

Sustainable development report 2016

Iron Ore Company (IOC)



Our employees and key stakeholders made a significant contribution in 2016

A word from our President and CEO

Over the past year the transformation of IOC resulted in establishing a strong foundation on which we can continue to build. Our markets were impacted by globalization which creates high volatility and uncertainty and is expected to continue.

In 2016, IOC joined our Rio Tinto colleagues across the globe in introducing Critical Risk Management (CRM) to the broader workplace including employees at all levels. With all employees and contractors focused on fatality risks and the effective controls to prevent them, we will reduce the overall frequency of safety incidents across our business. This is an essential element to IOC's overall success.

Our employees and key stakeholders made a significant contribution in 2016 to further reducing costs and increasing productivity (80 production records achieved in 2016), which has laid the foundation for achieving operational excellence in 2017 and beyond.

Performance Driven Improvement teams continued to uncover value for the business through focus on engaging employees to work together to identify sustainable actions to improve business performance.

Our 2017 strategy is aligned with our five priorities, Safety, People, Cash, Partnerships and Growth. We will continue to be challenged by a more volatile industry environment in terms of demand and price.

We have the opportunity to modernize our assets and adopt a more efficient operating model which will enable us to be more competitive and allow us to secure our long term future as a premier mining operation.

Bringing the new Wabush 3 pit through construction and into full operation will deliver benefits for the business, employees and surrounding communities in Labrador West and Sept Iles for many years to come by increasing the life of the mine and allows us to offer continued employment opportunities. The Wabush 3 Project will provide a flexible source of ore delivery and allows IOC to meet its current capacity, while also significantly contributes to the planned pathway of safely achieving 23 Mt per annum.

Our efforts need to focus on safety, engagement and our productivity at all levels of the organisation to ensure we become "Superior in performance". The successful adoption of Integrated Operations will enable a focus on unlocking additional system value in day to day execution.

To continue driving these outcomes in a challenging environment, we see people and partnerships as more important than ever – and we must challenge ourselves to build on employee and stakeholder engagement as a key driver for the success of our business and the achievement of operational excellence.

Clayton Walker
President and Chief Executive Officer

Highlights of 2016

Safety

- Critical Risk Management (CRM) – IOC achieved the Onboarding Level of implementation for the CRM Program.
- Rio Tinto Global Safety, Performance & Innovation Award 2016 – IOC was the winner of the Safety Award with the Thumb Activated Mic on Graders Initiative. The grader operator no longer has to release the operating joystick to communicate over the radio mic which eliminates the grader from stopping abruptly and negatively impacting road maintenance.



- Focused Hazard Inspection program was implemented to assist with the prevention of injury or illness, damage to physical assets and/ or to the Environment. The program was built to focus on hazards related to fire, gravity, electrical, mechanical, Environment and Health & Hygiene, and complements the CRM efforts as well. Completed inspections provide qualitative and quantitative data to drive measureable improvements and mitigate workplace risks. The program has been very successful in Labrador City and Sept Iles will be implementing the program in 2017.
- As the result of a fatality that occurred at a sister operation, IOC implemented a High Pressure Water Jetting safety procedure to ensure risks associated with this task are eliminated.
- The All Injury Frequency Rate (AIFR) for 2016 slightly exceeded target (0.73 actual vs. 0.68 target).
- Development of online training courses and HSE Induction for Labrador City and Sept. Iles employees resulted in increased training efficiency and reduced cost. Programs can now be completed within two hours without loss of knowledge transfer.
- A “Call to Action” concerning vehicles and driving was completed in 2016. One result of this initiative was the reconfiguring of the parking lot at the Administration Building.
- Following a serious incident which occurred at

RTKC in Utah in January 2016, a No Ride Policy has been adopted across all of Rio Tinto. For IOC/QNS&L, this means that when equipment is in motion on the rail, all personnel must stay within the confines of equipment designed for that purpose. Clinging to handholds and standing on steps or platforms of equipment to protect movements or in the performance of other duties has become prohibited.

- Sept. Iles development and deployment of electrical safety training
- Sept. Iles completed overall revisions of isolation procedures.
- Sept. Iles finalized installation of multi-gas detecting equipment

Emergency Services and Security (ESS)

- ESS inherited a previously occupied building on IOC site to house the Emergency Response Team equipment. This has been a tremendous success for the ESS Team. All equipment is housed under one roof with a training room to facilitate learning opportunities. The building is also equipped with equipment to complete training exercises such as confined space rescue and high angle rescue.
- Successful completion of mock exercises in operational areas (Pellet Plant, Steam Plant, Tailings Discharge) to help employees gather information to develop Emergency Response Plans (ERP) for jobs in their respective areas.
- Operation Torrent – To assess the operational readiness of the organization with respect to capacity and capability to respond to Hazardous Materials and Environmental Emergencies, a full scale mock exercise which included the BRRP team along with the Environment Department was successfully completed in 2016. Scenario consisted of a major diesel tank rupture holding 2.6 Million liters with great potential to enter Wabush Lake.
- ESS was certified to conduct all the Alcohol and Drug testing on site and it has been a great success story. The ESS Team has also helped out in not only post incident reasonable cause testing, but have also completed pre hire testing for the temporary workforce.

Contractor Management

2016 was a very successful year in improving IOC’s contractor efficiency through engagement, thus removing delays. Some of the highlights implemented are outlined below:

- Re-establishment of a Contractor Management Department that has contract

ownership for multiple site wide services (Snow Clearing, Scaffolding, Busing, and Fuel Management).

- Implementation of on-line training courses for contractors for IOC Induction, Isolation Theory, Critical Risk Management (CRM) and Pit Permit; reducing full day classroom sessions.
- Online training linked to security gate access for IOC Induction, Critical Risk Management and Fitness for work (drug screen testing).
- Effective 2016, all IOC contractors working onsite in Labrador City were required to complete the Critical Risk Management training available online in English and French through Cognibox.
- Point of Care Testing (POCT) and Alcohol and Other Drugs (AOD) testing methods were simplified from laboratory analysis to instantaneous testing.
- Contractor work permits were reviewed, and for routine onsite contracts, the permit is now valid for 7 days instead of 1 day to reduce delays and wait time. Development of an on-line 7 day work permit is currently in progress.
- Real time gate site access reporting online is now available in Sept Iles and Labrador City.

Environment

- Improvements achieved to Mine Effluent Management which resulted in zero significant incidents for 2016.

Sept-Iles (ZV)

- Improvement at dock #2 facilities helped decrease the accumulation of falling iron ore and manage red water runoff in the Sept-Îles Bay.
- Locomotives were provided with spill response material and training was provided to locomotives operators.
- Environmental incidents scenarios have been identified and additional spill material purchased for the QNS&L railway.
- Modification of transfer points on conveyors and transfer points in the yard to decrease dust emissions.
- Vibrations study conducted to better understand the impact of train operations to the surrounding communities.

IOC Labrador City (CR)

- Successful works to reduce Total Suspended Solid (TSS) levels at Mine Final Discharge Points therefore reducing negative impacts to fish habitat.
- Luce Effluent Treatment Facility is now operational. The system is designed to reduce total suspended solids (TSS) and treat unionized ammonia in effluent.

- As part of the Wabush 3 development, hydrometric stations were installed to monitor both water quality and quantity. This is done in conjunction with Environment Canada and NL Municipal Affairs and Environment.
- Environmental Effects Monitoring study was completed.
- Field work was completed as part of the Wabush Lake Fish Habitat Compensation Plan.
- Additional groundwater monitoring wells were installed at various locations around IOC.
- Annual bathymetric survey, paired with LiDAR and aerial photography was completed as part of Tailings Lease Line monitoring plan.
- It was decided that *Monitorpro5* will be the data management system for the Environment Department.
- Three Unmanned Aerial Vehicles (UAV's), were purchased to assist with land use management, water quality monitoring and emergency response requirements.
- *Bionest* sewage treatment plant is commissioned and fully effective to manage IOC's onsite septic waste.
- Industrial parts washers were replaced with a bio-remediating parts cleaner/degreaser that offers an eco-friendly way to clean and degrease industrial parts and reduces IOC environmental footprint.
- Petroleum storage tank/systems were assessed for compliance. A total of 674 deficiencies were identified.
- The Dust Suppression System on Stacker 1 & 2 transfer points was fully commissioned, reducing fugitive dust in the Loadout Operations.
- Offset work took place on a stream used for recreational fishing by local cabin owners that was impacted by a major forest fire in 2013. Offset included planting of 12,600 tree seedlings, seeding 7,000 m² of stream banks, addition of 28 overhang structures and completion of 14 boulder clusters in the stream.



Offset Location – Cowboy Creek

Seedling

- As part of IOC's Progressive Rehabilitation and Revegetation Campaign, 16.5 hectares were rehabilitated in 2016.



Beaver Bay Stock Pile rehabilitation

Health and Hygiene

- Periodic medical surveillance program continued with strong compliance in 2016, with a total of over 1468 medicals conducted throughout the year. This program is designed to support employees to maintain their health and wellness as well as identify and address any fitness for work concerns.
- IOC's Occupational Health clinic staff also began completing Respiratory Fit Testing of employees during their medical surveillance in 2016.
- Occupational Health team worked closely with Human Resources and Operations across both operational sites to support the business in the successful rollout of Phase 2 of the Substance Abuse Prevention Policy with additional coaching and information delivered pertaining to fitness for work.
- Wellness programs in 2016 focused on topics such as Respiratory Health, Hearing Conservation and Mental Health and Wellbeing. Blood pressure clinics and influenza vaccinations were once again offered to employees to assist with maintaining and improving their health.
- IOC has supported the initiative of the Newfoundland & Labrador government to conduct the Labrador West follow up dust study and has participated in the study to allow a third party, to review and provide feedback on best practices and how IOC is managing in this area.
- Critical Control Monitoring Plans (CCMP) have been developed and conducted in areas for material health risks.
- Occupational hygiene exposure monitoring program based on risk including exposures such as silica, noise, and gas/fumes continued throughout 2016.

Additional Highlights

Light Vehicle Fleet

- The ORCA (in vehicle monitoring system) was installed. This allows better management and monitoring for addressing speeding issues, reducing high fuel consumption and unnecessary idling time, unauthorized usage, improving vehicle utilization and reducing vehicle maintenance costs.
- Initiative was taken to implement a change in the policy for towing and boosting light vehicles. Seven booster packs were purchased and placed in strategic areas site wide to eliminate the need to dispatch a tow truck service call due to extreme cold temperatures.

Tailings Operations

- Major work took place in 2016 on the Central Control Dyke within the Tailings Impoundment Area (TIA). The dyke raise consisted of a 6 meter lift for a distance of 2.2km, using 850,000m³ of tailing material. East and West slopes were lined with geotextile and riprap to ensure the dyke's integrity and to minimize erosional washouts having the potential to impact the Federal Lease Line and fish habitat.
- Dredging Activities occurred at the Old Tailings Dump Pond and Beaver Bay Dump Pond to reduce the amount of solids deposited by effluent and returning the holding pond back to optimal holding capacity.

Mobile Maintenance Mining Operations

- 2016 warranted to be the best year for Haul Truck Availability averaging 86.5% for the entire year, including three consecutive months that achieved over 90%; first time achievement in the history of IOC.

Asset Disposal

- A complete cleanup of the Lox Plant Salvage Yard which consisted of left over mechanical components and materials derived from Operational/Capital Projects over the last 15 years. This area is now additional real-estate for future projects.
- A removal and clean-up project for the Mine Scrap Yard was finalized in 2016. Since the start-up of IOC, the Scrap Yard was a staging area for obsolete equipment such as haul truck, parts and other miscellaneous mobile equipment. This parcel of land is now available for ore stockpiling.

Growth and Innovation

- Commissioned Operations Command Center (OC) was established and centralized to monitor Concentrator, Ore Delivery Systems, Pellet Plant and Loadout and Port & Terminal. The OC is accountable for the operating strategy and process optimization. The OC focuses on balancing the value chain and maximising throughput and quality from the assets by providing relevant and timely decisions.

Information Technology

- Developing an Integrated Operations Command Center (technology) which brings operators, planners and decision makers together to analyze trends, detect opportunities for improved efficiencies and plan dynamically to maximize opportunities as they arise during the production day.
- Deployed a network of digital cameras throughout operations to improve visibility and early awareness of production or equipment issues.
- Implementing remote operations of the loading pockets which will allow movement of operators to a clean, accessible and ergonomically friendly environment, reducing operator cycle time and improving the overall working environment for the employee.
- Investigating technologies for autonomous hauling and drilling which will allow for improved production efficiencies and improved safety through collision detection and avoidance.
- A network of sensor and monitors have been deployed to operational assets to improve early detection of maintenance issues to minimize the impact to and maximize the efficient use of and overall lifecycle of the assets.

Expansion and Engineering

- Orica Bypass Road Construction - New section of mine access road was constructed to bypass the existing section of mine road running parallel to the explosives facility. This bypass road enables non-essential personnel outside to remain outside of the exclusion zone surrounding the explosives facility ensuring the safety of employees travelling to and from the mine and maintaining compliance with federal regulations.

Economic

During 2016 we contributed C\$41 million in total payments to the government, mainly through municipal and payroll taxes that were offset by

a net tax credit of C\$70 million from previous year tax adjustment.

Also contributed approximately \$50,000.00 through our community investment program as well as in kind donations.

The economic breakdown for 2016 is:

- Wages and salaries (including benefits) C\$358m.
- Ore revenue C\$1,620mm.
- Total revenue C\$1,580m.

Community Engagement

IOC actively supports a wide range of activities that benefit the communities in which we operate.

- We continued to suspend community investments in 2016, however, we found alternative ways to support community groups through various in-kind contributions and partnerships.
- IOC continued to be represented on community boards (Housing & Homeless Coalition, Habitat for Humanity, Chamber of Commerce, Labrador West Gateway, Sept-Iles regional hospital foundation, Sept-Iles United Way, and Sept Iles Air Quality committee).
- Employees in Labrador City organized a “Pack the Back” food drive for the local food bank, collected holiday pyjamas for underprivileged children and raised funds for the Adopt-a-Mom program. At the end of the year, IOC was pleased to make community donations on behalf of employees of \$20,000 each to the Labrador West Ministerial Association and Comptoir Alimentaire in Sept Iles.



- The Regional Taskforce (RTF) supported the alignment of industry with multi-level government stakeholders to share information to enable collaborative decision making about the rapidly changing economic situation in the Labrador West region.
- The Community Advisory Panel (CAP) in Labrador West met quarterly and used the meetings as an opportunity to share information that would help organizations and businesses support the community throughout the economic downturn.

Continued building and strengthening of our relationship with government stakeholders; regional stakeholders, and Indigenous groups where we operate occurred through ongoing engagement and consultation.

- IOC participated in both the Career Fair at Sheshatshiu Innu School where youth continue to be encouraged to apply for the Rio Tinto Award for Indigenous Students through Inspire and also in National Aboriginal Day events in both Labrador City and Sept Iles.
- IOC's Inclusion & Diversity Committee continued to work collaboratively with employees and the community to ensure an inclusive, diverse and respectful workplace by: relaunching the Employee Equity Survey; launching a revised Respect, Inclusion and Diversity policy; participating in the Labrador West Pride Week Walk while raising the Pride Flag in recognition of Pride Week at both sites; Promoting International Women's Day Celebrations; and continuing to promote inclusion and diversity through regular engagement activities.
- Family Day was held in Labrador City and Sept Iles. The theme for this event was "Saved by the Belt" to promote seatbelt safety. The event had many activities including mine and railway tours. IOC thanks the many volunteers and employees for helping ensure the success of Family Day 2016.

- IOC joined forces with health officials and community leaders as part of a coalition to identify immediate and longer term community-designed solutions for ongoing mental health concerns in Labrador West. IOC's Occupational Health Department provides regular support, information and awareness materials to employees through their clinic and ongoing internal communications.
- Supplier forums were held at both sites to provide business updates to suppliers and contractors and to reinforce their role in ensuring IOC remains a sustainable, cost effective business.

We would like to take this opportunity to thank our valued stakeholders for supporting us in what was another challenging year for the business, but a year that has helped set the foundation for a stable, more resilient business for the future.



Performance Data

Table 1: Performance Data

		2010	2011	2012	2013	2014	2015	2016
Environmental Stewardship	Energy Use MWh	4,884,000	4,394,000	4,795,000	4,654,865	4,419,514	4,517,959	5,252,372
	Greenhouse Gas Absolute Emissions (Scope 1 and 2) tonnes CO ₂ e	1,201,000	1,028,000	1,141,000	1,046,289	986,730	1,113,358	1,075,331
	Emission Intensity * Tonne CO ₂ e / tonne total saleable product	-	-	-	-	0.066	0.0613	0.0587
	Land rehabilitated ha	78.5	36	50.3	41	49.4	14.88	22.6
Social Wellbeing	All Injury Frequency Rate (per 200,000 hours worked)	0.88	0.91	0.75	0.62	0.66	0.74	0.73
	Lost time injuries	7	16	18	8	11	10	11
	Medical treatment cases	20	23	22	12	11	13	11
	New cases of occupational illness***	16	9	0	0	0	2	5
	Number of employees exposed to an 8-hour noise dose above 85 dB(A)	347	573	510	391	483	452	492
	Community Advisory Panel or similar community meetings	Labrador West: 4 Sept-Îles: 3	Labrador West: 6 Sept-Îles: 0	Labrador West: 6 Sept-Îles: 0	Labrador West: 4 Sept-Îles: 0	Labrador West: 4 Sept-Îles: 0	Labrador West: 4 Sept-Îles: 0	Labrador West: 3 Sept-Îles: 0
Economic Prosperity	Number of employees	2,206	2,361	2,538	2,509	2,425	2,258	2,350
	Community Investments**	\$3.8M	\$5.7M	\$6.17M	\$7.6M	\$7.1M	\$8.0M	\$9.9M
	Municipal, provincial and federal taxes	\$448M	\$492M	\$280M	\$280M	\$154M	\$45M	\$41M
	Sales	\$2,421M	\$2,335M	\$1,907M	\$2,094M	\$1,596M	\$1,387M	\$1,620M
	Sales including QNS&L Railway	\$2,521M	\$2,483M	\$2,073M	\$2,307M	\$1,798M	\$1,543M	\$1,667M
	Salaries and benefits	\$258M	\$296M	\$345M	\$371M	\$364M	\$349M	\$360M

* 2014 Emission Intensity Target of 0.0578 t CO₂-e/ t produ ** Includes grant-in-lieu of taxes to the Town of Labrador City and community controlled payments *** Updated reporting definitions for Occupational Illness to include noise induced hearing loss, musculoskeletal and repetitive strain illness among other health conditions.

Towards Sustainable Mining

Towards Sustainable Mining (TSM) is a program developed by the Mining Association of Canada (MAC) to improve the industry's social and environmental performance.

As a member of MAC, IOC adheres to its guiding principles and is committed to the implementation of extensive management processes in the MAC TSM performance areas

Table 2: TSM Performance Indicators

	IOC Labrador West					IOC Sept-Îles				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
	✓	✓	☑	✓	☑	✓	✓	☑	✓	☑
Energy & Greenhouse Gas Emissions Management										
Energy use management system	AA	AAA	AA	AA	AA	AA	AAA	AA	AA	AA
Energy use reporting system	AA	A	AA	AA	A	AA	A	AA	AA	AA
Energy intensity performance targets	A	B	B	B	B	A	B	B	B	B
GHG use management system	AA	AAA	AA	AA	AA	AA	AAA	AA	AA	AA
GHG emissions reporting system	AA	A	AA	AA	A	AA	A	AA	AA	AA
GHG intensity performance targets	A	B	B	B	B	A	B	B	B	B
Tailings Management										
Tailings management policy and commitment	AA	AAA	AAA	AAA	AAA	N/A	N/A	N/A	N/A	N/A
Tailings management system	AA	AAA	AAA	AAA	AAA	N/A	N/A	N/A	N/A	N/A
Assigned accountability and responsibility	AA	AAA	AAA	AAA	AAA	N/A	N/A	N/A	N/A	N/A
Annual tailings management review	AA	C	AAA	AAA	B	N/A	N/A	N/A	N/A	N/A
Operation, maintenance and surveillance manual	AA	A	AAA	AAA	AAA	N/A	N/A	N/A	N/A	N/A
Aboriginal Relations and Community Outreach										
Community of interest (COI) identification	AAA	AAA	AAA	AAA	AAA	AA	A	A	AA	B
Effective COI engagement and dialogue	AAA	A	AAA	AAA	AAA	AA	B	B	AA	B
COI response mechanism	AAA	A	AAA	AAA	AAA	AAA	A	A	AAA	AA
Reporting	AA	AA	AAA	AAA	AAA	AA	AA	AA	AAA	AA
Safety & Health										
Policy, Commitment & Accountability	A	AAA	AAA	AAA	AAA	A	AAA	AAA	AAA	AAA
Planning, Implementation & Operation	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Training, Behavior & Culture	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Monitoring & Reporting	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Performance	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Biodiversity										
Corporate Biodiversity Conservation Policy, Accountability & Communications	B	B	B	C	C	B	B	B	C	C
Facility-Level Biodiversity Conservation Planning & Implementation	C	C	C	C	C	C	C	C	C	C
Biodiversity Conservation Reporting	C	C	C	C	C	C	C	C	C	C

✓ Self-assessed
 ☑ Externally verified
 AAA Excellence and leadership.
 AA Integration into management decisions and business functions.

A Systems/processes are developed and implemented.
 B Procedures exist but are not fully consistent or documented; systems/processes planned and being developed.

C No systems in place; activities tend to be reactive; procedures may exist but they are not integrated into policies and management systems.

Table 3: Crisis Management

	Labrador City					Sept-Îles				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
	✓	✓	☑	✓	☑	✓	✓	☑	✓	☑
Preparedness	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Review	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- ✓ Self-assessed
- ☑ Externally verified

Tell Us What You Think

We are committed to operating our business in a sustainable way to secure our future, and the future of the communities where we work and live.

Feedback from stakeholders is a key part of improving our social, environmental and economic performance as well as our sustainable development reporting.

Please feel free to email us at IOCFeedback@ironore.ca to let us know how you think we're doing in this regard, and help us identify areas where we can improve.