

Çayeli

is an underground copper and zinc mine located on the Black Sea coast of northeastern Turkey.



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|--|---|
| Type of mine | Underground |
| Ownership | 100 percent |
| Inmet's revenue | 32 percent |
| Opened | 1994 |
| Expected closure | 2016 |
| Land owned | 45 hectares |
| Land disturbed | 17 hectares |
| Distance from nearest town | 0.5 km from Madenli, Turkey and 8 km from Çayeli, Turkey. |
| Main activities in surrounding area | Agriculture, residential and small business. |
| Employees | 473 |
| Unionized employees | 327 |
| National employees | 468 |
| Female employees | 24 |
| Donations to the local community | \$670,000 |
| Proportion of spending locally ¹ | 34 percent (Rize area) |
| Methods of waste disposal | Deep sea tailings discharge at 275 metre depth in the Black Sea. Two small surface rock containment facilities. |
| Emergency Preparedness and Response Plan | Yes (consistent with MAC ² guidelines) |
| Tailings management system | Tailings management system being improved to meet MAC TSM standards – some modifications may be necessary to apply to deep sea tailings disposal. |
| Tailings Operations, Maintenance and Surveillance (OMS) Manual | A manual applicable to deep sea tailings disposal is under development. |
| Status of closure plan | Reviewed, submitted and approved by Turkish authorities. |
| Community relations committee | Yes, community advisory panel established in 2008. |
| Foundation (community development) | Yes |

¹ Contributions to the local economy include the local purchase of goods and services, and total payroll (G3 Indicator EC6).

² MAC is the Mining Association of Canada.

Çayeli's safety performance improved significantly in 2008, a result of the focus on safety procedures, training and employee commitment.

Çayeli's performance

ÇAYELI'S 2008 PERFORMANCE AT A GLANCE

| | 2008 target | 2008 results | 2009 objective |
|---|-------------|--------------|----------------|
| Lost Time Injury Frequency (LTIF) | 1.0 | 0.5 | 0.4 |
| Accident Severity | 67 | 24 | 19 |
| Reportable environmental incident intensity | 0.10 | 0.29 | 0.15 |
| Notices of Violation or warnings | 0 | 0 | 0 |
| Percentage of after-tax profits for community support | 0.5 | 1.27 | 0.5 |
| Ore production (000s tonnes) | 1,100 | 1,109 | 1,200 |
| Net income (\$000s) | | 52,571 | |

Operate safely

SAFETY MANAGEMENT

In terms of performance against trailing safety indicators, Çayeli's LTIF decreased by 26 percent from its 2007 results. There were three lost-time injuries reported in 2008. Severity declined by 98 percent, reflecting the impact of good performance and an elevated 2007 rate caused by a contractor fatality. Disabling Injury Frequency (DIF) was down two percent from 2007 while Total Injury Frequency (TIF) was elevated by 33 percent because of a rise in reported medical aid cases from seven in 2007 to 12 in 2008.

Çayeli made significant improvements in 2008 to its safety management system. By the end of the year, managers and supervisors had been retrained on (i) risk assessment, (ii) new Life Saving Rules and (iii) the Managing Director's expectations of supervisors and their field leadership. Each of the HCPs was assigned to an internal champion and an HCP coordinator was designated. The HCP guidelines was translated into Turkish and safe work procedures were revised for training purposes.

An analysis of safety incidents and near misses over the past two years confirmed that priority was being appropriately placed on measures for fall protection, on isolating and locking out switches and other energy sources during site activities, and on vehicular energy safety.

Çayeli continued to improve emergency preparedness and response through regular surface response and mine rescue training, practice and simulations. During 2008 one emergency drill was completed. Çayeli also successfully responded to three incidents that included a fire and two occasions of poor air quality. The simulations and actual responses were useful learning experiences for the Mine Rescue Team. They were conducted in accordance with the MAC guidance on crisis management and helped identify and address shortcomings in response plans and improve emergency preparedness.

Learning from experience

Çayeli reported an incident, which fortunately, did not result in serious injury but which could have led to much more serious consequences. The worker's first aid injury resulted from minor burns on his face while working in a confined space. During the root cause investigation site personnel determined that the worker was working alone in an effort to complete the job during the crew's break, and that the worker was not qualified for the work. The confined space permit that was in place for the job had not been strictly followed. Site safety systems have since been improved to include increased training, field inspection and hazard discussions.



Ribbon cutting ceremony at the 10-flat apartment completed in 2008 by the Housing Foundation at Madenli. Our employees, construction contractors, local residents and dignitaries enjoyed an afternoon celebration for the opening. The families moved in to their new flats by the end of 2008.

Protect the environment

There were three environmental incidents at Çayeli, including a small process reagent spill, a release of process water and a 200 litre spill of petroleum. The petroleum spill was reportable under our internal protocols, and resulted from a broken hydraulic hose on a piece of heavy mine equipment.

Çayeli continues to investigate how it can improve the operation of one of its process and storm water retention ponds. Given the restricted project footprint, Çayeli has limited space to construct holding ponds for impacted storm water generated from rainfall at the site. It maintains an automated pumping system to remove water from these facilities and they are occasionally overwhelmed by storm water flows generated by the heavy rainfall that occurs frequently in the area. In these situations storm water is released to the local Büyükdere River. Çayeli believes that the storm water dilution from rainfall is sufficient to reduce the concentration of metals and other constituents to below regulatory levels. It is however, investigating options to better improve these systems.

ENVIRONMENTAL MANAGEMENT

Çayeli successfully resolved several environmental issues and continuously improved environmental management during 2008.

- Submitted site closure plan to Turkish authorities
- Obtained rights for withdrawal of river water as a backup to current supply
- Moved the groundwater supply wells to a larger and more stable part of the aquifer to alleviate fluctuations during droughts
- Identified eleven priority energy conservation projects

Review of its Environmental Management and Procedures Manual originally scheduled for 2008 continued and Çayeli expects it to be complete in 2009. All but six of the corrective actions identified during the 2007 Çayeli environmental regulatory compliance audit were implemented. The remaining corrective actions are related to site runoff management and environmental controls at the port. Both are being addressed as a priority and have been assigned to the appropriate department manager for completion.



Runoff management within the steep terrain at Çayeli can prove difficult. Çayeli is assessing measures that will improve runoff management and help reduce its consumption of fresh water from the aquifer and river.

The maintenance team initiated a continuous improvement project of tracking, reporting and improving control of oil spills on site.

Values in Action – Energy Conservation

- Çayeli has identified up to 21 potential energy conservation projects
- Eleven of these projects are being assessed for implementation
- The potential 26 percent energy savings that can be realized by implementation of these 11 priority projects is intended to keep energy costs down to early 2008 levels
- An energy champion has been assigned to ensure ongoing progress

Water

The primary source of water for Çayeli comes from the gravelly aquifer that extends beneath the site and within the Büyükdere River valley. After further investigation of the aquifer, an independent consultant retained by Çayeli concluded that fluctuations in the aquifer level and production are primarily affected by precipitation and by potential blockage of the aquifer caused by the introduction of fine-grained silt generated by quarrying activities upstream from Çayeli. The mine's water intake was determined not to be the primary cause of the aquifer fluctuations. To help limit impact on the aquifer, the consultant suggested that the site continue with its current plan to extract groundwater from further north where the aquifer is wider and deeper. Development of new wells, up to 700 metres to the north, will continue over the next two years. These are designed to have no significant effect on other users. Çayeli also secured river water rights with a term of three years for withdrawal of 340 cubic metres per hour at an annual cost of US \$38,000. This river water will serve as a backup water supply.

Çayeli has prioritized the need to reduce fresh water use. It plans to recycle thickener overflow water for reuse in the zinc flotation and dewatering circuits. The approved capital project will reduce fresh water withdrawal from the aquifer by more than 25 percent. Çayeli is assessing options for reducing fresh water use for maintaining flow velocity in the tailings discharge pipeline by using seawater. Çayeli is also assessing a third option for water conservation that would use runoff collected in its two main sumps as wash water in the maintenance shops. Improved monitoring in the mine may also identify additional sources of water for reuse.

Treat people and communities well

Çayeli continues with its community relations efforts. A dedicated community officer was appointed to assist in completing its first socio-economic assessment and community development strategy. To-date, Çayeli has completed site and community profiles, a detailed action plan for completing the social and economic assessment, and has engaged over 100 community members in nine meetings. A community impact list and an impact management plan were prepared and Çayeli intends to release its SEAT report in 2009. The impact management action plan will be a model for other Inmet sites. During the year, meetings were held to update 351 stakeholders, including residents from neighbouring villages, community leaders, elected officials and nongovernment organizations; this was a 20 percent increase in the number of meetings from 2007.

Acting on feedback from local community meetings

Priority areas of concern identified during 2008 community meetings included:

- High level of unemployment in the region
- Land, infrastructure and housing damage perceived by local communities as caused by mining activities
- Perceived poor runoff water control
- Complaints concerning traffic on local roads, and noise and dust from the underground mine

All of these concerns have been integrated into Çayeli's 2009 plans and assigned to site management as part of their objectives.

Çayeli's ongoing community development programs address concerns about damage that stakeholders believe to be a result of mining activities by making contributions to neighbouring villages through the Büyükdere Valley Housing Foundation. Water runoff control has been improved and will be incorporated into Çayeli's plans for increased water recycling. Çayeli will continue to consult with the community on matters such as local traffic, and air quality and noise monitoring program results. Çayeli will also continue to assist the community through partnerships to increase employment and business opportunities.

Progress in building the capacity of local suppliers and contractors continued as Çayeli helped them with materials specification checks and pre-qualification safety and leadership training. All contractors must have a Çayeli-issued safety card prior to working on the property.



The mining and sustainability lesson portion of the students mine site tour includes lunch and presentations by our site employees.

Contributions to local community development focused on schools and hospitals in the area. Çayeli's community development support for children, health and education continued in 2008:

- Madenli school refurbished – \$30,000
- Education equipment for seven schools in Çayeli – \$28,000
- Medical and surgery equipment for Çayeli state hospital – \$46,000
- Scholarship for 40 students in Rize high school – \$15,000
- Madenli municipality sewage system (European Union-funded project) – \$29,000
- Food and material support for Madenli families – \$24,000

Community Advisory Panel

Çayeli established a Community Advisory Panel in 2008 comprised of the village mayor, the local school manager and three local residents. The panel agreed on terms of reference that outline functions, goals, responsibilities, membership, codes of conduct and confidentiality, and plans to meet quarterly. The panel's functions include providing the mine with feedback and critical reviews of performance.

VALUES IN ACTION – AN UPDATE ON THE BÜYÜKDERE VALLEY HOUSING FOUNDATION

The Foundation's four primary activities include:

- Building houses on Foundation land and then granting the homes to local families in need
- Building and transferring ownership of prefabricated houses on land owned by others
- Wholly or partially repairing and refurbishing houses belonging to people in need
- Donating construction materials to local families where necessary to facilitate completion of housing construction

In 2008 the Foundation:

- Completed and inaugurated a 10-flat apartment building
- Built four prefabricated houses in the village of Madenli
- Refurbished 12 dwellings in a neighbouring village

Çayeli continues to support the activities of the Büyükdere Valley Housing Foundation, a trust fund established in 2005 to help provide local needy families with housing. Since 2005, Çayeli has contributed nearly \$1.4 million to the Foundation. Five Çayeli employees make up the majority of the nine-member Board of Directors with community representation from the Mayor of Madenli, a District representative and two elected neighbourhood leaders. Applications for assistance are received by the Foundation and are prioritized according to need. Existing houses are evaluated structurally to determine whether they can be salvaged or need to be rebuilt. Information is then presented to the Foundation's Board for a final decision on steps to be taken.



Entrance to the new apartment building built by the Büyükdere Valley Housing Foundation with funding provided by Çayeli.

Çayeli's performance on 2008 SECA objectives

| 2008 SECA OBJECTIVES | 2008 PERFORMANCE |
|--|--|
| <ol style="list-style-type: none"> 1. Complete High Consequence Protocols (HCPs) and develop implementation plans. 2. Develop implementation plans for the SECA Standards at our majority-owned operations. 3. Increase community affairs resources at our majority-owned operations. 4. Conduct a socio-economic assessment at each majority-owned operation. 5. Develop energy and water conservation plans at each majority-owned operation. | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Protocols were developed and translated into Turkish. HCP Coordinator and HCP champions assigned for the development of the HCPs. Introduced Life Saving Rules and began intensive supervisor training on newly introduced management system components. Risk assessment procedure developed. Supervisor and management team went through risk assessment training for the implementation of the risk management procedure. <input checked="" type="checkbox"/> Site implementation plans were developed and the work is in progress. <input checked="" type="checkbox"/> Community officer appointed in 2008. <input checked="" type="checkbox"/> Socio-economic assessment and community impact management plan completed. SEAT assessment undertaken. Report will be finalized in 2009. <input checked="" type="checkbox"/> The site drafted water and energy conservation plans. |



Pre-mine tour safety orientation for students and their teachers. All of our sites complete pre-visit and pre-work safety and environmental orientations and training suited to the activity.