

Life Cycle Management: Generating Value for Rio Tinto Borax's Sustainability Program

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Rio Tinto Borax has undertaken an initiative to integrate Sustainable Development into its core operations. Borax has established several objectives to help guide the implementation of its sustainable development program. Objective five is “to expand how our products contribute to sustainable development.” In order to achieve this objective, the company identified Life Cycle Assessments (LCA) of its products as a tool to quantify and better understand the environmental performance of its products throughout the product lifecycle.

To date, the company has completed LCA's for several of its products, including Optibor®, Neobor®, Dehybor®, Borax, Boric Oxide, Zinc Borate, Tim-bor® and Granubor®. The results of these studies are being used by Borax for several efforts under their sustainability program. The software models are being used to aid in identifying and tracking significant aspects under the ISO 14001 Environmental Management Systems. The models can also be used to assess various process improvement or technology change scenarios from both a life cycle and site perspective. For example, LCA is being used to evaluate various process modification alternatives in terms of environmental impacts, such as energy consumption, and significant aspects identified under the ISO 14001 program. The study results are being used at a corporate level to help produce business benefits such as increasing access to various markets, for example by working with Borax customers on life cycle initiatives, utilizing the life cycle inventories. Further studies on downstream applications are currently underway, such as borate treated wood and Oriented Strand Board containing zinc borate. This paper will summarize these initiatives to explore the value of utilizing a life cycle management approach as part of a broader sustainability program.