

STATEMENT OF WORK

SW 1 Background

The Royal Oak Mines Ltd, Giant Mine has been producing arsenic trioxide since its start-up in 1948. Generally the operation has resulted in the collection of this material through a roaster and baghouse process followed by storage underground in chambers. This has resulted in the collection of approximately 280,000 tons of material. In the 1980's the company undertook to develop a process to refine the arsenic trioxide to a quality where it could be sold as a marketable commodity. The process was called WAROX for white arsenic trioxide. The company did not continue on this process for various reasons. In recent times the process was modified and is being used at Barrick Gold Corp's El Indio Mine in Chile.

The Department has become increasingly involved in the management of arsenic trioxide at the mine through the recent receivership of the company. The Department is convening an experts technical workshop to review and develop management options for the arsenic trioxide.

The Department requires a qualified expert to review the WAROX and El Indio processes, provide a report on their potential use on the Giant Mine arsenic trioxide and present the findings at the experts workshop.

SW 2 Objective/Scope of Work

- 2.1 Assess the processing technology employed by El Indio with respect to its potential applicability to Giant. The potential of the process employed at El Indio as a means of treating and upgrading the quality of product of material stored at the Giant Mine to meet the market specifications will be evaluated under this task. Consideration will be given to the requirement for an operational mill (ongoing supply of sulphide concentrates as roaster feed) versus those of a stand-alone operation (without the need of an operating mill).
- 2.2 Evaluate the technical and operational readiness of the WAROX Process as a means of upgrading current arsenic product stored at the Giant to meet market specifications. This evaluation will consider the applicability of the process according to relevant criteria, such as consistency of product quality in relation to market requirements, additional resource requirements and the necessity for an operational mill and supply of sulphide concentrates versus a stand-alone treatment and reprocessing facility.
- 2.3 A comparative assessment of the two processing options will be conducted, based on a qualitative assessment of relevant criteria, such as:
 - ❖ Comparative "readiness" of these processes for implementation (qualitative estimation of time, development and implementation requirements to facilitate optimization and full-scale commercialization) at Giant both under the conditions of an operating mill and those of a stand-alone reprocessing operation (without an operating mill);
 - ❖ Operating requirements (feed stocks, energy, additional equipment, etc.);
 - ❖ Demonstrated product quality and consistency with existing market specifications;
 - ❖ Consistency and stability of operational and performance data;

- ❖ Requirements for treatment and handling of waste streams or non-saleable by-products;
- ❖ Consistency with existing regulatory criteria. and
- ❖ Overall applicability to Giant.

- 2.4 Attend and present the results to the Arsenic Technical Workshop tentatively scheduled for June 22, 23 & 24, 1999.
- 2.5 Attend meetings or conduct further research on related issues, as requested by the Department Representative.

SW 3 OUTPUT

- 3.1 Provide a written draft report on SW 2.1 to 2.3, comprising the Summary Report and Presentation Materials to the Departmental Representative by May 31, 1999.
- 3.2 A summary of the findings for inclusion in a workshop briefing binder by June 5, 1999.
- 3.3 Provide a final report on SW 2.1 to 2.3, comprising the Summary Report and Presentation Materials to the Departmental Representative by June 11, 1999.
- 3.4 Submit a summary report to the Departmental Representative addressing the subject areas of research conducted or meetings attended.

The Contractor will provide three copies of all reports; one original bound, an unbound copy suitable for reproduction and an electronic copy in an acceptable format to the Departmental Representative (WordPerfect 6/7/8 or Quattro Pro 8).

SW 4 Departmental Support

The Departmental Representative will:

- 1) Provide copies of relevant WAROX material to the contractor.
- 2) Provide initial contacts with Barrick Gold Corp. and Royal Oak Mines.

SW 5 DEPARTMENTAL CONTACT

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