

1.0 Introduction

This project summary has been developed to complete reclamation services to #4 Copper Pond. The project involves the removal of filtrate from the pond to safely excavate the solid material. The solid material will require adequate time to decant any free liquid present. The decanted material will be treated with lime to further stabilize to allow for safe offsite shipment. The completed intermediate product will be either package in bag or bulk for shipment. The project also involves the demolition of the pond structure. Solid material from #6 Copper Pond will be removed and processed to generate capacity for # 4 Copper Pond filtrate.

The objectives of the #4 Copper Pond Reclamation project are to ensure the following tasks are executed:

- Generation of a stable product that is safe for shipment;
- Safe removal of solid from the pond;
- Safe removal of pond filtrate;
- Preparation of final product prior to shipment;
- Works to be completed safely and environmental cautions; and
- Comply with environmental and transportation regulations.

2.0 Proposed Project Methodology

The project methodology has been developed in order to successfully complete the tasks in a sustainable manner. The following work plan has been developed for the project:

1. Kick-off Meeting;
2. Develop Site Specific Health, Safety and Environment Plan;
3. Mobilization to Site;
4. Site Set Up;
5. Removal of Solid Material from Copper Pond #6;
6. Removal Filtrate from Copper Pond #4;
7. Removal of Solid Material from Copper Pond #4;
8. Production of a Stable and Marketable Intermediate Product;
9. Preparation of Intermediate Product for Shipping;
10. Demolition of Pond Structure;
11. Quality Control; and
12. Site Closeout

2.1 Site Kick-off Meeting

A successful project is a project that was delivered which met all goals, expectations and requirements of the initiating party. This statement is very much accepted on the international project management stage. Furthermore the delivery of a successful project is directly dependent on how well the execution of the project was planned and how well information was shared within the project team.

The purpose of the kick off meeting is to confirm the stakeholders in the project, identify communication requirements, share information on processes and procedures for safety and security requirements, and request information required for execution of the works and establishes high level interface protocols.

The site kick-off meeting will cover:

- Tervita project team organization
- Vale project team organization
- Scope of work
- Metrics to be used to measure success
- Roles and responsibilities
- Schedule and milestones
- Identified high level risk
- Health, safety and the environment
- Quality control
- Reporting
- Communications (internal, external and with third parties)

2.2 Health, Safety and Environment Plan

Tervita's safety division will develop and implement a rigorous safety plan during the contract duration. In accordance with our Occupational Health and Safety Program, Vale Health and Safety policies, Tervita will prepare and publish a Site-Specific Health and Safety Plan (SSHSP) that will include but not be limited to:

Exclusion Zones	Traffic Patterns & Controls	Liquid Fuel Handling & Designated Fueling Locations
Personal Protective Equipment (PPE) Requirements	Site-Specific Hazards Assessment	Roles & Responsibilities
Emergency Procedures	Local Emergency Contact Information	Field Level Risk Assessment
Job Safety Analysis	Emergency Response Plan	Spill Management Plan

The hazards identified at this work-site are as follows:

- Material and hazardous material handling, storage, packaging (specifically the Copper Pond #4 and #6 material)
- Site and work area access – Third party, wildlife, nuisance
- Continual operations
- Heavy equipment operation, fueling
- Heavy equipment requiring comprehensive competency training
- Overhead and underground utilities/client infrastructure
- Work in congested areas/close to critical client processes
- Spills or releases of any quantity or kind
- Acute, adverse temperatures
- Extreme weather – storms, wind/wind gusts, precipitation, dust
- Working in proximity to other subcontractors

The risks associated with the hazards listed above include the following:

- Negative health affect to worker(s)
 - Injury
 - Exposure – hazardous material, noise
- Damage to equipment (heavy and light duty)
- Damage to Vale infrastructure
- Damage to reputation

The SSHSP will be developed as part of the overall application of the on-site safety program for the required operations that are to be performed by site personnel. All applications of the safety program will be in accordance with Provincial regulations & Tervita's Occupational Health & Safety Manual; a copy of each document will always be located at the onsite office. The SSHSP will detail the appropriate requirements to safely perform the necessary work that is to be carried out. As the project progresses and site conditions change modifications to the SSHSP may be required. The SSHSP will be finalized prior to the commencement of work site activities.

Only persons having authorized access will be permitted on the site. Nevertheless, minimum approved personal protective equipment (PPE) will be required by all site personnel and visitors regardless of the type of work being conducted at any particular time. The requirement for specialized safety equipment will be assessed by Tervita's safety department prior to work commencement and re-evaluated as the work progresses. Minimum PPE to be worn by all authorized personnel at designated work sites (excluding designated exclusion zones) will include:

- Chemical resistant Tyvek and gloves with full face respirator while working near the copper arsenic material
- Canadian Standards Association (CSA) approved safety glasses
- CSA approved protective work boots

- CSA – Class B (side impact) hard hat
- Coveralls with reflective stripping or five-panel tear-away high visibility safety vest
- Leather work gloves or other approved hand wear—available on person

Limited Industrial Hygiene Survey

Tervita would complete a limited industrial hygiene survey as part of the project initiation. The purpose of the survey would be to evaluate employee's potential exposure agents associated with Tervita's work; exposures to respirable silica quartz, total particulate, metals, Hexavalent chromium, and noise would be evaluated. A list of recommendations would be prepared based on the results of the survey. The recommendation could include Engineering Controls, Administrative Controls, and/or PPE Controls.

Baseline Medical Monitoring

The SDS for Copper Pond #4 and #6 Solid does not provide specific information as to whether baseline medical monitoring testing is required. Tervita will assume that baseline testing is required for this project. Baseline monitoring will be complete for all employees at the start of the project and testing will continue every three months until the project is completed.

Environmental Considerations

Tervita will devise an Environmental Construction Operation (ECO) Plan to identify and mitigate potential environmental impacts that may arise as a result of onsite activities. This plan will be developed and submitted to Vale for review prior to the commencement of work. The ECO plan will include but is not limited to the following items with corresponding mitigative measures:

Potential Environmental Impact	Mitigative Measure
Release of solid material while in transport to the processing area	Solid material will only be transported into heavy-duty RO bins with sealed lids and doors. The RO bins will be inspected regularly.
Release of filtrate while in transport to Ponds 5/6	Filtrate will only be transported in stainless steel vac truck or tanker truck. The truck tank will be inspected regularly.
Release of solid material at the processing area	Solid material will only be placed on the concrete pads in the processing area. Any free standing liquid will be collected and transported to Ponds 5/6. The processing area will be inspected regularly.
Contact with liner system while removing solid material from Ponds 4/6	A piece of rubber will be installed on the cutting edge of the bucket of the long-reach excavator to protect the liner system of Ponds 4/6.
Release of solid material or filtrate at Pond 4 during ongoing reclamation activities	Special care will be taken during the removal of solid material and filtrate from the pond to ensure offsetting pressure on perimeter cribbing is neutralized. The removal of solid material and filtrate will be completed in designated areas.
Release of solid material or filtrate during the demolition of Pond 4 structure	Solid material will be consolidated to one area and removed with the long-reach excavator. Once the solid material is removed, the liner system will be spray using a pressure washer. The rinse material will be collected and transported to Pond 5/6. The integrity of Pond 4 structure will be maintained until the liner has been sprayed. Once demolished, components from Pond 4 will be tested as required prior to final disposal.

A series of spill kits will be made available at each work area to minimize the impact of a spill in the event of a release. Any free liquid will be collected using a vac truck and transported to Pond 5/6 or the tailings basin. Any solid material will be collected and placed in open-top 45-gal steel drums. The solid material will be either be recovered to generate intermediate product or transported to Vale's WMF for future offsite disposal.

2.3 Mobilization Plan

An initial site safety kick-off meeting will be held with the onsite team and all safety protocols and procedures will be reviewed during this meeting. Emergency gear, muster points and evacuation routes will also be familiarized. During this meeting, Tervita's work zone will also be defined along with areas that should not be disturbed. A right-of-way area on the main access road will be identified.

The proposed site amenities for the project will consist of one trailer for crew and management, one designated parking area, portable washrooms, one seacan for tool storage, two generators, and one fuel tank. The facilities will all be located within close proximity to each other for safety, security and power requirement reasons. The trailer will be powered with onsite generators.

2.4 Site Set Up

There will be three main working areas to complete the reclamation of #4 Copper Pond as described below. A decontamination facility will be placed at each working area. The decontamination facility will have dirty and clean rooms which will allow employees to safely remove their working attire. Each working area will remain clean and tidy during the project duration.

Processing Area

The processing area is located roughly 1 km northeast of #4 Copper Pond. It includes a decant pad, concrete pad, and tent structure. A site office, seacan, portable toilet, generators and fuel cube will be staged in the area. The area will be used to process the solid material from the pond, specifically to dewater (if required), stabilize and process for shipment.

The concrete pad and tent will be separated into three different zones. The first zone will receive the decanted solid material from the pond and is located on the south portion of the concrete pad. The second zone will be used to mix and blend the decanted solid material with lime. This zone will be in the middle of the concrete pad and the tent. The lime will be stored in the second zone under the tent. The third zone will be used to store the intermediate material prior to shipment. The bagging operation will take place in this zone, if required. This zone will be located under the tent structure. A majority of intermediate product will need to be stored outside of the processing area. The decant area will be utilized to allow for additional passive drying time, when required.

Copper Pond #4

The perimeter rock berms on the north, south and west sides of the pond will be reworked to allow truck access. Ramps will be installed to allow entry and

exit on the three sides of the pond. It appears that there is currently enough rock fill in the vicinity of the pond to complete this task. Reworking activities will not take place until the filtrate is removed from the pond to ensure offsetting pressure on perimeter cribbing is neutralized.

Copper Pond #6

#6 Copper Pond will be a work area complete with a decontamination facility. There will be no changes made to the pond or work area as access into Copper Pond #6 can be achieved with ease. Solid material will be removed from the pond to generate capacity for filtrate material from Copper Pond #4.

2.5 Removal of Solid Material from Copper Pond #6

The removal of solid material from Copper Pond #6 will take place in order to generate capacity for Copper Pond #4 filtrate material. A CAT 336 long-reach excavator will be utilized to remove the near surface solid material from Copper Pond #6. The long-reach excavator will have a boom length of roughly 17 m. This will allow the excavator to collect the solid material from the perimeter berms. Solid material will be placed in cone shaped windrow to allow the material to dewater in place. The solid material will be loaded into RO bins and transported to the processing area to be produced into intermediate product. A piece of rubber will be installed on the cutting edge of the bucket of the long-reach excavator to protect the liner system of Copper Pond #6.

2.6 Removal of Filtrate from Copper Pond #4

The filtrate within the pond will be removed prior to the removal of solid material. Tervita will utilize the following techniques to safely remove the filtrate from the pond:

- Excavation of a low-lying sump area complete with interceptor trenches to allow positive filtrate drainage
- A series of 4" trash pumps with associated hosing to transfer the filtrate to the sump area
- A vacuum Truck and/or Truck with Tank will be utilized to transport the filtrate to its desired destination

2.7 Removal of Solid Material from Copper Pond #4

Tervita will begin the safe removal of the solid material from the pond once the filtrate has been removed. An area inside the pond adjacent to cribbing wall will be cleared of solid material. A series of rig mats will be placed on the floor of the pond in the cleared area. The CAT 336 long-reach excavator will access the pond from the rock berm over the cribbing on top of the stacked rig mats. If access cannot be achieved using this method, a crane would be mobilized to

site to lift the excavator into the pond on top of the rig mats situated in the pond.

The excavator will begin flipping the solid material into a series of coned shape windrows to allow the material to dewater. The solid material will be spread-out over a large surface area to promote passive drying during warmer and drier periods. Once sufficiently dried, the solid material will be loaded into RO bins, transported and placed on first zone of the processing area using a RO truck. Any solid material that requires additional drying efforts will be transported to the decant area. The RO truck will be sprayed down with a pressure washer prior to leaving the processing area if required.

The excavator will move on top of rig mats while inside the pond. Special care will be taken not to damage the liner. It is understood that lime treatment will not take place within the pond.

2.8 Production of a Stable and Marketable Intermediate Product

The production of the intermediate product will involve the mixing and blending of lime into the solid material. The solid material will be taken from the material stockpiled in the first zone and/or the decant area. Tervita will supply the lime required to stabilize the solid material so that it can be shipped offsite. All intermediate product will be covered with tarps.

Lime Supply, Delivery and Storage

Tervita will supply and deliver high calcium hydrate lime to the processing area. The lime will be delivered using 40-ton pneumatic B trains. Each truck will be off loaded at the designated laydown area through a three-inch pipe attached to the discharge valve. The lime will be blown underneath a 36mil reinforced polypropylene liner. The liner will be properly secured and will always remain over the stockpiled lime material. The lime will be stored in the tent on the concrete pad.

Lime Mixing and Blending

Lime will be blended and mixed into the dried solid material utilizing a CAT 320 excavator with support from a Komatsu 380 wheel loader. One bucket of lime will be blended and mixed into nine buckets of solid material from #4 copper pond. The nine buckets will be spread out in a thin layer over a dedicated blending location in the second zone of the processing area. One bucket of lime will be distributed evenly on top of the thin solid material layer. Once the lime is in contact with the solid material, the excavator will begin mixing activities. The material will continue to be reworked until it is thoroughly mixed and stabilization activities initiate. The blended material will be placed in a cone shaped stockpile and will remain in place until the lime has completely

reacted with the solid material. The pile will be monitored, and additional mixing and/or blending of lime may be required.

Once adequately stabilized as determined by Vale using the quality acceptance criteria, the intermediate product will be moved to the third zone of the processing area using the wheel loader. This process will be repeated until all the solid material is produced into an intermediate product.

It is understood that mixing ratios will be determined as the project progresses. The supply of lime delivered to site will be monitored to ensure surplus lime is not present at the completion of the project. Tervita has assumed that any lime remaining at the end of the project will be purchased by Vale at fair market value.

2.9 Preparation of Intermediate Product for Shipping

The intermediate product will either be shipped in bulk or in a bag. Tervita will move the intermediate product from the holding area, whether in bag or in bulk, utilizing a CAT 268 skid steer complete with a fork attachment or Komatsu 380 wheel loader. The intermediate product will be covered by a series of tarps once in the holding area.

The bagging of the intermediate material will be supported by a CAT 268 Skid Steer with forks and mini-excavator. The skid steer will hold up the bags through its support straps while the mini-excavator loads the intermediate product into the bag. Once the bag is full, the skid steer will lower the bag onto a pallet. The pallet will be transported to a portable weigh scale to record the weight of the bag by subtracting the pallet weight from the total weight. The bag will be numbered, and the weight will be recorded and written on the bag. The bag will be labelled and completed with shrink wrap for shipment.

2.10 Demolition of Pond Structure

Demolition of the pond structure will take place after all the material is removed from the cell. Demolition efforts will take place using a CAT 320 excavator with thumb attachment and a CAT 268 Skid Steer with a bucket attachment.

The excavator will remove the HDPE liner from inside of the pond structure. The liner will be manually separated from the plywood as required. The perimeter cribbing will be removed by separating the rough timber and the rock fill. The rock fill retaining berm adjacent to the perimeter cribbing will be casted aside. The HDPE liner underneath the cribbing and inside of the containment area will be removed. The rock fill from the cribbing structure, retaining berm, and containment berm will be leveled off evenly in the footprint of the existing pond. Special care will be taken not to damage the monitoring wells located

within the area. The liner, plywood and rough timber will be separated and neatly placed in distinct piles for future disposal.

2.11 Site Closeout

Site closeout will take place at the completion of construction activities and will include site clean-up of all items. Decontamination of equipment and tools will take place at the end of the project. Demobilization of equipment, personnel and project support infrastructure will take place.

3.0 Project Execution

The proposed project execution plan as described in the section below has been developed based upon scope of work and estimated quantities.

3.1 Project Management

Tervita has many tools which can be implemented in order to track the progress and success of each site. Progress reports will be submitted throughout the project. The quality associated with the project will be reported, and correlated with the project schedule and cost.

These reports will be provided on a weekly basis to provide assurance that the project is progressing as planned. Tervita will track project metrics such as cost, schedule, safety and volumes. The following tools are some that will be employed:

- Daily construction report detailing completed tasks, safety statistics, production quantities, weather forecast, equipment and personnel utilization, equipment checks, pictures and a plan for the next day's task
- Weekly Gantt Chart updates showing actual schedule versus anticipated schedule
- Weekly budget forecasts detailing forecasted quantities to completion
- Weekly local spending report
- Weekly safety summary report
- Weekly QA/QC submittal checklist

3.2 Phase I – Project Setup

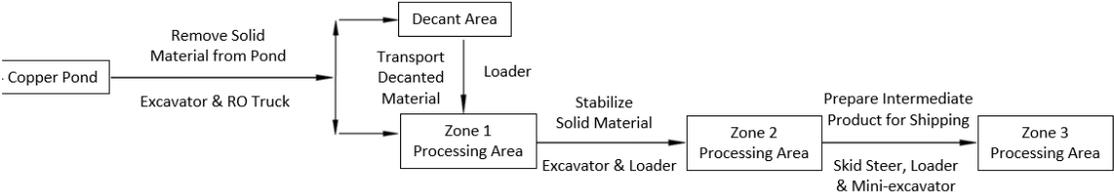
The first phase of the project involves the implementation of baseline medical monitoring testing, mobilization to site, site kick-off meeting, and implementation of the SSHSP. An initial site walk around will be completed and recorded as required. The project management reporting documents will be finalized and project tracking metrics will be initiated.

3.3 Phase II – Site Set Up and Copper Pond #6 Product Recovery

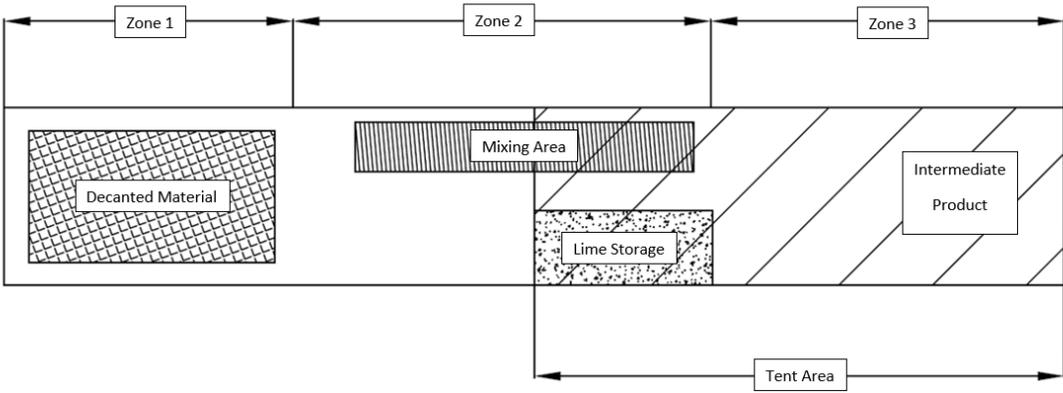
The configurations of processing area and copper pond working locations will be put into place. The site amenities including decontamination facilities will be set up.

Phase II includes the removal of solid material from Copper Pond #6, production of an intermediate product and the preparation for shipment. The limited industrial hygiene survey will be completed at the start of Phase II so that any recommendation from the survey can be implemented in a timely manner.

The following flow chart will be used to execute the work. The flow chart shows the various work locations, tasks and equipment that will be used to complete the associated work.



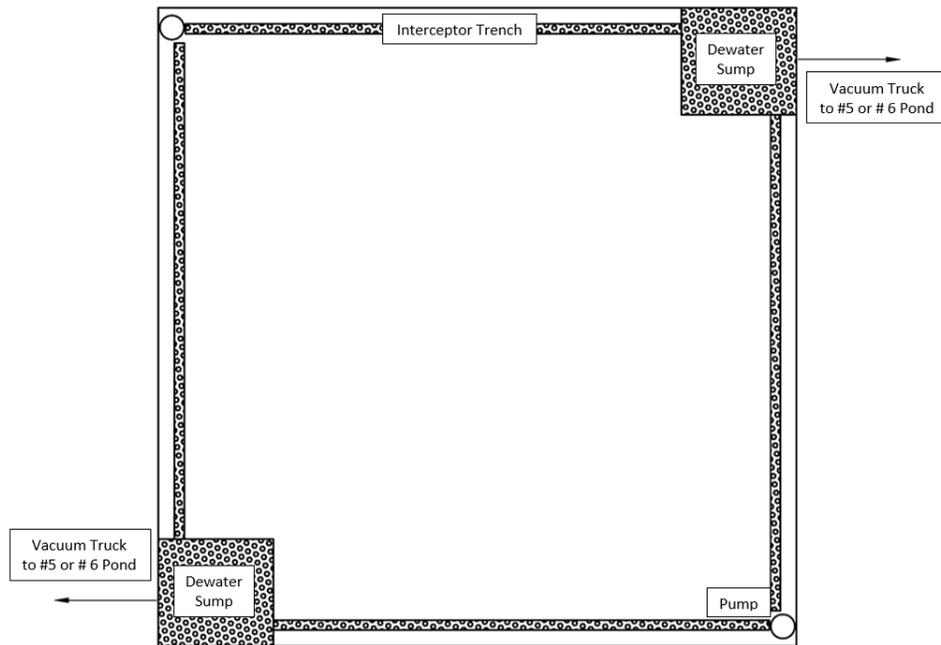
The figure below shows the layout of the processing area, including the layout areas within the Zones.



We have estimated that 200 T of intermediate product will be generated per day. Given the footprint of the processing area, the decanted material within the processing area will have a height of roughly 0.3 m and the mixing area height will be approximately 0.5 m high. A truck load of hydrated lime will need to be delivered to site every 1.5 days.

3.4 Phase III – Copper Pond #4 Product Recovery

The removal of the filtrate from Copper Pond #4 will start during this phase. The schematic below illustrates the initial filtrate removal layout of Copper Pond #4. Additional pumps and interceptor trenches will be installed once access is gained into Pond #4.



Once the filtrate is removed from Copper Pond #4, solid material will be recovered from the Pond. The solid material will be transported to the processing area to generate intermediate product as described in Phase II of the Project Execution.

3.5 Phase IV – Project Closeout

At the completion of Phase III, the crew will complete the following tasks as part of the final phase of the project:

- Pond Demolition
- Clean Up of Working Areas

Tervita will demobilize after completion of all site work.