

CTPM Mining & Process Industry Client Achievements

The following information has been reported in the public domain (CTPM Annual Forums) and hence can be shared.

Our clients have also achieved many more substantial gains which, for confidentiality reasons, cannot be reported in this document.

Company & Site	Timeframe & Awards	Publically Reported Savings / Improvements
Banpu Open Cut Coal Mine Lampang Thailand 160 personnel	Commenced: Feb 03 <ul style="list-style-type: none"> • Level 1: Aug 04 • Level 2: Sept 05 • Level 3: Dec 05 • Level 4: Aug 06 • Level 5: May 07 <p><i>The first site in the world to achieve Level 5 TPM Excellence Award</i></p> Mine ceased operations in August 2007 due to completion of coal resources.	<p><i>At time of Level 5 Verification Assessment in May 2007 Comparing with 2002 Baseline figures:</i></p> <ul style="list-style-type: none"> • 98% reduction in Plant 2 oversize product • 64% reduction in Plant 1 maintenance costs • 86% reduction in Plant 2 maintenance costs • 36% reduction in Conveyor System maintenance costs • 50% reduction in site average maintenance costs • \$138,000 savings by reducing spare parts holdings by 13% • Achieved 517 days accident free
PT Kitadin (Banpu Company) Tandung Mayang Open Cut Coal Mine Bontang Indonesia 666 personnel	Commenced: May 06 <ul style="list-style-type: none"> • Level 1: Sept 08 • Level 2: Aug 09 • Level 3: Jun 10 • Level 4: Jun 12 • Level 5: Dec 14 <p><i>of CTPM's TPM Excellence Award</i></p>	<p><i>At time of Level 5 Verification Assessment in December 2014 compared to 2006 Baseline figures:</i></p> <ul style="list-style-type: none"> • 263 Cross-functional Teams completed • 3,039 One Point Lessons created • 1,868 Improvement Sheets • 510 A3 Problem Solving Summary Sheets • 19% increase in Large Excavator Output • 27% increase in Small Excavator Output • \$29.1 million in Cost Reduction against budget (USD) to Oct 14

CTPM Mining & Process Industry Client Achievements

Company & Site	Timeframe & Awards	Publically Reported Savings / Improvements
<p>PT Kitadin (Banpu Company) Indominco Coal Processing & Port Bontang Indonesia 841 personnel</p>	<p>Commenced: May 06</p> <ul style="list-style-type: none"> • Kick-off: May 08 • Level 1: Aug 09 • Level 2: Nov 10 • Level 3: Dec 12 • Level 4: Dec 14 <p>of CTPM's TPM Excellence Award</p>	<p>At time of Level 4 Verification Assessment in December 2014 compared to 2007 Baseline:</p> <ul style="list-style-type: none"> • Better ownership by workforce with positive impact on culture • Big improvement in safety and cleanliness • 15% increase in ship loading OEE above budget • 23% increase in Coal Processing Plant (CPP-2) output above budget • 50% reduction in Coal Processing Plant (CPP-1) Maint cost / ton of budget • 103 Cross-functional Improvement Teams completed • 2,311 Improvement Sheets completed • 1,048 One Point Lessons created • \$25 million in Cost Reductions
<p>PT Kaltim Prima Coal Open Cut Coal Mine Bontang Indonesia 5700 personnel</p> <p>GM Business and Performance Improvement Global Executive Mine Management Summit - Bali</p>	<p>PT Relogica* Commenced October 2008</p> <ul style="list-style-type: none"> • 	<p>By August 2010:</p> <ul style="list-style-type: none"> • Total accumulated benefits to date being \$135.5m • "Program now really attracts the attention from Board of Directors" <p>By September 2011:</p> <ul style="list-style-type: none"> • Total accumulated benefits to date being \$180m
<p>PT Vale Indonesia Laterite Mine & Nickel Smelter Sulawesi Indonesia 3600 personnel</p>	<p>PT Relogica* Commenced October 2011</p> <p>Concluded Dec 2018</p>	<p>Operational & Maintenance Improvement Program</p> <ul style="list-style-type: none"> • Significant gains however they cannot be publically reported at this stage

CTPM Mining & Process Industry Client Achievements

Company & Site	Timeframe & Awards	Publically Reported Savings / Improvements
<p>Blair Athol (Pacific Coal) Open Cut Coal Mine Clermont – Central Queensland 180 personnel</p> <p><i>CTPM Newsletter</i> Winter 2001</p>	<p>Commenced August 2001</p> <p>2 x CI Leader / Instructors – Jun 02</p> <p>Concluded Oct 2002 due to change of Management</p>	<ul style="list-style-type: none"> • During Clean for Inspection on Service Truck found 27 defects and \$6,000 worth of fittings within all the built up grease • Improved Service Truck OEE from 7% to 67%
<p>Boral Quarries Dunmore NSW 24 personnel</p> <p><i>Team Presentation</i> Forum 2008</p>	<p>Commenced August 2007</p> <p>Completed 2 Cycles involving Cross-functional Teams and WAM / 5S teams</p> <p>Concluded Oct 2008 due to change of Management</p>	<p><i>By conclusion of Cycle 1 in Dec 2007 achieved:</i></p> <ul style="list-style-type: none"> • Employees feeling empowered by the process with improved communication between employees and management. • Visible improvements in the crib room, laboratory and administration area. • New Stockpile area has been levelled and crowned. • Signage for the individual stockpiles installed • Standards and procedures for maintaining the stockpile area developed • Worn chutes identified and repaired reducing spillage by over 90% (target was 50%) • Removed over 85 tonnes of spilled product from the tower • Schedule for cleaning and inspection implemented. <p><i>At 2008 Forum an Area Based Team focused on Work Area Management of their Stock Pile Area reported:</i></p> <ul style="list-style-type: none"> • Increased morale due to the fact that employee changes were being implemented • Assumed greater responsibility for team outcomes • Improved relationships between employees and management

CTPM Mining & Process Industry Client Achievements

Company & Site	Timeframe & Awards	Publically Reported Savings / Improvements
<p>Zinifex (formerly Pasmaico) Underground Lead & Zinc Mine Rosebery TAS 250 personnel</p> <p><i>Team Co-ordinator</i> Forum 2003</p> <p><i>Team Presentations</i> Forum 2007 and 2008</p>	<p>Commenced June 2001</p> <p>Completed 3 Cycles then went into Administration</p> <p>Re-started June 2005 Completed 6 Cycles</p> <p>2 x CI Leader / Instructors</p> <p>Concluded Dec 2008 due to sale of business</p>	<p><i>In the first twelve months:</i></p> <ul style="list-style-type: none"> • Reduced crusher roll change-outs saving \$160,000 per annum • Improved capability in mine development from 100 to 125 metres/week • Improved metal recovery in conversion plant by 3% resulting in a revenue increase of \$1.6 million p.a. <p><i>At the 2007 Forum, a Cross-functional Team focusing on improving the condition of the underground truck highway reported:</i></p> <ul style="list-style-type: none"> • Cleared 80% of the worst TOES in the main decline roadway • Reduced tyre punches from 1-2 per fortnight to 1 tyre change per month • \$204,000 p.a. saving in tyre costs • \$5 million p.a. savings in lost revenue from tyre downtime <p><i>At 2008 Forum, a Cross-functional Team focusing on reducing losses and wastes associated with thickener overflows reported:</i></p> <ul style="list-style-type: none"> • Improved communications and relationships. • Improved morale • Decreased safety hazards through improvements.
<p>Juken New Zealand – Northland Timber Mill Kaitaia NZ 200 personnel</p>	<p>Commenced: Jan 05</p> <ul style="list-style-type: none"> • Level 1: Nov 06 <p>2008: Sawmill closure due to downturn in Japanese marketplace</p>	<p><i>At time of Level 1 Verification Assessment in November 2006:</i></p> <ul style="list-style-type: none"> • 88% reduction in Lost Time Injury Frequency Rate • 375% increase in Productivity • 35% increase in Sawmill Capacity (OEE) • 20% increase in Veneer Plant Capacity (OEE) • 93% increase in Sawmill Yield resulting in \$350,000 p.a. savings in Raw Material costs • 67% reduction in Sawmill Maintenance Costs • 29% reduction in Sawmill Electricity Costs • 50% reduction in Total Manufacturing Costs

* **PT Relogica** is CTPM's partner in Indonesia. They are a Management Consulting Practice specialising in Reliability and Operations Excellence.