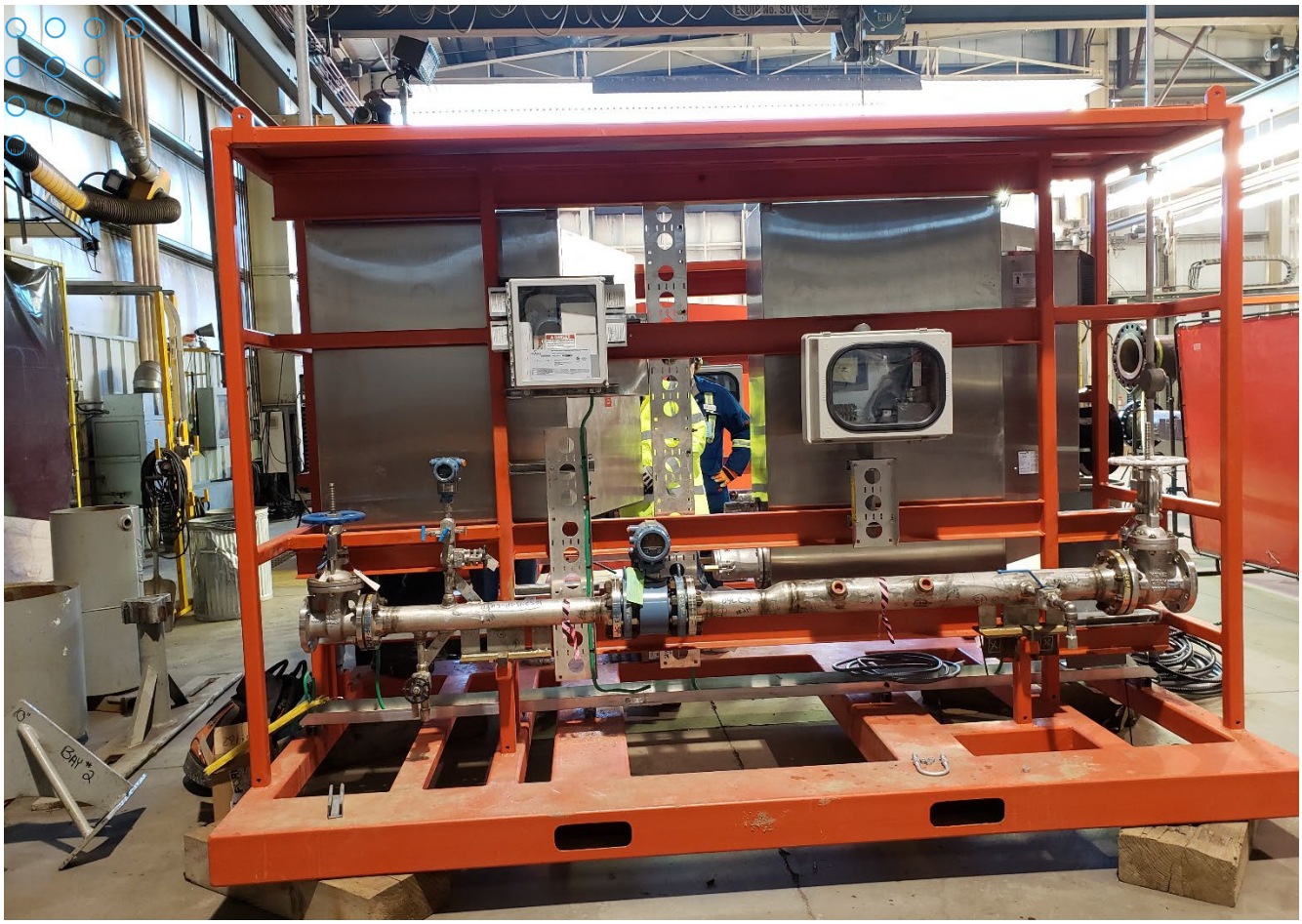
Basal Depressurization Wells

Basal DP wells are required to de-pressurize the in-pit mine area prior mining activities. The water drawn from the existing DP wells contains hydrogen sulphide; the water must be treated prior to discharge to onsite ponds. The original basal DP well design had safety, operability, maintainability, and reliability issues. In addition, the measurement and control systems were unable to meet the Client's performance requirements.

Rally was engaged to review and re-engineer these mobile water treatment plants, modifying the design as required to correct all known issues. The Client planned to deploy the modular water treatment plants to six new mine well sites, requiring the project to deliver 44 new equipment skids.



Basal Depressurization Wells

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PROCESS ENGINEERING / INSTRUMENTATION

The skid packaged designed by the original 3rd-party vendor did not meet the Client's performance specifications for treating H2S in the water. Rally conducted a technical review of the process design and issued a report identifying the changes necessary to improve performance. This exercise established the process design basis for the second-generation water treatment system.

The process relies upon a highly-specialized probe to measure dissolved H2S in water. However, this type of probe was developed for open water systems, not for use as an inline instrument. After consultation with many vendors, Rally determined that there were no other instruments on the market that could make the required measurements.

Instead, Rally redesigned the system to use the original H2S probes in a fast-loop arrangement. This way, measurements could be taken in a low-flow zone, shielding the instrument from the high pressures seen elsewhere in the system. Redeploying the existing probes in a new way made it possible to take accurate H2S measurements, further enabling the automation of a peroxide dosing system.

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SCHEDULE

To meet stakeholder requirements, the well construction schedule was very aggressive. Detailed engineering of the new system, procurement of vendor equipment and bulk materials, modular fabrication, and onsite construction were all completed within eight months.

Rally successfully employed the following techniques to fast-track the design, construction, and successful start-up of the new water treatment systems:

- An integrated team was formed including the Client, their Constructor, and Rally. A comprehensive engineering, procurement, and construction schedule was developed and maintained throughout the project.
- The team focused on managing equipment and bulk material deliveries. Engineering activities were aggressively scheduled and delivered to suit the material delivery plan.
- A robust weekly status reporting program was implemented to keep the Client aware of any project needs from a cost, schedule, or engineering perspective. This allowed the Client to make timely decisions, eliminating roadblocks.
- By including the Constructor from the outset of the project, constructability was built into the design. This significantly reduced the number of RFIs and construction inquiries after engineering packages were issued for construction (IFC).