

## **Effective Planning for Mine Closure and Reclamation**

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Proper planning for mine closure and final reclamation is an essential part of the mine planning process throughout the entire mine life. Upon ultimate retirement of the mine operations the planning that is completed before shutdown can save unnecessary expenses as well as valuable time. The evaluation of final mine closure planning also sets forth to accomplish another task which is accurately and appropriately capturing all liabilities, both financial and social. In order to properly account for all items and tasks associated with mine retirement a Mine Closing Survey (MCS) should be employed throughout the entire mining cycle. A Mine Closing Survey should be a full account of all items necessary to obtain final bond release and captures all associated reclamation costs including demolition of structures, filling boreholes, shafts, and slopes, reclaiming refuse piles and slurry impoundments, re-grading and seeding, and other miscellaneous costs associated with the mine. The Mine Closing Survey should be adjusted based on operations at each mining site. Proper planning for closure also includes forecasting of capital expenditures during reclamation phase, the proper sequencing of reclamation activities and subsequent Long Range Plan associated with that sequencing can save substantial monies throughout the closure process. Additionally, risks associated with the mine should be evaluated for on an annual basis, including safety, compliance, cost, and production related risks. Understanding the risks and associated liabilities of the mine will help with prioritizing reclamation projects and preventing unexpected expenditures. An accurate Mine Closing Survey, Long Range Plan, and Risk Assessment will help predict the profitability of a mine and allow for accurate budgeting for future reclamation expenditures. To address proper planning in mine closure, several case studies will be covered. Following this management plan for mine closure can help prevent unexpected costs and risks associated with reclamation.