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# 2008 Sustainability Summary Pend Oreille Operations

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# Letter from the General Manager

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Throughout 2008, we were one of the largest businesses and employers in northeastern Washington, producing 170,000 tonnes of zinc metal at the Pend Oreille mine since 2004. During that time, our focus on sustainability has been rewarded with progress in the areas of safety, environmental stewardship, and community engagement. This report highlights our sustainability activities over the past year, and identifies our direction for the future.

The health and safety of workers is one of our core values. In 2008 we achieved an excellent safety record with zero injuries requiring time away from work and a dramatically reduced incident frequency rate. At the end of 2008, our underground workforce reached a milestone of two years without any Lost Time Injury (LTI), whilst the mill operations group reached the five year landmark.

Our commitment to the environment was seen in our mining activities and also in our support for the local ecosystem. For example, we assisted in the purchase of new equipment to help the county control and eradicate Eurasian Milfoil, an invasive species of aquatic plant that threatens water bodies throughout the state. Other important community programs we supported included groups from the local school district, Northwest Natural Resources and the North Pend Oreille Valley Lions Club. In recognition of our work, we received several awards from local community groups, such as the Community Service Award for Education from the Association of Washington Businesses. In addition we were given the Helping People in Need award as a result of our donation of a new ambulance for the Pend Oreille County Fire District and the funding of a local Emergency Medical Technician (EMT) course in Pend Oreille County.

In mid-December, we announced a temporary shutdown of the mine due to a major drop in the price of zinc. Over the course of the next few months, we shifted to care and maintenance status, which has unfortunately necessitated some downsizing of our staff. However, I am pleased to report that we have a plan to minimize the “boom and bust” pattern often found in mining operations, thanks in no small part to the Selkirk Community Teck Cominco Planners (SCTCP), a group of local leaders who developed and implemented a community action plan during the initial days of the mine’s restart in 2004. As a result, we have been able to continue local sourcing in several areas of business, including a contract janitor service. In addition, we applied and received approval for Trade Adjustment Assistance, providing additional medical, educational and unemployment benefits for former colleagues.

We are in an uncertain position, and fully appreciate the challenges ahead. We do not take this responsibility lightly, and understand the nature of our commitment to the local community. While it is too soon to predict the future of the mine, we believe that working in close partnership with our local stakeholders increases the possibility of attaining a beneficial outcome for all concerned.

**Mark Brown**  
General Manager

## Overview of Operation/Facility

We are an underground zinc/lead mine with surface ore processing facilities, located in Northeast Washington State, employing approximately 220 people. Teck American Incorporated is the sole owner. The site facilities consist of underground mine workings, mill/processing buildings, a concentrate load-out building and a double-lined tailings disposal facility. We use the “room and pillar” mining technique, which involves removing ore in a honey-combed network of underground rooms up to 30 feet in width and 70 feet in height.

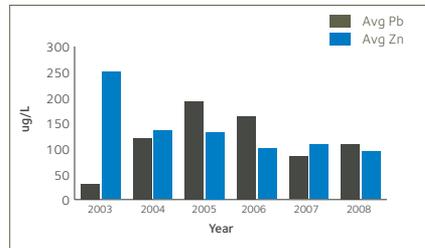
## Goals and Objectives

We seek to conduct our operations within permitted environmental guidelines and aim to create safe and healthy working conditions at the mine. During 2008, we were successful in attaining both of these goals. We achieved a zero Lost Time Injury rate, and our Total Reportable Incident (TRI) rate was approximately three times better than it was in 2007. We also implemented the components of a new data management system for environment, health, safety and community information, whilst continuing work on an innovative bio-based reactor. Details of each of these initiatives are provided in the pages that follow.

Our decision in mid-December to temporarily close the mine has obvious implications for our ambitions over the next year and beyond. In the coming months, our main focus will be shifting the mine, including facilities, operations, and employees, to “care and maintenance” status in a way that minimizes the economic, environmental, and community impacts of those changes. We are proud of the work that has already been done, and we remain committed to working with the community throughout this transition. We will continue to keep employees, their families, and community leaders informed with open, honest, frequent communication, and will provide transition services to ease the financial burden imposed by the temporary shutdown.

## Environmental Programs

One of our latest initiatives is the development of a Sulfate Reducing Bacteria (SRB) reactor, which biologically treats sulfate-rich mine water and chemically stabilizes zinc and lead dissolved in the water. This initiative began in 2007 and work continued over the past year to refine the reactor’s design and operating process, thereby increasing its effectiveness. We believe the SRB reactor will significantly reduce zinc and lead in our discharge water, and ultimately improve the water quality of the Pend Oreille River.



**Figure 1:** Lead and Zinc Discharge Levels.

Lead discharge is closely tied to the grade of lead in the areas where mining is taking place. In 2008, we were mining in areas with higher concentrations of lead. The lead discharge levels were thus higher than they were in 2007, when we experienced record low lead feed grades.

## Safety and Health

This year our activities in the area of safety and health focused on data management, training, and performance. The enhancement of our data management systems enables us to identify trends, spot best practices and subsequently improve our strategic planning. We have therefore begun the integration of our new environment, health, safety, and community information management system. As of December 2008, we have completed the incident reporting and investigation module of this new system and will continue to add modules when mining operations resume.

We also provided training to fire and emergency personnel in 2008. In one example, a 100-hour basic fire fighting training course was conducted, in which ten employees were certified as Basic Fire Fighters. Fifteen employees completed the Washington State EMT certification.

Our focus on safety paid off, and this year we saw significant improvements in our Total Reportable Incident (TRI) rate, which was approximately three times better than in 2007. Our Underground Operations group, the largest employee group at the mine, completed two years (equating to 190,847 hours) without sustaining any Lost Time Injuries, meaning there have been no accidents or injuries that resulted in time away from work. Our Mill Operations group continued its record of safety excellence reaching the significant milestone of five years without any Lost Time Injuries.

### **Tailings Management**

The ground-up waste rock and effluents generated during the mining process are called tailings, and responsible tailings management is one of the key areas of a mine's operations. When considering the design of a tailings storage facility there are many considerations which ultimately affect the way a facility is designed, built, operated and closed, including the site's geography, potential for erosion, settling behavior, leaching behavior, and physical composition and stability.

At Pend Oreille, our tailings management plan has been designed to withstand environmental pressures and incorporate safeguards for unexpected situations. In February 2008, a thick layer of snow caused damage to the lining system of our Tailings Disposal Facility

(TDF) #3. This damage increased leakage rates, and triggered mitigation activities under our existing Leakage Collection Recovery System (LCRS). We conducted an extensive investigation between April and October 2008 in an attempt to determine the location and extent of the leakage. Divers were onsite several times to conduct grid searches, and the LCRS system was flooded to the waterline in order to conduct an electronic survey. In October an acoustic survey successfully located the leak. We were able to successfully seal the defect and return leakage rates to pre-damage rates. Tailings were not leaked to the environment as leakage only occurred between the inner and outer liners of the TDF. All leakage was collected and returned to the TDF.

### **Reclamation**

There are currently no reclamation activities within the mine area and our surrounding property. A comprehensive reclamation plan covering the historic mining area, the current mining operation, reclamation, mitigation, and capping of the three Tailings Disposal Facilities, and reclamation of the historic debris area is currently under review.

Tailings Disposal Facilities #1 and #2 are remnants of previous mining operations conducted 30 years prior to the start-up of the current Pend Oreille Operations, and are located adjacent to the active mining area. In 2008, we installed three new monitoring wells at these facilities to gather information about groundwater quality at the site. This installation was conducted in accordance with Washington State Department of Ecology findings, providing information that allows a Remedial Investigation/ Feasibility Study (RI/FS) to move forward to completion.

## **Conservation and Biodiversity Initiatives**

Our potential impact on nearby habitats is an issue we take very seriously. Located adjacent to our facilities is the 1.5-acre Frog Creek Wetland, which provides habitat for sensitive and important plant and animal species. This wetland is fed by Frog Creek, which runs near our Tailings Disposal Facility #3. We are committed to monitoring the water, soil and vegetation conditions associated with Frog Creek on a regular basis. In 2002 we conducted a baseline assessment to characterize the soils, hydrology and vegetation of Frog Creek and its associated wetlands. Follow-up assessments in 2006 and 2009 showed that no substantive changes have occurred. An independent analysis shows that differences in soil, hydrology, and vegetation are indicative of natural variability in these conditions.

## **Community Outreach, Engagement, Dialogue**

We interact with our local community in a number of ways. For example, we participate in monthly meetings of the Metaline Chamber of Commerce in order to maintain a dialogue between the Mine and the communities in which we operate. We also have a long history of community engagement with the Selkirk Community Teck Cominco Planners committee. This committee was developed prior to mine start-up to create dialogue and involve the local community in the development, operation and eventual closure of our operations. Our participation in this committee enables the mine's General Manager to collaborate with several local Mayors, County Commissioners and other community leaders.

Meetings of the Selkirk Community Teck Cominco Planners committee are held on an ad hoc basis as deemed necessary by the participating members. When we announced the temporary shutdown of the mine in mid-December, the community group gained a new sense of urgency and resolve. Moving forward, we anticipate ongoing, fruitful and productive dialogue with the committee.

## **Aboriginal Relations**

Not applicable to this operation.

## **Community Development and Good Neighbor Practices**

Our commitment to socially and environmentally sensitive operations extends into our support for the local community. Over the past year we have supported programs including the Special Olympics, Boy Scouts, Selkirk Humanities Foundation, civil groups and county fair. We also provided financial support and skills training for Selkirk High School's recently initiated Career Exploration class, which places representatives from local employers into the school to teach two-week modules focusing on the trades and technical training. Our Employees routinely volunteer with the local fire district, provide emergency medical services, serve as town mayors, and coach youth sports.

One of our largest donations in 2008 was a \$200,000 contribution towards the purchase of a milfoil harvesting boat for Pend Oreille County. Milfoil is an invasive aquatic species of plant that is very aggressive and often dominates or completely eliminates natural vegetation in water bodies. It is a nuisance to fishermen, skiers, and other recreational users, can become a hazard to swimmers and is detrimental to fish and wildlife habitat. As the harvester barge boat moves through the water, a 10 foot wide swath of milfoil is cut about 5 to 6 feet below the water surface—similar to an underwater lawn mower. The milfoil are brought onto the boat deck until they can be offloaded onto shore above the ordinary high water line. This technology reduces underwater disturbance and improves water quality, while still providing an excellent tool in the fight against this noxious weed.

## **Emergency Preparedness and Risk Management**

We take the utmost precautions in emergency preparedness in all areas of our Operation. In addition to daily, weekly, and monthly workplace inspections, joint annual reviews of surface and underground fire control systems are conducted with our insurer. Quarterly inspections are conducted by the Mine Safety and Health Administration (MSHA) and by Washington State Department of Ecology. We are also a member of Central Mine Rescue, an organization that provides mutual aid to other mines in the event of an emergency. As one of nine full members, we are committed to providing two fully trained mine rescue teams, as well as a full mine rescue station at our site. We conduct joint training with other member mines and are available to respond to as many as 20 affiliate mines.

We also partner with members of our local communities to support emergency preparedness. For example, we conducted a joint rope rescue emergency exercise in the spring with approximately 45 representatives from the County, Seattle City Light, Fire District 2, Central Mine Rescue and our Operation. While focused on mining, this exercise also benefits the community since many of the participants serve as volunteer fire fighters and Emergency Medical Technicians (EMTs) with the local town and county emergency departments.

## **Human Resources**

A wellness program called Club Health is available to all employees. The program provides free health screening for employees and spouses and enables access to the Club Health web site, which provides wellness tips and strategies. We also participate in Teck's Olympic sponsorship. We have benefited from weight loss programs, health seminars and fitness activities as a result of this sponsorship program.

A summer student program offers a work program during summer and holiday season for employee dependents who are existing college students or are about to enter college.

	2006	2007	2008
<b>Health &amp; Safety Statistics</b>			
Total Recordable Incident Frequency	3.83	4.56	1.52
Fatalities	0	1	0
Lost Time Injuries (LTI)	2	2	0
LTI Frequency	0.96	1.14	0.00
Severity	11.97	2,283.98	0.00
<b>Energy Use</b>			
Fuel (TJ)	24	31	35
Electricity (TJ)	157	171	214
Carbon Energy Intensity in Product (GJ/t)	0.61	0.94	0.85
Energy Intensity in Product (GJ/t)	4.6	6.1	6.1
<b>GHG Emissions</b>			
CO <sub>2</sub> equivalents (kt) (Direct)	1.9	2.4	2.6
CO <sub>2</sub> equivalents (kt) (Indirect)	0.0	0.0	0.0
CO <sub>2</sub> equivalents (kt) (Total)	1.9	2.4	2.6
Carbon Intensity in Product (t/t) (Direct)	0.049	0.071	0.064
Carbon Intensity in Product (t/t) (Indirect)	0.00	0.00	0.00
Carbon Intensity in Product (t/t) (Total)	0.049	0.071	0.064
<b>Production – Metal Contained in Concentrate (kt)</b>			
Zinc	34	29	35
Lead	5	4	6
Total	39	33	41
<b>Mined Materials</b>			
Total waste rock (kt)	3	0	29
Total tailings dry (kt)	482	581	627
<b>Permit Compliance</b>			
Number of Permit Exceedances	2	0	0
Total Parameter Count – Air	0	0	0
Total Count over Permit Limit – Air	0	0	0
% Compliance Air	0.00%	0.00%	0.00%
Total Parameter Count – Water	332	332	332
Total Count over Permit Limit – Water	2	0	0
% Compliance Water	99.40%	100.00%	100.00%
<b>Reportable Spills</b>			
Number	0	0	0
Volume (L)	0	0	0
Weight (kg)	0	0	0
<b>Reclamation</b>			
Total disturbance (ha)	34.8	35	35
New reclamation for the year (ha)	0	0	0
Reclaimed to date (ha)	0	0	0
Land to be reclaimed (ha)	35	35	35
Reclaimed/Land To Be Reclaimed (%)	0%	0%	0%
Trees/shrubs planted (number)	0	0	0
<b>Waste Management &amp; Recycling</b>			
Total solids recycled (tonnes)	1	11	5
Total liquids recycled (m <sup>3</sup> )	96	0	23
Total solid non-haz. material to landfill (tonnes)	163	123	116
<b>Water Conservation</b>			
Total groundwater withdrawal (m <sup>3</sup> /yr)	53,803	56,984	53,202
Total surface water withdrawal (m <sup>3</sup> /yr)	0	0	0
Total volume of water recycled/reused (m <sup>3</sup> /yr)	1,418,794	1,533,754	1,650,584
Total percentage water recycled/reused %	2637.00%	2691.54%	3102.51%

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