



February 7, 2005

Mr. Carlos Birbuet
Manager of Geology
Empresa Minera Paititi S.A.
Casilla 4326
La Paz, Bolivia
cbirbuet@comsur.com.bo

Re: Don Mario Upper Mineralized Zone Au-Cu Deposit Resource Review and Technical Report: Progress Report
Project No. 9401.01

Dear Mr. Birbuet:

At the request of Orvana Minerals Corporation (Orvana), Pincock Allen & Holt (PAH), a division of Hart Crowser, Inc., is preparing a NI 43-101 Technical Report of the Don Mario Upper Mineralized Zone (UMZ) gold deposit to meet the requirements of Canadian National Instrument 43-101. The objective of the report is to provide Orvana with an independent review of the company's resource estimate and technical report that will follow existing regulations in Canada.

The principal author of the report is Raul Borrastero, a Certified Professional Geologist (C.P.G.). Mr. Borrastero has been involved with the project since October 2004 and has visited the site in November of 2004. Mr. Borrastero is reviewing the information available on the project including the location, tenure, access, infrastructure, history and all aspects of the geology, drilling, sampling and data verification of the property. Mr. Richard Addison, Professional Engineer (P.E.), PAH's Principal Metallurgical Engineer, is conducting a review of the preliminary processing information available on the UMZ metallurgy.

During the site visit, conducted on November 2 through November 5, 2004, PAH reviewed existing conditions, access, infrastructure, field geology, and mineralization at the UMZ area and toured the existing Don Mario underground mine, open pit mine and Au recovery plant that are currently operating on ore material produced from the Lower Mineralized Zone (LMZ).

PAH personnel have gathered documents and computer files that include geological information, drill hole and assay databases, cross-sectional geologic interpretations and resource estimation, metallurgical tests and conceptual pilot plant designs provided by Orvana.



PAH is reviewing the geology and data collection techniques including drilling, sampling, assaying, geologic interpretation, database compilation, and resource modeling. A process engineer is conducting a desk review of the metallurgical testing and conceptual plans for the project.

PAH expects to finalize the Technical Report meeting the criteria of the Canadian Stock Exchanges by March-April 2005. The Technical Report will discuss all items required by NI43-101.

The following summarizes PAH's findings and conclusions to date from our site visit and review of various reports and documents presented to support Don Mario UMZ's mineral resources.

SUMMARY

Orvana Minerals Corporation (Orvana), engaged Pincock, Allen & Holt (PAH) to prepare a Technical Report covering the Don Mario Upper Mineralized Zone (UMZ) gold deposit, Bolivia to meet the requirements of Canadian National Instrument 43-101.

The following PAH individuals are contributing to the preparation of the report:

- Raul H. Borrastero, C.P.G., Senior Geologist, Resources, Regional Geology, Drilling, Sampling.
- Richard Addison, P.E., Principal Process Engineer, Metallurgy.

Project Description

The Upper Mineralized Zone (UMZ) Project is located at the Don Mario mine site in San Juan Canton, Chiquitos Province, Department of Santa Cruz in eastern Bolivia. The area is located about 480 kilometers (km) northeast of the city of Santa Cruz de la Sierra, Bolivia. The project is currently envisaged as a gold, copper and silver open pit and mill operation.

The Don Mario mine and UMZ project are geographically located at Latitude 17°20'09" South and Longitude 59°41'16" West, at an elevation of about 300 meters above sea level. The area is located within the Bolivian oriental plains and is characterized by a gently undulating terrain considered a tropical savanna with dry winters. Elevations range from about 300 meters to about 450 meters above sea level (asl). The highest point in the area is the Don Mario hill where the UMZ deposit is located. The Don Mario hill, traditionally known as Cerro Pelado (Bald Mountain), has an elevation of 424 m asl, approximately 120 m above the mine camp. There are no perennial streams within 20 km of the Don Mario site.



Access to the project is by air from the city of Santa Cruz de la Sierra, or by road or a combination of rail/road.

The Don Mario Property consists of nine contiguous mineral concessions covering about 65,700 hectares located within the San Juan Canton of the Province of Chiquitos. The Don Mario deposits consisting of the Upper Mineralized Zone (UMZ), and the Lower Mineralized Zone (LMZ) are located within the Don Mario concession. The UMZ is the main focus of the current NI 43-101 report. The LMZ is presently mined by underground and open pit methods, and processed at the on-site mill at a rate of about 700 tonnes per day.

The Don Mario concession is held by Empresa Minera Paititi S.A. (Paititi), a Bolivian subsidiary of Orvana. Orvana is a Canadian company listed in the Toronto Stock Exchange that managed the activities at Don Mario from December 1992 to January 2002. On January 11, 2002, Compañía Minera del Sur (Comsur) acquired a controlling interest in Orvana and has since managed and operated the exploration, development, and mining activities at Don Mario. Comsur is the largest privately held mining company in Bolivia. The company has built a modern camp for about 200 people. The site has satellite, telephone, fax, television, radio and internet service. A public telephone booth is also available and operates with calling cards.

Brief History

Cerro Pelado (now Cerro Don Mario) was probably worked by the Jesuits as early as the 1700's.

The deposit was explored in 1991 by Compañía Minera La Rosa (La Rosa), when gold was detected in samples of copper oxide material brought to La Rosa by loggers for assaying. In July 1993, La Rosa and Billiton Exploration and Mining (Billiton) formed a Joint Venture (JV) to conduct exploration. In April 1996 Orvana acquired 100% of the property by acquiring Paititi and three other subsidiaries from the JV partners and decided to focus on the higher-grade and less complex-metallurgy LMZ.

On January 2002, Comsur acquired 50% plus one share of Orvana and assumed management of the exploration and development at Don Mario. In late 2002, Comsur-Paititi mined and stockpiled about 50,000 tonnes averaging about 4.76 gpt Au grade from the Mini Pit. As of December 31, 2002, about 400 workers were involved in constructing the mine. In May 2003, Don Mario started running low-grade LMZ ore through the mill. Mine ore production is currently about 700 tonnes/day, 60 percent from the underground and 40 percent from the open pit.

Between June and September 2004, Paititi completed a core-hole drilling program consisting of 44 holes (DM-200 to DM-243) totaling 2,819 meters. The exploration program also included several



trenches and channels across the slopes of the Cerro Don Mario UMZ outcrops. Paititi compiled, updated and re-evaluated all the data relevant to the UMZ mineralization and conducted cross-sectional resource estimations for the porous (oxide), oxide, transition (mixed), and sulfide zones. The UMZ resource update is the main focus of the Technical Report.

Regional Geology

The Don Mario district is located in the southwest portion of the Precambrian Brazilian shield. The shield is composed of a gneissic basement with well-developed belts of mid to upper Proterozoic schistose rocks with a medium grade metamorphism of the amphibolite facies and granitic intrusions. The Bolivian portion of the shield is also known as the Paragua craton and is up to 270 kilometres wide and bordered by two parallel orogenic belts of Middle to Upper Proterozoic age: the Sunsas Mobile Belt along its western edge and the Aguapei Mobile Belt along its eastern border. The Don Mario deposits are hosted within the Cristal schist belt, which is composed of quartz-muscovite and quartz-biotite schists. The Cristal belt is surrounded by gneisses to the north and east and by the Señoritas granite to the west.

Property Geology

The Property lies within the southeast margin of the Sunsas Mobile Belt of the Brazilian-Bolivian shield, in a region characterized by highly deformed and metamorphosed Lower Proterozoic rocks of the Aventura Complex. The Property covers a series of northwest trending schist belts (Cristal Sequence), orthogneiss (Patuju Domain) and a granite intrusive body within an area of approximately 25 kilometers east-west by 25 kilometers north-south.

The most common lithologies are varieties of biotite schist, sillimanite schist, quartzite and calc-silicate gneiss. In the area of the property, the regional structure appears to subdivide into multiple sub-parallel shear zones and strike slip faults, one of which passes along the length of the Cristal Schist Belt, and is known as the Don Mario Shear Zone. In the vicinity of the Don Mario Deposits, the Don Mario Shear Zone is approximately 700 m wide, trends northwest, and dips near vertical to 80° to the northeast.

Local Geology

The most prominent topographic feature in the area is the Cerro Don Mario, originally called "Cerro Pelado" (Bald Mountain) because it is devoid of trees. The hill rises about 100 meters above the surrounding schist and gneiss terrain and is capped by calc-silicate-bearing schists. The calc-silicate schists strikes northwest-southeast, parallel to the strike of all the metamorphic strata in the area. It forms a line of hills from Cerro Cristal at the southeast end through Cerro Don Mario in the center



to Cerro Felix in the northwest. The calc-silicate units thin out both to the northwest and southeast of Cerro Don Mario. The calc-silicate rocks at Cerro Don Mario are part of an extensive meta-sedimentary sequence of the Cristal Formation that includes several units and sub-units defined by Orvana-Paititi.

Mineralization

The UMZ mineralization is hosted by a package of calc-silicate schists that has not been found elsewhere on the property. The calc-silicate rocks are largely composed of tremolite, diopside, ophicalcite, dolomite and talc which suggests that the mineralization may be skarn-hosted, and so related to the emplacement of the granite.

The calc-silicate mass of the UMZ is oval in plan, strikes southeast-northwest, dips to the northeast at about 35 to 60 degrees, extends for about 500 meters along strike, has a width of 100 to 150 meters, and a thickness of about 20 to 100 meters. The rocks located to the footwall of the UMZ are along a structural contact that corresponds to the mineralized zone of the LMZ composed of quartz-muscovite-biotite-feldspar-sillimanite schist.

A large portion of the UMZ is oxidized to depths of up to about 50 meters, followed by a transition zone and a sulphide zone. The main primary minerals are chalcopryite, pyrite, bornite, galena, sphalerite, subordinate gold and possibly chalcocite. Secondary minerals are malachite, azurite and crysocola. The copper mineralization tends to be more evenly distributed whereas gold and silver are more irregular.

Production History

As explained above, in late 2002, Comsur-Paititi mined and stockpiled about 50,000 tonnes of oxidized LMZ material averaging about 4.76 gpt Au grade from the Mini Pit. In May 2003, Don Mario started running low-grade LMZ ore through the mill. During the 15 months of commercial production ending in September 30, 2004, Don Mario has produced a total of 56,634 troy ounces of gold. In October 2004, Don Mario treated 20,245 tonnes of LMZ ore at an average grade of 8.32 gpt Au at a mill recovery rate of 86 percent.

In addition, about 20,000 tonnes of oxidized UMZ material has been mined and stockpiled from the Mini Pit to date.



Resource Estimation

The geologic evaluation of the UMZ utilized all of the available data for the area consisting of core holes (91), RC holes (6), trenches (10) and surface channels (2). The resource estimation of Au, Cu, and Ag grades was carried out using core and trench data only. About half of the core holes were drilled between 1990 and 2000. The latest campaign carried out in June – September 2004 drilled 43 core holes for a total of 2,819 meters.

Specific Gravity (SG) determinations of core were performed at different times throughout the drilling campaigns. Both unsealed and sealed tests were carried out and the SG determined by the water displacement method. Four zones were defined: Porous (2.54 tonnes per cubic meter, T/m³), oxides (2.65 T/m³), transition (2.8 T/m³) and sulfides (2.86 T/m³).

During the 2004 campaign, drill samples were assayed by the Don Mario laboratory and about 30 percent of the samples were also sent to the Alex Stewart lab in Argentina for checks. Important discrepancies were found especially for silver assays and hence all of the 1,844 samples were re-prepared and assayed at the Chemex ALS lab in Bolivia. The results showed good correlation between the two commercial labs (i.e. Chemex and Alex Stewart) for Au, Cu and Ag. Therefore, the 2004 results from Chemex in conjunction with the previous core drilling were used for the resource estimation.

The resource estimation consisted on a cross-sectional interpretation following the main known controls of the UMZ mineralization. A total of 15 vertical sections perpendicular to the strike of the UMZ were defined at 25 m spacing between sections. The overall drill hole spacing is about 25 meters. The boundaries for the Porous, Oxide, Transition and Sulfide zones were defined on section following a combination of physical properties, geologic controls, mineralogy and cutoff grades. The cutoff grades (1 gram per tonne (gpt) for Porous and Oxide zones; 1.27 gpt for Transition; and 1.32 gpt for Sulfides) were calculated on a gold equivalent grade basis considering metal prices and preliminary metallurgical recovery results.

For each section, the average grade of gold, copper, and silver for each drill hole was estimated for each zone. Individual samples were previously checked to determine if any high-grade erratic values (i.e. any sample where the grade is three times higher than the next and the previous sample) were present and replaced the outlier value with the mean of the three samples. The final grade estimate(s) is the result of weighting by the hole length and by the sectional area of influence for all zones. The volumes and tonnages were calculated for each section and zone and tabulated. Table 1 shows the summary of resources for the UMZ mineralization estimated by Paititi. The resource is considered in the indicated category.



TABLE 1
Empresa Minera Paititi S.A.
Don Mario UMZ, Bolivia
Mineral Resource Estimate

Zone	Indicated Resources			Tonnes
	Au g/t	Cu %	Ag g/t	
Porous	1.31	1.78	52	443,422
Oxides	1.57	1.99	49	1,790,670
Transition	1.41	1.37	57	1,775,430
Sulfides	1.46	1.42	44	1,568,151
Total	1.47	1.61	50	5,577,672

PAH is in the process of reviewing the information available on the UMZ. From the data reviewed to date, PAH believes that Paititi and previous operators have conducted exploration, sampling and analysis programs using standard practices, providing generally reasonable results. PAH believes that the resulting data can effectively be used in the subsequent estimation of resources. PAH is currently conducting independent checks and data validation of the drill hole sampling data and resource model and finds the geologic interpretation, grade and tonnage estimation reasonable and acceptable.

Mineral Processing and Metallurgical Testing

The UMZ testwork is limited to oxide and transition ore. The work was conducted by CIMM in Santiago, Chile and was reported in 1994. The ore responded poorly to flotation but well to leaching, specifically to acid leaching followed by cyanide leaching.

From the testwork it is evident that the oxide and transition ore from the UMZ respond well to extraction of copper, gold, and silver. However, the testwork is very limited in that it only was conducted on six samples, four of oxide ore and two of transition ore. No data is shown for cyanide consumption. Although extraction of the copper, gold, and silver is good, recovering the extracted metals in an industrial plant will be complex and expensive. Perhaps with extensive metallurgical testing and thorough engineering studies it may be established that it can be economically processed; accordingly, this mineralization may be considered a resource.

The sulfidic portion of the UMZ will probably respond well to flotation and the flotation concentrates would find a ready market.



Don Mario should delay the plans to build a pilot plant on site. It may be that such a plant will eventually be worthwhile, but much more extensive testwork and engineering studies should precede such a decision.

Environmental Issues

PAH did not conduct an environmental review of the Don Mario site and property. PAH is not aware of any existing environmental liabilities on the project. According to Comsur, the site and mine water balance of current operations is in operating deficit and therefore there is no water discharge. Process water from the tailings impoundment is re-circulated back to the plant and mixed with fresh water for use in the process circuit.

The mill tailings transport is through PVC pipes installed along lined ditches. The tailings pond is lined with a 1.5 mm geo-membrane so that the mine can operate with a live cyanide pond for process purposes and hence no cyanide destruction plant exists. However, the operators have erected fences around the pond to protect animals, and have installed four "firecrackers" (remotely hand-operated cannons) to scare birds away. When the mining operation is complete, the water will evaporate from the pond with any residual cyanide being naturally destroyed through exposure to sunlight and oxygen.

Hunting and tree cutting are expressly prohibited within the fenced Don Mario property. The property site is clean; trash pick up and removal is done on a regular basis. Paititi has received the necessary permits required to explore the property and operate the mine.

Comments

PAH will complete the process of reviewing data that supports the resource statement in the upcoming weeks and finalize the NI 43-101 Technical Report.

Sincerely,

PINCOCK, ALLEN & HOLT

By:

RAUL BORRASTERO, C.P.G.
Senior Geologist

Reviewed by:

RICHARD ADDISON, P.E.
Principal Processing Engineer