations and several Métis locals, with a total of 236 consultation and community engagement activities in 2010-11
- A long-term Syncrude employee was seconded to the Chipewyan Prairie Dene First Nation in October 2011 to advise on the community's business development efforts
- Regular contact with Aboriginal contractors (at least two meetings per year per contractor) was maintained and issues and concerns were documented and tracked to enable prompt resolution
- A joint venture among the Athabasca Chipewyan First Nation, the Fort McKay First Nation and a third party won a Syncrude contract to provide all site food services, commencing January 2011
- Chief-to-Chief meetings were held between Syncrude and the Fort McKay First Nation, the Athabasca Chipewyan First Nation, Mikisew Cree First Nation, Fort McMurray 468 First Nation, and Chipewyan Prairie Dene First Nation. As well, a Chief-to-Chief meeting with all Chiefs was held during the 2011 Treaty 8 celebrations
- Elders advisory tours on Syncrude reclamation projects were held in 2010 and 2011 for Elders from the Fort McKay First Nation, Athabasca Chipewyan First Nation, Mikisew Cree First Nation, Fort McMurray 468 First Nation, Chipewyan Prairie Dene First Nation and Métis Locals 1935, 125 and 63
- Syncrude participated in industry and government efforts toward a new consultation agreement with the Mikisew Cree First Nation and Athabasca Chipewyan First Nation, which is hoped to replace the All Party Core Agreement, which ended in March 2010. Negotiations are continuing
- Syncrude leaders remained active on the Industry Committee of the Northeastern Alberta Aboriginal Business Association

- Conducted bison activity days at the Beaver Creek Wood Bison Ranch for students from Fort McKay School, Anzac School, Father Turcotte School, and Father Patrick Mercredi High School
- Assisted the Athabasca Chipewyan First Nation with a building inspection and facility report for property in Fort Chipewyan
- Produced trapper identification cards for all trappers with the Fort McKay First Nation so they can be easily identified by Syncrude field staff and have unimpeded access to their trap lines during winter field programs
- Presented on the topic of reclamation to grade 7/8 students at Anzac School

## Aboriginal Relations Policy, Program & Governance

Syncrude's policies pertaining to our relationships with Aboriginal stakeholders are incorporated into our overarching Communications and Stakeholder Relations Policy and Stakeholder Consultation Guidelines.

The goals of our Aboriginal Relations Program are to:

- be a corporate leader in Aboriginal Relations and employment and a sustainable and socially responsible leader and employer in the oil sands industry;
- attract and retain qualified employees from local Aboriginal communities to assist in meeting our workforce needs;
- be an employer of choice for Aboriginal people;
- be a corporate leader in Aboriginal business development;
- achieve effective, two-way relationships and consultation with local Aboriginal stakeholders;
- focus community investment initiatives on education and recruitment, community relations, cultural retention, and Aboriginal leadership;
- ensure local Aboriginal communities have the capacity to engage with Syncrude regarding consultation, employment, business, and environmental and socio-economic impacts from our projects; and
- ensure Syncrude's environmental programs are designed to mitigate impacts to traditional land uses, incorporate traditional knowledge where possible and are well understood by our stakeholders.

Progress toward these goals is stewarded by Syncrude's Aboriginal Relations Steering Committee, whose mandate is to ensure that Syncrude delivers on its six key commitment areas for Aboriginal Relations: Corporate Leadership, Employment, Business Development, Education, Community Development and the Environment. The Committee includes senior managers and advisors from throughout Syncrude who meet quarterly to guide and champion strategies to ensure positive outcomes for Aboriginal stakeholders. An Aboriginal Relations team supports the Committee; the team manages the day-to-day interactions and relationships with local stakeholders.

## Our Approach to Aboriginal Consultation

Syncrude operates on the traditional lands of five **First Nations**. Since our earliest days, we have, where possible, accommodated the interests of the local First Nations and Métis Locals. We endeavour to earn support through relationship-building and formal agreements that are aligned with our mutual interests, mitigate concerns, provide benefit to affected communities, and are in accord with Canadian law.

Our engagement with those affected by our operations is ongoing, and in specific cases is also triggered by regulatory applications that fall under the following laws and under which Syncrude has a delegated duty to consult:

- Oil Sands Conservation Act;
- Alberta Environmental Protection and Enhancement Act, including Closure and Reclamation Plan renewals;
- Alberta Water Act;
- Federal government approvals or amendments (e.g.: Fisheries Act or Canadian Environmental Assessment Act); and
- Licenses or permits that fall outside of existing Mineral Surface Leases (e.g.: winter drilling programs).

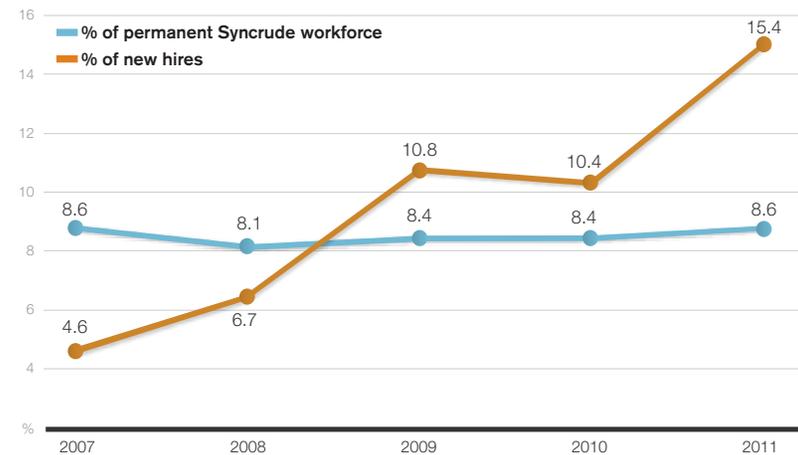
In the reporting period, Syncrude had two active regulatory applications requiring project-specific consultation: Southwest Sand Storage (SWSS) project was approved without the need for a public hearing and consultation on the Base Mine Lake diversion project is continuing.

## Our Aboriginal Workforce

Syncrude was successful in attracting 86 new Aboriginal employees in 2010-11. Attrition among Aboriginal employees was generally consistent with overall workforce attrition, at 10.2 percent in 2010 and 7.4 percent in 2011. As at year-end 2011, our 493 Aboriginal employees comprised 8.6 percent of our total workforce, an increase of 0.2 percent over 2009.

Ongoing recruitment initiatives, such as the day-to-day work of Syncrude's Aboriginal Recruitment Specialist, Syncrude's rotational employment program in several Wood Buffalo Aboriginal communities, and Syncrude's participation in the Aboriginal Human Resource Council's *Inclusion Works National Career Fair* will help maintain strong levels of Aboriginal hiring. Workforce development initiatives, such as our work to support education and trades training programs, also play an important role in developing the next generation of Aboriginal employees.

### Aboriginal Workforce



*In 2011, Aboriginal people represented over 15 percent of our new employees.*

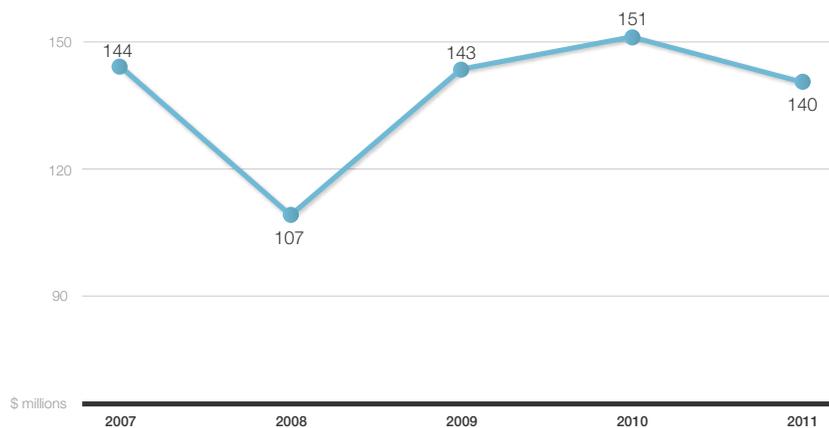
## Aboriginal Cultural Awareness Training

To create an enhanced working environment for Aboriginal employees and improve Aboriginal employee retention, Syncrude committed in 2011 to cultural awareness training for key leaders and staff in our organization. The training will help ensure that Syncrude leaders demonstrate respect for and understand the cultural traditions of local Aboriginal people. The half-day program commenced late in 2011 and will provide greater understanding of Aboriginal history, culture and lifestyles, and insight into how these factors translate into the workplace. It is being conducted by a company whose owner is a member of the Mikisew Cree First Nation.

## Business Development Reaches \$1.7 Billion

Syncrude recorded strong performance for Aboriginal procurement in 2010-11, with a total business volume of \$291 million with companies owned by Aboriginal entrepreneurs and First Nations in the Wood Buffalo region, an increase of \$41 million over 2008-09. This brought to \$1.7 billion the total cumulative procurement since 1992, when Syncrude established a minimum annual target of \$30 million. Our policy requires an Aboriginal business to be 51 percent owned by a band or Inuit, First Nations or Métis person. The Aboriginal owner must also be in control of the operations on a day-to-day basis.

### Procurement with Aboriginal-Owned Companies



The cumulative total for Syncrude business with First Nations- and Métis-owned companies since 1992 is over \$1.7 billion.

## Investing in Strong, Healthy Communities

Syncrude invested nearly \$2 million in Aboriginal community projects during 2010-11. Among the projects we supported:

- **The WinterPlay Festival.** Funds from Syncrude enabled the expansion of this annual event to Wood Buffalo Aboriginal communities in 2010.
- **The Syncrude Aboriginal Trades Preparation Program at Keyano College.** It comprises scholastic upgrading, trades exploration and work placements at Syncrude. The Program is offered at the College's main Fort McMurray campus and also in the region's Aboriginal communities of Fort Chipewyan, Fort McKay, Janvier and Conklin. Syncrude offers permanent jobs to all students upon successful completion of the program, including 16 graduates in 2010 and 20 in 2011.



Jeffrey Cree is a heavy equipment apprentice with Syncrude and a graduate of the Aboriginal Trades Preparation Program.

- **The National Aboriginal Achievement Awards (now the Indspire Awards) and the NAAF Education Series Career Fair for Aboriginal high school students.**
- **The Science Alberta Foundation.** It will produce classroom science learning tools for Aboriginal schools in the Wood Buffalo region and beyond.
- **The Anzac Li'l Lakers Family Resource Centre.** In the community of Anzac, it provides children's programming, after-school programs, parental education, personal development, and arts & culture workshops.



Program facilitator Michelle Whitford assists Ryan Belore on his latest Li'l Laker masterpiece.

- **Alberta Foundation for the Arts Travelling Exhibition (TREX) Program.** It features works by Aboriginal artists in an exhibition that travels to various communities across Alberta.
- **A bison education kit for all 23 schools in the rural Northland School Division.** The kit was originally commissioned by Syncrude for use in the Fort McKay School and proved so popular that Syncrude provided funds to enable its use in more schools.
- **The WISEST and DiscoverE programs with the University of Alberta School of Engineering,** which will now reach out to Aboriginal communities in northern Alberta.

## Syncrude Leaders Serve on National Boards

Two Syncrude leaders continued to serve on the governing boards of national Aboriginal organizations during the 2010-11 reporting period. Dan Brown, Manager of Process Control and Automation, volunteers for the Aboriginal Human Resource Council, and Kara Flynn, Vice President of Government and Public Affairs, volunteers for the Canadian Council for Aboriginal Business.

## Syncrude Helps Refine PAR Program

Syncrude leaders are helping the [Canadian Council of Aboriginal Business](#) refine and enhance the Council's Progressive Aboriginal Relations Program. The program was developed as a framework for companies to measure progress on developing progressive Aboriginal relations and considers corporate efforts in Aboriginal employment, Aboriginal business development, building individual capacity and enhancing relations with Aboriginal communities. Syncrude currently holds Gold Level PAR distinction, and has been accredited five times.

## Aboriginal Relations Program Recognized

Syncrude's commitment to working with First Nations and Métis communities in the Wood Buffalo region earned an Alberta Business Award of Distinction for Aboriginal Relations Best Practices, bestowed by the Alberta Chambers of Commerce in February 2010. Adjudicators cited Syncrude for establishing, and meeting, commitments in six priority areas.

## Employment Program Marks 30th Year

A Syncrude rotational employment program for people from the Aboriginal community of Fort Chipewyan celebrated its first 30 years in November 2010. The program enables participants to be employed by Syncrude while remaining active residents of their community. Fly-in/fly-out transportation and Fort McMurray-based accommodation is provided by Syncrude. Since 2009, the program has also been offered to residents of the southern Aboriginal communities of Janvier and Conklin. About 26 residents of the three communities were active employees as at year-end 2011.



*A resident of Fort Chipewyan, Tim Flett participates in Syncrude's rotational employment program.*

## Beaver Creek Wood Bison Ranch

In 1993, Syncrude introduced a herd of wood bison into a reclaimed area to assess the capability of the landscape to support large mammals such as ungulates. Today, approximately 300 wood bison graze on 300 hectares of land at the Beaver Creek Wood Bison Ranch. The herd is managed cooperatively with the Fort McKay First Nation.

The health of the animals is monitored through annual veterinarian examinations. Due to the herd's excellent health and disease-free status, it has become part of a genetic preservation project headed by scientists from the Universities of Calgary and Saskatchewan, the Canadian Food Inspection Agency, Parks Canada, the Government of the Northwest Territories and the Calgary Zoo.

The herd has been recognized with several livestock awards at regional and national competitions. In 2010, the ranch received the highest bid for a female animal at the national show, followed with the title for Grand Champion Female in 2011.

In 2010, bison twins were born on the ranch. Not only is this rare in the bison species, but it was made even more extraordinary by the twins being male and female. Their birth gave researchers an opportunity to study whether freemartinism – a naturally-occurring genetic gender abnormality seen in cattle which causes infertility in female calves born with male twins – would also occur. After veterinary testing, it was confirmed the female was sterile. Research from this event is being collected and published to further the understanding and management of bison herds.

## First Nations' Community Health Studies

Please see discussion about community health studies in Fort McKay and Fort Chipewyan in [Safety and Health](#).

## Aboriginal Caucus in Place on Multi-Stakeholder Association

Recommendations from a year-long review over the governance and operation of the [Cumulative Effects Management Association \(CEMA\)](#) led to the establishment of an Aboriginal Caucus and the hiring of an Aboriginal Coordinator in February 2011. The Coordinator is to facilitate meaningful involvement by Aboriginal stakeholders in the affairs of the multi-stakeholder organization, whose role is to advise provincial and federal governments and make recommendations with respect to managing the cumulative environmental effects of regional development on air, land, water and biodiversity. Toward this, CEMA recommends management frameworks, best practices and implementation strategies that address cumulative effects on air, land, water and biodiversity to protect, sustain and restore the environment and to be protective of human health.

## Syncrude Aboriginal Review

Published annually, Syncrude's Aboriginal Review provides a comprehensive overview of our Aboriginal Relations work and our progress in stewarding to our key commitment areas of corporate leadership, employment, business development, education, community development and the environment. View the 2011 report [here](#).



## Syncrude Scholarship Recipient Called to the Bar

Corie Flett, daughter of Syncrude employee Dwight Flett and recipient of two Syncrude-supported scholarships, was called to the Bar in 2012 and began her career as a lawyer practicing in Fort McMurray. Among her duties, Corie will provide pro bono legal services to Aboriginal clients in the Wood Buffalo region.



Corie Flett



08.13.2012 @ Syncrude Upgrader

# Narry Ramnath

SAFETY, HEALTH & ENVIRONMENT COORDINATOR

“Employees expect to go home safely at the end of their work day.

A strong safety culture is a must when you have some of the largest pieces of equipment in the world working in your mines and you operate a complex plant with different units that process hydrocarbons at high temperatures under pressure. Syncrude is one of the safest organizations I've worked at in my career because the organization is always striving to improve in this area. To manage the risks to safety, health and the environment, Syncrude is implementing the Operations Integrity Management System (OIMS) developed by ExxonMobil and used in their plants around the world. My interpretation is that OIMS is more than a system; it's a lifestyle and it starts with employees who work in the mine and in the plant. Adopting OIMS is another way Syncrude has shown its commitment to keeping workers safe as well as constantly trying to improve.”

# NARRY

# SAFETY AND HEALTH

## Performance Overview

- 2011 safety performance on-target
- Maintenance turnaround executed with best ever safety performance
- Addressed exhaust fume exposure hazard in heavy equipment after it was identified as a health risk to operators
- Alberta government investigation ongoing after contract worker dies as a result of a workplace incident

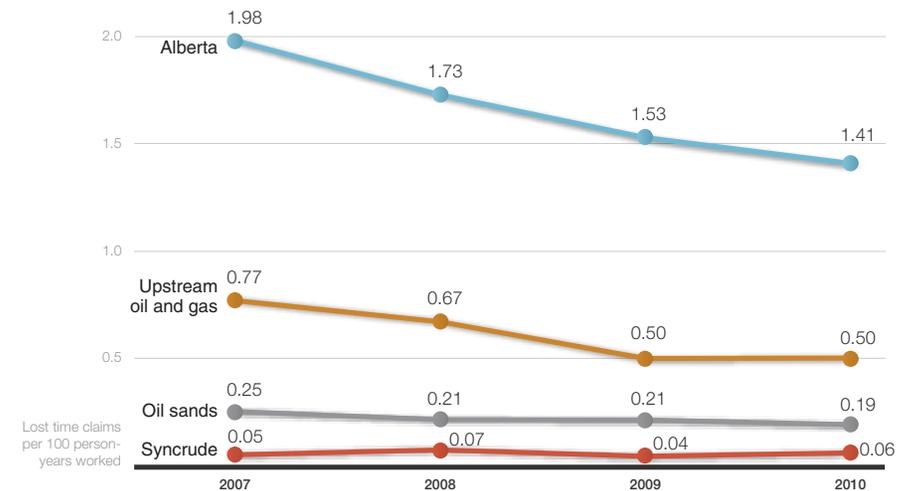
## Safety & Health Management System

Syncrude is in the process of adopting the ExxonMobil Operations Integrity Management System (OIMS) as our primary tool for managing personnel and process safety, and workforce health. The new system is expected to be fully implemented by 2013. It focuses on identifying and managing hazards through more clearly defined work processes and workforce responsibilities.

In 2011, an internal team assessed the status and effectiveness of all 11 OIMS elements; the group determined how well hazards are systematically identified, evaluated and controlled; how the risks of these hazards are managed; and that Syncrude is compliant with safety, security, health and environmental regulations. (See [Management Systems](#) for more detailed discussion on OIMS).

We are committed to achieving year-over-year improvement in safety performance towards an injury-free workplace.

## Alberta Lost-Time Claim Rate Comparison



Data source: Workers Compensation Board

## New Incident, Injury & Hazard Loss Reporting Structure

Syncrude changed its illness and injury classification and reporting system effective January 1, 2011. Occupational illnesses are now included in the calculation of Total Recordable Injury Rate (TRIR) and Lost-Time Injury Rate (LTIR). The new system provides for clearer classification parameters and enables Syncrude management to improve safety performance by focusing on the types of injuries and illnesses sustained by workers. It also enables more accurate benchmarking against other petroleum producers and other Imperial Oil/ExxonMobil worksites.

## Syncrude Joins Highway Safety Coalition

In an effort to promote responsible driver behaviours on busy Wood Buffalo region highways, Syncrude joined the [Coalition for a Safer 63 and 881](http://www.safer63and881.com) in 2010. The Coalition aims to engage drivers, help them identify potentially dangerous driving habits and foster long-term behavioural change. The coalition includes oil sands companies, local businesses and government. In 2011, it launched a major multi-media awareness campaign and held an educational Summer Safety Jam that attracted more than 1,500 Wood Buffalo residents. Highways 63 and 881, which carry high volumes of commuter traffic, have seen hundreds of vehicle-related injuries and dozens of fatalities in recent years. The current multi-year project to twin Highway 63 should also help improve traffic safety.



Billboard from Tunnel Vision campaign

## Investigation Concluded into 2009 Workplace Death

Separate investigations by the Alberta government and Syncrude have concluded that three factors led to the November 2009 collision between two hauler trucks at Syncrude's North Mine that claimed the life of employee Lyanne Jackson.

The investigations showed that the primary retarder braking system failed on one hauler and the operator of that truck did not apply the emergency/service brake which was available for use at the time.

Subsequently, Syncrude has enhanced truck retarder control system design and maintenance procedures beyond the original equipment manufacturer's specifications. We have also enhanced operator training about safe vehicle operation and emergency procedures.

## Syncrude Fined and Creatively Sentenced for 2008 Workplace Death

In February 2011, Syncrude pleaded guilty to one charge under the Alberta Occupational Health and Safety Act, which was laid after the December 2008 incident that caused the death of employee Thomas Miller. Miller was clearing ice from a pipe rack and was fatally injured when he was struck by a large mass of falling ice. Syncrude paid a \$10,000 fine and a \$1,500 victim impact levy and also paid \$365,000 to Keyano College as part of a creative sentence. Keyano is to develop and implement curriculum enhancements on winter hazards for its Process Operator, Power Engineering and Occupational Health and Safety programs, and also establish a \$100,000 endowment for scholarships in memory of Thomas Miller.

## 2010 Incident Reinforces Commitment to Safety

In December, emergency crews responded to reports of a contract worker found unresponsive at our emissions reduction project construction site. He was pronounced dead at the scene. All appropriate authorities were notified and a government investigation is ongoing. We are committed to providing a safe workplace and steadfast in preventing a similar incident from occurring in the future.

## Reducing Worker Exposure to Exhaust Fumes

Worker exposure to diesel exhaust fumes from mobile mine equipment at the Aurora Mine site was identified as a significant health risk in 2010 as a result of a routine hazardous operations risk assessment. Exposure risks to mobile equipment operators at Mildred Lake also were subsequently identified as a result of Syncrude's adoption of an enhanced Incident, Injury and Hazard Loss reporting structure (IIHL), in 2011. Many actual exposure incidents were recorded.

In response, a Mobile Equipment Exhaust Exposure Reduction Committee, led by our Process Safety Department, was promptly established. The group investigated the ways in which drivers are exposed to such fumes and also researched potential solutions; some were implemented immediately and longer-term work continues with equipment manufacturers on engineering solutions. As well, protocols to detect exhaust leaks were established, as were procedures for operators to follow if they detect leaks while operating equipment. Equipment with higher potential for exhaust leaks was given priority for maintenance and repairs. Also, operators are now trained to be alert to the symptoms of exposure and to take measures to avoid fume build-up. Since the changes were made, exposure incidents have dropped to virtually nil.

## Emergency Response Preparation

Syncrude's emergency response personnel deal with many different kinds of situations. They prepare for these in various ways, including by participating in regional and national events that provide training in a competitive atmosphere. Their typically strong performance at these events demonstrates their proficiency to handle real-life situations. In 2011, for example, Syncrude teams participated in the [National Scott FireFit Championships](#) and the Western Regional Mine Rescue Competition.

## Community Health Studies

The First Nations community of Fort McKay, which is adjacent to Syncrude's Mildred Lake site, agreed in late 2011 to work with the Alberta government to identify the main health concerns of residents and the studies needed to assess the validity of those concerns. Community members have long had questions regarding the health effects of oil sands operations and the agreement should help provide definitive answers. The process will be community-led, with the government working in a supportive role. Negotiations with the community of Fort Chipewyan for a similar agreement on health studies are continuing; that community has expressed concern about the need to include workplans, budgets and timelines into any such agreement.

## Recognition for Safety Performance

Each year, Syncrude presents awards to encourage continuous improvement in safety performance throughout the organization and among contractor companies. These awards also enable the sharing of best practices and lessons learned. Two Syncrude suppliers, Terracon Geotechnique and Willbros Canada,

were recognized for having exemplary safety performance in 2010, and two more, Aluma Systems and Fort McKay Group of Companies, were recognized for having the most improved safety performance. For 2011, Clean Harbors and Aluma Systems received the awards for best safety performance, while Clearwater Welding & Fabrication and Finning were recognized for most improved performance.

In addition, two Syncrude departments received awards for excellent safety performance – Utilities and Offsites in 2010 and Hydroprocessing in 2011.

## Community Safety Events Help Seniors and Youth

In support of Wood Buffalo Emergency Preparedness Week in 2010, Syncrude provided funds that enabled about 200 regional seniors to receive kits that provide necessities for 72 hours of survival in case of an emergency. Seniors are an especially vulnerable group when disasters happen and the kits will enable improved emergency outcomes for this demographic. At the 2010 Fort McMurray Family Safety Day, helmets that fit and function properly were distributed to about 95 local area children. The event, which received financial support from Syncrude, attracted more than 1,100 people for a day of information sharing and activities that focused on injury prevention, emergency preparedness and wellness.

## Emergency Personnel Respond to McClelland Lake Fire

In May and June of 2011, the second largest forest fire in Alberta history came in close proximity to Syncrude's Aurora North Mine. The situation persisted for weeks, creating reduced visibility and air quality, among other hazards. Keeping people safe was our top priority during this time so Syncrude reduced its site workforce to essential personnel and occasionally called for complete work stoppages.

For five weeks, Syncrude emergency response personnel and heavy equipment operators assisted crews from Alberta Sustainable Resource Development in building fire breaks and directing the fire away from work sites and populated areas.

Air quality monitoring continued at both the Aurora and Mildred Lake sites to ensure it was safe to work both inside and outside. Work exceptions were granted to staff with respiratory issues, such as asthma.

During the work stoppages caused by the fire, some equipment operators used the opportunity to upgrade their skills using simulator training.

## Safety and Health

	2007	2008	2009	2010	2011
Employee lost-time incident rate	0.06	0.04	0.05	0.09	0.07
Contractor lost-time incident rate	0.04	0.1	0.03	0.04	0.09
Combined employee and contractor lost-time incident rate	0.05	0.07	0.04	0.06	0.08
Employee lost-time injuries (#)	3	2	3	5	4
Contractor lost-time injuries (#)	2	7	2	4	8
Combined employee and contractor lost-time injuries (#)	5	9	5	9	12
Employee total recordable incident rate	0.69	0.49	0.35	0.36	0.83
Contractor total recordable incident rate	0.71	0.63	0.37	0.47	0.70
Combined employee and contractor total recordable incident rate	0.70	0.59	0.36	0.43	0.75
Employee recordable injuries (#)	33	26	20	21	48
Contractor recordable injuries (#)	33	44	29	43	66
Combined employee and contractor recordable injuries (#)	66	70	49	64	114
Syncrude injury severity rate	2.33	0.20	4.20	6.54	7.55
Contractor injury severity rate	1.97	6.26	0.95	4.18	11.92
Syncrude and contractor injury severity rate	2.15	3.63	2.32	5.09	10.26
Injury-free performance – maximum hours between LTIs (millions of hours)	9.7	11.7	14.3	13.1	10.9
Employee health – temporary disability absenteeism (% of Syncrude workforce)	3.8	3.9	4.3	3.8	3.9
Employee health – new long-term disability (LTD) cases (#)	21	21	14	22	32
Employee health – health centre visits (#)	25,904	28,923	27,871	28,880	29,370
Employee fatalities (#)	0	1	1	0	0
Contractor fatalities (#)	0	0	0	1	0
On-site responses by emergency services <sup>1</sup> (#)	–	2,312	2,117	2,095	1,986
Off-site responses by emergency services <sup>1</sup> (#)	–	123	104	72	68
EH&S professionals on staff (#)	124	137	136	107	97
Workforce represented in formal joint management-worker H&S committees (i.e. safe operating committees) <sup>2</sup> (#)	–	–	–	–	201
Health and safety convictions (#)	0	0	0	0	1
On-site workforce (#)	9,363	11,766	13,518	14,963	15,178

<sup>1</sup> Not reported prior to 2008.

<sup>2</sup> Safe Operating Committees are a requirement of the Operations Integrity Management System currently being implemented throughout the organization; participation is officially tracked and will be reported on an ongoing basis.

- A **lost-time incident** is an injury / illness that requires medical attention and results in the worker being absent from work; lost-time incident statistics include all lost time injuries / illnesses and fatalities.
- **Total recordable incident rate** includes all injuries / illnesses requiring medical attention, involving work restrictions, or that resulted in a worker being absent from work (recordable injury / illness statistics include all non-first aid injuries / illnesses); it is expressed as injuries / illness per 200,000 work hours.
- **Injury severity** is the average rate of lost workdays per lost-time injury / illness; only lost-time injuries / illness have days lost.



08.21.2012 @ Canadian Oil Sands Office

## Marcel Coutu

CHAIRMAN, BOARD OF DIRECTORS  
CEO, CANADIAN OIL SANDS LIMITED

“We’re seeing a larger number of socially responsible funds investing in our sector. In fact, on the strength of Syncrude’s accomplishments, Canadian Oil Sands Limited (a 36.74% owner of Syncrude) is included on the Dow Jones Sustainability Index, which measures economic performance, environmental performance, community investments, technology improvements and other factors to assess our sustainability performance. While Syncrude’s record is strong, we remain committed to improving on our performance as technologies evolve.

*Toward that, the Board’s Safety, Health and Environment Committee is increasing its environmental focus and also seeking to learn more about stakeholder concerns.*

I’m hopeful that these things will help Canadians develop a sense of pride in this industry and indeed the tremendous resource wealth this country enjoys. Oil sands are a national treasure and responsible development will enable many more decades of widely shared benefits.”

# MARCEL

# FINANCE AND OPERATIONS

## Performance Overview

### 2010

- Shipments of 107 million barrels
- Operating expenditures of \$37.74 per barrel
- Bitumen recovery at 90.7%
- Heat exchanger equipment strategy to improve reliability progressed

### 2011

- Shipments of 105.3 million barrels
- Operating expenditures of \$35.65 per barrel
- Bitumen recovery improved to 91.7%
- Coker 8-2 maintenance turnaround successfully executed with best-ever turnaround safety performance (TRIR = 0.30)

## Financial & Operating Summary

	2007	2008	2009	2010	2011
Total crude oil production <sup>1</sup>					
Millions of barrels per year	111.3	105.8	102.2	107.0	105.3
Thousands of barrels per day	305	289	280	293	288
Millions of cubic metres per year	17,695	16,821	16,249	17,012	16,694
Realized SCO selling price (\$ per barrel) <sup>4</sup>	79.29	107.47	69.47	80.53	101.20
Total operating costs <sup>2</sup>					
Millions of dollars	2,743.8	3,749.6	3,645.8	4,040.2	4,344.44
\$ per barrel of production	24.64	35.44	35.69	37.74	35.65
Capital expenditures <sup>3</sup> (millions of dollars)	499.8	765.9	1,198.1	1,376.7	1,477.0
Revenues <sup>4</sup> (millions of dollars)	3,250	4,169	2,615	3,180	3,934
Retained earnings <sup>5</sup>	0	0	0	0	0
Bitumen produced (million barrels)	132.5	121.3	120.0	126.3	125.2
Bitumen recovery (%)	91.8	90.3	90.8	90.7	91.7
Upgrading yield (%)	84.3	85.9	86.9	85.8	85.7
Environmental fines (\$ millions)	0	0	0	3.2	0
Environmental protection orders (#)	1	0	0	0	0

<sup>1</sup> Production is Syncrude crude oil shipped.

<sup>2</sup> Operating costs are costs related to the mining of oil sands, the extraction and upgrading of bitumen into Syncrude crude oil, and maintenance of facilities; they also include administration costs, start-up costs, research, and purchased energy. There is no generally accepted accounting definition as to what constitutes "Operating Costs."

<sup>3</sup> Capital expenditures includes development expense related to sustaining capital and growth capital projects. The accounting treatment of certain costs may vary significantly between different producers; some producers may elect to capitalize or defer and amortize certain expenditures that are recorded as an expense by other producers, and may segment "Corporate" costs.

<sup>4</sup> Production of Syncrude Crude Oil becomes the property of Syncrude's Joint Venture owners at point of departure from the Syncrude plant. As the operator, Syncrude does not collect revenue from the sale of crude oil or other products. Selling price and revenue reported here reflects only that of Canadian Oil Sands Limited, a 36.74% owner, grossed up for 100% Syncrude, and is solely meant to provide an indication of performance.

<sup>5</sup> Syncrude's annual operating and capital expenditures are funded pro-rata by Syncrude's Joint Venture owners.

**Note:** These figures may differ from those reported by any of the Joint Venture participants due to differences in reporting conventions and methodology

## Record Run for Coker 8-2

With an operating run that lasted 1,044 days (34 months) before it was brought down for a scheduled maintenance turnaround in September 2011, Coker 8-2 bested the previous Coker run length record by nearly six months. The feat was enabled by good decision-making among our Production, Maintenance and Technical teams over the life of the run – their focus was on ensuring reliability through stable operation.

## Fossil Discovery One of the Best Yet

The discovery of a nearly intact long-necked plesiosaur in November 2011 brings the number of important prehistoric creatures recovered from Syncrude's mines to 10. The rare reptile once lived in an ancient Alberta sea, probably more than 100 million years ago. Experts from the [Royal Tyrell Museum of Paleontology](#) excavated the remains after they were discovered by an alert Syncrude shovel operator. The last such find at Syncrude was in 2000. Syncrude shovel operators are trained to stop work and notify a company geologist when they spot something unusual. Syncrude aims to be a responsible steward of its obligation to protect and preserve any fossils discovered during the earth-moving process.



Shovel Operator Maggy Horvath, shown with the plesiosaur she discovered in November 2011.

## Sulphur Management

Sulphur is a by-product of Syncrude's bitumen upgrading process and it is by law considered a natural resource that must be managed according to provincial guidelines. Syncrude's Joint Venture owners take their proportional share of all of Syncrude's daily liquid sulphur production and market it independently. Alternatively, sulphur is stored in blocks on Syncrude's site. To reduce the liability associated with long-term sulphur storage, portions of the current stockpile may be made available to the market, by individual owners, as opportunities arise.

## Supplier Program Improves On-Time Parts Delivery

A supplier relationship management program initiated in 2010 by Syncrude's procurement department succeeded in its goal of improving on-time parts delivery from vendors and reducing equipment downtime caused by late parts delivery. Research revealed that 20 percent of suppliers were responsible for 60 percent of late deliveries. By working with them to improve performance, on-time delivery by those firms increased from 75 percent on-time to 96 percent on-time, helping keep equipment maintenance jobs on schedule.

## Future Development Plans

Syncrude is focused on improving capacity utilization for the next number of years. Our owners believe this approach is the best opportunity to add value in the near term. Preliminary plans had been to expand production capability by developing the Aurora South Mine leases, which will now likely remain undeveloped until the early 2020s.

Near-term capital spending through 2014 will focus on mine train relocations and replacements at both the Mildred Lake and Aurora North sites. These should position Syncrude for as many as 20 years of production at current rates. Significant investments will also be made in tailings management infrastructure, including a Composite Tailings plant at the Aurora North site and a Centrifuge plant at the Mildred Lake site.

Expansion projects require unanimous approval by the Syncrude Joint Venture participants. The most recent information about Syncrude's forward-looking plans is available from [Canadian Oil Sands Limited](#).



09.11.2012 @ Downtown Calgary

## Dave Tuccaro

PRESIDENT AND CEO, TUCCARO INC.

*“When I took over Neegan Development from the Mikisew Cree First Nation in 1990, the company was going broke because we had too much heavy equipment that wasn’t being used. Dennis Love, who was Syncrude’s mine manager, sent over a couple of people to evaluate our fleet and finances before changing the scope of our tree-clearing contract. It allowed us to survive and reorganize. Our relationship has grown since then and we have more than 200 employees working in different areas at Syncrude.*

*It showed real foresight from Syncrude’s leadership to see our community as potential suppliers because the conventional oil patch in Alberta was closed to Aboriginals at that time.*

We started the Northeastern Alberta Aboriginal Business Association to help others learn how to work with industry. Syncrude has supported the association by working with members on what they need to do to work at their sites. Both the industry and the communities have prospered because of this vision. That’s win-win in my books.”

# DAVE

# ECONOMIC CONTRIBUTION

## Performance Overview

- Economic contribution of \$6.4 billion in 2010 and \$6.9 billion in 2011
- Purchased \$3.9 billion in goods and services in 2010 and \$4.1 billion in 2011
- Cumulative royalty payments now exceed \$8.6 billion

## Total Expenditures by Category

(\$ millions)

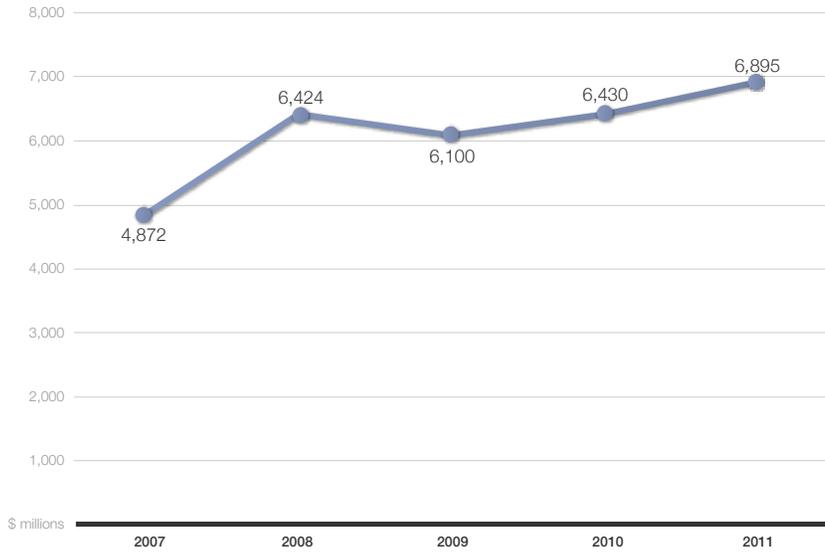
	2007	2008	2009	2010	2011
Royalties, payroll & municipal taxes	1,656	1,988	1,026	<b>1,204</b>	<b>1,269</b>
Purchased energy	585	878 <sup>1</sup>	432 <sup>1</sup>	458 <sup>1</sup>	528 <sup>1</sup>
Employees (net)	585	684	937	843	907
Materials and supplies	682	817	1,026	978	931
Contracted services	1,218	1,929	2,509	2,916	3,233
Other expenditures	146	128	170	30	27
<b>Total</b>	<b>4,872</b>	<b>6,424</b>	<b>6,100</b>	<b>6,430</b>	<b>6,895</b>

<sup>1</sup> Also includes expenditures related to purchased bitumen

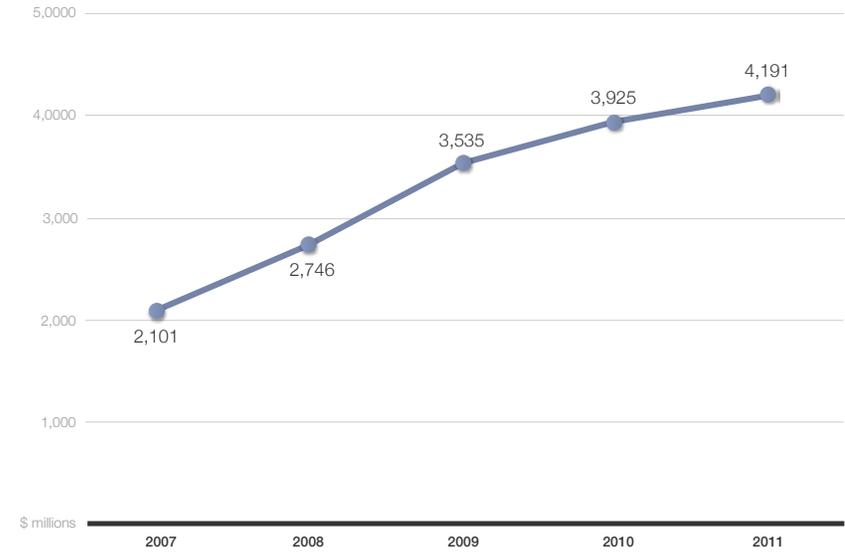
## Generate Economic Benefits

Syncrude recognizes that its procurement strategy must benefit all Canadians. While Alberta will remain Syncrude's primary supply hub, supply chain studies indicate substantial indirect flow-through to other provinces via subcontracting. The Canadian Energy Research Institute conducts occasional studies on the economic impacts of oil sands development. Visit their [website](#) for more information.

### Annual Economic Contributions



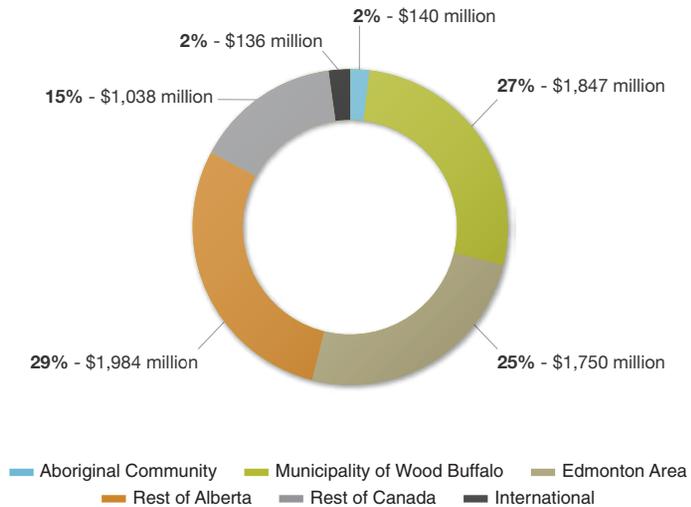
### Annual Procurement of Goods and Services



## Geographic Distribution of Expenditures<sup>1</sup>

	2011
Aboriginal community	140
Municipality of Wood Buffalo	1,847
Edmonton area	1,750
Rest of Alberta	1,984
Rest of Canada	1,038
International	136
<b>Total</b>	<b>6,895</b>

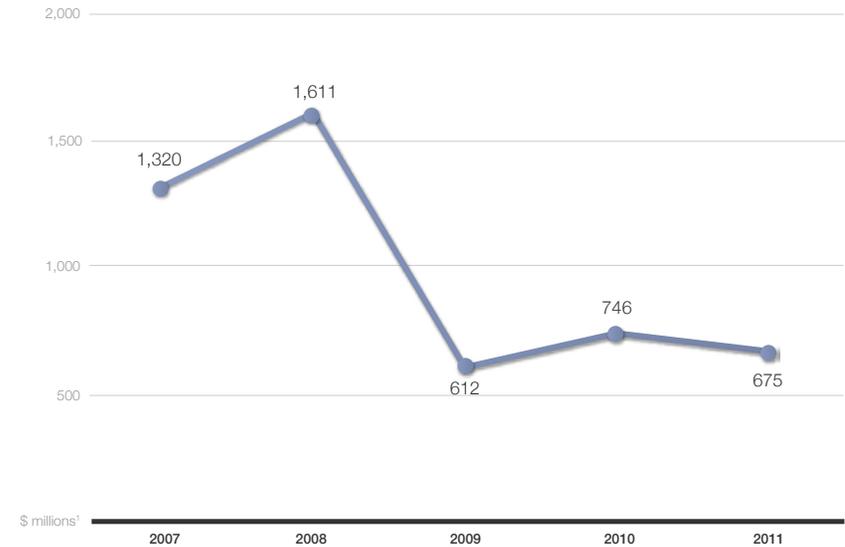
<sup>1</sup> Includes materials, supplies and contracted services



## Agreement on Crown Royalties

The Syncrude Joint Venture owners and the Government of Alberta signed two agreements in 2008 to amend the existing Crown Agreement and to transition the Syncrude Project to a new royalty framework based on the production of bitumen, not synthetic crude oil. For a detailed overview of these agreements and ongoing discussions with the Alberta government regarding bitumen valuation, please refer to the Canadian Oil Sands Annual Information Form available at [www.cdnoilsands.com](http://www.cdnoilsands.com).

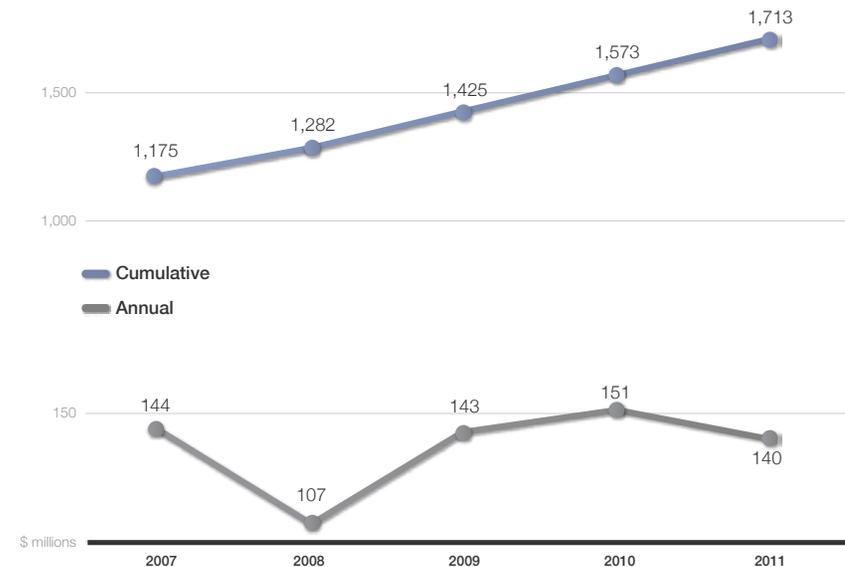
## Syncrude Royalty Payments



<sup>1</sup> Due to different accounting treatments, royalties as reported by Syncrude's Joint Venture owners may vary.

Syncrude has paid over \$8.6 billion in royalties since the start of operations.

## Aboriginal Business Expenditures



Over \$1.7 billion has been spent with Aboriginal companies since 1992.

08.14.12 @ De-Sanding Pilot Test

## Robert Siy

SENIOR RESEARCH ASSOCIATE

“At Syncrude, we’ve been able to introduce new technologies to make our operation and processes more efficient and more reliable. Oil sands hydrotransport, oil recovery from tailings and low energy extraction are some examples.

*Stakeholders expect continuous improvement, so a current focus is to develop a new extraction process that gets consistently high bitumen recovery, uses less energy, produces less and cleaner tailings, and improves overall environmental performance.*

We’re exploring these step-out technologies that, if successful, could drastically change how Syncrude and the industry operate in the future. We’re essentially writing a new chapter for the oil sands, and that is really exciting.

## Ron Cleminson

TECHNOLOGY DEVELOPMENT ASSOCIATE

Our industry is unique, and so we’ve had to develop much of the equipment and process technology solutions ourselves. Taking something from concept to actual field implementation can involve years of work and millions of dollars, so it’s important that our research and technology development teams work collaboratively to make the improvements we need as an industry to remain competitive and responsible.”

# ROBERT/ROON

# RESEARCH AND DEVELOPMENT

## Performance Overview

- Recognized as one of Canada's top spenders on R&D
- Cofounded Oil Sands Tailings Consortium to advance tailings management technologies
- Study to evaluate using coke to remediate tailings water approved for field pilot
- Two new research chairs sponsored at the University of Alberta

Innovation enabled by research and development is key to Syncrude's sustainability efforts. For 48 years, we have been a technology leader in the oil sands industry, developing and implementing many innovations that have established an operating platform, lowered costs, improved reliability and reduced environmental impact.

Syncrude operates the oil sands industry's only dedicated research and development centre, and invests more than \$60 million per year to improve knowledge and develop better ways. We are among Canada's top 50 R&D spenders.

About 100 scientists and technologists work at the R&D Centre, including a growing team of experts dedicated to improving environmental performance; their efforts are supplemented by a rotating complement of more than 20 graduate students who become the next generation of oil sands scientists.

While new production technologies are patented and licensed, Syncrude technologies related to tailings management and reclamation are published and shared through collaborative industry groups like the [Oil Sands Tailings Consortium \(OSTC\)](#) and the [Canadian Oilsands Network for Research and Development \(CONRAD\)](#), which will be managed under the newly formed [Canadian Oil Sands Innovation Alliance \(COSIA\)](#).

Syncrude stewards to an annual Technology Development Plan. This plan constitutes the planning base for maintaining an appropriate level of investment in R&D for continuous improvement in current plant operations, as well as progressing new and emerging technologies in the mining, extraction, utilities, upgrading and environmental areas. Syncrude is continuously challenged to develop new technology to solve current and future operating problems.

Research Chairs supported by Syncrude:

- [University of Alberta/NSERC Chair in Oil Sands Engineering](#)
- [Alberta Chamber of Resources/University of Alberta Mining Industry Chair in Geo Statistics](#)
- [University of Alberta/NSERC Chair in Forest Reclamation](#)
- [University of Alberta Chair in Integrated Landscape Management](#)
- [University of Alberta/NSERC Chair in Pipeline Transport](#)
- [University of Alberta/NSERC Chair in Oil Sands Tailings Water Treatment](#)
- [University of Alberta/NSERC Chair in Control of Oil Sands Processes](#)
- [Canadian Centre for Welding and Joining](#)

## Syncrude Helps Found Tailings Research Consortium

Syncrude was among six companies joining forces in December 2010 to create the [Oil Sands Tailings Consortium](#). Its mandate is to advance tailings management solutions through collaboration and sharing of intellectual property. Each company has pledged to share its existing tailings research and technology and to remove barriers to collaborating on future tailings R&D.

The group established a budget of \$90 million for 2011 and mapped out the initial consortium field projects for that year. Syncrude took the lead on MFT Centrifuging and polymer mixing techniques (see [Fluid Fine Tailings](#) discussion). Other operators are focused on alternative polymers and the commercial feasibility of thin-lift drying.

The consortium also executed a \$1.4 million tailings road map study to identify all possible and potential technologies to remediate oil sand tailings. Over 450 submissions were received, and 135 will be examined as potential solutions. The most promising of these will be further evaluated.

## Filtration of Tailings Water Studied as Remediation Treatment

A multi-year Syncrude project to study the effectiveness of using petroleum coke, an oil sands by-product, to filter harmful substances, such as naphthenic acids, out of tailings water has proven sufficiently promising that a field pilot will be conducted in 2012. The pilot will aim to determine the field conditions needed to ensure the process is operated in the most efficient manner possible. The experiment is being led by two Syncrude researchers with a combined 30 years experience in water treatment. The technology has received patents in Canada and the United States.



*Fish tank trial helps prove water remediation technology: A demonstration project at Syncrude's R&D Centre involving koi living in treated tailings water has shown the viability of treating the water with petroleum coke to support aquatic life. The koi have been living in the water since May 2010.*

## Rough Mulching Aids Reclamation Efforts

Syncrude research to study the effects of using roughly mulched woody debris as a soil cover on reclamation landscapes has proven effective in improving plant growth and productivity on these sites. Syncrude has been using the debris on all of its reclamation sites since 2009. The material from tree tops and stumps was formerly considered as waste, and past practice was to burn it when land is being cleared for mining.

A 2009 directive from Alberta Sustainable Resource Development on the [Management of Wood Chips on Public Land](#) reaffirmed the benefits of using coarse woody debris over wood chips. Chips have the negative effect of interfering with plant growth and depleting soil nitrogen. A rougher mulch, which contains wood slivers and pieces as large as six feet long, acts differently and breaks down more slowly than wood chips, thereby mimicking natural processes. It also creates habitat for small animals, provides areas for water to collect, promotes growth of natural vegetation and minimizes soil erosion. Other resource developers are now incorporating rough mulch in their reclamation landscapes.



*Rough mulching of woody debris provides habitat for small animals, improves water retention and minimizes soil erosion on reclaimed landscapes.*

## Pilot Plant Addresses Reliability Issues

An oil sand extraction froth treatment pilot plant, operating since 2009 at Syncrude's Edmonton R&D Centre, has helped reveal ways to remove chloride-laden water and clay solids from bitumen froth; both cause reliability problems in bitumen processing equipment. The pilot test also aims to improve environmental performance by reducing the amount of bitumen lost to tailings. A patent for the novel froth treatment process demonstrated at the pilot plant is underway and scale-up plans are being developed.

## Support for University Research

Two new research chairs created at the University of Alberta in 2011 brought to nine the total number of chairs at the University supported by Syncrude. [Dr. Mohamed Gamal El-Din](#) is studying processes to clean oil sand tailings water so that it can be recycled or safely discharged into the environment. [Dr. Biao Huang](#) is studying technology-control methods used to monitor oil sand extraction and upgrading facilities. Syncrude is providing more than \$6 million in total for research at the University, including the nine chairs, 14 joint industry research programs and directly-commissioned research involving 19 different projects. The research is expected to lead to ways to reduce environmental impacts, improve reliability and reduce costs.



*Professor Mohamed Gamal El-Din (right) discusses the next batch of samples for the "Waters" UPLC – HDMS (Ultra Pressure Liquid Chromatography) – (High Definition Mass Spectroscopy) equipment with PhD Candidate Parastoo Pourrezaei and Postdoctorate Leo Perez at the University of Alberta.*

## Sulphur Effects in Reclaimed Landscapes Studied

Syncrude has commissioned scientists from McMaster University to study bacterial sulphur reactions occurring in a reclamation landscape where composite tailings have been used as a substrate. Composite tailings are a mix of fluid fine tailings and gypsum (calcium sulphate); the material is alkaline and saline, and has little organic matter. The area being studied is being reclaimed as a fen wetland and the research aims to determine if bacterial sulphur is having an effect, whether good or bad, on the fen's development. The [\\$2.2 million project](#) is supported by Syncrude along with the Natural Sciences and Engineering Research Council of Canada.

## Reclamation Research

In 2011, Syncrude continued working with our CONRAD (Canadian Oilsands Network for Research and Development) partners to support a broad range of reclamation and environmental research. This research is summarized in the CONRAD ERRG (environmental & reclamation research group) Annual Update released each year and posted on their website. It provides a brief description of the objectives of each program, a brief summary of results to date and a list of the peer reviewed journal publications published that year. View the 2011 ERRG Update at: [www.canadianoilsandsnetwork.ca](http://www.canadianoilsandsnetwork.ca).

## THE SYNCRUDE OPERATION

Syncrude is one of the largest operators in Canada's growing oil sands industry, with a 34-year history of responsible operations and ongoing innovation.

Based in Fort McMurray, Alberta, Syncrude operates technologically-advanced oil sands mines, extraction and upgrading facilities, as well as utilities plants. A large research and development facility in Edmonton supports operations and has pioneered many of the technologies used today in the industry. Current production capacity is 350,000 barrels per day of high quality light, sweet crude oil, and cumulative production now exceeds 2.2 billion barrels.

The Syncrude Project is a Joint Venture undertaking among Canadian Oil Sands Partnership #1 (36.74%), Imperial Oil Resources (25%), Mocal Energy Limited (5%), Murphy Oil Company Ltd. (5%), Nexen Oil Sands Partnership (7.23%), Sinopec Oil Sands Partnership (9.03%), and Suncor Energy Oil and Gas Partnership (12%).

This report is a comprehensive discussion of the environmental, social and economic impacts of Syncrude's business activities during 2010 and 2011. This is our eighth sustainability report, which will be published on an annual basis going forward. More information about Syncrude and access to past reports, including our most recent 2008-09 edition, can be found through the contacts listed at the end of the [Corporate Information chapter](#).



## Proposed Site

Surveys and core sample drilling help us to gain better understanding of the oil sands resource on undeveloped leases, its quality and distance from the surface. Environmental assessments are also completed to provide a complete picture of local ecosystems, vegetation and geographical features to inform future reclamation. The oil sands found on Syncrude's leases are accessed via mining operations. Syncrude does not operate in situ facilities.

## Stakeholder and Customer Consultation

Syncrude consults with a wide range of interested groups and individuals about our plans. The input and expectations of stakeholders are integral to the decisions we make today and how we plan for the future. Furthermore, Syncrude and its owners work continuously to understand present and future requirements for refinery customers that process our Syncrude Crude Oil blend. These requirements are influenced by regulators and by end-use customers.

## Research and Development

Science and technology provide the keys to unlocking the potential of the oil sands resource and improving our performance. In this area, Syncrude leads the way with one of the few dedicated corporate R&D programs in the oil sands industry. We are among the top 50 corporate R&D spenders in Canada, investing about \$60 million annually in the pursuit of new and better ways and currently hold 137 active Canadian and U.S. patents. More than 100 scientists and technologists work at our Research and Development Centre in Edmonton, and many more are engaged in research at a fundamental level through their work at universities and research institutes.

## Purchase of Goods and Services

Syncrude helps sustain local and regional economies through the purchase of goods and services. In 2010/11, non-energy procurement amounted to about \$8.1 billion. Governments also benefit through Syncrude's payment of taxes and royalties—\$2.5 billion in 2010/11 and \$14.7 billion since 1978.

## Construction and Operations

Whether it's fabrication, new construction or ongoing maintenance activities, we directly and indirectly employ many thousands of people across the country. In fact, Syncrude is one of the largest employers of Aboriginal people in Canada. Syncrude is seen as an employer of choice in the region, with 89 percent of job offers accepted. Syncrude has also been recognized as one of Alberta's top 50 employers and named one of the nation's top employers for new Canadians and young people.

## Utilities

Utilities produce steam, electricity and air, and treat the water, required to run plant operations. Syncrude is a net exporter to the Alberta power grid, producing more electricity than it uses.

## Mining

Shovels and trucks remove muskeg, overburden and earth overlying the oil sands at Syncrude's Mildred Lake and Aurora sites. This material is put aside for reclamation activities. Shovels and trucks mine the oil sand, which is mixed with warm water to create a slurry that is pumped by pipeline to our extraction facilities.

## Extraction

The slurry is fed into separation vessels, where the bitumen floats to the surface as froth. This froth is diluted with naphtha and fed into centrifuges, which spin out water and solids. Finally, the naphtha is removed, leaving clean bitumen, which is piped to our upgrading operation.

## Upgrading

The cleaned bitumen goes into one of Syncrude's three fluid cokers or a hydrocracker, where it is thermally cracked into hydrocarbon gases, naphtha and gas oils. The hydrocarbon gases are treated for use as refinery fuel. The naphtha and gas oils are further treated and blended into high quality light, sweet crude oil.

## Delivery of Crude Oil

Syncrude Crude Oil becomes the property of the Joint Venture owners upon being shipped from our site. The oil is transported by pipelines to refineries throughout North America, where it is turned into gasoline and diesel fuels, jet fuels and chemical feedstocks. Syncrude is not responsible for marketing our product.

## Mine Completion and Land Formation

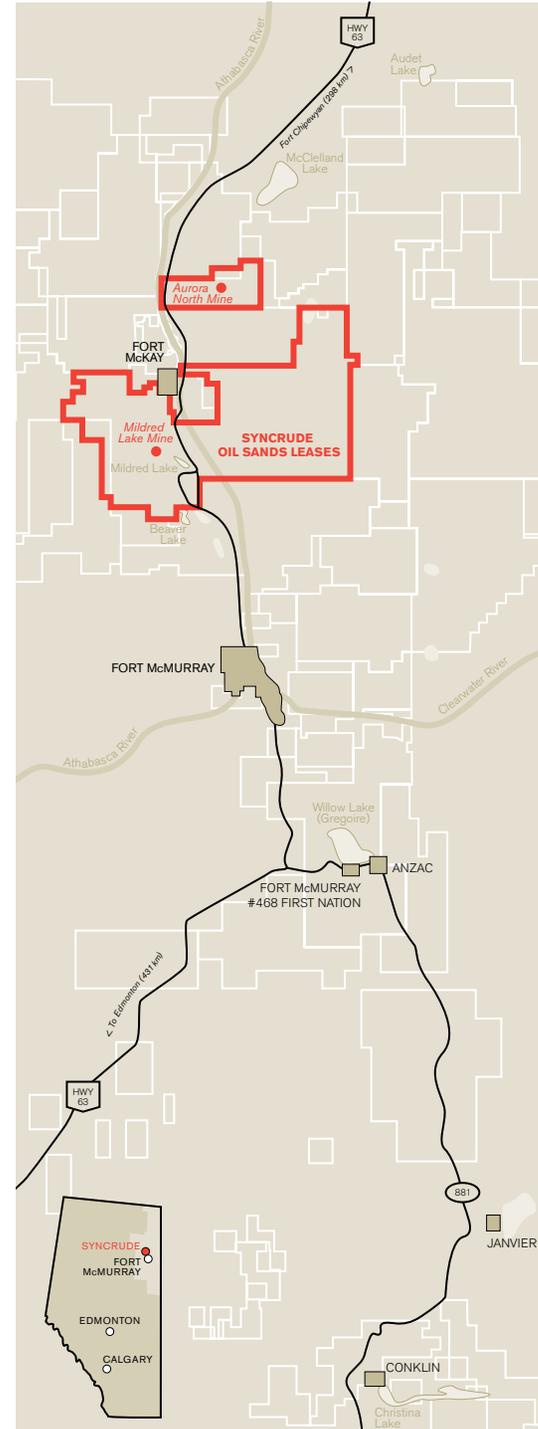
After mining is complete, work starts to reclaim the land. Overburden, sand and/or tailings fill up former mines. Geotechnical engineers guide the design of the landscape while placement of muskeg, peat and organic matter from the forest floor are transferred from future mine areas.

## Reclamation

Vegetation specialists manage native plants, shrubs and trees to recreate diverse boreal forest ecosystems. About a quarter of our footprint has either been fully reclaimed or is undergoing reclamation. Around six million tree and shrub seedlings have been planted in these areas. Syncrude is the first oil sands operator to receive government certification for reclaimed land. Certification was received in 2008 for a 104-hectare area known as Gateway Hill, which was planted in the early 1980s.

# SYNCRUDE OIL SANDS LEASES

The long life and high quality resource base of Syncrude's oil sands leases provide our Joint Venture participants with a sound platform for continued sustainable operations and future growth. All of Syncrude's leases can be mined and are among the best in the Athabasca deposit for quality of ore, low stripping ratios, and low total volume-to-bitumen in place, all of which enhance the economics of the Syncrude project. Syncrude uses the Dean & Stark extraction quality assurance method to test core samples and provide an accurate picture of the oil contained within its leases.



# CORPORATE GOVERNANCE

**Syncrude Canada Ltd. is a private company incorporated under the Business Corporations Act of Alberta.**

Syncrude's bylaws stipulate that shares in the corporation may be held only by the shareholders in proportion to their interest in the Syncrude Project, a joint venture, and that Syncrude Canada Ltd. may not carry on business or activities other than to act as operator of the Syncrude Project on behalf of the shareholders.

## Board of Directors

The Board of Directors of Syncrude is responsible for providing corporate oversight and direction. The Board of Directors takes seriously its duties and responsibilities, and it is the view of the Board that its approach in directing the business of Syncrude Canada Ltd. is comprehensive, effective and consistent with generally accepted standards of Canadian corporate governance. The whole Board meets at least annually and fulfills all statutory and other legal requirements that have not been delegated to the Committees of the Board. There are four Committees of the Board, which meet on a more frequent basis: CEO Committee; Human Resources & Compensation Committee; Pension Committee; and Safety, Health, Environment & Corporate Sustainability Committee. The Board and its Committees are composed of Directors appointed by the shareholders of the Corporation.

## CEO Committee

The CEO Committee assists the Board in providing corporate direction and oversight for the Corporation's business and strategic plans and specific matters pertaining to its executive and senior management team, including:

- To review and endorse the long-term strategic plan of the Syncrude Project and the business plans of the Corporation;
- To review and approve the Corporation's succession plans for its executive and senior management team;
- To review and approve annual adjustments to the compensation of the Chief Executive Officer of the Corporation, as well as the other officers of the Corporation, as recommended by the Human Resources & Compensation Committee.

## Human Resources & Compensation Committee

The Human Resources & Compensation Committee assists the Board in providing corporate direction and oversight for the Corporation's principal compensation and benefit programs and human resource policies and succession plans, including:

- To review and approve annual adjustments to the salaries and benefits of the Corporation's employees;
- To review and approve principal human resource policies and programs of the Corporation and significant changes thereto and to provide advice and direction on major human resource issues;
- To approve changes in any benefit plan texts, including the Retirement Plan for the Employees of Syncrude Canada Ltd. and Member Corporations ("Retirement Plan"), that require Board approval;
- To approve any post-retirement pension payment adjustments and adhoc increases, and to authorize the Corporation, as sponsor of the Retirement Plan, to make such payments; and
- To review and approve changes to management structure and senior management succession plans of the Corporation or to provide guidance on significant issues regarding those matters.

## Pension Committee

The Pension Committee assists the Board in providing corporate direction and oversight for the Corporation's responsibilities as administrator of the Retirement Plan for Employees of Syncrude Canada Ltd. and Member Corporations ("Retirement Plan") pursuant to the Employment Pension Plans Act ("Act"), including:

- To monitor the Retirement Plan assets and approve the appointment of the Actuary and the Trustee & Custodian of the Retirement Plan;
- To review and confirm or amend the Statement of Investment Policies and Procedures ("SIPP") each year on behalf of the Board;
- To review and recommend to the Board that the Board approve the annual audited financial statement of the Retirement Plan; and
- To review and approve financial assumptions and actuarial valuations of the Fund when required by the Act or when the Committee deems that additional Fund valuations are necessary.

## Safety, Health, Environment & Corporate Sustainability Committee

The Safety, Health, Environment & Corporate Sustainability Committee assists the Board in fulfilling its corporate direction and oversight responsibilities for the Corporation's safety, health and environmental requirements, policies, practices, compliance systems and performance, and in monitoring current and future trends in safety, health and environmental laws and practices, including:

- To review and approve the Corporation's SH&E policy and significant revisions to that policy and the principal programs and processes supporting it;
- To review, assess and approve the Corporation's processes for the selection, preparation and disclosure of sustainability performance criteria and information and sustainability targets and measures as well as the programs and initiatives to address sustainability objectives and issues;
- To monitor and assess the Corporations performance in complying with its SH&E policy, procedures, standards and related requirements by receiving and reviewing regular or special reports from the Corporation outlining such performance;

- 

- To confirm that the Corporation has implemented and continues to maintain and audit appropriate policies, procedures, controls and due diligence systems with respect to safety, health and environmental requirements and issues including, without limitation, compliance with all applicable laws, appropriate plans or responses to deal with emerging issues, or trends, and procedures for notifying the Board and Management Committee of the Syncrude Project of any significant or material incidents and, when necessary, to recommend to the Corporation revisions or amendments to such policies, procedures, controls and due diligence systems; and
- To review reclamation and closure plans and receive updates on reclamation activities, including tailings management.

## Management Committee

Each of the Participants of the Syncrude Project, a joint venture, appoints two representatives to the Management Committee, which meets regularly and provides oversight and governance for the project on behalf of the Participants. The weight assigned to each Participant's vote through the Management Committee is proportionate to its interest in the Syncrude Project.

The Management Committee reviews and approves the Syncrude Project's strategic plans, business plans, annual budget and major capital appropriations. In addition, it reviews overall performance, both operationally and financially.

The Management Committee is chaired by one of its members. The current Chair is Marcel Coutu, Chief Executive Officer of Canadian Oil Sands Limited.

The Management Committee has created subcommittees and delegated the indicated powers and duties to support Syncrude and the Participants. Each Participant, as well as Syncrude, is entitled to nominate two representatives to each of the subcommittees. Each subcommittee reports to the Management Committee, which appoints the chair and secretary of each subcommittee.

## Operations Subcommittee

The Subcommittee assists the Management Committee of the Syncrude Project on operations matters, including:

- To monitor the performance of the Syncrude operations and provide advice and guidance to the Management Committee and Syncrude on plans designed to address improvement opportunities;
- To provide advice and guidance to the Management Committee and Syncrude on each Business Plan and Annual Budget for the Syncrude Project, including:
- sustaining capital or significant changes to operating expenditures;
- material regulatory matters, including those related to reclamation approvals and requirements;
- procedures and controls for safety, health, environmental and security matters; and
- the Pembina crude pipeline for the Syncrude Project.

## Growth & Development Subcommittee

The Subcommittee assists the Management Committee of the Syncrude Project on capital growth and development opportunities, including:

- To identify and evaluate such opportunities and make recommendations concerning same;
- To provide advice and guidance to the Management Committee and Syncrude on each Business Plan and Annual Budget for the Syncrude Project with respect to growth and development opportunities and major capital projects in progress;
- To monitor the status and performance of all major capital projects in progress under its mandate, including cost and schedule relative to applicable work programs and budgets; and
- To establish appropriate business controls for major capital project spending and performance.

## Audit & Business Controls Subcommittee

The Subcommittee oversees all aspects of Syncrude's internal control systems and financial and related disclosures as required by law and good accounting practice, including:

- To review the adequacy of internal control systems and the scope and adequacy of the Corporation's internal audit program and the results of their activities;
- To review the scope, timing and findings of the external audit;
- To review and approve the selection and application of accounting principles and practices applied to the Syncrude Project;
- To review and recommend to the Board and/or Management Committee for approval all annual financial statements and/or related information;
- To review the quarterly and annual representations made by Syncrude to the Participants, as well as changes to the form of those representations; and
- To review and recommend new or additional Syncrude reporting disclosures as a result of changes in and/or emerging reporting, accounting or internal control issues affecting Syncrude Canada Ltd. financial statements or Participants' respective regulatory reporting requirements.

## Code of Ethics and Business Conduct

Syncrude has a Code of Ethics and several other Business Conduct policies that are designed to foster a high level of ethical conduct expected by our many internal and external stakeholders. The Corporation stewards the application of these policies and reports regularly periodically to the Audit and Business Controls Subcommittee and makes representations to the Board to confirm compliance. In addition to internal processes, Syncrude has an external system for the reporting of concerns about corporate conduct. Employees, contractors and members of the public may file their concerns anonymously and confidentially through EthicsPoint, at [www.ethicspoint.com](http://www.ethicspoint.com) or 1-800-493-1866. This information is available internally and through Syncrude's external website at [www.syncrude.com](http://www.syncrude.com).

# CORPORATE INFORMATION

## Board of Directors

### Canadian Oil Sands Partnership #1

Marcel Coutu<sup>1,2,3</sup>

Trudy Curran<sup>5</sup>

Ryan Kubik

Darren Hardy<sup>4</sup>

### Imperial Oil Resources

Chris Ford<sup>2,3,5</sup>

Glenn Scott<sup>1</sup>

Dee Brandes<sup>4</sup>

### Mocal Energy Ltd.

Kazuo Tanabe<sup>1</sup>

Steve Fly<sup>3</sup>

Kemmei Nakata

*1 CEO Committee*

*2 Human Resources & Compensation Committee*

*3 Management Committee*

*4 Safety, Health, Environment & Corporate Sustainability Committee*

*5 Pension Committee*

### Murphy Oil Company Ltd.

Dennis Ward<sup>5</sup>

Cal Buchanan

Ron McIlwrick<sup>1,3,4</sup>

### Nexen Oil Sands Partnership

Kevin Reinhart<sup>1</sup>

Jim Arnold<sup>3</sup>

Bern Frasson<sup>2,4,5</sup>

### Sinopec Oil Sands Partnership

Lianhua Zhang<sup>1,2,3</sup>

Pengfei Yin<sup>4,5</sup>

Weiquan Xiao

### Suncor Energy Oil and Gas Partnership

Don Goodrow<sup>2,4</sup>

Stephen Reynish<sup>1</sup>

Richard Brown<sup>3</sup>

Pat Suzuki<sup>5</sup>

## Officers of Syncrude Canada Ltd.

Marcel Coutu  
Chairman of the Board

Scott Sullivan  
President and CEO

Gord Ball  
Vice President, Strategic Planning

Harold Kunas  
Chief Financial Officer and Vice President, Business Services

Ray Hansen  
General Counsel and Corporate Secretary

## External Financial Auditors

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## Further Information

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# INVESTOR INFORMATION

## Advisory

In the interest of providing readers of this report with information regarding Syncrude, including management's assessment of Syncrude's future technologies, emissions and production levels and Syncrude operations, certain statements and graphs throughout this sustainability report contain "forward-looking information" under applicable securities law. Forward-looking statements in this report include, but are not limited to, statements and graphs with respect to: the expectations regarding Syncrude's sustainability initiatives in the areas of land use and biodiversity, water, tailings, Aboriginal relations, regulatory and government relations, employment and labour, community, air quality, energy and climate change and safety and health; the expected emission reductions relating to the Syncrude emissions reduction project (the "SER Project"); the anticipated start-up date of the SER Project; the expectations with respect to reducing emissions such as nitrogen oxide; the expected improvement in energy efficiency; the expected reduction in emissions of carbon dioxide; the estimated value and amount of reserves recoverable; the timing and amount of bitumen production from Aurora South; the expectation that the mine train relocations/replacements should position Syncrude for as many as 20 years of production at current rates; the land reclamation plans and targets; Syncrude's tailings management plan and the timeline for the implementation of the various components of such plan; the anticipated benefits resulting from the tailings management technologies (water capping, composite tails, centrifuged tails, filtration of tailings water and rough mulching); the expectation that Syncrude's tailings management plan will enable Syncrude to meet the long term intent of ERCB Directive 074 as of 2015 and the timeline for the implementation of the ExxonMobil Operations Integrity Management System.

The factors or assumptions on which the forward-looking information is based include, but are not limited to: the successful and timely implementation of capital projects; major project spending plans; the ability to obtain regulatory and Syncrude joint venture owner approval; the continuation of assumed tax, royalty and regulatory regimes and the success of the tailings management technologies.

You are cautioned not to place undue reliance on forward looking statements, as there can be no assurance that the plans, intentions or expectations upon which they are based will occur. By their nature, forward looking statements involve numerous assumptions, known and unknown risks and uncertainties,

both general and specific, that contribute to the possibility that the predictions, forecasts, projections and other forward-looking statements will not occur. Although Syncrude believes that the expectations represented by such forward-looking statements are reasonable and reflect the current views of Syncrude, there can be no assurance that such expectations will prove to be correct.

Some of the risks and other factors that could cause results to differ materially from those expressed in the forward-looking statements contained in this sustainability report include, but are not limited to: the impact of technology on operations and processes and how new complex technology may not perform as expected; risks inherent to the operation

of any large, complex refinery units, especially the integration between mining operations and an upgrader facility; changes in business strategy; imprecision of reserve and resource estimates; regulatory decisions; the effects of competition and pricing pressures; shifts in market demands; potential increases in costs; timing of completion of capital or maintenance projects; various events which could disrupt operations including severe weather conditions; technological changes; management retention and development; skilled labour shortages and the productivity achieved from labour in the Fort McMurray area; the supply and demand metrics for oil and natural gas; the unanimous joint venture owner approval for major expansions; the impact of Syncrude being unable to meet the conditions of its approval for its tailings management plan under ERC B Directive 074; the impacts of legislative or regulatory changes, especially as such relate to royalties, taxation, the environment and tailings and such other risks and uncertainties described from time to time in the reports and filings made with regulatory authorities by Syncrude.

You are cautioned that the foregoing list of important factors is not exhaustive. Furthermore, the forward-looking statements contained in this report are made as of the date of this report and unless required by law, Syncrude does not undertake any obligation to update publicly or to revise any of the included forward-looking statements, whether as a result of new information, future events or otherwise. The forward-looking statements contained in this report are expressly qualified by this cautionary statement.

## Jantzi Social Index

The Index has included Joint Venture owner Canadian Oil Sands Limited since 2006, recognizing the performance of the Syncrude Project through a set of broadly based environmental, social and governance rating criteria. Jantzi Research is Canada's leading provider of social and environmental research for institutional investors.

Further information about Syncrude's business performance and investing in Syncrude can be obtained through the web sites listed below.

### Canadian Oil Sands Limited

(COS – TSX)

[www.cdnoilsands.com](http://www.cdnoilsands.com)

### Imperial Oil Resources

(IMO – TSX/AMEX)

[www.imperialoil.com](http://www.imperialoil.com)

### Mocal Energy Limited

(5020 – TSE)

[www.noex.co.jp](http://www.noex.co.jp)

### Murphy Oil Company Ltd.

(MUR – NYSE)

[www.murphyoilcorp.com](http://www.murphyoilcorp.com)

### Nexen Inc.

(NXY – TSX/NYSE)

[www.nexeninc.com](http://www.nexeninc.com)

### Sinopec Corp.

(386. HK – HKEX, 600028 – SSE, SNP – NYSE/LSE)

<http://english.sinopec.com>

### Suncor Energy

(SU – TSX/NYSE)

[www.suncor.com](http://www.suncor.com)

## PARTNERS IN SUSTAINABILITY

Syncrude has many partners in its sustainability journey. Together, we are working to address and improve the economic, environmental and social performance of Canada's resource industry. In many cases, Syncrude is a leading contributor through the provision of staff expertise and funding. Readers are invited to learn more by visiting the websites listed below.

Aboriginal Human Resource Council

[www.aboriginalhr.ca](http://www.aboriginalhr.ca)

Alberta Chamber of Resources

[www.acr-alberta.com](http://www.acr-alberta.com)

Canadian Association of Petroleum Producers

[www.capp.ca](http://www.capp.ca)

Canadian Business for Social Responsibility

[www.cbsr.ca](http://www.cbsr.ca)

Canadian Council for Aboriginal Business

[www.ccab.com](http://www.ccab.com)

Canadian Oil Sands Network for Research and Development

[www.conrad.ab.ca](http://www.conrad.ab.ca)

Mining Association of Canada

[www.mining.ca](http://www.mining.ca)

Oil Sands Developers Group

[www.oilsandsdevelopers.ca](http://www.oilsandsdevelopers.ca)



Responsible Canadian Energy™ (RCE) is an industry performance program developed by the Canadian Association of Petroleum Producers (CAPP) with support and leadership from across the upstream oil and gas industry. The program is about performance and reflects industry's ongoing commitment to responsible resource development and to continuous improvement in environment, safety and health, and social performance.



Syncrude is a participant in the Towards Sustainable Mining (TSM) initiative of the Mining Association of Canada, which is a strategy for improving the sustainability performance of Canada's mining industry.



Syncrude is a member of Canadian Business for Social Responsibility (CBSR), a business-led, non-profit Corporate Social Responsibility consultancy and peer-to-peer learning organization. CBSR provides its members with candid counsel and customized advisory services to improve their social, environmental and financial performance.



Syncrude is accredited at the Gold Level in the Progressive Aboriginal Relations (PAR) Program of the Canadian Council for Aboriginal Business. PAR measures corporate performance in Aboriginal employment, business development, capacity development and community relations.



Syncrude is a participant in the Integrated CO<sub>2</sub> Network, or ICo<sub>2</sub>N, which is exploring the viability of large-scale carbon capture, transportation and storage for a cross-section of Canadian industry.

# GRI CONTENT INDEX

The Global Reporting Initiative (GRI) Sustainability Reporting Guidelines provide a framework to help companies report consistent, high quality sustainability information that meets stakeholder needs.

Syncrude is committed to providing stakeholders with high quality information on performance. We use the GRI guidelines for our sustainability reporting and report to a C application level. Stratos, a sustainability consultancy, reviewed the content of our report against the GRI G3.1 Guidelines Standard Disclosures and found it includes (fully or partially) the disclosure items shown in this index. Stratos did not review the quality or accuracy of the data reported.

The index maps our reporting against the GRI G3.1 Guidelines. GRI disclosures not reported are not included in the index. As we improve our reporting over time, we expect to further deepen the alignment of our report with the GRI Guidelines.

## STANDARD DISCLOSURES PART I: Profile Disclosures

	Description	Reported	Cross-reference
<b>Strategy and Analysis</b>			
1.1	Statement from the most senior decision-maker of the organization.	Partially	<a href="#">Leaders Letter</a>
1.2	Description of key impacts, risks, and opportunities.	Fully	<a href="#">Our Sustainability Path</a> <a href="#">Sustainability Management Systems</a> <a href="#">Air Quality</a> <a href="#">Biodiversity</a> <a href="#">Climate Change</a> <a href="#">Land Reclamation</a> <a href="#">Tailings Management</a> <a href="#">Water Management</a> <a href="#">Waste Management</a> <a href="#">Community Involvement</a> <a href="#">People</a> <a href="#">Labour Relations</a> <a href="#">Stakeholder Relations</a> <a href="#">Aboriginal Relations</a> <a href="#">Safety</a> <a href="#">Finance and Operations</a> <a href="#">Economic Contribution</a> <a href="#">Research and Development</a> <a href="#">Corporate Governance</a>
<b>Organizational Profile</b>			
2.1	Name of the organization.	Fully	<a href="#">Corporate Governance</a>
2.2	Primary brands, products, and/or services.	Fully	<a href="#">The Syncrude Operation</a>
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	Fully	<a href="#">Corporate Governance</a>

	Description	Reported	Cross-reference
2.4	Location of organization's headquarters.	Fully	<a href="#">Corporate Information</a>
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	Fully	<a href="#">Syncrude Oil Sands Leases</a>
2.6	Nature of ownership and legal form.	Fully	<a href="#">Corporate Governance</a>
2.8	Scale of the reporting organization.	Fully	<a href="#">Finance and Operations</a> <a href="#">People</a> <a href="#">The Syncrude Operation</a> <a href="#">Syncrude Oil Sands Leases</a>
2.9	Significant changes during the reporting period regarding size, structure, or ownership.	Fully	<a href="#">Leaders Letter</a> <a href="#">Our Sustainability Path</a>
2.10	Awards received in the reporting period.	Fully	<a href="#">Sustainability Management Systems</a> <a href="#">People</a> <a href="#">Aboriginal Relations</a>
<b>Report Parameters</b>			
3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	Fully	<a href="#">The Syncrude Operation</a>
3.2	Date of most recent previous report (if any).	Fully	<a href="#">The Syncrude Operation</a>
3.3	Reporting cycle (annual, biennial, etc.).	Fully	<a href="#">The Syncrude Operation</a>
3.4	Contact point for questions regarding the report or its contents.	Fully	<a href="#">Corporate Information</a>
3.5	Process for defining report content.	Partially	<a href="#">Our Sustainability Path</a>
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers).	Fully	<a href="#">The Syncrude Operation</a>
3.7	State any specific limitations on the scope or boundary of the report.	Fully	<a href="#">The Syncrude Operation</a>
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report. Explain any decisions not to apply, or to substantially diverge from, the GRI Indicator Protocols.	Partially	<a href="#">Environment</a> <a href="#">Finance and Economy</a> <a href="#">Operations</a>
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/periods, nature of business, measurement methods).	Fully	<a href="#">Climate Change</a> <a href="#">Land Reclamation</a> <a href="#">Finance and Operations</a>
3.12	Table identifying the location of the Standard Disclosures in the report.	Fully	<a href="#">GRI Content Index</a>

	Description	Reported	Cross-reference
<b>Governance, Commitments, and Engagement</b>			
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	Partially	<a href="#">Corporate Governance</a>
4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	Fully	<a href="#">Corporate Information</a>
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	Partially	<a href="#">Corporate Governance</a> <a href="#">People</a>
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	Fully	<a href="#">Sustainability Management Systems</a>
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	Fully	<a href="#">Corporate Governance</a>
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	Fully	<a href="#">Sustainability Management Systems</a>
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	Partially	<a href="#">Leaders Letter</a> <a href="#">Our Sustainability Path</a> <a href="#">Sustainability Management Systems</a> <a href="#">Corporate Governance</a>
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	Fully	<a href="#">Sustainability Management Systems</a>
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: Has positions in governance bodies; Participates in projects or committees; Provides substantive funding beyond routine membership dues; or Views membership as strategic.	Fully	<a href="#">Sustainability Management Systems</a> <a href="#">Biodiversity</a> <a href="#">Climate Change</a> <a href="#">Land Reclamation</a> <a href="#">Tailings Management</a> <a href="#">Water Management</a> <a href="#">People</a> <a href="#">Labour Relations</a> <a href="#">Stakeholder Relations—Non-Aboriginal</a> <a href="#">Aboriginal Relations</a> <a href="#">Safety &amp; Health</a> <a href="#">Research and Development</a>
4.14	List of stakeholder groups engaged by the organization.	Fully	<a href="#">Stakeholder Relations—Non-Aboriginal</a> <a href="#">Aboriginal Relations</a>
4.15	Basis for identification and selection of stakeholders with whom to engage.	Fully	<a href="#">Stakeholder Relations—Non-Aboriginal</a> <a href="#">Aboriginal Relations</a>

	Description	Reported	Cross-reference
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	Partially	<a href="#">Our Sustainability Path</a> <a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Aboriginal Relations</a>
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	Fully	<a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Aboriginal Relations</a> <a href="#">Our Sustainability Path</a> <a href="#">Stakeholder Perspective Profiles</a>

## STANDARD DISCLOSURES PART II: Disclosures on Management Approach (DMAs)

<b>Disclosure on Management Approach EC</b>			
Aspects	Economic performance	Fully	<a href="#">Finance and Operations</a>
	Indirect economic impacts	Fully	<a href="#">Economic Contribution</a>
<b>Disclosure on Management Approach EN</b>			
Aspects	Energy	Fully	<a href="#">Climate Change</a>
	Water	Fully	<a href="#">Water Management</a>
	Biodiversity	Fully	<a href="#">Biodiversity</a>
	Emissions, effluents and waste	Fully	<a href="#">Air Quality</a> <a href="#">Tailings Management</a> <a href="#">Water Management</a> <a href="#">Waste Management</a>
	Products and services	Fully	<a href="#">Finance and Operations</a> <a href="#">The Syncrude Operation</a>
	Compliance	Fully	<a href="#">Sustainability Management Systems</a>
	Overall	Fully	<a href="#">Sustainability Management Systems</a>
<b>Disclosure on Management Approach LA</b>			
Aspects	Employment	Fully	<a href="#">People</a> <a href="#">Labour Relations</a> <a href="#">Aboriginal Relations</a>
	Labor/management relations	Fully	<a href="#">Labour Relations</a>
	Occupational health and safety	Fully	<a href="#">Safety and Health</a>
	Training and education	Fully	<a href="#">People</a> <a href="#">Aboriginal Relations</a>
	Diversity and equal opportunity	Fully	<a href="#">People</a> <a href="#">Aboriginal Relations</a>

	Description	Reported	Cross-reference
<b>Disclosure on Management Approach SO</b>			
Aspects	Local communities	Fully	<a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Aboriginal Relations</a>
	Corruption	Fully	<a href="#">Sustainability Management Systems</a> <a href="#">Corporate Governance</a>
	Public policy	Fully	<a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Biodiversity</a> <a href="#">Climate Change</a> <a href="#">Land Reclamation</a>
	Compliance	Fully	<a href="#">Sustainability Management Systems</a> <a href="#">Corporate Governance</a>

## STANDARD DISCLOSURES PART III: Performance Indicators

<b>Economic</b>			
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	Partially	<a href="#">Community Involvement</a> <a href="#">Finance and Operations</a> <a href="#">Economic Contribution</a>
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	Partially	<a href="#">Climate Change</a>
EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	Fully	<a href="#">People</a>
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	Partially	<a href="#">Economic Contribution</a> <a href="#">Aboriginal Relations</a>
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	Fully	<a href="#">People</a> <a href="#">Aboriginal Relations</a>
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	Fully	<a href="#">Community Involvement</a> <a href="#">Stakeholder Relations–Non-Aboriginal</a>
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	Fully	<a href="#">Economic Contribution</a>
<b>Environmental</b>			
EN1	Materials used by weight or volume.	Fully	<a href="#">Finance and Operations</a>
EN3	Direct energy consumption by primary energy source.	Fully	<a href="#">Climate Change</a>
EN8	Total water withdrawal by source.	Fully	<a href="#">Water Management</a>
EN9	Water sources significantly affected by withdrawal of water.	Partially	<a href="#">Water Management</a>
EN10	Percentage and total volume of water recycled and reused.	Fully	<a href="#">Water Management</a>

	Description	Reported	Cross-reference
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	Fully	<a href="#">Biodiversity</a> <a href="#">Land Reclamation</a>
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	Fully	<a href="#">Biodiversity</a> <a href="#">Land Reclamation</a>
EN13	Habitats protected or restored.	Fully	<a href="#">Biodiversity</a> <a href="#">Land Reclamation</a>
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	Fully	<a href="#">Biodiversity</a> <a href="#">Land Reclamation</a>
EN16	Total direct and indirect greenhouse gas emissions by weight.	Fully	<a href="#">Climate Change</a>
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	Partially	<a href="#">Climate Change</a>
EN19	Emissions of ozone-depleting substances by weight.	Fully	<a href="#">Air Quality</a>
EN20	NOx, SOx, and other significant air emissions by type and weight.	Partially	<a href="#">Air Quality</a>
EN21	Total water discharge by quality and destination.	Fully	<a href="#">Water Management</a>
EN22	Total weight of waste by type and disposal method.	Partially	<a href="#">Waste Management</a>
EN23	Total number and volume of significant spills.	Fully	<a href="#">Water Management</a>
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	Fully	<a href="#">Waste Management</a>
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	Partially	<a href="#">Biodiversity</a> <a href="#">Water Management</a>
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	Fully	<a href="#">Biodiversity</a> <a href="#">Finance and Operations</a>
EN30	Total environmental protection expenditures and investments by type.	Partially	<a href="#">Tailings Management</a> <a href="#">Air Quality</a>
<b>Social: Labor Practices and Decent Work</b>			
LA1	Total workforce by employment type, employment contract, and region, broken down by gender.	Fully	<a href="#">People</a>
LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	Partially	<a href="#">People</a>
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	Partially	<a href="#">Safety and Health</a>
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender.	Partially	<a href="#">Safety and Health</a>
LA10	Average hours of training per year per employee by gender, and by employee category.	Partially	<a href="#">People</a>

	Description	Reported	Cross-reference
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	Partially	<a href="#">People</a>
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	Partially	<a href="#">People</a>
<b>Social: Society</b>			
SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	Fully	<a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Aboriginal Relations</a>
SO9	Operations with significant potential or actual negative impacts on local communities.	Fully	<a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Aboriginal Relations</a>
SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	Fully	<a href="#">Biodiversity</a> <a href="#">Climate Change</a> <a href="#">Land Reclamation</a> <a href="#">Tailings Management</a> <a href="#">Water Management</a> <a href="#">People</a> <a href="#">Labour Relations</a> <a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Aboriginal Relations</a> <a href="#">Safety and Health</a> <a href="#">Research and Development</a>
<b>Corruption</b>			
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	Fully	<a href="#">Sustainability Management Systems</a>
<b>Public Policy</b>			
SO5	Public policy positions and participation in public policy development and lobbying.	Fully	<a href="#">Sustainability Management Systems</a> <a href="#">Stakeholder Relations–Non-Aboriginal</a> <a href="#">Tailings Management</a> <a href="#">Climate Change</a> <a href="#">Land Reclamation</a> <a href="#">Economic Contribution</a>
<b>Compliance</b>			
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	Partially	<a href="#">Finance and Operations</a>