

A photograph of an industrial facility, likely a mine or processing plant, at dusk. The sky is a deep blue, and the ground is dark. In the background, there are large piles of material, possibly ore or coal, and several tall, dark structures that look like conveyor belts or processing towers. The scene is illuminated by a few bright lights, possibly from the facility itself, which create a strong contrast against the dark background. The overall mood is industrial and somewhat somber.

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# 2007 Sustainability Summary Lennard Shelf Operations

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**Teck**

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# Letter from the General Manager

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At the Lennard Shelf (Pillara) Operations, we have concentrated our sustainability efforts this year on three key areas, namely: environmental compliance, effective safety management systems and maximization of local participation. Given the short life of the project, it was seen as critical to establish and resource systems quickly, and to see tangible positive results from the start.

Generally, outcomes have met or exceeded our expectations. We were able to demonstrate to regulators and local government our genuine commitment to zero harm to the environment. This resulted in our obtaining a "clean bill of health" from government agencies for our Derby Port Operation, and a collaborative approach to resolving some long-term legacy issues at the mine site.

In the area of safety and health, we developed effective management and monitoring systems, particularly where known hazards existed, such as lead, noise and dust. Our workforce demonstrated a high level of awareness and cooperation in adopting preventative controls.

We focused on involving and building the capacity of local indigenous people. This initiative had rapid benefits in reduced turnover, lower recruitment and transport costs, and general good standing as a corporate citizen and neighbour.

For the remaining life of the project, we will continue to work to eliminate harm to our people, our community, and our environment.

Dan Gignac  
General Manager

## Overview of Operation/Facility

The Lennard Shelf Operations are located in the Kimberley region of Western Australia; actual production (i.e., mining and milling activities) commenced in February of 2007. The company is jointly owned by Teck and Xstrata Plc. Lennard Shelf produces mainly zinc and lead from its underground mining Operations at Pillara; Pillara is a 2,800 tonne per day underground Operation, producing approximately 21,000 tonnes of zinc concentrate and 6,200 tonnes of lead concentrate in 2007.

The Operations in Western Australia currently employ approximately 300 employees including contractors. Five employees are based in West Perth, with the remainder on-site at Pillara or working from the Derby Port Facility.

Teck Cominco Limited and Xstrata Zinc recently announced the closure of the Lennard Shelf Pillara mine. Operations are expected to cease by early August. The Pillara mine has become uneconomic, primarily due to the sharp decline in zinc and lead prices compounded by the appreciation in the Australian dollar. Higher energy and labour costs and lower-than-planned production have also contributed to rendering the project uneconomic. The decision to start Lennard Shelf was made in 2006 and production commenced in early 2007. In the period to December 31, 2007, the operation produced 42,100 tonnes of zinc metal and 12,400 tonnes of lead metal. Production numbers in the table below reflect 50% ownership by Teck.

## Goals and Objectives

In 2007 all of our environmental and safety goals were met, with a Total Recordable Incident Frequency (TRIF) of 3.51 (based on 23.66 per million man hours), with no major environmental non-compliances. The TRIF resulted from 2 Lost Time Injuries and 10 Medical Treatment Injuries. The Derby Port Facility, and our operating practices at the Port, were audited by the Department of Environment mid-year, and were found to be fully compliant.

## Environmental Programs

During our first months of operation, we identified several areas for potential improvement. These were as follows:

- education of groundwater draw and water re-use. We re-designed aspects of the mine drainage system to feed more readily into the process water system, reducing draw-down from our borefield, and volumes of water released to the environment
- waste reduction – we eliminated the use of disposable plastic containers for meals giving a reduction to landfill of 50%
- in the area of recycling, the Operation purchased a cardboard baler mid-year, allowing the economic return of cardboard to regional centres for recycling

The Operation has continued to closely monitor the quality of water released to the environment, in compliance with license conditions. Additionally, it has been assisting a local pastoral station in gaining government permission to establish pasture irrigation using water runoff from the mine.

## Safety and Health

As part of the safety and health program, there was extensive environmental lead monitoring in and around the Derby Port Facility throughout the year in association with local government and State government programs. Extra focus and effort was placed on blood lead monitoring for all employees, based on changes to State legislation relating to exposure limits for lead.

## Tailings Management

Lessons learned from the first three months of operation resulted in more accurate beaching angles for tailings deposition, eliminating the need for a further lift of Tailings Storage Facility walls. In addition, better tailings density control procedures were implemented.

## Reclamation and Closure

As indicated above, mine closure is tentatively scheduled for December of 2009, so initial planning around reclamation, rehabilitation of the Tailings Storage Facility, and return of the site to its original state (i.e., original pastoral land use, specifically, cattle ranching) and related procedures commenced toward the end of 2007.

## Audits (internal)

Department of Consumer and Employment Protection audits and inspections occurred on a regular basis, and were complemented by a series of safety, risk and hazard audits completed by Teck Cominco. All of the recommendations are currently being implemented.

## Energy Efficiency and GHG Emissions Management

Audits of underground ventilation and pumping systems resulted in a steady reduction in power draw, and further significant improvement opportunities were identified. A new concentrator operations strategy prompted a reduction of over 880,000 Kwh in site power usage to date.

Community Outreach, Engagement, Dialogue  
The Pillara Operation identified and engaged with key stakeholders including the Gooniyandi tribal group, which incorporates several clan/family groups. The Operation regularly interacts with subgroups through employment participation programs, sponsorship of sporting events, school programs and donations. Though there is no formal complaints system, regular meetings are held with the municipal office; this office relays any concerns raised by members of the public – none have been raised to date; relations with the community are good, and dialogue has always been honest and open.

## Aboriginal Relations

Indigenous participation contributed to more than 10% of the total workforce for all of 2007. In the early stages of site development, the Operation noted that there were locally-based, job-ready indigenous personnel available. An Accelerated Indigenous Employment program was instituted, establishing several “trainee” roles funded from the Human Resources Budget; indigenous staff work alongside those in established roles. When the staff attain the appropriate skills and vacancies occurred within crews, trainees were then appointed to fill a permanent role in the Operation. This process resulted in high indigenous representation amongst process crews (i.e., above 20%). There were low turnover rates (i.e., 28% amongst program participants compared to 55% for the project overall), once staff were appointed to these roles.

The Operation continues to sponsor an after-school program of high performance coaching in the standard school curriculum, for promising primary school students, including the provision of six laptops for home use.

## Community Development/ Good Neighbour Practices

As an extension of community development and good neighbour practices, the Operation has placed a stronger emphasis on recruitment from within the region, rather than from the capital city. Our purchasing policy favours local procurement, when costs are reasonably competitive.






















## Emergency Preparedness and Risk Management

Our Emergency Response Team's capability was greatly enhanced in 2007 with the appointment of a full-time Coordinator and the adoption of a significant training program. Team Leaders are now appointed for each shift panel, and conduct simulation exercises regularly.

## Human Resources

The "Move Better, Feel Better" wellness program was designed and delivered by professional physiotherapists who observed and videotaped the way in which individuals performed standard tasks and movements. This program was initially offered to mine personnel, but has since been extended site-wide. They then designed remedial and /or coping exercises for each participant. Higher exercise levels amongst camp residents resulted from a re-fit of the camp gymnasium and other related facilities. The Social Club has become very active on-site.




		2007	
<b>Health &amp; Safety Statistics</b>			
Total Recordable Incident Frequency		3.51	
Fatalities		0	
Lost Time Incidents		2	
LTI Frequency		0.58	
LTI Severity		0.58	
<b>Permit Compliance</b>			
Number of Excursions		0	
% Compliance Water		100%	
% Compliance Air		100%	
<b>Reportable Spills</b>			
Number		5	
Volume (L)		100,000	
Weight (kg)		150	
<b>Average Concentrations in Effluent (mg/L)</b>			Permitted
Lead		<0.0001	0.100
Zinc		< 0.0001	3.000
<b>Energy Use (Direct and Indirect) <sup>(1)</sup></b>			
Electricity (TJ)		98	
Fuel (TJ)		401	
Carbon Energy Intensity in Product (GJ/t)		14.7	
Energy Intensity in Product (GJ/t)		18.3	
<b>GHG Emissions (Direct) <sup>(1)(2)</sup></b>			
CO2 equivalents (kt) (Direct)		29	
CO2 equivalents (kt) (Indirect)		29	
CO2 equivalents (kt) (Total)		58	
Carbon Intensity in Product (t/t) (Direct)		1.05	
Carbon Intensity in Product (t/t) (Total)		2.12	
<b>Production - Metal Contained in Concentrate (000 tonnes) <sup>(1)</sup></b>			
Lead		6.2	
Zinc		21.0	
Total		27.2	
<b>Recycling</b>			
Total solid material (tonnes)		18	
Total liquid materials (m <sup>3</sup> )		79	
Total items counted (count)		48	

	2007
<b>Managed Waste</b>	
Total waste rock ('000 tonnes) <sup>(3)</sup>	0
Total tailings dry ('000 tonnes)	822
Total solid non-haz. material to landfill (tonnes)	100
<b>Water Conservation</b>	
Total groundwater withdrawal (m <sup>3</sup> /yr)	2,191,395
Total surface water withdrawal (m <sup>3</sup> /yr)	0
Total volume of water recycled/reused (m <sup>3</sup> /yr)	139,604
Total percentage water recycled/reused %	6.40%
<b>Reclamation</b>	
New reclamation for the year (ha)	2
Reclaimed to date (ha)	128
Land to be reclaimed (ha)	148
Trees/shrubs planted (count)	0

n/a = not available

- (1) Production, energy use and greenhouse gas emissions are shown 50% based on the mine's 50/50 ownership between TCL and XStrata.
- (2) Lennard Shelf GHG CO<sub>2</sub>e emissions were calculated for this report using the MAC spreadsheet for fuel use only; electricity emissions were based on Australian GHG CO<sub>2</sub>e emissions factors since the majority of electricity generated in Australia is from coal-fired sources.
- (3) Lennard Shelf total waste rock is reported as 0 for 2007 because only ore is brought up to the surface, as ore and waste rock are separated underground.

Deloitte & Touche LLP reviewed selected environmental, health and safety data in the 2007 Sustainability Report. Their Independent Reviewers' Report is available on page 54. Only performance data with the following symbol  was independently reviewed by Deloitte & Touche LLP.



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