



Redbank Copper Ltd, formerly Redbank Mines Ltd wish to make an addition to the EIS Guidelines for the;

EXPANSION OF THE REDBANK COPPER OXIDE LEACHING OPERATIONS

(Released in October 2008)

So as to also include the mining and processing of SULFIDIC ORES.

INTRODUCTION

In late 2008, under new funding and management, Redbank reviewed the project and has taken the following actions:

- Placed the site on care and maintenance and embarked on a program to improve environmental compliance, in particular to remedy discharges of contaminated water from the site.
- Carried out a review of the project to determine the future direction of its development
- Commissioned a scoping study to examine the options for future development of the project.
- Embarked on an aggressive and well funded exploration program that aims to discover new resources and to upgrade the status of the existing resources.

The Scoping Study has identified that the future of the project is primarily in processing sulfide copper ores, which make up more than 80% of the resources, to make a quality copper concentrate. In addition to the anticipated continuation of sulfide ore being the dominant ore source the following issues also helped determine the need to progress with the sulfide project;

- The initial activities focusing on an existing pit and existing processing and impacted area.
- The need to properly manage the site's legacy water contamination issues prior to the commencement of mining.
- The use of existing infrastructure.
- The remoteness of the site and the logistical and economic benefits associated with the development of the project as a whole.
- The benefits of the economies of scale in regard to operation.
- The improved financial position of the company and
- A variety of other relevant issues.



An Environmental Impact Statement is currently being prepared. It will address ongoing operations at the site and cover short term environmental improvements including water management. In addition the statement will address future operations covering the mining and processing of oxide and sulfide ores. Environmental and other approvals are being sought to be obtained by early 2010.

A discussion with Mr. Roderick Johnson of your department resulted in his feedback informing us that we should submit a Clause 14A variation to the existing EIS Guidelines so that the sulfide mining and processing component of the project may be included in the assessment process.

We expect to be required to provide details about the;

1. The mining process to reach the sulfide ores that lie below the oxide ores that are also the subject of the EIS,
2. The complete dewatering of the Sandy Flat pit and ongoing water management,
3. Refurbishment of the existing plant and alterations to the site,
4. Management of wastes including tailings.
5. Further environmental and water management details and plans based on the sulfide component, and
6. Anything else as required.

Sulfidic ore will initially be mined from the existing Sandy Flat Pit once the site's water management issues have been successfully resolved. A water quality management plan including dewatering the pit, treating the contaminated water and avoiding future water and contamination issues is in development.

Mineral extraction facilities will be upgraded and expanded on the existing disturbed site adjacent to the Sandy Flat Pit. Some expansion of the area of disturbance will be required.

Following mining at the Sandy Flat Pit, mining is proposed for the Bluff, Azurite and Redbank deposits.

The resultant ore from the Redbank, Azurite and Bluff pits will be transported to the existing Sandy Flat plant site along a 4km haulage road.



Summary of Preferred Project Concept

The preferred project concept identified by the Scoping Study is for a project based on mining and processing oxide and sulfide mineralisation simultaneously using the current resources as a starting base.

Production would start with a 300,000tpa sulfide concentrator plant based on refurbishing the existing flotation plant. In the second year of operation an oxide processing plant with 150,000 tpa capacity would be added and in the third year the sulfide plant's capacity would be expanded to an annual throughput of 500,000 tonnes of ore. This staged development comprises:

- **Year 0**
Refurbishment of sulfide flotation processing plant, infrastructure and mining ore from Sandy Flat pit (oxide ore already mined).
- **Year 1 (or later)**
Construction of an oxide leach and SX-EW plant. Mining at Bluff (oxide followed by sulfide)
- **Year 2 (or later)**
Construction of expanded sulfide processing plant to 500,000 tpa capacity. Mining at Redbank (oxide followed by sulfide) and Azurite (oxide followed by sulfide).

Operations would take place over 8 years based on the delineation of additional mineable resources. Operations will be year round with sulfide ore processing continuing throughout the wet season. Adequate stockpiles of consumables (fuel and reagents) will need to be established at site in the latter months of the dry season. Concentrate will be stored at site during the wet season until road conditions permit their freighting to Darwin. Mining activities will be carried out on a limited basis or suspended during the wet season.



The general project elements will consist of the following:

Open pits

Open pit mining for sulfide ore with leachable oxide ore produced as a by product. Non leachable transition ore would be stockpiled separately for possible later treatment. Some transition ore may be sold as direct shipping ore if the grades are high enough and it can be selectively mined.

Each open pit would be allowed to fill with water at conclusion of mining. It is planned that only groundwater inflow and direct rainfall will collect in each pit with other clean surface water runoff to be diverted away from the pit. Anaerobic conditions will prevail underwater and oxidation of sulfides will be prevented which will result in good pit water quality. Evaporation will match or exceed inflow and a stable water level will be established with no discharge.

Processing and transport infrastructure

Haul roads will connect each open pit to a central processing plant located at Sandy Flat.

The processing plant will be located at the existing Sandy Flat processing plant to minimise site disturbance and hasten approvals. The crushing circuit will be refurbished and a new grinding section will be added. The remainder of the flotation plant will be refurbished to 300,000 tpa capacity. All other infrastructure including offices, supply chain management, power generation, diesel fuel farm and changes house will also be located here. The processing plant and associated infrastructure will be located close to the edge of the future expansion of the Sandy Flat sulfide open pit and where possible all new facilities will be located as far to the east as possible.

A 150,000 tpa oxide leach SX-EW plant would be built.

The sulfide plant would then be expanded in capacity to reach 500,000 tpa.

Tailings Storage Facility (TSF)

A new TSF will be constructed. It will take the form of a turkey's nest design using local borrow materials and suitable non acid forming waste materials from the Sandy Flat open pit pre-strip. Water storage dams will be located adjacent to the tailings dam. It is assumed that the tailings will need to be covered with a thin layer of waste rock at conclusion of operations. The initial tailings dam would be subsequently expanded during the life of the project.

Waste Dumps

Waste dumps adjacent to each open pit and containment of material with acid rock drainage (ARD) potential within each waste dump. Each dump would be constructed to a final stable shape and rehabilitated in accordance with requirements.



Retention Pond(s)

During the mining of the Sandy Flat Pit, alternative arrangements for the management of stormwater that is potentially contaminated by legacy issues and current site activities will be required. The development of storage capacity in the form of retention ponds is most likely.

Rectification of past water contamination and on-going water management

The existing Sandy Flat area will be cleaned up by processing ore currently retained at the site, generally incorporated into the refurbished and new processing facility and rehabilitated. Previous waste dumps are likely to be moved and their contamination potential investigated to determine future management of that material

A water management strategy of diverting clean water away from contaminated areas and managing the treatment of contaminated water before discharge will be implemented.

Surface run-off water will be harvested for processing water along with reclaim of use water from the tailings dam. Groundwater will be required for makeup in the dry season when other sources are not available

MINING METHOD

Mining will be by drill and blast open cut methods, similar to the mining practices for the oxide ore. Pit designs and mining schedules are being developed based on the resource models.

Grade control drilling will be carried out. Assaying of the grade control samples will be by the on site laboratory at the plant site and a field portable XRF in the pit.

Supervision of the ore and waste mining will be undertaken by geological personnel. Mine haul trucks will transport the rock from the excavator in the pit to either the waste rock dump near the pit, if waste, or in the case of ore to the run of mine (ROM) Pad adjacent to the primary crusher at the Process Plant.

Present plans involve the mining of sulfide material and associated waste rock from the Bluff, Redbank and Sandy Flat pits from a depth below the 35m from surface which is the approximate boundary between the oxide and the sulfide mineralised material.

The following table (**Table 1**) shows the magnitude of excavations and land used for the Bluff, Azurite, Redbank and Sandy Flat pits as mined for the sulfide as well as the previous oxide ores and associated waste dumps:



Table 1 Sulfide Resources

OPEN PIT					WASTE DUMP	
PIT	Depth m	Footprint ha	Ore t	Waste m3	Height m	Footprint ha
Bluff	150	8.0	520,000	5,100,000	20	32
Azurite	50	1.5	200,000	182,000	10	3
Redbank	50	1.25	100,000	261000	10	4
Sandy Flat	130	4.0	520,000	2,377,000	20	14

Approximately 700,000 m³ of waste rock mined from Sandy Flat could be used in the construction of the larger TSF reducing the Sandy Flat waste dump significantly.

PROCESSING

In the 1990's a processing plant based on flotation of copper sulfide ores was constructed at site but for most of its time only processed oxide and transitional ore. These materials were difficult to treat by flotation. It was only in the plant's last campaign that the open pit was sufficiently deep to produce good quality sulfide ore and anecdotal reports suggest that a high quality concentrate was able to be made from this material and recoveries were good. There is a limited amount of metallurgical data available for the processing of sulfide ores and new test work will be done on samples obtained from the 2009 drilling program.

A criterion for development of the project is to minimise capital expenditure at start up. The major project expense will be associated with the processing plant. Other expenditure will cover infrastructure such as an expanded camp, airstrip upgrade and general service facilities.

Several options for plant development have been considered and the preferred approach is to refurbish the existing sulfide concentrator as the initial processing plant. The plant would then, in subsequent years, be expanded from the current 300,000 tonnes per annum capacity about 500,000 tonnes per annum of processing capacity.

A smaller oxide processing plant of about 150,000 tonnes per annum capacity is also proposed by this study. That plant would use the current on site two stage crushing circuit to produce a product which would be screened into coarse and fine portions. The coarse material would be vat leached in the existing three vats and the fine material would be treated in a batch agitated leach and the leach solutions would be combined to form the feed to a small SX-EW plant producing copper cathodes.



Tailings Storage Facility

A new tailings storage facility (TSF) will be built. The existing 4 ha facility will be managed for rehabilitation over time.

Combined oxide and sulfide tailings produced during the initial 3 year stage of mining will be 2.3M tonnes and a 10 metre high dam with an appropriately higher wall and will have a footprint of 14 ha.

No allowance has been made for lining of the facility or ongoing lifts to achieve the ultimate storage capacity.

Water Balance

Management of the water balance in the circuit is important not only to maintain solution chemistry but to ensure that in the wet season there is not an un-manageable increase in water in the system. On an annualised basis the process has a significantly negative water balance due to the evaporation rate being around 3 times the precipitation. However with most of the rain falling during the wet season and potentially in intense cyclonic events the circuit has to have process water surge capacity to cope with these events. A water balance for the proposed processes has been developed and plans to supply that water are under development.

Resources and Mineable Resources

Based on previous drilling at Redbank Copper an indicated resource of 943,000 tonnes of mineralized copper sulfides containing 16,500 tonnes of copper metal and an inferred resource of 3,353,000 tonnes of mineralized copper sulfides containing 44,500 tonnes of copper metal have been announced (**Table 2**). Further exploration during the dry season 2009 and in future exploration programs is expected to increase these resources.

Table 2 ERL 94 total known sulfide resources determined by independent consultants SRK Pty Ltd in September 2008.

	INDICATED RESOURCE		INFERRED RESOURCE		TOTAL RESOURCE	
	TONNES	Cu %	TONNES	Cu %	TONNES	Cu %
SANDY FLAT	433,000	1.9	1,604,000*	1.2	2,037,000	1.3
BLUFF	407,000	1.7	1,188,000*	1.6	1,595,000	1.6
PUNCHBOWL			385,000	1.3	385,000	1.3
AZURITE	79,000	1.4	61,000	1.4	140,000	1.4
REDBANK	24,000	1.4	115,000	1.0	139,000	1.1
TOTAL	943,000	1.7	3,353,000	1.3	4,296,000	1.4

- >100 metres below surface



Waste Rock Classification and Storage

Identification and characterisation of waste rock removed during the ore mining process is critical in determining a positive outcome for control of acid mine drainage (AMD) in the long term. Initial assessment of AMD issues indicate;

- That there are sharp transitions from ore grade mineralisation to host rock offering the opportunity for good grade control and AMD screening during mining to ensure waste rock contains a minimal amount of metal.
- The oxide host rock and mineralisation contain significant quantities of rapidly reacting acid consuming minerals such as carbonate.
- The mineralisation is relatively lacking in metal species other than copper (up to 4%) and iron (up to 4%). Zinc, arsenic, lead etc are present only in very low concentrations (<200ppm).

Detailed AMD test work and design of the waste rock storage area is underway. It is anticipated this will demonstrate

- That waste rock can be identified and handled with sufficient precision to ensure low levels of copper and other potentially motile metals are achieved in the waste rock storage.
- That the proper management of oxide and sulfide mining processes will allow the total project waste rock to have sufficiently net acid consuming or neutral characteristics in all time scales such that acid drainage generation will not occur.

Waste rock storages can be constructed so that following rehabilitation they have minimal natural drainage influx.

Rehabilitation Plan

Issues to be managed

The Sandy Flat Pit is an environmental legacy from the previous operations in the 1990s. The pit currently holds 530,000m³ of copper laden acidic water (pH <3, and 0.6g/litre copper). The standing water table is about 6m below the present surface. However, a palaeochannel contributing to the recharge of the palaeochannel intersects the pit and causes it to overflow.

A rehabilitation plan for the Redbank site will encompass rectifying existing contamination issues as well as rehabilitation of Sandy Flat after the sulfide operations have ceased.

Proposed Management during the course of operations

The proposed sulfide operation aims to operate on a contained water cycle which will commence with dewatering followed by ongoing management and monitoring.



Dewatering

In the course of the sulfide operation the intention is to draw down the pit water via treating it with lime to induce the precipitation of metals and the neutralization of the acidity to a level suitable for release into the environment.

Drawing down of the contaminated water in the open pit will also drain the potentially contaminated water from the adjacent palaeochannel and the shallow unconfined aquifer underneath the plant site.

Management after dewatering

Once the pit has been dewatered and mining begins, the Sandy Flat pit will no longer be the storm water receptacle for the disturbed area. The Sandy Flat pit will only receive waters from either direct precipitation, groundwater from the water table and potentially ephemeral water flows from the palaeochannel. This will be thoroughly investigated during the 2009/10 wet season.

Ongoing monitoring

Improved understanding, management and containment of the water cycle will enable limiting the existing contamination of the shallow aquifer under the plant site. Ongoing monitoring and research, to be undertaken during the course of operations, will expand the knowledge base for rectifying existing issues. During the course of the mining operation the aim is to enable cleaner water recharge to the aquifer, palaeochannel and the open pit. During operations and decommissioning the pit will be in a better position, than it is presently, to refill to groundwater levels with cleaner water.

Decommissioning

Rehabilitation of the pits will involve installing an abandonment bund around the pit, trenching the access ramp, and final forming of the current diversion drains. Timely introduction of a water cover in the pit will prevent oxidation of sulfidic minerals present in the pit below the surface oxidation zone.



ENVIRONMENTAL MANAGEMENT SCOPE

The environmental management scope for the project in general will have the following main components:

- Management of physical impacts within the impact areas of the mining operations and the existing plant and surrounding area. This includes management of all solid waste materials from the operation. The physical impact management will also need to ensure that ultimate rehabilitation objectives are not compromised (eg ensuring soil cover is stockpiled in a manner where it can be reclaimed for rehabilitation). The aim will be to minimise the physical impact area of the operations and to ensure that on completion, rehabilitation can be completed to a satisfactory standard.
- Management of water and water quality will remain the main focus of environmental management at Redbank. Baseline water and aquatic ecology monitoring data is now available for both the Hanrahan's Creek and Redbank Creek drainages. Ongoing water management and monitoring programs will be continued and enhanced. Significant reduction in the amount of water borne contamination leaving the site is an achievable objective. Actual operations on the site presents the opportunity to achieve this objective. Solid commitments for improvements have been declared in the Water Management Plan required as part of the Mining Management Plan administered by DRDPiFR.
- Utilisation of existing knowledge of legacy issues to ensure the prevention of future environmental concerns.

Summary of Additional Potential Impacts of the Sulfide Project

At the Sandy Flat plant site and surrounding area the proposed sulfide operations can be managed in a manner that decreases the long term environmental risks posed by the site at present. The main factors are as follows:

- The Sandy Flat Pit with its highly contaminated water will be dewatered, and the contained water treated to acceptable release (according to Waste Discharge Licence). This will also largely drain the contaminated unconfined aquifer beneath the plant. This will allow access to the fresh ore resources at the bottom of the pit.
- The initial ores mined from Bluff, Azurite, Punchbowl and Redbank will be wholly oxidised. Initial static AMD data indicates that the leach ore will still contain materials capable of neutralising acidity in the medium to longer term. Therefore it could be expected that once production ceases the waste material will progressively consume remnant acidity. Data from longer term dynamic testing will provide further data necessary for detailed closure planning.



- Closure rehabilitation of the site will involve covering with stockpiled top soil and new and contained seeds and establishment of runoff drainage control. Drainage control will ensure that there is no surface flow into the rehabilitated legacy areas. The soil cover and developing vegetation will minimise oxygen and rainfall access to the interior rehabilitated areas.
- The development of the sulfide project will require the draining and treating of the contaminated Sandy Flat Pit waters. The enhanced site water management along with improved understanding and management of groundwater, acid and contaminate producing material on the site will ensure that the water that eventually refills the pit is of a much higher quality than it is currently.

The existing and precursor operations at Redbank have impacted on Hanrahan's Creek and downstream drainage system. Otherwise environmental impacts have been limited to the immediate disturbance areas at the plant site and immediate environs. The proposed mining operations at Bluff and Redbank are located in the Redbank Creek drainage system. Previous impacts on the Redbank Creek drainage system have potentially come from the small scale mining activities between 1916 and the 1960's and the presence of an exploration and then mine camp from the 1970's to the present. The mining activities included small open pits and shafts, distribution of mined ore in sorting piles and a 5,000 tonne stockpile at Redbank.

An aquatic macro-invertebrate base line survey undertaken by the Environmental Research Institute of the Supervising Scientist in March 2008 of Redbank Creek found no indications of environmental damage (Humphrey, 2008). The lack of discernable impact is probably due to the fact mining activities were restricted to the oxide zone. Exploration soil surveys also show only localised copper anomalies around the workings with no significant migration of metal down slope towards Redbank Creek. Further and follow up samples have been collected in March 2009, however identification of samples has not yet occurred.

During mining operations, dewatering will be required at all pits. It is not known until ground water tests have been conducted the amount or quality of water that will have to be discharged. However there are no known palaeochannels and no evidence of major unconfined aquifers. The Redbank deposit is situated at the upslope limit of the alluvial deposits of the Redbank Creek and has limited hillside catchment areas further upslope. Dewatering will be conducted via dewatering bores adjacent to the pits and by pit sumps. The duration of mining for sulfidic ores is yet to be determined as the depth extent of the deposits are unknown.

If this water is acceptable and not required for the process facilities it will be irrigated around the pits or discharged through settlement ponds into Redbank Creek to ensure there are low levels of suspended sediments. Ground water tests of waters in the vicinity of the new deposits have displayed a neutral pH.



A larger volume of waste rock will be required to be removed from the pits to access the deeper sulfidic ores. Once the sulfide zone has been reached waste rock removed from the open pits may be sulfidic and good grade control practice will ensure there is limited misplacement of ore material. Waste rock plans for sulfidic waste rock are being developed in conjunction with waste rock plans for the oxide zones so as to ensure the best containment and management possible.

At all new sites there is the opportunity to place the waste rock where run off from up slope is minimal. Rehabilitation of the waste rock with soil cover and drainage works will ensure that water flows through the material is minimal.

Consequently the impact of the proposed pits at Bluff and Redbank is expected to be limited to local physical impacts which can be minimised by good mine development planning and further ameliorated by proper rehabilitation and closure measures.

I hope this information is sufficient to allow you to determine the requirements for us to incorporate the sulfide component of this project into the existing EIS Guidelines for the redevelopment and management of this site.

Yours Sincerely

Bruce Morrin
Managing Director
Tuesday, July 28, 2009