Project Notes: Mathinna Tailings Project Resource Modeling

Client: Silver City Mining Limited (SCM)

Project Outline

A drilling program was undertaken over the historical tailings deposit at the now derelict Mathinna Gold Mine in order to (a) provide sufficient material for a metallurgical test work program and (b) to develop an updated resource estimate for the tailings deposit. The deposit comprises *in situ* historical tailings (residue) in a small valley within which resides a deposit of historical ore processing material (slimes) in the south and a more recently constructed pile (heap) of disturbed residue immediately north and westward of the slimes deposit.

External laboratories were used for the primary assay results (Intertek) and for the umpire assay results (Amdel).

Cadastral information and historical reports describing the location, extent, and quality of the tailings deposit and associated infrastructure were provided by external sources.

Phytochemex was contracted to oversee the drilling program, to undertake resource modeling and to prepare a JORC compliant resource estimation for the tailings deposit. Due to unfavorable results obtained from a metallurgical test work program, run in parallel to the assay test work program, the scope of the project was reduced significantly. As a result, **no resource estimate was calculated and only preliminary resource wireframes were developed** to approximately calculate the volume and quality of the residue, slimes, and heap materials within the tailings deposit.

Project Data

The following data was provided or developed during the progress of this project.

Data Type	Data Source	Data Description
Laboratory assay results	Intertek via SCM	Assay results for 276 of the total 312 samples collected
Historical assay results	Hughes 1948 report	Tabulated historical assay results and tailings thickness
Historical drilling data	Hughes 1948 map	Location of 1948 drilling program collar positions
Historical cadastre	Hughes 1948 map	Location of historical tailings extent and infrastructure, historical tailings surface, original basement topography
Current bulk density	SCM	Data describing a large-sample test pit program and laboratory data taken from selected assay samples.
Current cadastre	SCM	Field mapping of current tailings extent, current topography
Drillhole database	phytochemex	Access database containing the non-valid 2013 drilling results and the 1948 drilling data
Preliminary Wireframes	phytochemex	Surpac format data describing the extent of the residue, slimes, and heap materials within the tailings deposit developed from the non-valid 2013 drilling results and the 1948 drilling data

Spatial Data

The position of the current topography was developed from Lidar data provided by SCM. The position of the historical tailings surface was developed from the Lidar data and from digitized surface contour data captured from the Hughes 1948 map. The position of the original basement topography for the valley floor was developed from digitized basement contour data captured from the Hughes 1948 map. The lateral extent of the tailings deposit was provided by SCM. The lateral extent of the heap material was inferred from a brief assessment of the Lidar data along the periphery of the heap. The lateral extent of the slimes material was inferred from the position of the heap material and from the Hughes 1948 data and map.

Assay Data

Some 312 individual tailings samples collected from the drilling program and were submitted to Intertek laboratories for assay, of which 276 laboratory results were available at the time of writing. Due to delays in sample processing at the laboratory, SCM decided to have the samples screened to <2.00mm to improve sample turn around. The 75 oversized reject subsamples were scheduled for later analysis. These assay data were not available at the time of writing.

Raw assay data for the 276 <2.00mm subsamples was received from SCM and tabulated for Quality Control and Quality Assurance (QAQC) analysis. All standard, blank, duplicate, and laboratory check analyses for the laboratory batch results were tested statistically and found it contain anomalous values. As a result, 96 of the <2.00mm subsamples were returned to the laboratory for repeat assay. These assay data were not available at the time of writing.

An initial eleven (11) randomly selected samples of the <2.00mm subsamples were submitted to Amdel for umpire assay test work. Raw assay data for these subsamples was received from SCM and tabulated for QAQC analysis. All standard, blank, duplicate, and laboratory check analyses for the laboratory batch passed the statistical test.

Drillhole Database

All non-valid assay data for the 276 <2.00mm subsamples were imported into an Access format drillhole database for resource modeling. To assist with accurately locating the position of the original basement topography and the basal contact between the residue and the heap, the database was amended to include the 1948 drilling data. Drillholes identified by a HoleID beginning with “SCM” in the database refer to the 2013 drilling program and drillholes identified by a HoleID beginning with “H” in the database refer to the 1948 drilling data.

The database contains four datasheets; collar, survey, assay, and lithology. Collar and Survey datasheets were developed from survey information provided by SCM. The assay datasheet was developed from the available 276 assays (valid and non-valid) as provided by SCM. The lithology datasheet was developed from field logs prepared during the 2013 drilling program and from the 1948 drilling data, captured from the Hughes 1948 report and map.

Bulk Density

Two bulk density test work programs were undertaken. A large-scale test pit program was conducted using a truck and weigh bridge to estimate the *in situ* bulk density from one (1) location assumed to be within each of the residue, slimes, and heap material areas. Selected assay samples from drillholes positioned near the test pits were also tested for bulk density by ALS Laboratories. Results for these test work programs are tabulated below.

Location	ALS (Dry)	Truck (Dry)	ALS (Wet)	Truck (Wet)	Ave Dry
Slimes	1.382	1.409	1.668	1.685	1.396
Heap	1.410	1.584	1.602	1.799	1.497
Residue	1.245	1.492	1.431	1.714	1.368

Resource Modeling

Resource modeling was undertaken using Surpac software, complimented by cadastral data manipulation using MapInfo software. The current resource model database is **preliminary only** as it contains non-valid assay data. The current resource model wireframes are **preliminary only** as they were completed hastily to meet a time constrain imposed by SCM.

The surface wireframe of the current topography was developed using Lidar data provided by SCM.

The surface wireframe of the original valley floor was developed by evaluating the locations of the End Of Hole (EOH) positions for the 2013 drilling program, the geo-referenced basement contour data captured from the Hughes 1948 map and the EOH positions for the Hughes 1948 drillholes.

From the above, a solid wireframe describing the entire tailings deposit (residue, slimes, and heap material) was developed from the intersection of the current topography surface and the original valley floor surface. A volume report for this solid was created.

A **preliminary** solid wireframe describing the location of the slimes material within the greater tailings deposit was developed by assuming the lateral extent of the slimes (based upon the 1948 drilling data and map) at the current topography surface and then projecting this extent downwards to the original valley floor surface. A volume report for this solid was created.

A **preliminary** solid wireframe describing the location of the heap material within the greater tailings deposit was developed by assuming that the heap was constructed on top of the original tailings surface. The lateral extent of the heap material was estimated from visual observations and from a brief slope analysis of the current topography surface along the periphery of the heap. A volume report for this solid was created.

No wireframe describing the tailings residue was developed and the quantity of tailings residue was calculated arithmetically by subtracting the volume of slimes and heap materials from the entire tailings volume report.

Preliminary Resource Calculations

From the aforementioned data, the following table of preliminary resource data was calculated.

Variable	Residue	Heap	Slimes	Total
Ave Bulk Density	1.368	1.497	1.396	
Volume (m^2)	178,174	31,991	37,226	247,391
Tonnage	243,830	47,885	51,950	343,664
Tonnage %	71%	14%	15%	100%
Ave Au (g/t)	1.14	1.17	0.85	1.10
Ounces	8953	1805	1414	12172

Prepare this day 29th May 2013 by

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