Rio Tinto Reducing Water Consumption

Rio Tinto Limited is a multinational mining and resources group founded originally in 1873. With an employee base of 35,000 and revenues amounting to 29.700 billion US $ it is the third-largest coal mining company in the world. The Group's principal activity is producing iron, coal, copper, aluminum, industrial materials including borates, industrial salt, talc and titanium dioxide feedstock, diamonds and other minerals and metals. It has operations in Australia, New Zealand, North and South America, Africa, Indonesia and Europe.

Case Background: Fine alumina particles, or micrograins, are used to produce white-fused alumina. Located in the French Alps, Rio Tinto's La Bathie plant produces these specialized micrograins for use in abrasive grinding wheels, high-tension insulators, tiles and laminate floors.

Until 2005, the micrograin workshop consumed over 350,000 m^3 of local well-water annually to wash and sort micrograins. The volume of water consumption became a concern given the possibility of future regulatory limits being imposed on annual well-water withdrawals. Also, the possibility that local authorities might charge for the use of well water in La Bathie's industrial zone could affect the site's profitability.

Case Description: The Company launched a project to reduce water use and improve the operations of its wastewater treatment station and other manufacturing processes.

In the first phase, the project team developed a detailed understanding of the entire process and the different variables, including suppliers, inputs and outputs. Based on this, the project team was able to move into the measurement phase, using 2005 water consumption figures of 357,850 m^3 as the baseline for measuring improvements. Their first objective was to reduce use by at least 20%, but a company executive challenged the team to increase this to 45%.

Over the following months, the project team drew up an action plan focused on making adjustments such as adding electronic valves and flow meters, in addition to reprogramming washers and adjusting water flow during the process of grinding wet particles into a fine powder.

Achievements: There has already been dramatic improvement. The first six months of 2007 indicated that water consumption (pro-rated to forecast the full year) has been reduced to less than 173,000 m^3 annually - a 52% reduction.

The plant identified other process improvement opportunities beyond reduced water consumption. It discovered that some micrograins could be produced faster and at less cost, thereby representing a future project for consideration.

With minimum investment, this project has created significant value for the company, including increased productivity through less process variation, increased material use efficiency, and a reduced environmental footprint. It has also enhanced the company's image and reputation within the community and reduced future financial risk due to higher water prices, water use and output limits.

Reference: www.wbcsd.org