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# THE ROUTE TO PROJECT SUCCESS

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Snowcat train with equipment at the KSM property in midwinter (Photo: Tetra Tech WEI Inc. project archives)

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## PROJECT MANAGEMENT FOR SEABRIDGE GOLD'S KSM PROJECT PREFEASIBILITY STUDY

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**Client:** Seabridge Gold Inc.



**Sector:** Mining & Minerals

**Duration:** Nov. 2011 – May 2012

**Location:** Vancouver, BC, Canada

- Features:**
- Billion-dollar Capex project
  - Study on combined open pit and underground operation
  - Fourteen engineering firms contributed to the Study

### Background

Seabridge Gold Inc.'s KSM (Kerr-Sulphurets-Mitchell) deposit is one of two deposits owned by the company, and they rank among the largest undeveloped gold deposits in Canada. The KSM property is in the coastal mountains of northwestern British Columbia, in the Iskut-Stikine River region, about 65 km northwest of the town of Stewart.

Seabridge completed five major drill programs after re-acquiring 100% of the KSM Project in April 2006 from Falconbridge Ltd. – now Xstrata plc. – taking the project from Preliminary Economic Assessment (PEA) level to Prefeasibility (PFS) level.

PFS is the step prior to Feasibility level, which is followed by engineering design and construction.

In Nov. 2011 Seabridge commissioned Tetra Tech WEI Inc. to prepare an updated NI 43101-compliant PFS Report on KSM, with Johan Steenkamp as project manager. The capital cost of the project was estimated at CAN\$5.31-billion.

Tetra Tech WEI Inc. (and previously, Wardrop Engineering) had been the lead consultant responsible for the overall reports of all the Engineering studies on KSM from 2008 to 2012.

This gave Johan and his team access to in-depth information on the property, and the opportunity to prove the economic viability of the project, despite economic downturns and fluctuations in metals prices.

### Responsibilities

Apart from Tetra Tech WEI Inc., as lead consultant, 14 engineering

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companies contracted directly with Seabridge to contribute specific sections of the study report. Their contributions and the integration of information across disciplines were managed by Johan Steenkamp:

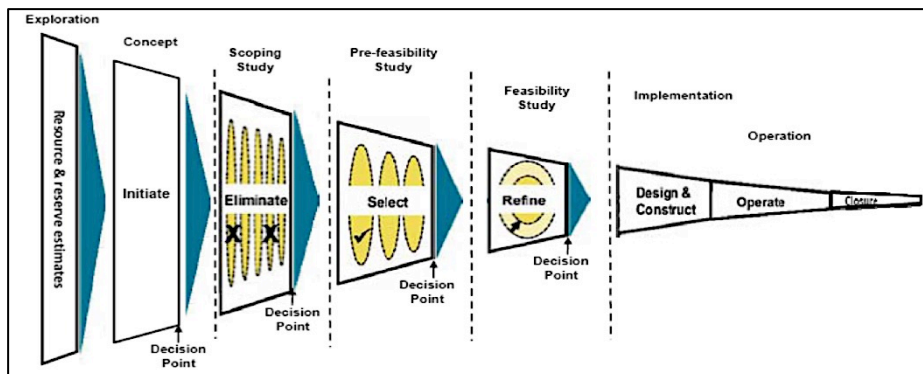
1. Resource Modeling Inc.
2. Moose Mountain Technical Services
3. WN Brazier Associates Inc.
4. Klohn Crippen Berger Ltd.
5. McElhanney Consulting Services Ltd.
6. BGC Engineering Inc.
7. EBA Engineering Consultants Ltd.
8. ERM Consultants Canada Ltd. (formerly Rescan Environmental Services Ltd.)
9. Stantec Consulting Ltd
10. Golder Associates
11. Allnorth Consultants Ltd
12. Bosche Ventures
13. BGC Consulting
14. Thyssen Mining

## Results

The ultimate test of success of any Mining Study is whether the engineering firm can prove the economic viability of the project and so move it to the next stage of development. (See diagram above) It is the primary task of a project manager on a Study to direct and control all the engineering disciplines to achieve this objective.

While a Study in itself may be an expensive undertaking, the loss of opportunity for investment and share price growth resulting from a poorly executed Study can be even more expensive and damaging to a company.

Base case economic projections in this PFS were superior to those in previous Studies. This was due to



Mine development process with stage gates from exploration to closure (Graphic: Tetra Tech WEI Inc.)

the consultants being able to provide a scenario in which Net project cash flow (pre-tax), Net present value at a 5% discount rate (pre-tax), and Internal Rate of Return (pre-tax) were increased, and the payback period, and life of mine average cash costs per ounce of gold were reduced.

**It is therefore not surprising that the client commented favourably on Johan's ability to achieve the desired project outcome.**

## Client references and comments

"On our work together Johan combined effective study management with practical understanding of how to resolve issues and integrate various mine development disciplines. I certainly recommend Johan for your next mining project."  
- Graham Parkinson, Senior Geoscientist, Klohn Crippen Berger Contact: [gparkinson@klohn.com](mailto:gparkinson@klohn.com)

"Johan is a detailed-oriented project manager with a strong knowledge of project controls. He has demonstrated an ability to

start, manage and complete large complex projects on time and on budget. And, he has also demonstrated an ability to turn around projects managed by others that need to be brought back on schedule or back on budget." - Brent Thompson, President, Mining & Minerals, Tetra Tech Inc. Contact: [Brent.Thompson@tetrattech.com](mailto:Brent.Thompson@tetrattech.com)

## Additional references

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