



**Ana Paula Project**  
**Preliminary Economic Assessment**  
Municipalities of Cuetzala del Progreso and Apaxtla del Castregon  
Guerrero State, Mexico

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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## **Important Notice**

This report was prepared as a National Instrument 43-101 Technical Report for Newstrike Capital Inc. ("Newstrike") by JDS Energy & Mining Inc. ("JDS"). The quality of information, conclusions, and estimates contained herein are consistent with the level of effort involved in JDS's services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Newstrike subject to the terms and conditions of its contract with JDS and relevant securities legislation. The contract permits Newstrike to file this report as a Technical Report with Canadian securities regulatory authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under provincial securities law, any other use of this report by any third party is at that party's sole risk. The responsibility for this disclosure remains with Newstrike. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

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# **1 Executive Summary**

## **1.1 Introduction**

JDS Energy & Mining Inc. (JDS) was commissioned by Newstrike Capital Inc. (Newstrike) to carry out a preliminary economic assessment (PEA) pursuant to Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1 standards (collectively, "NI 43-101") of the Ana Paula Project (Ana Paula or Project) which is a gold resource development project located in Guerrero State, Mexico. The Project encloses several gold occurrences within an exploration concession covering an area of more than 600 km<sup>2</sup>.

It must be noted that this preliminary economic assessment is preliminary in nature and includes the use of inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

## **1.2 Property Description and Location**

The Ana Paula Project is located in the north central part of the State of Guerrero in southern Mexico, roughly half way between the major cities of Mexico City and the Port of Acapulco; the Project centroid is defined by UTM Q14N, WGS84, 409,027.8E and 1,997,632.6N or by 99° 51' 34.4 west longitude and 18° 3' 55.2" north latitude. The Project lies within the Sierra Madre mountain range where topography can range from moderate to rugged with elevations varying from 900 m to over 1,460 masl. The Balsas River, which divides the Sierra Madre Mountains into north and south ranges flows just south of the project area.

The climate in the region is warm and humid, with temperatures ranging 17 to 45 degrees Celsius and average precipitation of 835 mm per year mostly occurring between June and October during a monsoonal wet season that is influenced by hurricanes from both the Atlantic and Pacific oceans. Seismic activity in the area is a design consideration.

Newstrike, through its Mexican operating subsidiary Minera Aurea, S.A. de C.V., entered into an agreement to acquire a 100 percent interest in certain mineral rights and concessions from Desarrollos Mineros San Luis, S.A. de C.V. and Minera San Luis S.A. de C.V., wholly owned Mexican subsidiaries of Goldcorp Inc. for CAD 2.1 Million in cash and shares. In addition, the Company granted Goldcorp a three percent net smelter royalty (NSR). Newstrike will have the right, upon completion of an NI 43-101 feasibility study, to purchase one third of the NSR.

Newstrike controls surface access to 2019.41 hectares overlying and surrounding the Ana Paula exploration target area, where 1,025.33 hectares are owned outright and approximately 994.08 hectares are under contract in 63 separate ten year access agreements. Surface rights for a significant portion of planned mining disturbance and facilities is secured through a combination of Newstrike surface ownership and pending Ejido negotiations. JDS has not completed a detailed review of surface ownership.



The authors are unaware of any factors or risks that may affect access, title, or the right or ability to develop the Project.

### 1.3 Geology and Mineralization

Mineralization in the Guerrero Gold Belt (GGB) is characterized as a skarn porphyry mineralization related to an early Tertiary intrusive event. Ana Paula is located along the northwesterly trend of the GGB where it straddles a boundary between two older tectonic sub-terrane; a volcanic-volcaniclastic arc assemblage to the west and a thick carbonate platform sequence overlain by younger marine deposits to the east.

The stratigraphy of both sub-terrane was deformed during the compressive Laramide orogeny and subsequently intruded by a  $\pm 62$ -66 million year calc-alkali magmatic event that is currently thought to be associated with the timing of mineralization responsible for the gold deposits and showings of the GGB.

In general four gold depositional settings are recognized at Ana Paula, including:

1. Quartz-sulphide and quartz-carbonate-sulphide veinlets, stockworks with sulphide clots and disseminations in both intrusions and hornfels.
2. Narrow semi-massive sulphide contact replacement of limestone or hornfels/skarn at the intrusion contacts.
3. Sulphide clots, rims and masses in narrow contact replacement of breccia hosted in intrusions at or near the sedimentary contacts and/or fault contacts (detachment faults).
4. Associated with a sulphide constituent within breccia matrix and with sulphide replacement textures within structurally controlled breccia formed oblique to the dominant northerly trending westerly dipping stratigraphy.

The veinlets, stockwork, clots and disseminated mineralization, along with the contact replacement textures (settings 1, 2 and 3 above) are commonly observed contained within a sediment intrusive domain (SZ) that collectively make up a corridor of structurally controlled northerly trending and westerly dipping marine sediment and intrusive sill/dike stratigraphy that is host to a lower grade mineralization that has an undiluted composite average grade of 1.0 grams per tonne gold and 3.9 grams per tonne silver. The corridor includes at least two continuous horizons of mineralized intrusions with contact replacement mineralization separated by relatively barren rock that is dominantly limestone. Discontinuous mineralization may occur locally within the barren horizons.

The sediment intrusive-domain lies to the east of a predominantly intrusive domain composed of several different intrusive phases. The contact trends northerly and dips to the west at steep to moderate angles parallel to the structural stratigraphy of the sedimentary-intrusive domain, and is locally defined by a fault breccia.

Two discrete structurally controlled breccia bodies of irregular dimensions that are oblique to the trend of the sediment intrusive domain have been delineated in drill core. Both breccia bodies come to surface relatively close to each other and may share a common origin. One of these breccia bodies is described as the high grade Breccia Zone (B1) which intersects the SZ host rock, dipping at a high angle to the south.

The B1 Breccia zone includes a high grade core zone of brecciated rock (setting 4 above) that represents the intersection of at least two structural lineaments. This high-grade breccia is surrounded by an extensive and irregular mineralized halo hosted within the altered limestone and intrusion country rock belonging to the sediment-intrusion domain described previously. The orientation of the mineralized halo is dominantly controlled by the steeply dipping structural intersection (the fluid conduit) and partly controlled by stratigraphy, especially along contacts (settings 1 to 3 above).

The second breccia body is described as the “Lower Grade Breccia” (“B2”) and mineralization is hosted by the intrusive domain, partly within oxidized intrusion and partly within (auto) brecciated intrusion (item 4) (setting 1). The mineralized zone is in fault contact with the footwall sedimentary-intrusive domain that hosts the high grade breccia. The B2 breccia tends to host lower grade gold mineralization. Table 1-1 lists averages grades of composites selected for metallurgical testing within the Breccia zones.

**Table 1-1: Select Composite Grades within Breccia Zones**

|                      | Gold Grade<br>(gm/tonne) | Silver Grade (gm/tonne) |
|----------------------|--------------------------|-------------------------|
| B1 Breccia Zone      | 9.76                     | 10                      |
| B1 Breccia Halo Zone | 3.74                     | 4.25                    |
| B2 Breccia Zone      | 0.93                     | 5.06                    |

Source: JDS(2014)

A second mineralized zone hosted within the intrusive domain, known as Tejocote, (pronounced as “teh ho cōtti”) lies to the southwest of the main Ana Paula deposit and consists of a mineralized intrusive body of coalescing dikes and sills separated by discontinuous altered sedimentary rock horizons. An extensive low grade mineralization has been identified at the surface and in core throughout this area that is dominantly disseminated within the intrusion(s) with some contact replacement observed (settings 1 and 2 above). Exploration of the intrusive domain is still underway and insufficient information is available to calculate average grades.

## 1.4 Exploration and Drilling

Drill holes AP-05-01 through AP-12-130, comprising a total of 130 diamond core drill holes aggregating 67,942.8 m and containing 45,512 assay intervals, formed the basis of the Company’s initial 2013 resource estimate technical report. The report is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Company’s website at [www.newstrikecapital.com](http://www.newstrikecapital.com). Drill hole collar and assay data for the first 130 drill holes included in the initial resource database are available in that report.

Drilling for the updated resource was completed on November 18, 2013 with an additional 45,844.61 m of core drilling in 100 delineation and exploration drill holes from AP-12-131 to AP-13-230, aggregating 37,158 new sample intervals collected for geochemical assay. All results from AP-05-01 through AP-14-230 form the basis of the updated resource and preliminary economic assessment that is the subject of this Report, incorporating a total of 110,099.88 m drilled in 230 diamond core drill holes and aggregating results from 82,670 downhole drill sample intervals with an average length of 1.4 m, where effectively all are assayed for gold and silver.



Since exploration began in 2010, a total of 96,045 samples have been collected from road cuts, outcrop chip and channel samples, stream and soil samples, and from drill core including blanks and standards. In addition, various samples for metallurgy, density measurements and quality assurance and quality control (“QAQC”) were collected for geochemical assay, Table 9-1. Results from the ongoing surface exploration indicate that alteration and mineralization remain open in several directions and at depth. Continuing exploration with surface mapping, ground geophysics, compilation of existing data and drilling is warranted based on results to date.

## 1.5 Metallurgy

The Ana Paula project has undergone a number of metallurgical studies covering a range of process options. The majority of gold and silver values in the Ana Paula materials appear to be in close association with sulfides and as liberated particles of electrum. This allows the metal values to be concentrated by flotation or gravity and leachable by conventional methods. Testwork has included all the major refractory processing methods including roasting, autoclave, and Albion™. Conventional process methods including flotation testing and gravity concentration followed by cyanidation, whole-rock leaching, diagnostic leaching, and heap leaching, were also studied. Basic testwork defining some cyanidation parameters are included with the leach studies, and bond work indices were conducted on some of the rock types. More detailed work is recommended for the next phase of engineering.

The proposed Ana Paula flowsheet which consists of sulfide concentration and cyanide leaching was based on the results of testwork performed by ALS, Report KM4097, on a year 1-4 composite sample. This work was considered the most reliable for use as a basis in designing a processing plant and superior to whole-rock leaching based on the reagent consumption. While whole-rock leaching produced similar recovery results to the flotation/leaching of concentrates, a comparison of the operating reagent costs did show the flotation system as more economically favorable. Additional test work to confirm the reagent consumptions is recommended in the next phase of engineering to optimize the process.

The results of the composite tests showing the first four years of production seem to correlate with the previous testwork, showing similar flotation results in terms of mass pull, and leaching results reported by SGS. The flowsheet is based on leaching a rougher concentrate however additional work is needed to confirm design parameters and reagent consumptions. This work is included in the proposed next phase of engineering. The work index chosen as a basis for design was a single composite sample which gave a BWi of 19.8 kWh/tonne. This index is high and because it is based on a single sample should be considered conservative.

## 1.6 Mineral Resource Estimate

The Ana Paula mineral resource estimate has an effective date of August 8, 2014 and was developed using an updated mineral resource model based on 223 drill holes (within the block model limits), an updated geologic interpretation, metallurgical recovery data discussed in Section 13, updated costs provided by JDS Mining and a geotechnical study by Steffen, Roberts & Kirsten Consulting of Denver, Colorado (“SRK”), which was completed in late November, 2012 (Ross-Brown, Levy, 2012). The deposit has been modeled using an inverse distance squared operator applied to 5m gold and silver drill hole composite lengths which

respected lithology units. Model blocks are classified as measured, indicated or inferred based on kriging variance, the number of holes inside the search ellipsoid and distance from the closest hole. Tonnages are estimated using the average of the density data by lithology.

Table 1-2 is a summary of the input parameters to define the portion of the mineral inventory which falls within a resource shell and thus tabulated as the mineral resource. A summary of the mineral resource is presented in Table 1-3, tabulated at an internal cut-off of 0.46 g/t gold equivalent (AuEq). The calculation of AuEq includes the gold and silver prices and recoveries presented in Table 1-4. AuEq equals  $Au + 0.011 \times Ag$ .

**Table 1-2: Input Parameters to Define the Mineral Resource Open Pit Shell Geometry**

|                          | Process Recovery                                        | Metal Price |
|--------------------------|---------------------------------------------------------|-------------|
| Gold Price               | 80%                                                     | \$1450/oz   |
| Silver Price             | 55%                                                     | \$23/oz     |
| <b>Costs:</b>            |                                                         |             |
| Process                  | \$15.60/t                                               |             |
| G&A                      | \$1.65/t                                                |             |
| Mining                   | \$1.85/t,, plus \$0.02/t per bench below 900m elevation |             |
| Pit overall slope angles | 55 degrees on west<br>45 degrees on all others          |             |

Source: JDS(2014)

**Table 1-3: Summary of the Mineral Resource**

| Category           | Tonnage & Grades $\geq 0.46$ g/t AuEq Cutoff |              |              |             | Contained Ounces (000's) |              |
|--------------------|----------------------------------------------|--------------|--------------|-------------|--------------------------|--------------|
|                    | Ktonnes                                      | AuEq, g/t    | Au, g/t      | Ag, g/t     | Gold                     | Silver       |
| <b>Measured</b>    | 22,767                                       | 1.661        | 1.608        | 4.90        | 1,177                    | 3,587        |
| <b>Indicated</b>   | 18,243                                       | 1.229        | 1.163        | 5.95        | 683                      | 3,489        |
| <b>Sum M&amp;I</b> | <b>41,010</b>                                | <b>1.469</b> | <b>1.410</b> | <b>5.37</b> | <b>1,859</b>             | <b>7,076</b> |
|                    |                                              |              |              |             |                          |              |
| <b>Inferred</b>    | 1,904                                        | 1.233        | 1.113        | 10.85       | 68                       | 664          |

Source: JDS(2014)

## 1.7 Mineral Reserve Estimate

JDS has not developed a mineral reserve estimate for the Ana Paula Project as part of this PEA. Significant additional data collection and technical work is required to elevate the technical confidence of the project to a level consistent with mineral reserve estimation, in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) *Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as amended*, NI 43-101, 2011.

Mineral resources that are not mineral reserves do not have demonstrated economic viability. It includes Inferred Mineral Resources that are considered too speculative geologically to have the economic

considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

JDS is not aware of any previous mineral reserve estimates on the Ana Paula deposit that have been completed in accordance with an international reporting code.

## 1.8 Mining

The Ana Paula project will be mined by open pit methods using conventional truck and shovel production equipment. Pit optimization and mine planning was carried out on the basis to support a plant capacity of 6000 tonnes-per-day, using measured, indicated and inferred resources provided by IMC. The project life will extend over a period of 10 years, including one year of waste rock pre-stripping followed by 9-years of production operations as shown in the mine production schedule provided in Table 1-4.

All mine equipment is modelled as provided by contractors. Total material movement peaks at approximately 9.5 million tonnes per year, which requires a modest production fleet of up to 5 conventional 90-tonne class haul trucks, 1 each 12.5m<sup>3</sup> class hydraulic shovel for primary use and 1 each 12.5m<sup>3</sup> class wheel loader for backup. Drilling can be completed with a single rotary machine capable of drilling 200mm diameter holes.

**Table 1-4: Mine Production Schedule by Year**

| Year         | Resources to the Mill |             |             |             | Waste (Mt)   | Rehandle (Mt) | Total EXPIT (Mt) | S.R. (W:O)  |
|--------------|-----------------------|-------------|-------------|-------------|--------------|---------------|------------------|-------------|
|              | Tonnes (Mt)*          | AuEq (g/t)  | Au (g/t)    | Ag (g/t)    |              |               |                  |             |
| -1           |                       |             |             |             | 6.65         | 0.00          | 7.27             | 10.73       |
| 1            | 2.16                  | 2.18        | 2.06        | 11.48       | 7.93         | 0.47          | 9.82             | 4.18        |
| 2            | 2.16                  | 2.50        | 2.43        | 6.40        | 6.26         | 0.00          | 9.47             | 1.95        |
| 3            | 2.16                  | 3.28        | 3.20        | 7.18        | 5.57         | 0.00          | 9.33             | 1.48        |
| 4            | 2.16                  | 2.93        | 2.80        | 12.29       | 7.63         | 0.67          | 9.27             | 4.64        |
| 5            | 2.16                  | 2.14        | 2.08        | 5.71        | 8.03         | 1.18          | 9.24             | 6.65        |
| 6            | 2.16                  | 1.67        | 1.63        | 4.08        | 3.43         | 0.25          | 5.62             | 1.57        |
| 7            | 2.16                  | 2.59        | 2.56        | 3.36        | 0.52         | 0.00          | 2.77             | 0.23        |
| 8            | 2.16                  | 1.56        | 1.51        | 4.88        | 0.10         | 1.17          | 1.08             | 0.10        |
| 9            | 0.47                  | 0.68        | 0.62        | 5.51        | 0.00         | 0.47          | 0.00             | 0.00        |
| <b>Total</b> | <b>17.75</b>          | <b>2.31</b> | <b>2.24</b> | <b>6.89</b> | <b>46.11</b> | <b>4.22</b>   | <b>63.86</b>     | <b>2.60</b> |

\*The reader is cautioned that inferred resources included in the mine production schedule are considered too speculative geologically to have economic considerations applied to them and there is no certainty that inferred resources will ever be upgraded to a higher category.

During the mine life, two stockpiles will be required to manage the mill throughput and to smooth out peaks in the strip ratios in years 4 and 5. The first stockpile will contain approximately 2.6 million tonnes of material



above a 0.72 g/t AuEq, cutoff which will be rehandled and processed throughout the mine life. The second stockpile will contain approximately 1.6 million tonnes of marginal grade for material ranging between 0.64 g/t and 0.72 g/t AuEq which is processed at the end of the mine life.

Underground mining was not considered for this PEA at the time of this study, which warrants further investigation.

## **1.9 Mine Rock Management**

Rock management facilities (RMF) will be constructed during operations in various locations surrounding the open pit. As required, material pre-stripped in year -1 will also be used for tailing management facility (TMF) embankment construction. The various RMF will be designed at later stages to be reclaimed concurrent with operations to reduce ultimate liability upon mine closure.

In pre-production 6.6 million tonnes of mine rock and 0.6 million tonnes of mill-feed will be pre-stripped. Life-of-mine (LOM), a total of 46 million tonnes of mine rock will be moved at a strip ratio of 2.6 to 1.

## **1.10 Recovery Methods**

Several recovery methods were evaluated to process the mineralized materials at Ana Paula. Although alternative process options may be potentially viable after subsequent testwork, the most economical method of extraction for this PEA was determined to be flotation concentration followed by cyanide leaching to produce a dore on site.

The major unit operations consist of: tertiary crushing followed by closed circuit ball mill and gravity concentration. Cyclone overflow reports to flotation and flotation concentrates are reground before entering an oxidation preparation stage. Oxidation is followed by carbon-in-leach for 48 hours. Gold is collected on carbon which is separated from the pulp, stripped, and precious metals recovered by electrowinning. Leached slurry will be detoxified before reporting to the tailings impoundment

Mill throughput is designed at 6,000 tonnes per operating day. The plant is expected to achieve an average recovery to doré of 75 percent for gold and 50 percent for silver.

The plant is provided with basic utilities, air and water systems, and a fire water system. Tailings are thickened and stored in a conventional tailings management facility. Process water is recovered to a separate process water tank.

## **1.11 Project Infrastructure**

The site is currently accessible for light vehicle traffic and intermittent heavy loads via a gravel roadway from the town of Cuetzala del Progreso. During mine construction and operations, an existing gravel road north of the site would be improved to enable access for larger loads to site especially during plant construction and equipment Mobilization. This same mine access road is connected to Mexico Highway 51, a paved and improved roadway which provides mine access to the Mexico highway system and capacity for large heavy loads either west from Mexico City via Iguala, or east from the port of Acapulco. Iguala is the nearest major



city, However does not have a commercial jet airport. Air service is available from Mexico City, Acapulco or Cuernavaca.

A lined tailings storage facility has been located, preliminarily sized and costed to facilitate the tailings anticipated to result from processing the 17.8 million tonnes of mineralized material to be processed. Additional volume for storm water runoff, surge, and wave action have been incorporated into the design as freeboard for the tailings storage facility. The tailings storage facility will cover an area of approximately 392,000 m<sup>2</sup> or 39.2 hectares.

The rock management facility has been sized for approximately 46 million tonnes of mine rock based on the mine production schedule. The rock management facility has been located adjacent to the pit with impacted runoff being captured by the downstream located tailings storage facility. This enables the contact runoff water to be controlled and utilized as process water if required.

The mine support facilities and process plant will be situated roughly one km southeast of the pit area and one km northwest of the tailings storage facility. In order to avoiding steep terrain in the area a location for the primary crusher at the plant was chosen which is 85 meters vertically higher than the pit crest. This rather large elevation gain between pit crest and primary crusher will require attention to ramp design as it exits the pit.

Support and ancillary buildings include a covered, but not fully enclosed equipment maintenance shop, administration office building, mobile security trailer, fuel storage/dispensing system, truck scale, and warehouse. Certain additional facilities may be brought in by the mining contractor. The mine scenario evaluated here includes the construction of an on-site camp. Security issues and effectively expanding the region or area from which skilled labor can be drawn to this mine will be enhanced by having a camp enabling the housing of workers at the site.

Line power is available within approximately 1.5 km of the plant site. The power line planned to be tied into supplies power at 115 kV and is reported by the Federal Power Agency in Mexico (CFE) to have sufficient capacity for the estimated +/-10 megawatt anticipated loading for the site. Once delivered to a new, yet to be constructed substation proximal to the mill, the power will be stepped down to 25 kV for site-wide distribution and to 4160 Vac for the larger motor loads. A site visit by CFE is required to obtain written confirmation that power is secured and is the next steps in this area.

The average fresh water usage for the project is estimated to be 2400 gallons per minute. Water is planned to be obtained from groundwater sources through a series of well clusters. Mexico recognizes water as a national resource and regulates its use. A water concession will need to be granted by the Mexican water agency, Comisión Nacional del Agua (CNA), based on a permit application. The permit application will need to be supported by a technical study demonstrating that water availability and sufficient quantity exist in the area.

The next phase of the investigation recommended is a preliminary hydrologic study that would include verifying the proposed groundwater source locations and conducting a field program to characterize aquifer characteristics and water quality and quantity to support the proposed water supply requirements and the environmental baseline study.



## 1.12 Environmental Considerations

As yet, no formal baseline characterization studies have been conducted for the project. Baseline studies will be required prior to submittal of environmental permit documents. No known environmental condition exists that would preclude development of the project.

## 1.13 Capital Costs

During the two-year pre-production period, the initial capital costs amount to \$163.9M. This includes costs for site detailed engineering, stationary mine equipment, facility construction, processing plant, tailings facility, etc. (Table 1-5).

Sustaining and closure capital cost estimates amount to \$55.8M with a majority of these costs attributed to the tailings facility, capitalized stripping, and reclamation. A 20 percent contingency is applied to all capital. Details on the capital costs can be found in Section 21 of this report.

**Table 1-5: Initial Capital Costs**

| Capital Costs                    | Pre-Production (\$M) | Sustaining/Closure (\$M) | LOM (\$M)    |
|----------------------------------|----------------------|--------------------------|--------------|
| Capitalized Stripping            | 16.7                 | 13.4                     | 30.2         |
| Contractor Mob/Demob             | 0.4                  | 0.4                      | 0.8          |
| Process Plant                    | 45.7                 | 2.8                      | 48.5         |
| General Site & Utilities         | 5.1                  | 0.0                      | 5.1          |
| Laboratory                       | 1.5                  | 0.0                      | 1.5          |
| Construction Camp                | 0.6                  | 0.0                      | 0.6          |
| Camp Site (Operations)           | 1.5                  | 0.3                      | 1.8          |
| Administration Facilities        | 1.1                  | 0.2                      | 1.3          |
| Tailings Facility                | 13                   | 14.8                     | 27.8         |
| Electrical Supply & Distribution | 4.6                  | 0.2                      | 4.8          |
| Water Supply & Distribution      | 1.8                  | 0.0                      | 1.8          |
| Royalty Purchase                 | 2.8                  | 0.0                      | 2.8          |
| Reclamation/Closure              | 0                    | 14.4                     | 14.4         |
| Indirects                        | 22.4                 | 0.0                      | 22.4         |
| EPCM                             | 15.4                 | 0.0                      | 15.4         |
| Owners Costs                     | 4.4                  | 0.0                      | 4.4          |
| <b>Subtotal</b>                  | <b>137.1</b>         | <b>46.5</b>              | <b>183.6</b> |
| Contingency (20%)                | 26.9                 | 9.3                      | 36.2         |
| <b>Total Capital Costs</b>       | <b>163.9</b>         | <b>55.8</b>              | <b>219.7</b> |

Source: JDS(2014)



## 1.14 Operating Costs

LOM operating costs amount to \$478.1M or an average unit cost of \$26.93/t milled. A breakdown of these costs is outlined in Table 1-6.

**Table 1-6: Operating Costs**

| Operation                    | Unit             | Cost Per Ton Milled |
|------------------------------|------------------|---------------------|
| Mining‡                      | US\$/t processed | \$6.58              |
| Resource Rehandle*           | US\$/t processed | \$0.12              |
| Processing                   | US\$/t processed | \$17.75             |
| G&A                          | US\$/t processed | \$2.49              |
| <b>Total Operating Costs</b> | US\$/t processed | <b>\$26.93</b>      |

‡Mining Cost is based on \$2.30/t mined

\*Rehandle Cost is based on \$0.50/t rehandled

## 1.15 Economic Analysis

An engineering economic model was developed to estimate annual cash flows and sensitivities of the project. Pre-tax estimates of project values were prepared for comparative purposes, while after-tax estimates were developed to approximate the true investment value. It must be noted that tax estimates involve many complex variables that can only be accurately calculated during operations and, as such, the after-tax results are approximations to represent an indicative value of the after-tax cash flows of the project.

Mineral resources that are not mineral reserves do not have demonstrated economic viability. It includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

The results of the economic analysis are shown in Table 1-7.

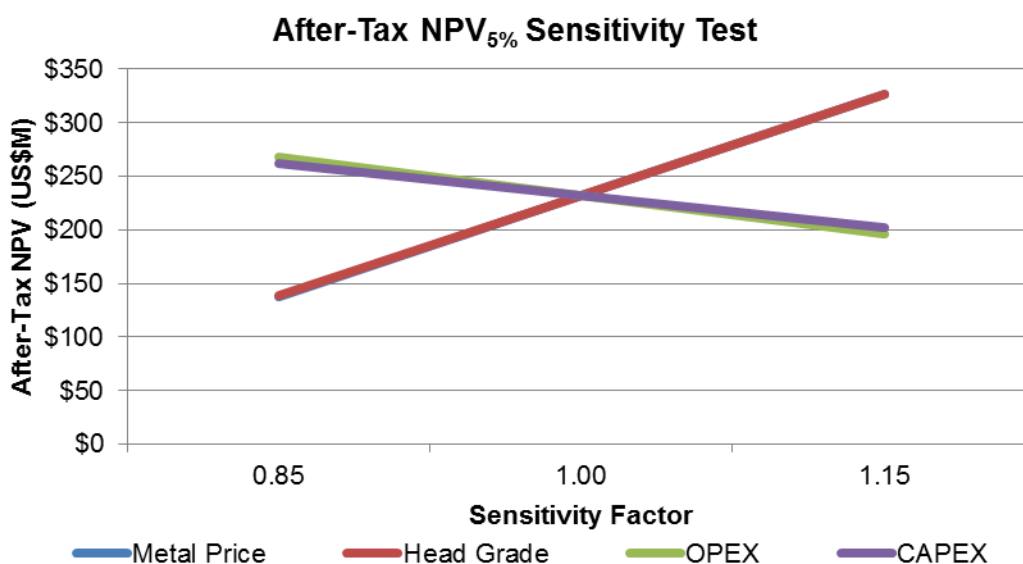

**Table 1-7: Results of the Economic Analysis**

| Summary of Results                    | Unit            | Value        |
|---------------------------------------|-----------------|--------------|
| Mine Life                             | Years           | 8            |
| Total Resource                        | M tonnes        | 17.8         |
| Total Waste                           | M tonnes        | 33.6         |
| Total Capitalized Waste               | M tonnes        | 12.5         |
| <b>Total Mined</b>                    | <b>M tonnes</b> | <b>63.9</b>  |
| Strip Ratio                           | w:o             | 2.60         |
| Mining Rate                           | tpd             | 21,600       |
| Plant Throughput                      | tpd             | 6,000        |
| Pre-Strip/Capitalized Waste           | M tonnes        | 12.5         |
| <b>Average Head Grades</b>            |                 |              |
| Au                                    | g/t             | 2.24         |
| Ag                                    | g/t             | 6.89         |
| <b>Payable Metal</b>                  |                 |              |
| Au                                    | LOM k oz        | 957          |
|                                       | k oz/yr         | 116          |
| Ag                                    | LOM k oz        | 1,961        |
|                                       | k oz/yr         | 239          |
| NSR (Net of Royalties)                | \$M             | 1,257        |
|                                       | \$/t processed  | 70.82        |
| Operating Costs                       | \$M             | 478          |
|                                       | \$/t processed  | 26.93        |
| Au Cash Cost                          | \$/Au oz        | 527.26       |
| Au Cash Cost (Net of By-Product)      | \$/Au oz        | 486.29       |
| <b>Capital Costs</b>                  |                 |              |
| Pre-Production Capital                | \$M             | 137          |
| Pre-Production Contingency            | \$M             | 26.9         |
| Total Pre-Production Capital          | \$M             | 163.9        |
|                                       | \$/t processed  | 9.23         |
| Sustaining & Closure Capital          | \$M             | 46.5         |
| Sustaining & Closure Contingency      | \$M             | 9.3          |
| Total Sustaining & Closure Capital    | \$M             | 55.8         |
|                                       | \$/t processed  | 3.14         |
| Total Capital Costs Incl. Contingency | \$M             | 219.71       |
|                                       | \$/t processed  | 12.38        |
| Working Capital                       | \$M             | 7.8          |
| Pre-Tax Cash Flow                     | \$M             | 559.4        |
| Taxes                                 | \$M             | 223.6        |
| After-Tax Cash Flow                   | \$M             | 335.8        |
| <b>Economic Results</b>               |                 |              |
| <b>Pre-Tax NPV<sub>5%</sub></b>       | <b>\$M</b>      | <b>405.3</b> |
| <b>Pre-Tax IRR</b>                    | <b>%</b>        | <b>47.5%</b> |
| <b>Pre-Tax Payback</b>                | <b>Years</b>    | <b>2.0</b>   |
| <b>After-Tax NPV<sub>5%</sub></b>     | <b>\$M</b>      | <b>232.1</b> |
| <b>After-Tax IRR</b>                  | <b>%</b>        | <b>32.8%</b> |
| <b>After-Tax Payback</b>              | <b>Years</b>    | <b>2.4</b>   |

Source: JDS(2014)

Sensitivity analyses were performed on the Base Case economics to determine which factors most affected the project performance. The analysis revealed that the project is most and equally sensitive to metal prices and head grades, followed by operating costs.

**Figure 1-1: Sensitivity Results for Base Case Scenario**



Source: JDS(2014)

## 1.16 Conclusions

It is the conclusion of the Qualified Persons preparing this technical report that the information contained within adequately supports the positive economic results obtained for the Ana Paula project. The project contains 17.8 million tonnes of gold-bearing sulphide mineralization that can be mined by open pit methods and recovered using common processing methods consisting of gravity, flotation, and cyanide leaching of flotation concentrates.

Mineral resources that are not mineral reserves do not have demonstrated economic viability. It includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

The resource mined in the PEA base case is 97 percent Measured and Indicated and three percent Inferred.

As demonstrated by the information contained in this report, the project demonstrates potential for economic development and should proceed to the next level of evaluation; either a pre-feasibility or feasibility study stage.

Newstrike has identified anomalous gold at surface in association with limestone, hornfels, intrusive rocks and breccia beyond the current pit shape that are consistent with existing mineralization at Ana Paula and comparable with other known deposits of the GGB. Results from drilling, mapping and surface geochemistry



indicate that mineralization within the Ana Paula deposit continues to remain open in several directions including at depth that merits follow up exploration and drilling.

## 1.17 Recommendations

The Ana Paula project should advance to a preliminary feasibility study (PFS) in alignment with Newstrike's desire to develop the resource. This study would encompass:

- Metallurgical testwork described herein to optimize the process flowsheet and quantify operating parameters and reagent consumptions.
- Geotechnical drilling and data collection to for pit slope design and stability analysis of TSF and MRF.
- More detailed mine planning based on Geotechnical data, and a tradeoff between owner vs. contract mining
- MRF design based on results of Geochemical and Geotechnical information.
- Generate a water balance

It is recommended that environmental baseline studies and a socio-economic program also be initiated as soon as practical. The proposed environmental characterization studies are included as part of the proposed budget. However, other responsibilities more typically associated with environmental permitting and developing sustainable community relations are not encompassed within the PFS budget as they are normally considered and executed separately.

Further action with CFE to schedule a site visit and formally secure line power should be initiated immediately.

Further hydrologic study to identify water resources and make application for their use is a priority task.

Geochemical characterization of mine rock and tailings must be completed to generate a basis for further engineering of storage methods and design.



## **2 Introduction**

### **2.1 Basis of Technical Report**

This Technical Report was compiled by JDS Energy & Mining Inc. (JDS) for Newstrike Capital Inc. This technical report summarizes the results of the preliminary economic assessment study and was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1.

It must be noted that this preliminary economic assessment is preliminary in nature and includes the use of inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

### **2.2 Terms of Reference**

A previous technical report was prepared for the Ana Paula project pursuant to Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1 and documents exploration work completed by Newstrike on the Ana Paula project in 2010, 2011, and 2012. The technical report was filed on SEDAR dated February 26<sup>th</sup> 2013. This subsequent technical report summarizes the results of the preliminary economic assessment study and was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1.

All drill hole and geological and other technical information in this Report is current through June 26, 2014 which is the date of the Company Management Discussion and Analysis (MD&A).

### **2.3 Scope of Work**

This report summarizes the work carried out by the Consultants, some of which are associated or affiliated with Newstrike. The scope of work for each company is listed below, and combined, makes up the total Project scope.

JDS Energy & Mining Inc.'s (JDS) scope of work included:

- Compile the technical report which includes the data and information provided by other consulting companies
- Mine planning
- Conduct optimal pit design and production schedule
- Select mining equipment
- Establish potentially mineable resources
- Design required site infrastructure, identify proper sites, plant facilities and other ancillary facilities
- Estimate OPEX and CAPEX for the Project
- Prepare a financial model and conduct an economic evaluation including sensitivity and Project risk analysis



- Interpret the results and make conclusions that lead to recommendations to improve value, reduce risks.

Herb Welhener, IMC scope of work included:

- Project setting, history and geology description
- Mineral resource estimate.
- PEA-level geotechnical assessment and estimate of appropriate overall pit slope angles.

Dr. Craig Gibson, P.G. Technical Director, Prospeccion y Desarrollo Minero del Norte, ProDeMin scope of work included:

- Sections 4 - 11

## 2.4 Qualified Person Responsibilities and Site Inspections

The Qualified Persons (QPs) preparing this technical report are specialists in the fields of geology, exploration, mineral resource and mineral reserve estimation and classification, geotechnical, environmental, permitting, metallurgical testing, mineral processing, processing design, capital and operating cost estimation, and mineral economics.

None of the QPs or any associates employed in the preparation of this report has any beneficial interest in Newstrike with the exception of Dr. Craig Gibson, who is subject to management or consulting contracts with Newstrike. The QPs are not insiders, associates, or affiliates of Newstrike with the exception of Dr. Gibson, who is subject to the terms of a consulting contract and an employment agreement, respectively, with Newstrike. The results of this technical report are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between Newstrike and the QPs. The QPs are being paid a fee for their work in accordance with normal professional consulting practice.

The following individuals, by virtue of their education, experience and professional association, are considered QPs as defined in the NI 43-101, and are members in good standing of appropriate professional institutions. The QPs are responsible for specific sections as follows:

**Table 2-1: Qualified Person Responsibilities**

| QP                          | Company  | Report Section(s) of Responsibility         |
|-----------------------------|----------|---------------------------------------------|
| Michel Creek                | JDS      | 1, 2, 3, 15, 19, 21, 22, 24, 25, 26, 27, 28 |
| Robert Matter, P. Eng.      | JDS      | 18                                          |
| Tony Loschiavo, P.Eng.      | JDS      | 15, 16, 21.4.1                              |
| Kelly Mcleod, P.Eng.        | JDS      | 13, 17, 21.1.4, 21.2.4                      |
| Dawn Garcia                 | JDS      | 20                                          |
| Craig Gibson, P.Geo., Ph.D. | ProDeMin | 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 23        |
| Herb Welhener               | IMC      | 12, 14                                      |

Source: IMC(2014)

QP site visits were conducted as follows:



- Mike Creek visited the project site March 19<sup>th</sup> and 20<sup>th</sup>, 2014
- Rob Matter visited the project site April 16<sup>th</sup> and 17<sup>th</sup>, 2014
- Herb Welhener visited the project site on March 19<sup>th</sup> and 20<sup>th</sup>, 2014
- Tony Loschiavo has not visited the project site.
- Craig Gibson visits the site regularly, with the last being on September 18-26, 2014.
- Kelly McLeod has not visited the project site

## **2.5 Sources of Information**

The sources of information include data and reports supplied by Newstrike personnel as well as documents cited throughout the report and referenced in Section 28.

All tables and figures are sourced from JDS, unless otherwise indicated.

## **2.6 Units, Currency and Rounding**

Unless otherwise specified or noted, the units used in this technical report are metric. Every effort has been made to clearly display the appropriate units being used throughout this technical report. Currency is in United States dollars (US\$ or \$).

This report includes technical information that required subsequent calculations to derive subtotals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the QPs do not consider them to be material.



### 3 Reliance on Other Experts

The QP's opinions contained herein are based on information provided by Newstrike and others throughout the course of the study. The QPs have taken reasonable measures to confirm information provided by others and take responsibility for the information.

Non-QP specialists relied upon for specific advice include:

- Sue Ritz, an independent Metallurgist
- Victoria Viveash, a Financial Analyst with JDS
- Sean Meldrum a Project Controller with JDS

The QPs used their experience to determine if the information from previous reports was suitable for inclusion in this technical report and adjusted information that required amending.

Mr. Creek, Mrs. Garcia, Mr. Matter, and Mr. Welhener have benefited from technical information provided by and discussions with, Ms. Gillian Kearvell, BSc, Vice President of Exploration for Newstrike, Mr. Thomas H. Bagan, P.E., MBA, Vice President Project Development for Newstrike and Dr. Peter Craig Gibson, Technical Director of ProDeMin. Dr. Peter Craig Gibson, a Certified Professional Geologist of the American Institute of Professional Geologists, and a Qualified Person under NI 43-101 requirements, supervises the Company's field programs.

It was not within the scope of this Technical Report to examine in detail or to independently verify the legal status or ownership of the Ana Paula Project. However, Newstrike has made available to the authors all the relevant documents, including a legal opinion of title prepared by Newstrike's counsel, Diaz, Bouchot and Raya of Mexico City and have no reason to believe that ownership and status are other than has been represented by Newstrike in Section 4.0 and 5.0 and their sub-sections.

## 4 Property Description and Location

### 4.1 Location

The Ana Paula Project is located in the north central part of the State of Guerrero in southern Mexico, roughly half way between the major cities of Mexico City and the Port of Acapulco. The Ana Paula Project centroid is defined by UTM Q14N, WGS84, 409,027.8E and 1,997,632.6N or by 99° 51' 34.4 west longitude and 18° 3' 55.2 north latitude, Figure 4-1.

Figure 4-2 shows the location of the Ana Paula Project in relation to other mines, deposits and concession holdings in the Guerrero Gold Belt, and Figure 4-3 shows Newstrike's GGB mineral rights concession holdings, including the Ana Paula Project location.

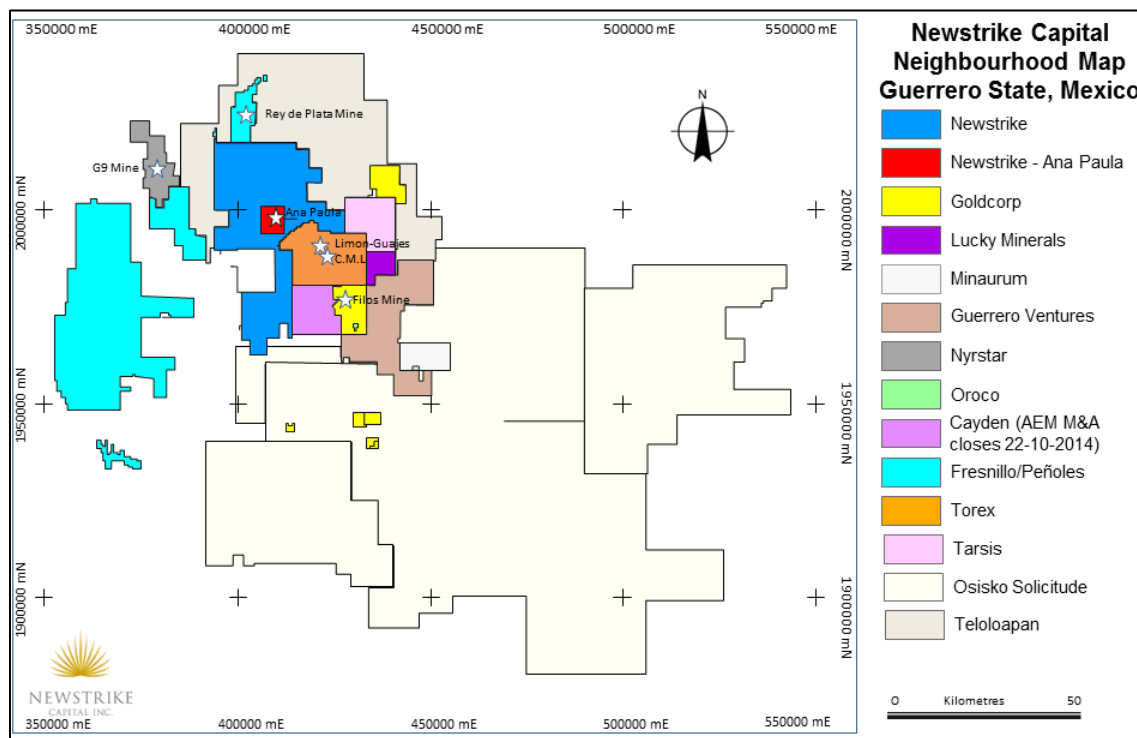
**Figure 4-1: Newstrike's Property Location and Access Map, Guerrero State, Mexico**



Source: IMC(2014)

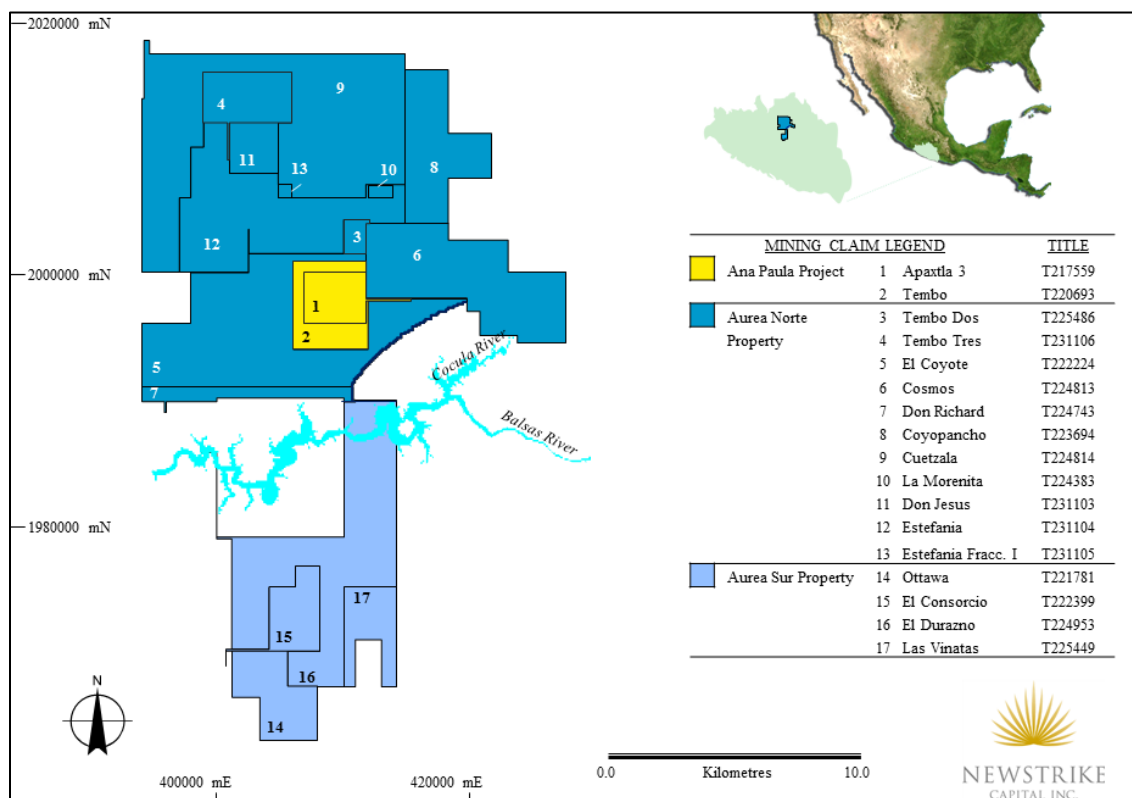
The Ana Paula project (red) is internal to Newstrike's other GGB mineral concessions (blue).

**Figure 4-2: Property and mineral showings location map**



Source: IMC(2014)

The Ana Paula Project in red. Stars locate operating mines or active projects.

**Figure 4-3: GGB Mineral Rights Concession Map.**


Source: IMC(2014)

## 4.2 Mineral Concessions and Agreements with Surface Owners

Mexico is a constituted federation of independent states that has been a party to the North American Free Trade Agreement (NAFTA) since it was signed it into law in December, 1993 and effective on January 1, 1994; as such it is governed by a tax and trade regime comparable to the USA and Canada. It operates under western-style legal and accounting systems, with a 30% flat tax rate.

The Mexican Constitution maintains a direct non-transferable ownership of the nation's mineral wealth (considered a national resource) that is governed under established Mining Law. The use and exploitation of such national resources is provided for through clear title to a mineral rights concession (lot or concession) that is granted by the Federal Executive Branch for a fee and under prescribed conditions. Mining concessions are only granted to Mexican companies and nationals or Ejidos, (agrarian communities, communes, and indigenous communities). Foreign companies can hold mining concessions through their 100% owned Mexican-domiciled companies. A number of Government agencies have responsibility for enforcing mining laws and its applicable regulations that must be complied with; non-compliance may result in cancellation of a concession.

Mining concessions confer rights with respect to all mineral substances as listed in their Registry document (the title) provided the concessions are kept in good standing. The main obligations to

maintain title to a concession in good standing are performance of work expenditures, payment of mining fees and compliance with environmental laws. Mineral rights fees are paid bi-annually in January and July, and annual proof of exploration work expenditures is done via a work report filed by the end of May of the following year (assessment report or comprobacion de obras). The amount of the mineral rights fees and the amount of expenditures required varies each year. It is calculated based on a per hectare rate that typically increases annually in line with annual inflation rates. The new rates are published each year in advance in the Official Gazette of the Mexican Federation (Diario Oficial).

The application process to acquire mineral rights is established under the Mining Law. Title is granted following a due diligence investigation of a mineral rights application as filed by the qualified party. Mineral rights fees and assessment works are required as of the date a concession title is issued. Following changes to the Mining Law in 2006, there is no longer any difference in Mexico between an exploration concession and a mining concession. The term of a mineral rights concession is 50 years, with the term commencing on the date recorded by the Public Registry of Mining, which is the date title is granted. A second 50-year term can be granted if the applicant has abided by all appropriate regulations, and makes the application within five years prior to the expiration date of the original title. Title to the Ana Paula project concessions is owned by Minera Aurea, S.A. de C.V, the 100 percent owned Mexican subsidiary of the Company, with underlying royalties as described in the section 4.2.1 of this report.

The Mexican Senate approved Tax Reform changes in Mexico that became effective January 1, 2014 affect operating mining companies in Mexico. The changes include: the corporate income tax remaining at 30 percent; a new mining royalty fee of 7.5 percent on income before tax, depreciation and interest; an extraordinary governmental fee on precious metals, including gold and silver, of 0.5 percent of gross revenues; and, changes affecting the timing of various expense deduction for tax purposes. This implies an effective combined tax and royalty rate of 35.25 percent depending on how deductions will be applied. The new rates put Mexico in line with the primary mineral producing nations of the world. Should the tax reform changes remain in place as is; the Property will be subjected to the new tax regime.

Title to mineral properties involves certain inherent risks due to the difficulties of determining the validity of certain claims as well as the potential for problems arising from the frequently ambiguous conveyance history characteristic of many mineral properties. Newstrike has investigated title to all of its mineral properties and maintains them in accordance with Mexican mining law, which provides for the rights to carry out the works and development required of and for mining and related activities.

#### **4.2.1 Mineral Rights**

On February 11, 2010, Newstrike, through its Mexican operating subsidiary Minera Aurea, S.A. de C.V., entered into an agreement to acquire a 100 percent interest in certain mineral rights and concessions from Desarrollos Mineros San Luis, S.A. de C.V. and Minera San Luis S.A. de C.V., wholly owned Mexican subsidiaries of Goldcorp Inc. The TSX Venture Exchange approved the transaction on April 28, 2010 and a definitive agreement for the transfer of assets including mineral titles was signed May 11, 2010. The final documentation was submitted for registration in Mexico City on June 24, 2010. As consideration for the acquisition, Newstrike paid to Goldcorp CA\$1.5 million in cash and 1,412,762 common shares of Newstrike having an aggregate value of CA\$600,000 calculated at a deemed price of \$0.4247, being the volume weighted average trading price of common shares of Newstrike on the TSX

Venture Exchange for the 20 consecutive trading days ending on the trading date prior to the issue date. In addition, the Company granted Goldcorp a three percent net smelter royalty (NSR) from the proceeds from the sale of any ores, concentrates, metals or any other material of commercial value produced by and from the Mining Concessions remaining after deducting costs. Newstrike will have the right, upon completion of a feasibility study as defined by NI 43-101, to purchase one third of the NSR for a consideration of US\$2.00 per ounce of gold classified as proven and probable reserves and measured and indicated resources in the feasibility study to a maximum of US\$6 million.

The asset acquired by Newstrike consists of the mineral rights to two contiguous and two discrete lots (or claims) including the Tembo, Tembo Dos, Tembo Tres and Apaxtla 3 mineral concessions accruing 7,622.38 Ha in total Fig. 4-4. The area highlighted in red in Figure 4-2 and yellow in Figure 4-3 locates the boundaries of the 4,238.00 hectare Ana Paula Project (also referred to as the Project or Ana Paula) that includes the contiguous Tembo and Apaxtla 3 mineral concessions, (Figures 4-3, 4-4). The non-contiguous Tembo Dos and Tembo Tres claims, shown in Figure 4-4, form discrete mineral claims that lie outside the boundaries of the Ana Paula Project. All concessions acquired from Goldcorp are internal to the surrounding 59,587.62 hectare Aurea Norte Property, also owned by Newstrike, (Figure 4-2). In conformance with the assignment of rights agreement between Goldcorp and Newstrike, mineral rights were transferred and registered to Minera Aurea, S.A. de C.V.

Mexican Mining Law requires certain mineral rights payments, paid each January and July, and an annual minimum exploration work obligation (assessment work), is filed each May for the preceding year. The required amounts are subject to modification as annual fee schedules are released for publication by the Mines Office. The 2014 first term mineral rights payment of about CAD\$58,478 was completed January 31st, 2014, a second payment was completed July 31st, 2014. The required annual assessment report (Comprobante de Obras) was filed on May 30, 2014, Table 4-1 and Figure 4-2.

The Mining Department in Mexico issued new Regulations, by Presidential decree, regarding mining concessions effective from January 1, 2006, whereby all the Exploration and Exploitation mining claims that existed in good standing under the old system were automatically transformed to a unique type of Mining Concession valid for 50 years, beginning from the date of their registration in the Mining Public Registry.

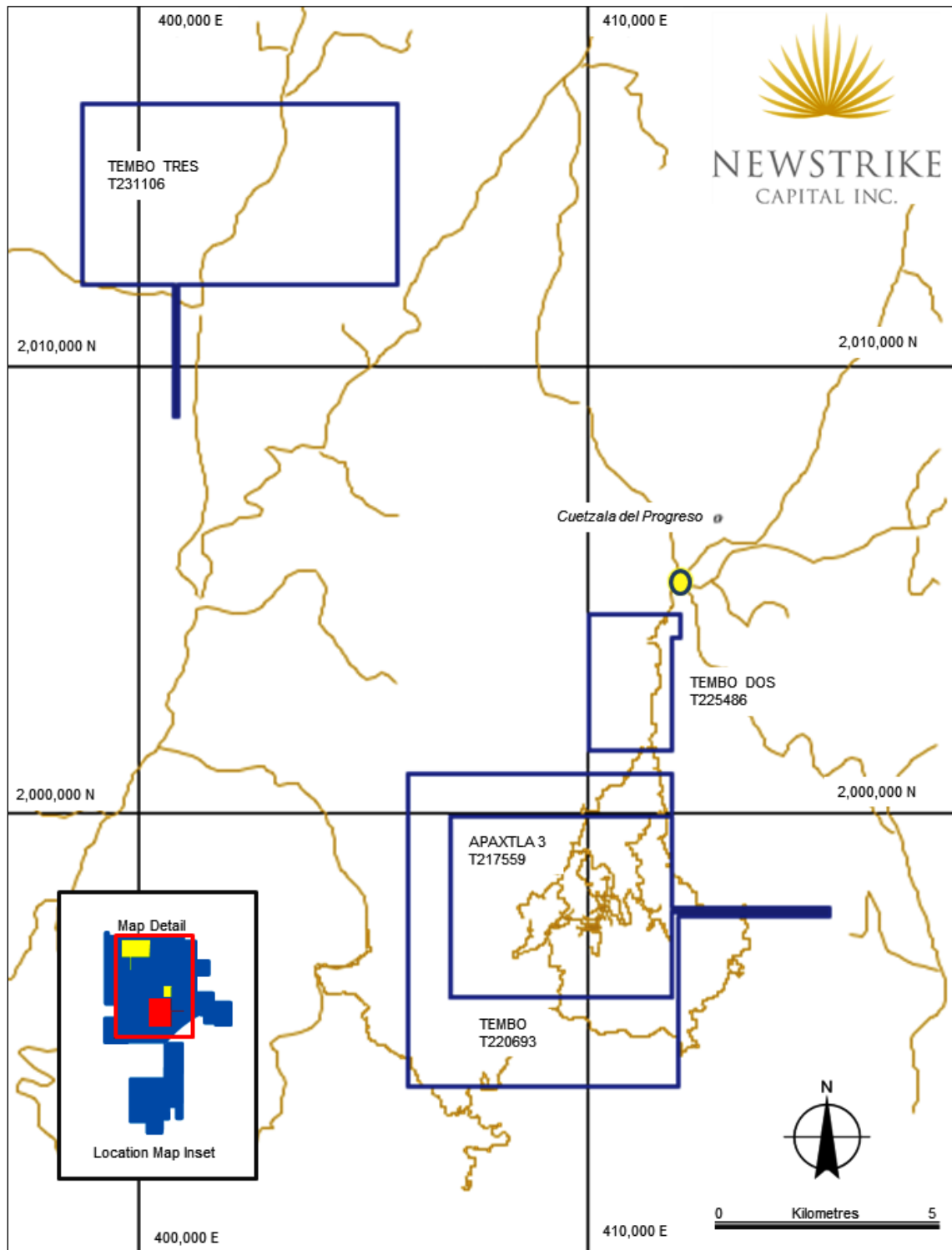
As a result of this decree, the expiry dates of the mining concessions acquired from Goldcorp, including those concessions comprising the Ana Paula Project that were initially titled as exploration concessions in 2002, 2003, and 2005 were automatically extended to conform with the new decree and will now expire in 2052, 2053 and 2055 respectively. See Table 4-1 for the expiry date for all mineral concessions. Under the new decree, all claims in good standing are renewable for an additional 50 year term.

**Table 4-1: Mining Concessions Acquired from Goldcorp on June 24, 2010**

| CLAIM      | HECTARES | GRANTED   | TITLE  | EXPIRATION |
|------------|----------|-----------|--------|------------|
| TEMBO      | 2,243.00 | Sep-30-03 | 220693 | Sep-29-53  |
| APAXTLA 3  | 1,995.00 | Jul-31-02 | 217559 | Jul-30-52  |
| Sub-Total  | 4,238.00 |           |        |            |
| TEMBO DOS  | 562.69   | Sep-13-05 | 225486 | Sep-12-55  |
| TEMBO TRES | 2,821.69 | Jan-17-08 | 231106 | Jan-16-58  |
| Sub-Total  | 3,384.38 |           |        |            |
| TOTAL      | 7,622.38 |           |        |            |

Source: IMC(2014)

**Figure 4-4: Mineral Rights and Concessions Acquired from Goldcorp**



Source: IMC(2014)

All acquired mineral rights are internal to Newstrike's existing mineral rights (blue, map inset). The Ana Paula Project (solid red, map inset) includes the Apaxtla 3 and Tembo concessions. 10 km grid spacing; brown lines are roads; yellow dot is town of Cuetzala Del Progreso, site of Newstrike field office and warehouses.

#### 4.2.2 Surface Exploration Rights

Mining concession licenses do not automatically grant surface access rights, which are treated separately under Mexican law. Permission for surface access must be negotiated with the relevant communities and individuals who hold surface titles to the areas affected by the mining concessions. These negotiations typically provide for the purchase or lease of the surface rights. Surface rights in Mexico are held as individually titled parcels or communally owned lands (Ejidos) that overlie the mineral rights concessions that are granted separately by the Federal Government. These are separate legal estates where individually titled parcels are governed under Mexican property laws. Ejido surface rights are governed under Mexico's Agrarian Laws while Mineral Rights are administered under established Mining Laws that have precedence over Agrarian laws.

The Company recognizes surface access as a potential risk to maintaining unencumbered entry to their mineral exploration properties and cannot guarantee to have continual access. As part of the Company's policy of good corporate citizenship in the communities in which it operates and with the objective of Project sustainability, the Company seeks to reduce potential risk to exploration through long term or permanent surface access agreements with affected surface owners prior to initiation of those activities.

Surface ownership of the Ana Paula Project area is controlled by individuals belonging to one certified and parceled Ejido with no common grounds, and to other individually titled small parcel owners. On October 7, 2010 the Company entered into surface access agreements with the local Ejido and with certain individual parcel owners. These transferable contracts provide unrestricted surface access for exploration to all private and Ejido lands for a period of ten years. Additional agreements, either through long term lease or through direct purchase of surface title, will be required as certain areas are advanced from exploration to development.

On January 17th, 2011 the Company announced the purchase from Goldcorp of surface title to certain land parcels within the Ana Paula Project. Final purchase of 89.48 contiguous hectares was completed on February 15th, 2011 by issuance of 83,200 common shares of the Company in full settlement of this acquisition valued at \$75,675.

On February 3, 2012 the Company announced it had entered into a purchase option agreement with a private individual for certain privately held land parcels. The Company will acquire 100 percent ownership in approximately 935.85 hectares by making staged annual payments. This agreement is pending final registration with the Mexican Government once the terms of the contract are completed.

As of June 26, 2014 Newstrike controls surface access to 2019.41 hectares overlying and surrounding the Ana Paula exploration target area, where 1,025.33 hectares are owned outright and approximately 994.08 hectares are under contract in 63 separate ten year access agreements.

Permits and other Considerations

All permissions and applications required for the exploration process are being performed in accordance with the applicable Mexican Official Laws and Standards (Normas Oficiales Mexicanas). According to Mexican Federal Law for the Protection of the Environment, existing environmental conditions caused by past operations are not liabilities for the Ana Paula Project or its present owners. Newstrike's Ana Paula Project does not fall within any protected area or special jurisdiction and there are no known existing environmental liabilities located on the Project.

Until exploration activities have progressed further, the permits required for exploration activities include a letter of initiation of activities received and sealed by the government authority. However, if the Project advances to the development stage the Company will require several Federal and State and Municipal permits. The required permits and their progress status at Ana Paula are shown in Table 4-2.

**Table 4-2: Permitting Requirements**

| Permit                                                                                                                                                           | Relevant to  | Status                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------|
| Letter of Initiation of exploration activities                                                                                                                   | Exploration  | Complete-filed                 |
| The Preventative Notice (Informe Preventivo);                                                                                                                    | Transitional | Ready to be filed              |
| The Permit for Change of Land Use in Forested Area issued by the State Delegations of Secretary of the Environment, Natural Resources and é Fisheries (SEMARNAT) | Transitional | Ready to be filed              |
| The Risk Study (Estudio de Riesgo);                                                                                                                              | Development  | Pending a development decision |
| A PPA (Accident Prevention Program);                                                                                                                             | Development  | Pending a development decision |
| An explosive use permit (Secretaría de la Defensa Nacional);                                                                                                     | Development  | Pending a development decision |
| The Environmental Impact Assessment (Manifestación de Impacto Ambiental);                                                                                        | Development  | Pending a development decision |
| A water use permit (Comisión Nacional del Agua);                                                                                                                 | Development  | Pending a development decision |
| An archaeological land 'liberation' based on authorization by the Instituto Nacional de Antropología e Historia (INAH)                                           | Development  | Not required for area          |
| Notice to state and municipal authorities (i.e., construction permits, land use change                                                                           | Development  | Pending a development decision |

Source: IMC(2014)



## **5 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **5.1 Topography, Climate, Physiography**

The Ana Paula Project is located in the Sierra Madre mountain range of southern Mexico where topography can range from moderate to rugged with elevations varying from 900 m to over 1,460 masl. The Company's exploration drilling activities are conducted primarily between 900 to 1,200 m elevation. The Project lies north of the Balsas River, which divides the Sierra Madre Mountains into north and south ranges.

The climate in the region is classified as warm and humid, with an average temperature of 28 degrees Celsius (range of 17 to 45 degrees Celsius) and average precipitation of 835 mm per year. Rainfall occurs from June through October during a monsoonal tropical wet season that includes the influence of hurricanes from both the Atlantic and Pacific oceans. Winters are dry with occasional light rains in February. Guerrero State is in a seismically active part of Mexico.

### **5.2 Vegetation**

Thorny plants and cacti dominate the vegetation on the Project at low elevations, giving way uphill to a patchy oak forest above 1400 m elevation. Vegetation is barren and desert-like during the dry winter months, with lush tropical growth during the wet summer season. Surface land use in the immediate area of exploration interest within the Ana Paula Project is devoted to cattle grazing and limited agriculture but is primarily non-arable and is uninhabited.

### **5.3 Accessibility**

The town of Iguala, with a population of about 200,000 is a three hour drive from Mexico City and about four hours from the port City of Acapulco, Figure 5.1. The Ana Paula Project concessions are accessible from Iguala via paved highways and good quality all season unpaved roads. Driving time from Iguala is about 1.25 hours to the Ana Paula Project headquarters located at Cuetzala del Progreso. The Company maintains offices, residences, and storage facilities in Cuetzala del Progreso. Access to the Project drill sites is via a series of secondary unpaved roads, built and maintained by the Company and many are passable by two-wheel drive vehicles year round. Four wheel drive vehicles are required on drill access roads during rainy periods. All exploration and potential mining activities are carried out year round. Newstrike has operated the Ana Paula project without interruption since the Project was acquired in June of 2010.

### **5.4 Local Resources and Infrastructure**

The area offers an established infrastructure with a good road network, and an available unskilled and skilled work force. The nearby Balsas River is a source of hydroelectric power and 115Kv high tension lines transect the Ana Paula Project site. All major supplies and services are available from the cities of Iguala



(1.25 hour by road), Cuernavaca (2.5 hours by road), and Chilpancingo, the State capital which is a 3.0 hour drive from the Project, Figure 5-1.

Basic supplies are available from the towns of Nuevo Balsas and Cuetzala del Progreso, among other small town suppliers. The nearest available international airport is in Cuernavaca with a landing strip suitable for large aircraft (a 45 by 2,772 meter airstrip), with major international airports located at Acapulco and Mexico City. The Mexico City Airport is a four to five hour drive depending on traffic.

A small craft gravel airstrip is located in nearby Apetlanca, 20 minutes from Cuetzala del Progreso. Iguala has a paved airstrip suitable for small aircraft (1,685 m in length). The Project lies within the Balsas River catchment basin and water supply for drilling is uninterrupted year round. Studies to evaluate infrastructure will be required as the Project advances.

Newstrike employs several semi-technical and non-technical residents of Cuetzala del Progreso where the Project headquarters and field offices are located. Skilled labor, and heavy equipment is available in Iguala. Several geologists are sourced from the nearby town of Taxco el Viejo where the Universidad Autónoma de Guerrero maintains a satellite university within 15 minutes of Iguala devoted to the earth sciences including degrees in geology. The economy has been dominated by small scale agriculture and agriculture related services. The local economy is improving as mining projects including Rey de Plata, Campo Morado-G9, Morelos, and Los Filos become the principal regional employers.

**Figure 5-1: Project location Road Map in Guerrero State, Mexico**



Source: IMC(2014)

## 6 History

The world class Guerrero Gold Belt was previously mined for gold and silver since pre-colonial times. Today, the trend includes producing gold mines, several known deposits in various stages of development and exploration, and numerous early stage exploration prospects. Since modern exploration began 20 years ago on the heels of changes to Mexican foreign ownership and mining laws, and signing of the North American Free Trade Act, the trend has evolved into one of Mexico's most prolific gold producing belts. The Ana Paula Project was acquired from Goldcorp in June, 2010, Goldcorp operates the Los Filos Mine in the region, one of Mexico's largest gold producing mines after Peñasquito in Zacatecas State. Exploration work completed by Goldcorp at Ana Paula between 2005 and 2009 outlined a one by two km exploration target (target) of coincident geophysical anomalies and surface gold geochemistry that underlies the Project.

In 2005 Goldcorp drilled 3,687 m of diamond core in eleven holes on the northeast portion of the target, intersecting gold and sulphide mineralization hosted in sediments and intrusions in a setting that is similar to other deposits and showings of the GGB. This exploration target is the focus of Newstrike's exploration and drill programs and the site of the Company's 2013 resource estimate.

### 6.1 Pre – Goldcorp Inc. (1950s to 2004)

The Morelos Federal Mineral Reserve (the Reserve) was formed during a program of nationalization of Mexico's mineral wealth during the 1970's to early 1980's. The Reserve was known for its historic small mining operations for replacement bodies with gold and fissure filling vein silver. No historic production records are available to the authors for these small-scale operations. The boundaries of the original Reserve and a geology map are provided in Figure 6.1.

In 1998 the Reserve was divided into the Morelos (then called Morelos Norte) and Morelos Sur properties and privatized through national lottery, each subject to a 3% net smelter return royalty payable to the Mexican geological survey, (Kearvell, 2009). Exploration and work activity on and around the Ana Paula Project is described below.

1950 - 1970's - Several small mines operated in the GGB including gold mining operations at Ana Paula (the Guadalupana Mine).

1977 - 1980's - The Consejo de Recursos Minerales (today known as the Mexican Geological Survey or SGM) carried out exploration of the GGB primarily outside the Project, including regional and detailed mapping, airborne and ground geophysics, geochemical sampling programs, and some drilling. In 1979 SGM built an access road to the existing Guadalupana gold mine on the Project and conducted mapping, sampling and trenching.

1980 - 1995 - In the 1980's, government surveys include regional and detailed mapping, airborne and ground geophysical surveys and compilation of a database preserving historical data on and outside of the Project boundaries. Grupo Peñoles S.A. acquired claims in the historic Bermejil area, located about thirty kilometers southeast of Ana Paula, and formed a joint venture (JV) with Newmont Corporation (the "Penmont JV").



In 1987 Minera Nukay S.A. De C.V. (Nukay) acquired the operating Nukay Mine, located immediately north of Bermejál, producing about 100 tons per day (tpd) from underground mine workings.

Nukay was taken over by Miranda Mining Corp. (Miranda) in 1993 and discovery of higher grade gold skarn mineralization prompted opening of the Nukay open pit. Following signing the NAFTA in December, 1992 (effective January 1, 1994) and changes to foreign ownership and mining laws, foreign investment dollars were sought to finance the new pit operation to development. A JV was finalized with Teck Resources Ltd that year (Miranda-Teck JV). In 1993 the Miranda-Teck JV developed the Nukay open pit mine and finalized acquisition of the surrounding claims leading to discovery of the Aguita, Filos-Pedregal, Creston Rojo, Mag Ridge and La Subida gold prospects. The Nukay Mine expanded to 400 tpd.

The Penmont JV announced the discovery of the Bermejál gold deposit, completing prefeasibility in 1994. The Miranda-Teck JV completes an evaluation of the federally owned Morelos Mineral Reserve, which was administered by the CRM prior to privatization.

1995 - 1998 - Miranda collected 726 regional stream sediment samples west of the Morelos Mineral Reserve, including samples from the Project area, and recognizing the gold potential of the historic Guadalupana Mine and San Jerónimo areas they stake the Tembo and Apaxtla 3 mineral concessions that today forms the Ana Paula Project.

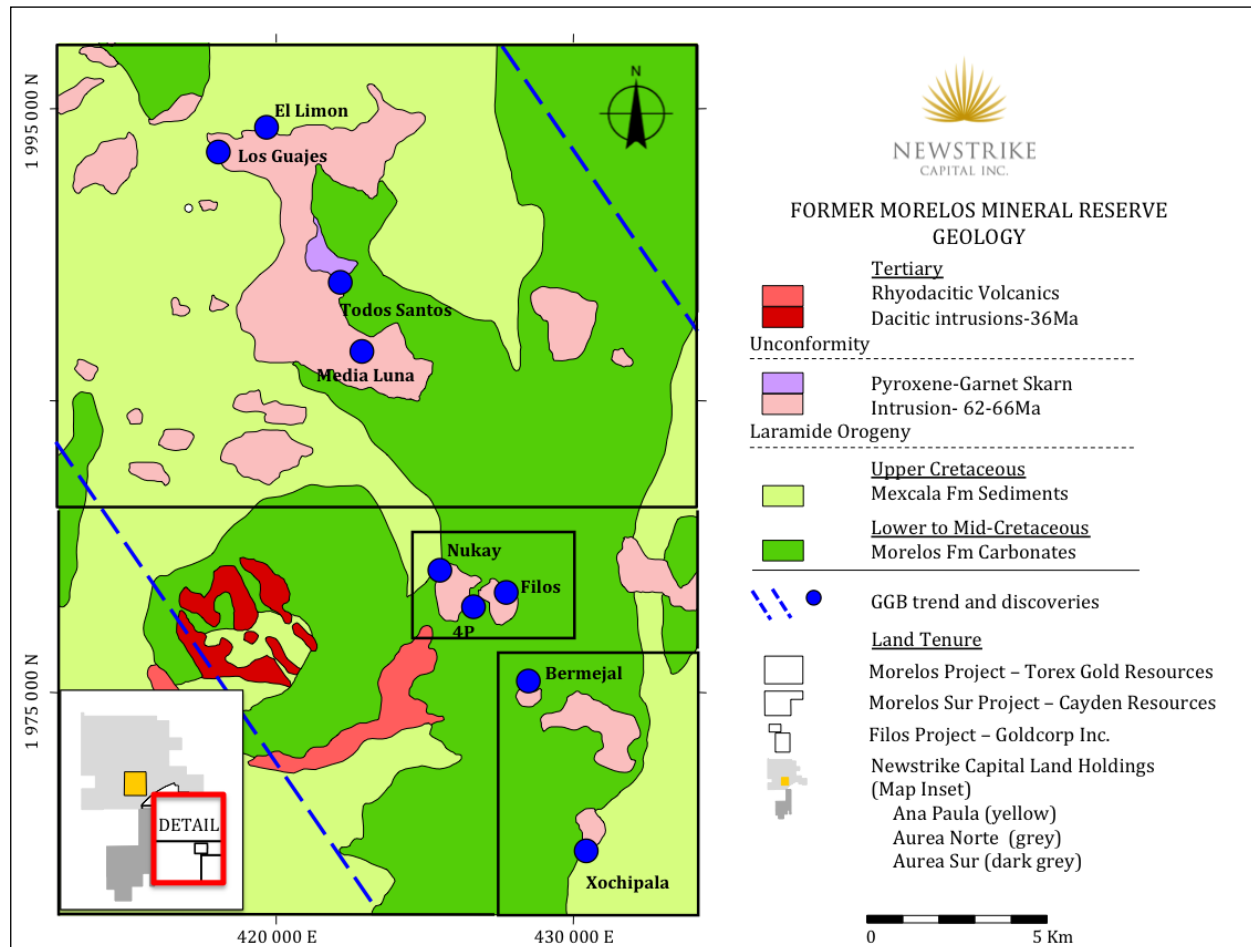
1999 - 2001- The SGM collected 160 stream sediment samples across the I.N.E.G.I. 1: 50,000 scale Apaxtla Del Castregon Map sheet that includes the Ana Paula Project. In 1998, the Morelos Mineral Reserve was auctioned and the Miranda-Teck JV won the Morelos North Concession, resulting in discovery of the Limon, C.M.L, Fundición and Amarilla (today called Los Guajes) showings from 1998 to 2000, located southeast of the Project.

2002 - 2005 - In 2002, Wheaton River Minerals Inc (Wheaton) purchased all assets of Desarrollos Mineros San Luis, S.A. de C.V. and Minera San Luis S.A. De C.V. (collectively Luismin) for US\$75M, and then purchased 100% of Miranda for US\$38.6M in 2003, thereby acquiring a 100% interest in the Ana Paula Project as part of the assets acquired from Miranda. Goldcorp's acquisition of Wheaton in 2005 included acquisition of Luismin and the Ana Paula Project.

In 2005 former members from the Miranda-Teck JV form Aurea Mining Inc. (today Newstrike), and stake or acquire 59,587.62 contiguous hectares off the western boundary of the former Morelos Mineral Reserve that became the Aurea Norte Property, which surrounds the existing Ana Paula Project mineral concessions, Figure 4.2. Luismin concurrently stakes two non-contiguous claims (Tembo Dos, Tembo Tres) increasing their land position held internal to the Aurea Norte Property to 7,622 hectares.

Aurea Mining describes the northwesterly trend of intrusions that extend across their Property and the internal Ana Paula claims as being associated with magnetic anomalies related to an important trend of orogenic gold mineralization that they informally name the Guerrero Gold Belt (or GGB). Initial mapping and sampling was completed during this period.

**Figure 6-1: The former Morelos Mineral Reserve, Geology, Discoveries and GGB Trend**



Source: IMC(2014)

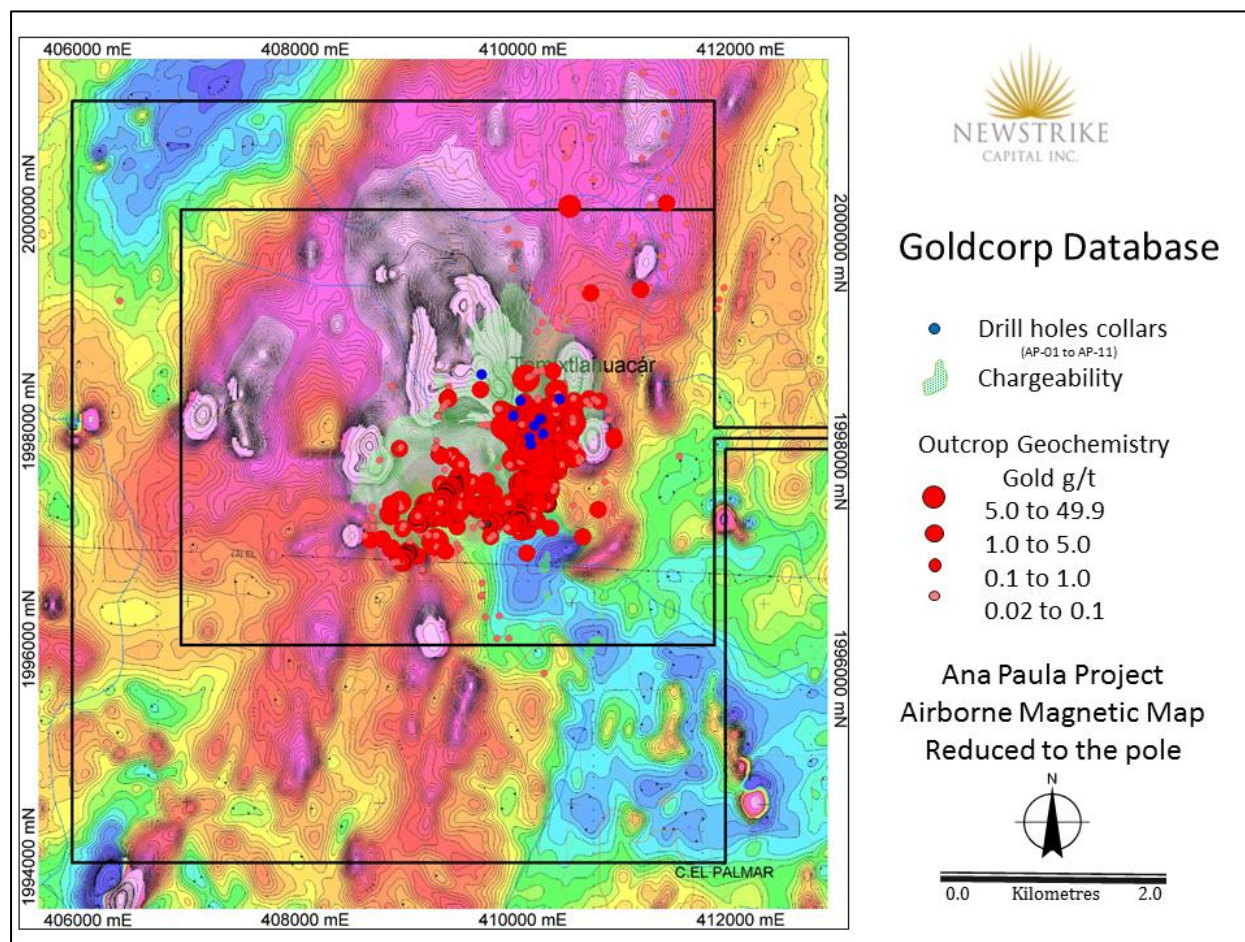
The Figure 6-1 map shows the distribution of some of the principal showings and deposits throughout the former Morelos Federal Mineral Reserve and their proximity with the trend of underlying intrusions. These intrusions are associated with a series of magnetic anomalies that together define the northwesterly trend of the GGB (dashed lines) (Kearvell, 2009).

## 6.2 Goldcorp Inc. (2004-2010)

Goldcorp conducted exploration on four mineral concessions (Tembo, Tembo Dos, Tembo Tres, Apaxtla 3) between 2005 and 2009. Work programs included regional and detailed geologic mapping (1:1000, 1:5000, and 1:10000 scale), road building, stream sediment sampling, trench and road cut sampling, age dating of the intrusion, an airborne multispectral and magnetic survey, a ground pole-dipole induced polarization survey, PIMA alteration mapping, structural interpretation, petrologic and microprobe studies. The details and results of these work programs are described in the previous Ana Paula Technical Report by Lunceford (2010).

Goldcorp's work outlined a one by two km exploration target defined by anomalous outcrop gold geochemistry (>0.2 to 49.9 grams per tonne gold) returned from grid and road cut samples with coincident underlying geophysical anomalies, as shown in Figure 6.2. Goldcorp drill hole locations are in blue.

**Figure 6-2: Coincident Geophysical and Geochemical Anomalies as Defined by Goldcorp**



Source: IMC(2014)

These anomalies became the focus of Goldcorp's exploration program and in 2005 Goldcorp completed 3,687 m of diamond core drilling in eleven holes varying from 184.25 m to 520.25 m in depth; the drill collar locations are shown in Table 6-1.

All drillholes intercepted frequently tightly folded, thick, sedimentary sequences invaded by intrusive sills and sill-like bodies. Significant intervals of weighted averages greater than 1.0 gram per tonne gold over downhole intervals of 5.0 m or greater (> 1.0 g/t Au and >5.0 m) are summarized in Table 6-2 below.

These same co-incident anomalies became the focus of Newstrike's exploration activities upon acquisition of the Project from Goldcorp in 2010.

**Table 6-1: Collar Data 2005 Goldcorp Diamond Drillholes.**

| Drill Hole | Date      |           | Coordinate UTM |         | Elevation | Collar  | Dip | Depth    | Horizontal   |
|------------|-----------|-----------|----------------|---------|-----------|---------|-----|----------|--------------|
|            | Begin     | End       | North          | East    | M         | Azimuth |     | M        | Distance (M) |
| AP-01-05   | 28-Feb-05 | 5-Mar-05  | 1,998,173      | 410,207 | 901.00    | 90      | -48 | 252.10   | 168.68       |
| AP-02-05   | 5-Mar-05  | 9-Mar-05  | 1,998,239      | 410,196 | 906.09    | 90      | -65 | 300.75   | 127.52       |
| AP-03-05   | 10-Mar-05 | 15-Mar-05 | 1,998,347      | 410,241 | 919.90    | 90      | -65 | 398.50   | 168.41       |
| AP-04-05   | 15-Mar-05 | 18-Mar-05 | 1,998,410      | 410,297 | 930.40    | 90      | -48 | 187.25   | 125.29       |
| AP-05-05   | 18-Mar-05 | 24-Mar-05 | 1,998,408      | 410,292 | 930.30    | 305     | -65 | 413.30   | 175.09       |
| AP-06-05   | 27-Mar-05 | 3-Apr-05  | 1,998,435      | 410,047 | 947.42    | 90      | -48 | 416.80   | 276.87       |
| AP-07-05   | 4-Apr-05  | 6-Apr-05  | 1,998,272      | 410,319 | 980.88    | 90      | -65 | 185.23   | 77.86        |
| AP-08-05   | 7-Apr-05  | 12-Apr-05 | 1,998,594      | 410,471 | 1,046.66  | 330     | -65 | 299.15   | 126.72       |
| AP-09-05   | 12-Apr-05 | 16-Apr-05 | 1,998,590      | 410,472 | 1,046.66  | 90      | -65 | 327.85   | 138.55       |
| AP-10-05   | 17-Apr-05 | 27-Apr-05 | 1,998,577      | 410,112 | 1,034.77  | 80      | -65 | 517.20   | 219.76       |
| AP-11-05   | 28-Apr-05 | 2-May-05  | 1,998,817      | 409,755 | 1,110.17  | 100     | -48 | 389.40   | 260.29       |
| TOTAL      | 28-Feb-05 | 2-May-05  |                |         |           |         |     | 3,687.53 |              |

Source: IMC(2014)

Note: Goldcorp drillhole number format is: Project-hole number-year (AP-01-05)

**Table 6-2: Summary of Significant Goldcorp Drill Intercepts**

| Hole     | From   | To     | Interval (m) | Au g/t |
|----------|--------|--------|--------------|--------|
| AP-01-05 | 62.35  | 75.65  | 13.30        | 2.049  |
| AP-02-05 | 91.00  | 104.10 | 13.10        | 1.195  |
| AP-03-05 | 20.25  | 29.15  | 8.90         | 1.244  |
| AP-05-05 | 41.70  | 49.90  | 8.20         | 1.489  |
|          | 62.40  | 73.50  | 11.10        | 5.550  |
|          | 120.00 | 128.55 | 8.55         | 1.336  |
|          | 136.00 | 141.12 | 5.12         | 1.560  |
|          | 197.45 | 203.25 | 5.80         | 4.358  |
|          | 203.25 | 211.90 | 8.65         | 1.223  |
| AP-09-05 | 250.50 | 277.10 | 26.60        | 1.175  |

Source: IMC(2014)

(&gt;1.0 g/t Au and &gt;5.0 m).

## 7 Geological Setting and Mineralization

### 7.1 Tectonic Setting

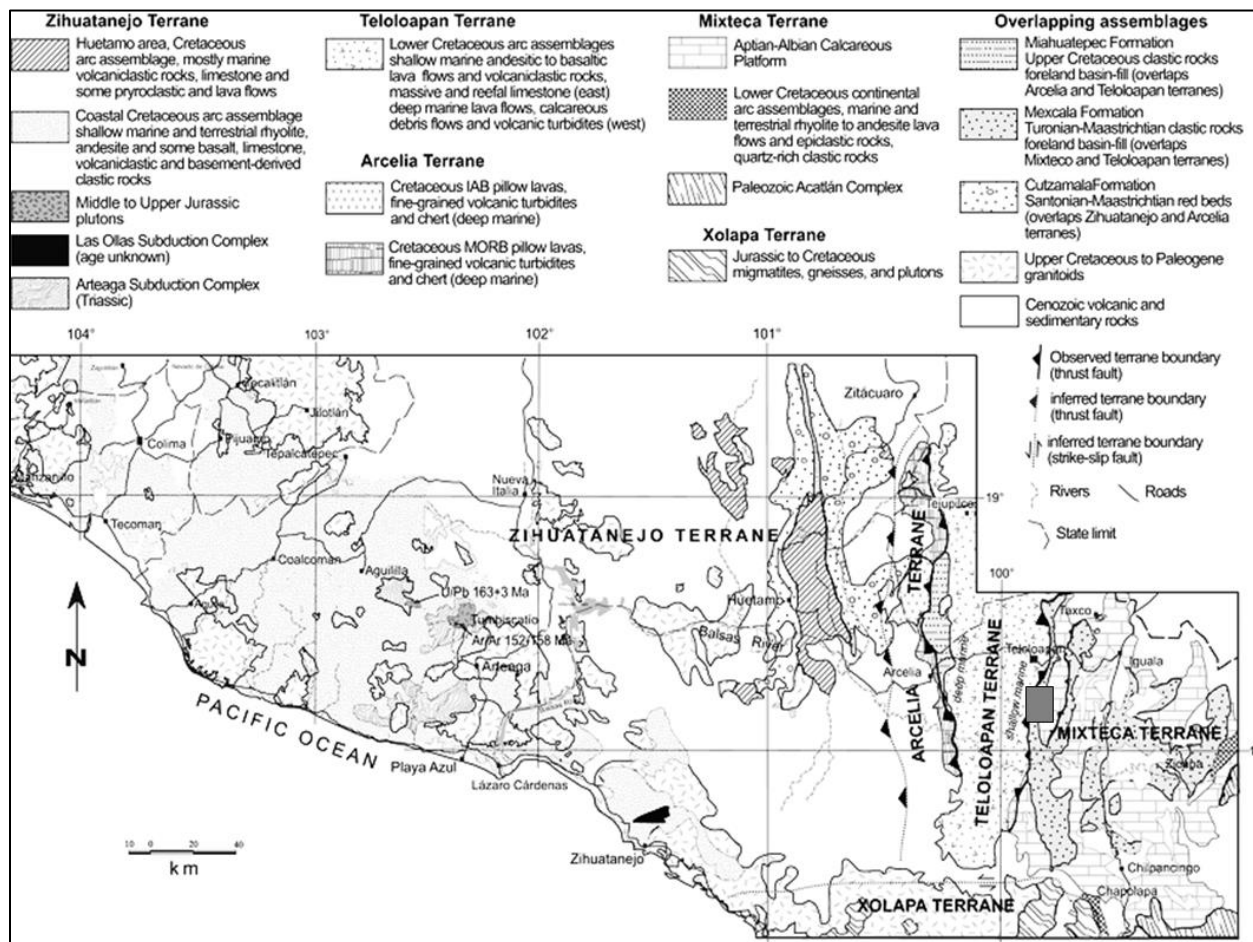
Southern Mexico is underlain by a basement stratigraphy that includes the greenschist facies Early Jurassic Tierra Caliente Metamorphic Complex. This mega-terrane includes two major sub-terrane in the Project area, the Mixteca Terrane comprising the Morelos-Guerrero Platform sediments as a sub-terrane (Platform), and the Guerrero-Composite Terrane, which includes submarine arc rocks of the Teloloapan Sub-terrane (Teloloapan). The eastern boundary of the Teloloapan sub-terrane is in contact with the western Platform Sub-terrane, as shown in Figure 7-1 and Source: IMC(2014)

A simplified geology map that shows the Mixteca, Teloloapan, Arcelia, and Zihuatanejo Sub-Terranes. The red square shows the location of the GGB within the Tectono-Stratigraphic Terranes of southwestern Mexico, (after Campa and Ramirez, 1979; Ortega et al., 1992; Talavera-Mendoza et al., 1995; Corona-Chávez and Israde-Alcántara, 1999; Mendoza and Suastegui, 2000; Centeno-García et al., 2003).

Figure 7-2, (Centeno-García, E, et al., 2008). The Teloloapan and Platform stratigraphy form the dominant outcrop exposures underlying the Company's mineral concessions.

A discussion of the nature of the contact between the two sub-terrane is not within the scope of this Report; however, both are thought to have been highly deformed during Laramide Compressional Orogeny (Laramide), and share a common basement in the Guerrero terrane based on 206/204Pb versus 87/86Sr isotopic studies (Jochin-Ruiz, 2008). A series of intrusions and sub-volcanic rocks were emplaced during or following this orogenic event along a northwesterly trend. The intrusions are interpreted to share a common provenance in a deep seated plutonic body derived from a mixing of two possible magma sources: a depleted mantle and an enriched crust (Jochin-Ruiz, 2008). A trace element study completed in 2003 proposed the pluton formed within a post collision tectonic framework of a volcanic arc related to the interaction between the Farallon and North America plates (Gonzalez-Partida et al, 2003, 2004).

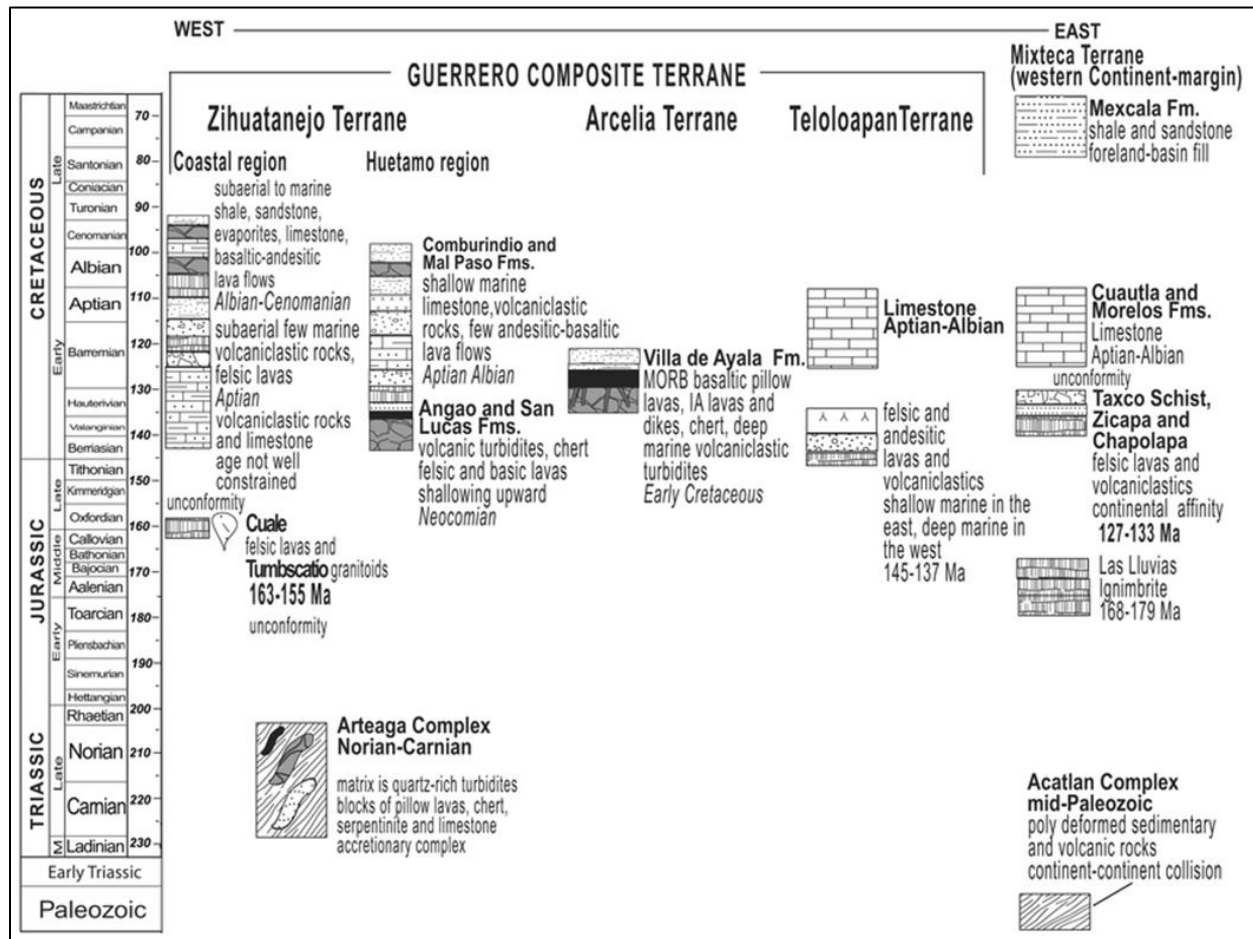
**Figure 7-1: Geologic Map of Southwestern Mexico**



Source: IMC(2014)

A simplified geology map that shows the Mixteca, Teloloapan, Arcelia, and Zihuatanejo Sub-Terranes. The red square shows the location of the GGB within the Tectono-Stratigraphic Terranes of southwestern Mexico, (after Campa and Ramirez, 1979; Ortega et al., 1992; Talavera-Mendoza et al., 1995; Corona-Chávez and Israde-Alcántara, 1999; Mendoza and Suastegui, 2000; Centeno-García et al., 2003).

Figure 7-2: Stratigraphic Column



Source: IMC(2014)

Mixteca Sub-Terrane and Guerrero Composite Terrane

(Includes the Teloloapan, Arcelia, and Zihuatanejo Terranes), (Centeno-García E et al. 2008).

## 7.2 Regional Geology

Ana Paula lies along the northwestern extension of the GGB and straddles the proposed tectonic boundary between the Teloloapan and Morelos Guerrero platform sub-terrane, as shown in Figure 7-3. The following discussion of regional geology is reliant on Werre-Keeman et al., 1999; Valencia-Gomez, et al., 2001 and 2008; Levresse et al., 2004; Centeno-García, E. et al., 2008; and Joachin Ruiz, 2008.

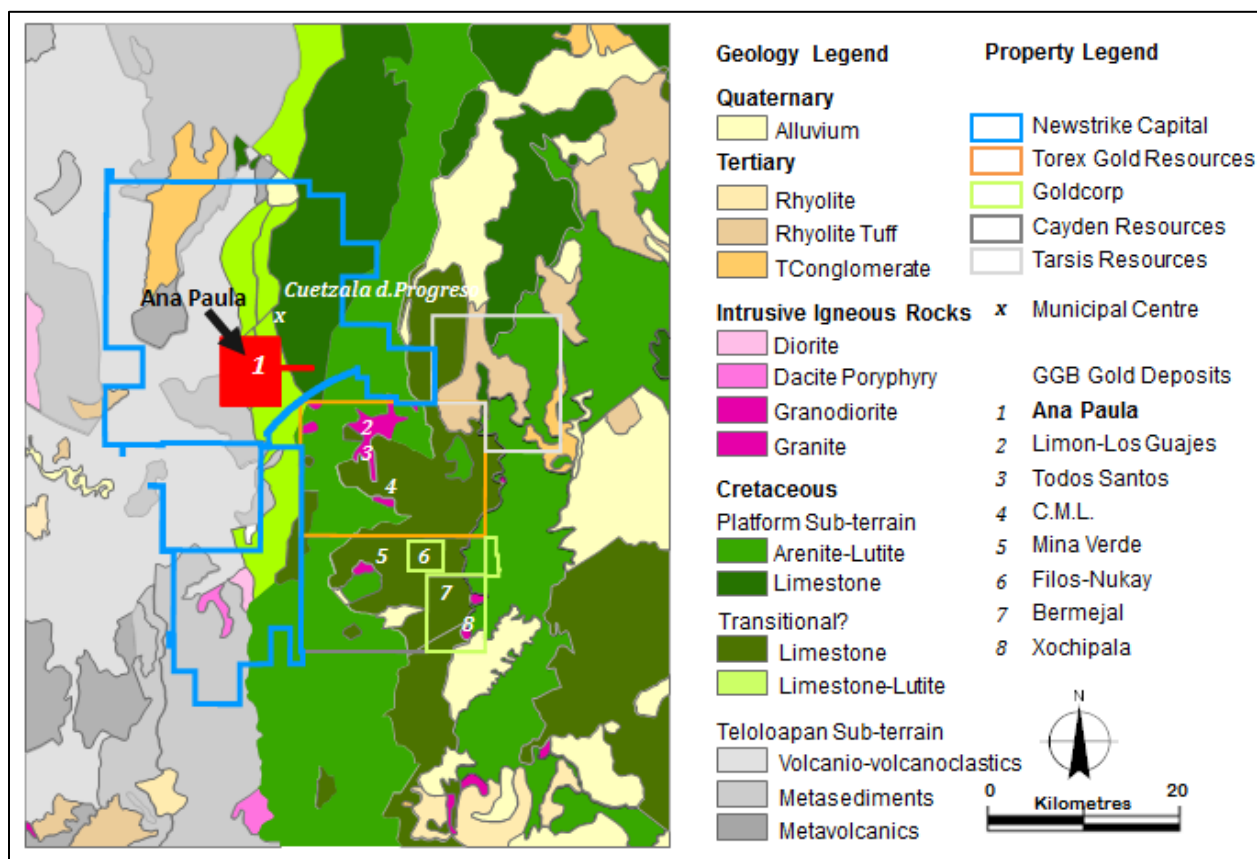
The regional geology includes stratigraphy belonging to the two proposed tectonic sub-terrane. The stratigraphy of the Teloloapan sub-terrane includes a volcanic-volcaniclastic arc assemblage that overlies a basement schist of the Guerrero composite terrane, both of Upper Jurassic to Lower Cretaceous age. This assemblage is in turn overlain by an undifferentiated limestone, shale, and sandstone sedimentary sequence of Cretaceous age that, on the scale of the Project, forms a North-South trending corridor separating in apparent fault contact the Morelos Guerrero Platform sediments on the east from the

Teloloapan volcanic-volcaniclastic belt on the west. The volcanic sequence associated with the Teloloapan sub-terrane is observed to outcrop immediately outside the western boundary of the Ana Paula Project. The stratigraphy attributed to the Morelos Guerrero platform includes a thick carbonate sequence of thick to thin bedded limestone and dolomite overlain by younger thinly bedded flysch-like deposits. Outcrops of this stratigraphic assemblage are observed outside the boundaries of the Ana Paula Project, underlying the eastern portion of the surrounding Aurea Norte Property.

The stratigraphy of both sub-terrane was intruded by at least two intrusive events. The earliest is a  $\pm 62$ -66 million years (Ma) calc-alkali intrusive complex that is related to the Laramide Orogeny and the mineralizing event recognized as the Guerrero Gold Belt. These intrusive bodies are observed to outcrop for at least 55 km through the district on a northwesterly trend. Zirconium  $^{206}\text{Pb}/^{238}\text{U}$  age dating of the intrusions at Ana Paula show they average  $66.0$  to  $66.8\text{Ma} \pm 1.8\text{Ma}$  in age, placing them within the same intrusive event as the Filos, Filos Deep and Morelos projects, Valencia-Gomez, et al., 2001 and 2008.

The second intrusive event are  $\pm 30\text{Ma}$  calc alkali to alkali volcanic rocks related to the onset of continental volcanism that may be associated with overprinting of an epithermal style mineralization observed within the Project. Quaternary volcanic units and lacustrine sediments outcrop regionally as local eroded remnants that overlie all older stratigraphy.

**Figure 7-3: Regional Geologic and Property Location Map**



Source: IMC(2014)



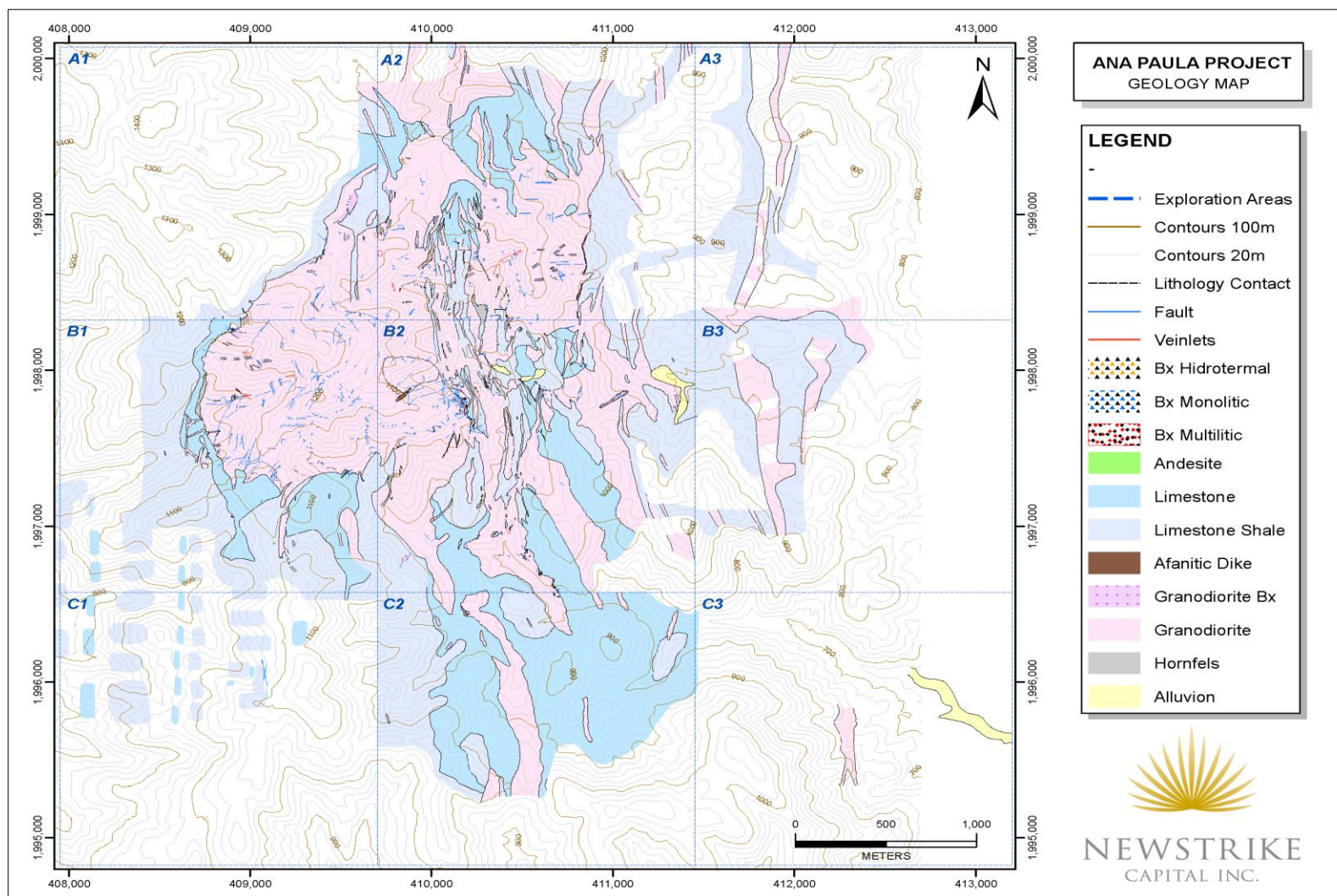
Modified from 1:250,000 scale Cartas Geológico Minero sheets E14-4; E7-10; E14-5 and E14-8; Mexican Geological Service (SGM), 2000.

### **7.3 Project Geology**

The geologic units underlying the Ana Paula project are primarily sedimentary rocks composed of an interbedded limestone and shale unit and a carbonaceous limestone unit that have been intruded by intermediate sills, dikes and stocks, as shown in Figure 7.4. A large body of intrusive rocks underlies the Ana Paula deposit as currently defined in quadrants A2, B1, and B2 in Figure 7.4. Two principal geological domains within this body have been recognized, a sedimentary-intrusive domain located in the eastern half of the exploration area and an intrusive dominant domain located in the western half of the exploration area. The contact between these domains is locally a fault. The Ana Paula deposit is hosted mostly in the sedimentary-intrusive domain.

In addition to the principal sediment and intrusive lithologies, several different breccia units important to gold mineralization are developed in local stratigraphy and recognized in drill core and outcrop. The following discussion is partially based on summary information provided by Newstrike and discussions with Newstrike personnel (Kearvell, 2010 to 2013, Gibson, 2010 to 2013).

**Figure 7-4 Ana Paula Project Geology Map**



Source: IMC(2014) Shows PhotoSat 20 metre topographic contours and location of local map sheets A1-A3, B1-B3 and C1-C3.

### 7.3.1 Sedimentary Rocks

Geologic mapping by Newstrike completed during 2010 to 2013 has shown that the sedimentary rocks underlying the Ana Paula deposit are composed dominantly of carbonaceous limestone within a more regionally extensive unit of interbedded limestone, shale and sandstone. These sedimentary rocks generally strike northerly and dip westerly and are distinct from the Morelos platform sediments, which lie off the eastern edge of the Project boundary, and from the volcanoclastic sediments of the Teloloapan Sub-terrane which lie west.

#### Limestone-Shale

Inter-bedded shale and limestone surrounds the deposit area. This unit is characterized by light brown weathering, platy outcrops, with distinct gray and brown limestone beds ranging from a few centimetres to as much as 25 centimetres thick. Sandstone layers may be present in this unit, Figure 7-5.

**Figure 7-5: Limestone-Shale Unit**

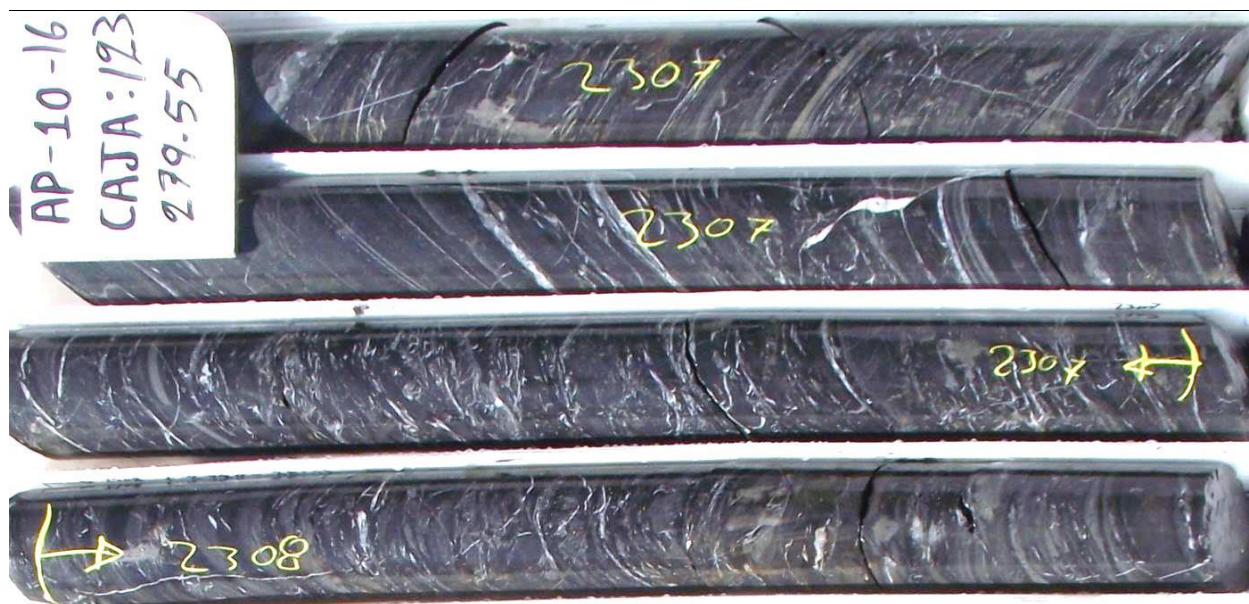


Source: IMC(2014)

In drillhole AP-10-16 from 52.44 - 59.15 m, no significant assay.

#### Carbonaceous Limestone

Massive to thin bedded, fine to medium laminated carbonaceous limestone is present in the area of the main Ana Paula deposit where it is the dominant sedimentary lithology. In drill core the unit locally presents a phyllitic to schistose deformation that varies from strongly carbonaceous to locally graphitic. This unit is known to include local pockets of breccia, stockwork or contact replacement mineralization but is generally not mineralized, Figure 7-6.

**Figure 7-6: Carbonaceous Limestone Unit**


Source: IMC(2014)

In drillhole AP-10-16 from 272.78 - 279.55 m, no significant assay.

### 7.3.2 Intrusive Rocks – Subvolcanic Rocks

A package of differentiated intrusive rocks that was emplaced over a period of time in several different intrusive phases underlies much of the Ana Paula deposit area. As described previously, the distribution of these intrusions has been sub-divided into two domains, marked locally at surface by a northerly trending fault that is approximately parallel to the structural grain defined by the sedimentary rocks and intrusions. The footwall sediment-intrusive domain lies to the east of the fault, and a hangingwall intrusive domain lies to the west, Figure 7-4. The range of observed intrusive textures suggest emplacement into a subvolcanic or, possibly locally, an extrusive environment. The transitional intrusive-extrusive environment is further supported by alteration paragenesis indicating epithermal conditions as observed in petrographic studies of drill core and in outcrop and described in Section 7.3.7.

#### Sediment-Intrusive Domain

The intrusions within the sediment-intrusive domain occur primarily as a series of sill-like bodies or dikes emplaced approximately parallel to and within the westerly dipping northerly strike of the sedimentary rocks described in section 7.3.1. The intrusions range from approximately 5-10 m to as much as 100 m in thickness based on drill intercepts. Dikes that cut bedding at a high angle are uncommon. Together the sediments and intrusions form a linear outcrop pattern on surface that trends northerly in a 1.5 by 0.7 km structural and stratigraphically controlled corridor that corresponds to the sediment-intrusive dominant mineralized domain described in Section 7.3.5.

Several intrusive phases are recognized with compositions that range from intermediate to felsic where granodiorite and monzonite predominate. Observation made during mapping and drill core logging

includes varying equigranular to porphyritic textures where coarse to fine grained porphyritic textures predominate. The main intrusive phase is plagioclase-biotite±quartz porphyry where plagioclase phenocrysts are commonly large, as much as 5-7 mm in the largest dimension and make up 15 to 25 percent of the rock. Biotite phenocrysts are generally from 1-3 mm in largest dimension and make up two percent to as much as five percent of the rock. In general, a wide range of grain sizes and phenocryst percentages is observed and local alignment of phenocrysts has been noted. The intrusive rock when fresh appears dark in color with subdued porphyritic texture, and contains stable biotite within a recrystallized or annealed quartz and feldspar matrix.

This unit is described as containing locally small amounts (< 1%) of partly resorbed quartz within a fine grained groundmass.

In 2005 a petrographic study was commissioned by Goldcorp on a suite of igneous rocks located within the Apaxtla 3 concession. The igneous suite (11 samples) was reported to consist mainly of aphanitic rocks with porphyritic textures and was classified as dacite porphyry, granodiorite, and porphyritic basaltic trachyandesite (Mauler and Thompson, 2005). A follow-up study was completed in 2008 on 14 samples that described a suite of quartz-plagioclase porphyry, plagioclase porphyry and feldspar porphyry (Thompson, 2008).

Intrusive contacts between the different fine and coarse phases are often gradational and have been observed mainly in core, but have not been mapped or traced over appreciable distances at surface. These contacts are commonly altered with reaction “fronts”. There is also a phase with marked compositional banding reminiscent of magma mixing textures.

### **Intrusive Domain**

Intrusions within the westerly lying intrusive domain occur in the hangingwall to the northerly trending high angle fault that separates the two domains. Intrusive phases within this domain include a series of dikes and/or sills that coalesce to form a stock-like body that has been drilled over 1.2 by 1.2 km approximately. Rafts or slivers of limestone-shale and hornfels are intersected in drill core that do not necessarily outcrop at surface. Several intrusive phases are observed in drill core that are essentially similar to those of the sediment intrusive domain. In addition, several different phases are observed, including a fine grained intrusive phase that commonly exhibits apparent flow banding, and locally resembles a stratified unit such as a tuff. This unit may grade into the B2 breccia unit, which is essentially a monomict intrusive breccia that is partly autobrecciated and partly a hydrothermal breccia, Figure 7-8(Gibson, 2012). Another phase that appears unique to this domain is a dense, silicified intrusive breccia unit that is host to a consistent low grade mineralization, Figure 7-9.

**Figure 7-7: Plagioclase-Biotite Porphyry**



Source: IMC(2014)

In drillhole AP-12-90 from 239.28 - 245.80 m, no significant assay.

**Figure 7-8: Banded Fine Grained Intrusive Phase, Intrusive Domain**



Source: IMC(2014)

In drillhole AP-11-56, from 220.71 – 223.5 m, no significant assay.

**Figure 7-9: Intrusive Breccia Phase, Intrusive Domain (Tejocote)**



Source: IMC(2014)

In drillhole AP-12-93 Sample 34437, with 0.344 g/t Au from 235-236.0m, Sample 34438, with 0.386 g/t Au from 236.0 to 237.15m, and sample 34439, with 0.367 g/t Au from 237.15 to 238.5m.

### 7.3.3 Metamorphic Rocks

#### Hornfels-Skarn

The sediments are locally metamorphosed to hornfels and skarn, Figures 7.10 and 7.11, occurring frequently as narrow contact replacement to the sediment intrusive contacts. More regional scale hornfels crops out to the northeast of the Project area and is encountered in most drillholes at increasing depth to the southwest. The altered rock is often transitional and termed hornfels where individual mineral grains are not recognizable and termed skarn where they are coarser and garnet and pyroxene become visually identifiable at the macroscopic scale. Skarn tends to be more common at depth to the southwest.

The mineralogy is composed of calc-silicate minerals (garnet, wollastonite, tremolite-actinolite, diopside, and idocrase) and is termed silication, and is generally not silicification (Gibson, 2012). This unit is a frequent host to mineralization associated with late disseminated to massive sulphide replacement (arsenopyrite and pyrite).

**Figure 7-10: Metamorphic Alteration to Hornfels**



Source: IMC(2014)

In drillhole AP-12-90; Sample 34690 with 0.767 g/t Au from 632.00-633.5m;

Sample 34691 with 0.364 g/t Au from 633.5-635.0 m.

**Figure 7-11: Metamorphic Alteration in Sediment to Skarn**



Source: IMC(2014)

In drillhole AP-10-21 from 212.61 - 219.37 m, no significant assay.

### **7.3.4 Breccia**

Breccia bodies were identified as important to the mineralization potential of the Project early in 2010 during re-logging of Goldcorp drillholes. The logging nomenclature of the numerous different breccia types recognized is designed to be descriptive, such as monolithic vs. multilithic, to avoid genetic terms other than contact and hydrothermal breccia.

According to Dr. Gibson (Personal Communication, 2014) ongoing core logging of breccia is still problematic even after modifications. Efforts to separate the different breccia bodies into meaningful divisions are currently underway.

Some breccia bodies, such as the high grade Breccia Zone described in section 7.35, are important to mineralization and others may predate or postdate mineralization. The most important breccias at the Project are multilithic and hydrothermal types. Other breccias identified on the Project include contact breccia, tectonic breccia, intrusive breccia and a monolithic breccia that has been locally described as resulting from autobrecciation. Tectonic breccias can be further subdivided into low angle and high angle fault breccia. Multilithic and hydrothermal breccias are described in more detail below.

#### **Multilithic Breccia**

This breccia, Figure 7-12, consists of angular to rounded plagioclase-biotite porphyry and angular fragments of hornfels, limestone, shale and other very fine grained to aphanitic fragments range from less than a centimetre to over 10cm in size. Brecciation appears to be relatively high energy but non-dynamic, exhibiting strong fracturing and angular fragmentation (locally crackle) and no obvious fault features such as gouge. Rock fragments are variably cemented within a matrix of silica (locally chalcedonic) and sulphide minerals (mostly arsenopyrite and pyrite/marcasite). In some areas the matrix appears to be finely ground rock or intrusive material; the latter may be more prevalent with the deeper drill intersections.

#### **Hydrothermal breccia**

This breccia, Figure 7.13, has a dense siliceous matrix with locally abundant sulphide minerals, mainly pyrite/marcasite and arsenopyrite, and these minerals are observed to rim or react with the breccia clasts. Fragments may be angular or rounded and there may be evidence of rock flour and brittle fracturing. Hydrothermal brecciation can occur in all rock types but is dominantly observed in intrusive rocks and is locally observed to re-brecciate the multilithic breccia.

22236

22237

691.0

691.78

LAJA: 282

AP-11-70

P: 681.65  
A: 690.65  
F: 300  
R: 300

690. MTS.

Plagioclase-biotite porphyry and hornfels fragments in a matrix that is partly silica rich partly intrusive rich. In drillhole AP-11-70. Sample 22236 with 18.44 g/t Au - 22.4 g/t Ag from 688.00 to 689.50m. Sample 22237 with 2.03 g/t Au - 11.2 g/t Ag from 689.50 to 691.0m, (Lunceford, 2012).

12587

12590

12591

12592

D. 82.30  
A. 85.54  
R. 3.04

AP-11-53  
L.RJA=39  
86-08

October 29, 2014

In Drillhole AP-12-53, Sample 12589 with 1.22 g/t Au - 38.1 g/t Ag from 82.5-84.0m; Sample 12590 with 2.31 g/t Au - 27.9 g/t Ag from 84.0 to 85.5m. Sample 12591 with 2.10 g/t Au - 19.2g/t Ag from 85.5 to 87.0m.

### 7.3.5 Mineralization

Ana Paula is located along the northwesterly trend of the GGB where it straddles a boundary between two older tectonic sub-terrane; the Teloloapan volcanic-volcaniclastic arc assemblage to the west and the Platform sequence of thick carbonates (limestone and dolomite) overlain by younger marine deposits to the east. The stratigraphy of both sub-terrane was deformed during the compressive Laramide orogeny and subsequently intruded by an early Tertiary,  $\pm 62$ -66 million years, calc-alkali porphyritic magmatic event associated with an essentially barren skarn and hornfels contact metamorphism. This intrusive event is currently thought to be associated with the timing of mineralization responsible for the gold deposits and showings of the GGB. At least two and possibly three mineralizing events are observed at the scale of the property, but the relationships and timing of these events is not currently known.

#### Mineral Deposition

In general four gold depositional sites are recognized at Ana Paula:

1. Quartz-sulphide and quartz-carbonate-sulphide veinlets, stockworks with sulphide clots and disseminations in both intrusions and hornfels.
2. Narrow semi-massive sulphide contact replacement of limestone or hornfels/skarn at the intrusion contacts.
3. Sulphide clots, rims and masses in narrow contact breccias hosted in intrusions at or near the sedimentary contacts and/or fault contacts.
4. Associated with a sulphide constituent within breccia matrix and with sulphide replacement textures within structurally controlled breccia formed oblique to the dominant northerly trending westerly dipping stratigraphy.

Mineralization at Ana Paula occurred during at least two different events or stages. The first event is characterised by gold-arsenic-(bismuth-tellurium), (or Au-As-(Bi-Te)), where mineralization is associated with intermediate intrusions emplaced into limestone. The second event locally cuts the first, and is characterized by gold-silver-lead-zinc-mercury-antimony (or "Au-Ag-Pb-Zn-Hg-Sb"), containing locally zoned coarse sphalerite. There are also various quartz-calcite veins with epithermal textures, but the relative timing of these veins remains unclear.

Mineralization is hosted in both the sediment-intrusive domain and the intrusive domain as described in Section 7.3.2 and illustrated in Table 7-1 and Figure 7-4. Delineation drilling for this Report has focused on mineralization hosted within the boundary of the sediment-intrusive domain and the intrusive domain. General length, width, depth and continuity of the mineralization are discussed in Section 10.

**Table 7-1 Undiluted Average Grade per Rock Type and Per Sub-type**

| Rock Type | Description                             | Proportion Per Rock type | Sub-Type Lithology                  | Code | Average Grade |        |              |        |
|-----------|-----------------------------------------|--------------------------|-------------------------------------|------|---------------|--------|--------------|--------|
|           |                                         |                          |                                     |      | by Sub-types  |        | By Rock Type |        |
|           |                                         |                          |                                     |      | Au g/t        | Ag g/t | Au g/t       | Ag g/t |
| B1        | Breccia 1 - The high grade breccia zone |                          |                                     |      |               |        | 5.38         | 6.49   |
|           |                                         | 18.12%                   | Breccia                             | B1b  | 9.76          | 10.0   |              |        |
|           |                                         | 3.47%                    | Hornfels                            | B1h  | 5.25          | 12.1   |              |        |
|           |                                         | 68.51%                   | Intrusion                           | B1i  | 4.41          | 4.6    |              |        |
|           |                                         | 8.91%                    | Limestone                           | B1l  | 3.44          | 8.3    |              |        |
|           |                                         | 0.99%                    | Semi-massive sulphide               | B1s  | 9.88          | 36.7   |              |        |
| B2        | Breccia 2 - The low grade breccia zone  |                          |                                     |      |               |        | 0.93         | 5.06   |
|           |                                         | 40.10%                   | Monolithic Breccia                  | B2b  | 0.84          | 6.8    |              |        |
|           |                                         | 59.90%                   | Intrusion                           | B2i  | 0.99          | 3.9    |              |        |
| SZ        | Sediment –Intrusive Domain              |                          |                                     |      |               |        | 1.00         | 3.90   |
|           |                                         | 100.00%                  | Intrusion and semi-massive sulphide | Szi  | 1.00          | 3.9    |              |        |

Source: IMC(2014)

## Mineralized Domains

### *Sediment-Intrusive Domain (SZ Rock Type)*

Mineralization is commonly observed contained within the sediment-intrusive domain described in section 7.3.2, occurring as veinlets, stockwork, clots and disseminated mineralization primarily hosted within or adjacent to the intrusive bodies, along with contact replacement textures and stockwork in the adjacent sedimentary rocks. The approximately 700 metre wide corridor has been intersected in drill core over 1.6 km along strike and remains open to the north and at depth. The corridor includes at least two relatively continuous mineralized intrusions with disseminated, stockwork and contact replacement mineralization that are separated by mostly barren limestone. Discontinuous mineralization may occur locally within the “barren” horizons.

This domain is sometimes described as the lower grade mineralization that has an undiluted composite average grade of 1.0 gram per tonne gold and 3.9 grams per tonne silver. Observed minerals include primarily pyrite and arsenopyrite, with traces of pyrrhotite, sphalerite, and native gold and/or gold tellurides. Magnetite, galena, stibnite, realgar and bismuthinite are observed rarely. Chalcopyrite and bornite are identified in thin section.

### *Intrusive domain (Exploration Stage)*

The intrusive domain is in the hangingwall of the fault that separates this domain from the sediment-intrusive domain. As the name implies this domain is comprised dominantly of intrusive rocks with relatively few “septae” of sedimentary layers. In general, the intrusive domain appears to follow and is hosted within the same northerly structural trend as the sediment-intrusive domain and is in contact with sedimentary rocks to the west and southwest. Several different intrusive phases are present, but they mostly appear to be of similar composition and mainly vary phenocryst grain size and overall percentage. Although the intrusive rocks are generally altered, relatively little mineralization has been encountered. An exception is the area known locally as Tejocotein the southwest or B1 quadrant, where mineralization similar to that at Ana Paula has been drilled, but here consists of a more dense stock-like intrusive body composed of coalescing dikes and sills that are locally separated by discontinuous altered and mineralized sediment horizons and multilithic breccia bodies that appear to be relict rafts of wallrock

sedimentary rocks within the intrusive bodies. These sedimentary rocks generally exhibit a higher grade of metamorphism than that present at Ana Paula.

A relatively continuous low grade mineralization is observed in core that occurs as disseminated sulphides within the intrusion(s) with some stockwork, structurally controlled mineralization and some replacement mineralization of breccia clasts, phenocrysts and locally of contact zones (depositional sites 1, 2 and 3 above). Sulphides are primarily pyrite with lesser arsenopyrite. Exploration of this domain is still underway and insufficient information is available to accurately estimate an average grade, expected to be low grade overall (0.3 to 0.5 grams per tonne gold). The mineralization observed to date is indicative of an extensive alteration halo that merits continued drilling. The “stock” has been drilled over about 1.2 by 1.2 km and remains open.

#### ***High Grade Breccia Zone (B1 Rock Type)***

Two discrete structurally controlled breccia bodies of irregular dimensions have been delineated in drill core that are oblique to the surrounding stratigraphy of the sediment–intrusive domain described above. These breccia bodies come to surface relatively close to each other and may share a common origin but are separated by the same fault boundary that separates the sediment-intrusive and intrusive domains.

The high grade Breccia Zone, or B1 rock type, is the most important domain for gold mineralization and is surrounded by the sediment-intrusive domain, sitting in the footwall near the fault contact with the intrusive domain, Figure 7.4. The Breccia Zone consists of a core of multilithic breccia, Figure 7.12, in a steeply south plunging column surrounded by a halo of mineralization and alteration characterized by veins, fracture zones, and massive sulfide contact replacements in country rock that includes limestone, hornfels and intrusive rocks along with other breccia. The breccia core and the surrounding alteration halo combine together to make up what has become known as the B1 high grade Breccia Zone. The same sulphide assemblage observed in the sediment-intrusive domain is also observed here where it occurs as matrix filling in hydrothermal breccia, replacements of the breccia fragments, as well as stockwork mineralization in the surrounding altered wallrock,. Late quartz and quartz-carbonate veins crosscut the entire unit and may represent a late or a second mineral event.

The breccia core occurs near a change in orientation or jogs in the stratigraphic and structural fabric of the surrounding sediment-intrusive domain, and is interpreted as being partly controlled by the intersection of at least two planar structures, forming a steeply plunging body that obliquely crosses the main structural grain. The Breccia Zone comes to surface around UTM grid line 1998050mN at the center of the cone pit shown in Section 14.1, and extends at least 700 m vertically from surface where it remains open at depth. Drillhole AP-11-70, drilled across the body at depth, intersected a 33.00metre interval of 12.39 grams per tonne gold and 10.7 grams per tonne silver from 677.5 to 710.5 m downhole (Newstrike, 2012). Drillhole AP-13-215 drilled oblique to the plunge intersected a 72.19 metre interval of 3.92 grams per tonne gold and 5.87 grams per tonne silver (Newstrike, 2013). Insufficient drilling has been completed to fully delineate the breccia at depth and true widths are not known. The B1 high grade breccia core is irregular in its dimensions, locally as thin as 18 m, but appears to average about 55 m near surface, and plunges southerly tapering at depth. The core breccia unit has an undiluted composite average of 9.76 grams per tonne gold and 10.0 grams per tonne silver.

The alteration halo surrounding the lithologic breccia extends laterally between 100 to more than 200 m from the breccia core, is also irregular in shape and is hosted within the altered limestone and intrusions of the sediment-intrusion domain described previously. The orientation of the mineralized halo is dominantly controlled by the steeply dipping structural intersection of the breccia core, and partly controlled by existing stratigraphy and structures, especially along contacts. The mineralized alteration halo has an undiluted average grade of 3.74 grams per tonne gold and 4.25 grams per tonne silver, decreasing away from the high grade core breccia unit.

Collectively the combined core breccia and the surrounding mineralized halo that make up the irregularly shaped B1 "Breccia Zone" has an undiluted average grade of 5.38 grams per tonne gold and 6.49 grams per tonne silver.

### Lower Grade Breccia (B2)

The lower grade B2 breccia is located within the intrusive dominant domain in the hanging wall of a fault contact with the sediment-intrusive domain, Figure 7.4, and appears to be cut off by this fault. It is essentially a brecciated intrusion composed of mostly monolithic fragments in a silica rich matrix with mixed sulphide-oxide mineralogy, Figure 7.13. The breccia may be part autobreccia, developed during intrusion emplacement, and part hydrothermal breccia, formed after emplacement. Crackle breccia is locally dominant. The alteration style is distinct from the rest of the mineralization at Ana Paula, with strong clay alteration and local advanced argillic mineralogy. The Lower Grade Breccia exhibits relatively long downhole intersections with consistent grades not common elsewhere in the deposit. Table 7-2 presents selected intersections from drillholes that tested the B2 breccia. This breccia zone requires further delineation as mineralization still remains open.

The B2 breccia is host to a lower grade gold mineralization with an undiluted composite average grade of 0.93 grams per tonne gold and 5.06 grams per tonne silver that may, in part, be stratigraphically controlled.

**Table 7-2: The Lower Grade Breccia Mineralization, B2 Rock Type**

Selected intersections from drilling completed to date

| Drill hole |          | From   | To     | Length (m) | Au g/t | Ag g/t |
|------------|----------|--------|--------|------------|--------|--------|
| AP-11-36   |          | 5.00   | 164.50 | 159.50     | 0.57   | 2.7    |
| AP-11-53   |          | 0.00   | 108.00 | 108.00     | 0.81   | 6.4    |
|            | includes | 60.00  | 81.00  | 21.00      | 1.97   | 15.9   |
| AP-11-55   |          | 114.50 | 150.00 | 35.50      | 0.59   | 8.9    |
|            |          | 153.70 | 222.00 | 68.30      | 0.67   | 3.7    |
|            |          | 226.00 | 278.00 | 52.00      | 0.56   | 16.0   |
| AP-12-94   |          | 58.68  | 142.00 | 83.32      | 1.07   | 8.0    |
|            | includes | 72.85  | 126.90 | 54.05      | 1.50   | 10.6   |
|            |          | 183.30 | 275.73 | 92.43      | 0.68   | 5.0    |
| AP-12-96   |          | 107.20 | 197.50 | 90.30      | 0.79   | 8.2    |
|            | includes | 162.00 | 183.75 | 21.75      | 1.29   | 17.4   |
|            |          | 310.25 | 338.50 | 28.25      | 0.74   | 15.2   |

Source: IMC(2014)

Selected intersections from drilling completed to date

## Other Mineralization

Metamorphic rocks in the form of stratigraphically controlled hornfels/skarn bodies outcrop in the northeast part of the property and occur in most drill holes within both the sediment-intrusive domain and to a lesser extent in the intrusive domain. These increase in frequency at depth and to the southwest in drill core. Contact breccia bodies hosted in intrusions at or near the sedimentary contacts are associated with the metamorphic rocks but also occur independent of them, and locally may be tectonic in origin. They are both a common host to replacement disseminated to massive sulphides (arsenopyrite + pyrite/marcasite  $\pm$  pyrrhotite) mineralization that can form high gold grades over narrow intervals, Figures 7-14 and 7-15 and Table 7-3. At present they are averaged into the lower grade bulk mineralization described above, and further drilling is required to evaluate their continuity and their potential for underground extraction methods. Some selected contact replacement intersections are shown in Table 7-3.

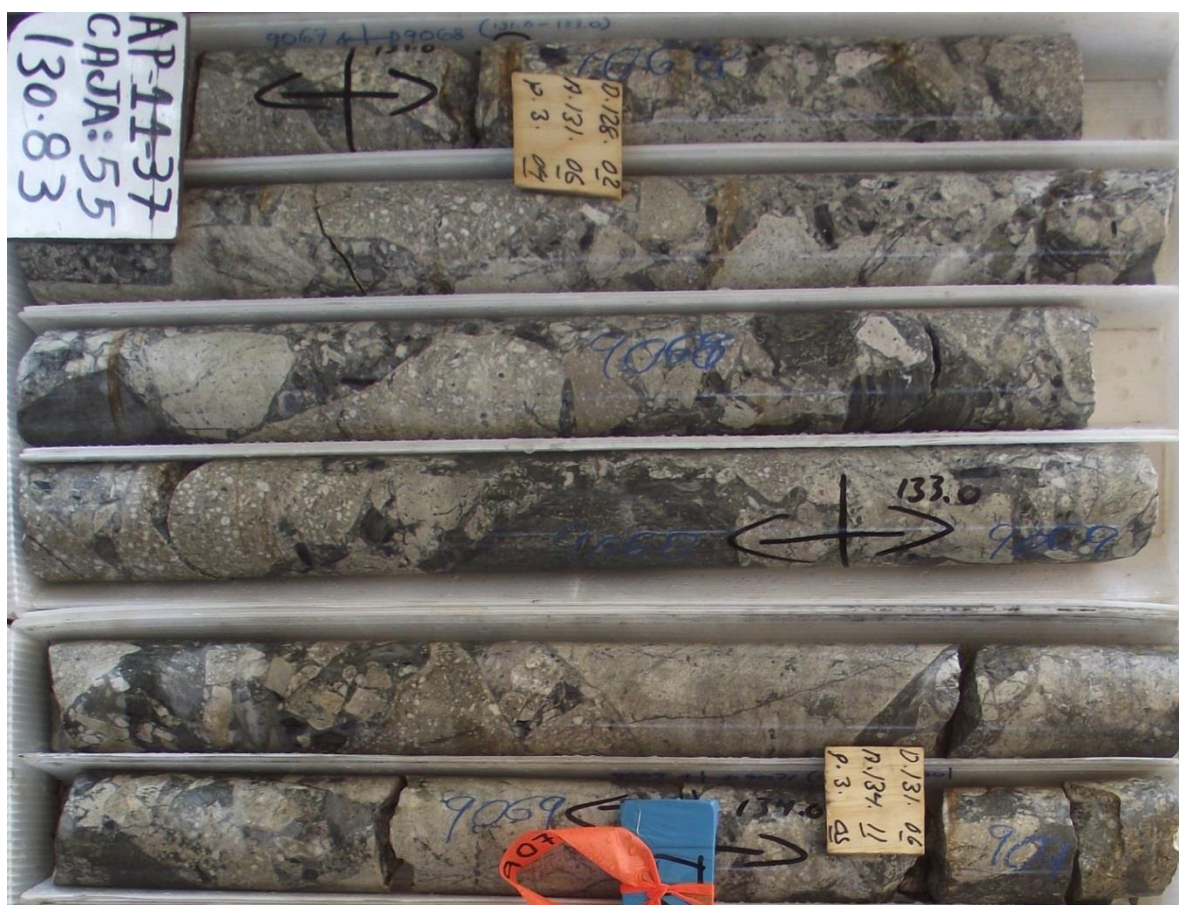
A later phase of banded epithermal style veining that is apparently associated with free gold is locally observed crosscutting all stratigraphic units, Figure 7.16, and is locally associated with increased silver grades. Coarse stibnite, sphalerite, galena and chalcopyrite are rarely observed as is occasional realgar crystals (Thompson, 2008). The relationship to the earlier mineralization, if any, is unknown.

**Figure 7-14: Contact Replacement Mineralization in Hornfels**



Source: IMC(2014)

In drillhole AP-12-111 Sample 46830 with 13.6 g/t Au - 40.3 g/t Ag from 98.17 to 99.00m; Sample 46831 with 11.45 g/t Au - 67.4 g/t Ag from 99.0 to 99.88m; Sample 46832 with 9.8g/t Au - 42.4 g/t Ag from 99.88 to 100.68m.

**Figure 7-15: Contact Replacement Mineralization in Intrusion.**


Source: IMC(2014)

Late arsenopyrite, pyrite and gold in massive sulphide replacement in multilithic breccia in drillhole AP-11-37, Sample 9068 with 16.35 g/t Au and 15.8 g/t Ag from 131.0 to 133.0 m; Sample 9069 with 28.0 g/t Au and 27.4 g/t Ag from 133.0 to 134.0 m.

**Table 7-3: Contact replacement mineralization**

Randomly selected intersections in hornfels-intrusion.

| Drill hole |          | From   | To     | Length (m) | Au g/t | Ag g/t |
|------------|----------|--------|--------|------------|--------|--------|
| AP-05-05   |          | 41.70  | 49.90  | 8.20       | 1.49   | 6.0    |
|            |          | 60.30  | 75.00  | 14.70      | 4.29   | 17.5   |
| AP-09-05   |          | 247.50 | 264.15 | 16.65      | 1.36   | 29.9   |
|            | includes | 254.40 | 259.95 | 5.55       | 2.96   | 69.8   |
| AP-11-40   |          | 26.10  | 50.00  | 23.90      | 2.02   | 20.7   |
|            | includes | 26.10  | 38.50  | 12.40      | 3.67   | 37.8   |
| AP-11-42   |          | 7.00   | 15.54  | 8.54       | 3.40   | 22.4   |
| AP-11-67   |          | 581.00 | 617.00 | 36.00      | 0.96   | 0.99   |

Source: IMC(2014)

Randomly selected intersections in hornfels-intrusion.

**Figure 7-16: Coarse Gold in Breccia Fragments**



Source: IMC(2014)

An epithermal style vein crosscutting intrusion in discovery drillhole AP-10-19, Sample 2816 depth 153.0 to 153.5m with 439.0 g/t Au and 126 g/t Ag (Kearvell, 2011). Visible gold is inside red oval.

### 7.3.6 Structures

The boundary between the Teloloapan and Platform terranes underlies the Ana Paula and surrounding mineral concessions. Medina (2010) described the contact zone as characterized by intense deformation and faulting, and placed the boundary on the eastern margin of the Ana Paula Project where it is interpreted as a north-striking left-lateral fault. Detailed structural work to verify this interpretation is currently underway.

Several structural observations may be important (Gibson, 2012).

1. Sedimentary rocks strike north to north-northwest with westerly dips of 45 to 75 degrees.
2. Intrusive contacts are generally parallel to bedding in the sedimentary rocks.
3. Most of the structures observed at the surface in the area of drilling consist of folds in sedimentary rocks that are surrounded by intrusive rock.
4. Apparently minor faults are common at low angles to the bedding, in many cases located along contacts between sedimentary and intrusive rocks.
5. Larger-scale faults are not observed at surface nor have they been intersected in core, other than

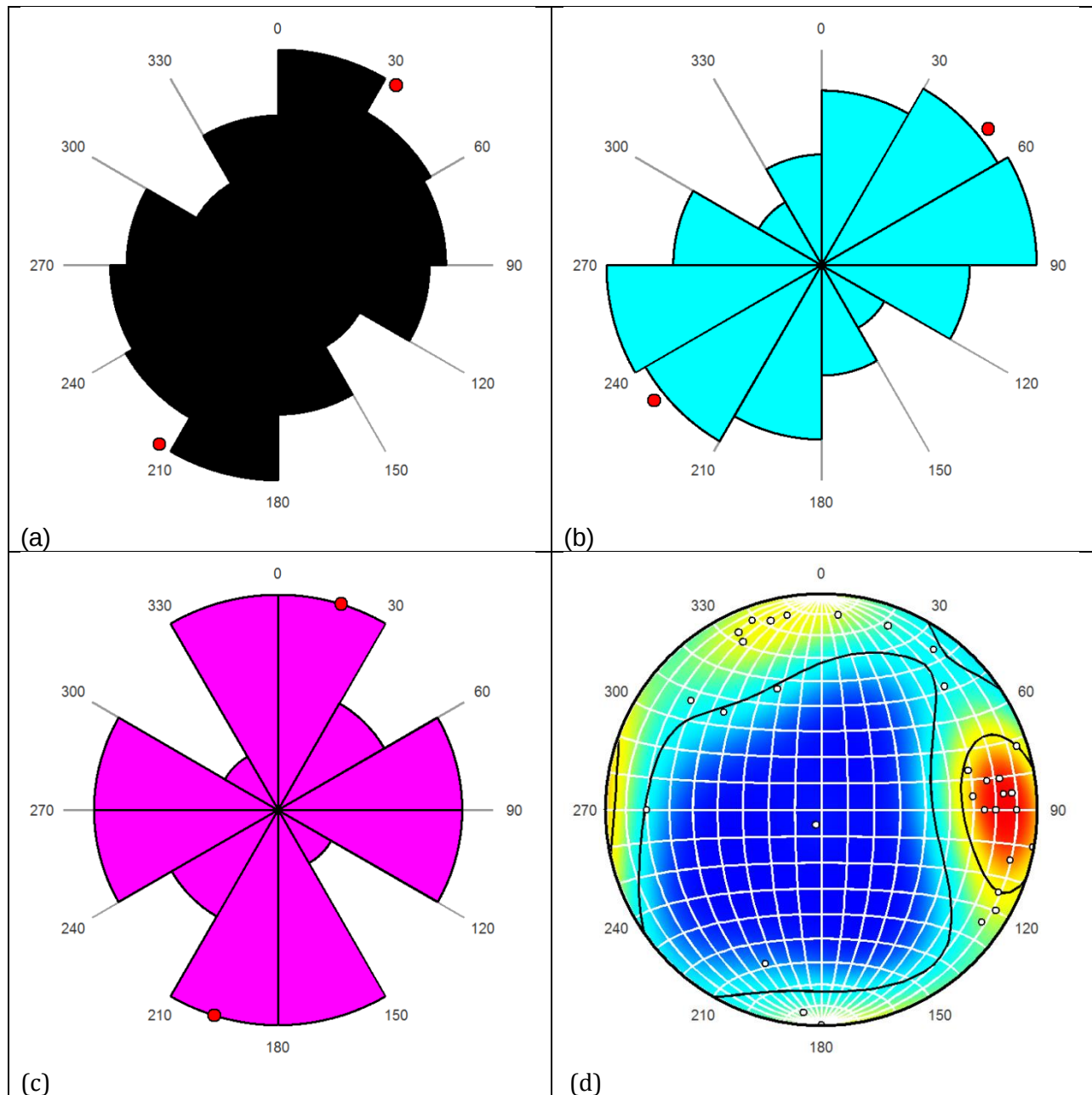
the faults commonly seen at and parallel to sedimentary-intrusive contacts.

6. Larger northeast and easterly trending structures (breccia, veins) are observed northeast of the main Ana Paula mineralization.

A structural orientation analysis of veinlets and mineralized contacts was undertaken by collecting structural information at the site of mineralized outcrop chip samples (n) that revealed patterns described in the following, (Johnson, B, 2014). All measurements are in azimuth and use the right hand rule for dips.

1. A rose diagram of the strikes of all veinlets (n=812) show that there are more veinlets in the NE and SW quadrants of the project area than in the NW and SE quadrants (see section 9.0, figure 9.1), with maximum frequency in the (diametrically opposite) ranges 000°-030° and 180°-210° (Figure 7.17a). Only a few veinlets strike in the minimum-frequency ranges 120°-150° and 300°-330°. Veinlets that carry anomalous gold (>200 ppb) show well-defined northeasterly strikes and near-vertical dips. This includes everything in the range 200 ppb to 5000 ppb Au. In contrast, veinlets and mineralized contacts at sample sites that returned assays of more than 5000 ppb Au mostly strike north-south and dip steeply west.
2. A rose diagram of all sampled veinlets with anomalous gold (n=318) shows a well-defined NE-SW strike maximum (Figure 7.17b), and the data have a statistical mean orientation of 231°/88°NW. The NE-SW strike is especially prominent in the range 750 to 5000 ppb Au, as shown by a more-detailed analysis not illustrated here.
3. For samples with >5000 ppb Au (n=32), a rose diagram shows a generally N-S strike maximum and a slightly weaker E-W spike (Figure 7.17c).
4. A spherical projection of poles to the 32 veinlets and mineralized contacts in this category shows a prominent point maximum corresponding to a strike and dip of 178°/75°W (Figure 7-17d). This steep westerly dip is similar to the orientation of most contacts between the sedimentary rocks and intrusions and of bedding in the sedimentary units, suggesting that the highest-grade gold is controlled by contacts and layering. The second, weaker cluster of poles corresponds to a strike and dip of approximately 080°/85°S.

**Figure 7-17: Structural Assessments of Mineralized Veins**



Source: IMC(2014)

(a) Rose diagram showing the strikes of all veinlets (n=812) at sites of surface rock-chip samples in the Ana Paula and Tejocote areas; (b) Rose diagram of all sampled veinlets with anomalous gold (n=318); (c) Rose diagram of sampled veinlets with >5000 ppb gold (n=32), and; (d) Equal-area spherical projection of poles to sampled veinlets with >5000 ppb gold (n=32). All diagrams in this section were produced using Orient 2.1.2 software (Vollmer, 2012).

### 7.3.7 Alteration

All lithology's underlying the Project exhibit some degree of alteration. A study undertaken by Mauler and Thompson on a suite of specimens submitted in 2005 identified skarn alteration that is patchy, selective and comprised of aggregates of garnet, calcite-hematite replacing K-feldspar and muscovite or chlorite or clay replacing biotite and commonly fracture controlled calcite. They also describe a main alteration phase within intrusive rocks that includes replacement of plagioclase phenocrysts and matrix K-feldspar by carbonate and minor sericite. Biotite phenocrysts are altered to carbonate  $\pm$  chlorite  $\pm$  pyrite  $\pm$  titanite with minor muscovite, clay and rutile. Mauler and Thompson (2005) concluded that corrosion of quartz phenocrysts and hornblende rims suggest a compositional imbalance of the system during crystallization, possibly caused by assimilation or contamination of the host rocks and/or by a flow of magma (magma mixing). Furthermore, they conclude that the high titanium oxide (TiO<sub>2</sub>) content in biotite suggests a basic source of magma, suggesting the granitoid rocks originated in a Type-I arc environment. The composition of the samples submitted for the 2005 study is meta-aluminous, calc-alkaline and is high in potassium. Silica varies from 58-65 percent placing the magma as diorite to granodiorite in composition.

Newstrike collected 34 mineralized samples from drill core that were submitted to Vancouver Petrographics Ltd of Langley, BC, Canada for petrographic study in 2012. The samples were selected to determine the alteration and mineral associations for each rock type submitted. A selection of results is described in Table 7-4, where similar rock descriptions are omitted from the sample studied.

The intrusion samples display various alteration, mineralogy and textural characteristics. Within the sediment-intrusive domain (SZ), quartz sericite alteration tends to highlight the porphyritic texture of intrusive rocks (bleaching); and argillic alteration, represented by feldspar phenocrysts altered to clay, locally swelling clay, appears to overprint other alteration types. Vancouver Petrographics also identified free gold in polished section where gold was precipitated on the boundary between euhedral arsenopyrite and the silica matrix. This agrees with early work by Thompson (2008), who determined that gold is associated with arsenopyrite as free grains on or around the grains of arsenopyrite, Figure 7.18.

Within the low grade breccia of the intrusive domain (B2), strong argillic alteration is observed with some petrological evidence for advanced argillic alteration present in the finer grained intrusive units (Colombo, 2012). Staining of these samples highlighted the presence of abundant potassium-bearing minerals, however, the very fine-grained nature of the groundmass/matrix hampered the identification of the minerals and some doubts remained between K-feldspar and illite in some of the samples. SWIR-spectroscopy was undertaken to verify this fine grained assemblage with results highlighted in Table 7-5. The analysis was carried out with a Terraspec 4 at the Mineral Deposit Research Unit (MDRU), Department of Earth and Oceanic Sciences – University of British Columbia, Vancouver. The interpretation of the SWIR-reflectance spectroscopy was conducted by Colombo (2012) with dedicated software (Specmin-ASD).

Table 7-4: Selected Petrology Results

| DRILL HOLE | METRES | LITHO | CODE | DOMAINS | V.P. NO. | SI             | DESCRIPTION                                                                                                                                                         |
|------------|--------|-------|------|---------|----------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AP-11-37   | 121.30 | BX1   | 62   | B1      | 9        | 0. 452 x 10 -3 | Gold-bearing adularia-quartz-calcite-arsenopyrite hydraulic breccia Fragments of: intensely altered (adularia-clay-white mica) plagioclase-phyric andesitic(?) rock |
| AP-11-37   | 180.90 | BX1   | 62   | B1      | 33       | 0. 466 x 10 -3 | Strongly altered (clay-white mica) plagioclase-phyric andesitic rock Arsenopyrite-quartz-adularia breccia                                                           |
| AP-10-19   | 153.15 | GD    | 20   | B1      | 31A, B   | 0. 597 x 10 -3 | Strongly altered [K-feldspar(?)-calcite-clay] quartz-plagioclase-phyric felsitic rock. Calcite-pyrite-arsenopyrite vein.                                            |
| AP-10-19   | 153.80 | GD    | 20   | B1      | 29       | 0. 666 x 10 -3 | Brecciated arsenopyrite-pyrite-chalcopryrite-bornite replacement zone Calcite vein                                                                                  |
| AP-10-20   | 207.94 | GD    | 20   | B1      | 5A       | 0. 595 x 10 -3 | Strongly altered (clay-calcite±quartz?) plagioclase-phyric andesite, Quartz veinlets. Calcite-pyrite-arsenopyrite±quartz veins                                      |
| AP-11-37   | 67.20  | GDBD  | 22   | B1      | 11A      | 0. 505 x 10 -3 | Strongly altered (clay-white mica) plagioclase-phyric andesite (Domain A)                                                                                           |
| AP-11-37   | 448.72 | GDBX  | 21   | B1      | 10A      | 0. 602 x 10 -3 | Strongly altered (chlorite-calcite-clay) biotite-plagioclase-phyric andesite                                                                                        |
| AP-11-37   | 448.72 | GDBX  | 21   | B1      | 10B      | 0. 626 x 10 -3 | Calcite±adularia±pyrrhotite±chalcopryrite±galena veins                                                                                                              |
| AP-11-37   | 317.30 | HFL   | 41   | B1      | 12       | 0. 573 x 10 -3 | Clay-calcite/dolomite-epidote-andalusite schist. Calcite-epidote-andalusite-garnet vein                                                                             |
| AP-11-76   | 611.75 | SK    | 40   | B1      | 24       | 0. 594 x 10 -3 | Calcite-clay-grossular granofels                                                                                                                                    |
| AP-11-36   | 78.75  | BXH   | 61   | B2      | 8        | 0. 572 x 10 -3 | Quartz-pyrite-arsenopyrite-rutile hydraulic breccia Fragments of: intensely altered (clay-white mica/illite?) plagioclase phyric andesitic rock?                    |
| AP-11-53   | 111.73 | BXH   | 61   | B2      | 17       | 0. 503 x 10 -3 | Pyrite-quartz-arsenopyrite hydraulic breccia Strongly altered (quartz-clay) plagioclase-phyric andesitic(?) rock                                                    |
| AP-10-22   | 96.91  | GD    | 20   | B2      | 32A      | 0. 527 x 10 -3 | Calcite-pyrite-sphalerite-chalcocite hydraulic breccia                                                                                                              |
| AP-10-22   | 43.62  | GDBD  | 22   | B2      | 7        | 0. 702 x 10 -3 | Clay-quartz-dolomite/calcite-pyrite-arsenopyrite-adularia replacement zone                                                                                          |
| AP-11-53   | 183.70 | GDBD  | 22   | B2      | 18       | 0. 457 x 10 -3 | Strongly altered (quartz-clay-calcite) plagioclase-phyric andesitic rock                                                                                            |
| AP-11-65   | 306.64 | BXML  | 60   | SZ      | 20A      | 0. 536 x 10 -3 | Strongly altered (clay-white mica-clay) intrusive polymict breccia                                                                                                  |
| AP-11-67   | 66.10  | BXML  | 60   | SZ      | 26       | NA             | Strongly to intensely altered (calcite-adularia-quartz) intrusive (?) breccia Fragments of intensely altered grossular-bearing granofels                            |
| AP-10-13   | 306.73 | GD    | 20   | SZ      | 1        | 0. 717 x 10 -3 | Strongly altered (clay-chlorite-amphibole-quartz-titanite-calcite-pyrite) plagioclase-phyric andesite                                                               |
| AP-10-14   | 294.05 | GD    | 20   | SZ      | 3        | 0. 502 x 10 -3 | Strongly altered (clay-white mica-calcite-chlorite-quartz) plagioclase-phyric andesite Calcite-arsenopyrite-quartz vein Pyrite-calcite vein                         |
| AP-10-15   | 195.17 | GD    | 20   | SZ      | 28A      | 0. 598 x 10 -3 | Calcite-sphalerite-pyrite-quartz-white mica replacement domain                                                                                                      |
| AP-10-16   | 102.00 | GD    | 20   | SZ      | 34       | 0. 508 x 10 -3 | Strongly altered (clay-white mica-calcite-K-feldspar?) plagioclase-phyric andesitic rock Calcite-arsenopyrite-quartz-pyrite vein                                    |
| AP-11-39   | 67.80  | GD    | 20   | SZ      | 13       | 0. 611 x 10 -3 | Weakly to moderately altered (clay-quartz-calcite-chlorite) plagioclase-phyric andesite                                                                             |
| AP-11-65   | 250.54 | GD    | 20   | SZ      | 21       | 0. 634 x 10 -3 | Strongly altered (clay-white mica-quartz) plagioclase-phyric andesite                                                                                               |
| AP-10-21   | 169.78 | GDBX  | 21   | SZ      | 6        | 0. 500 x 10 -3 | Clay-calcite-quartz-pyrite replacement zone                                                                                                                         |
| AP-11-65   | 101.54 | GDBX  | 21   | SZ      | 19A      | 0. 502 x 10 -3 | Polymict breccia. Strongly altered (clay-calcite-white mica) plagioclase-phyric andesitic                                                                           |
| AP-10-12   | 76.00  | SK    | 40   | SZ      | 25       | 0. 459 x 10 -3 | Quartz-pyrite-arsenopyrite-calcite-adularia replacement zone                                                                                                        |
| AP-11-67   | 607.70 | SK    | 40   | SZ      | 27       | 0. 673 x 10 -3 | Garnet-calcite-quartz layered granofels                                                                                                                             |

Source: IMC(2014)

**Table 7-5: Summary of the Mineral Analysis with SWIR-Spectroscopy**

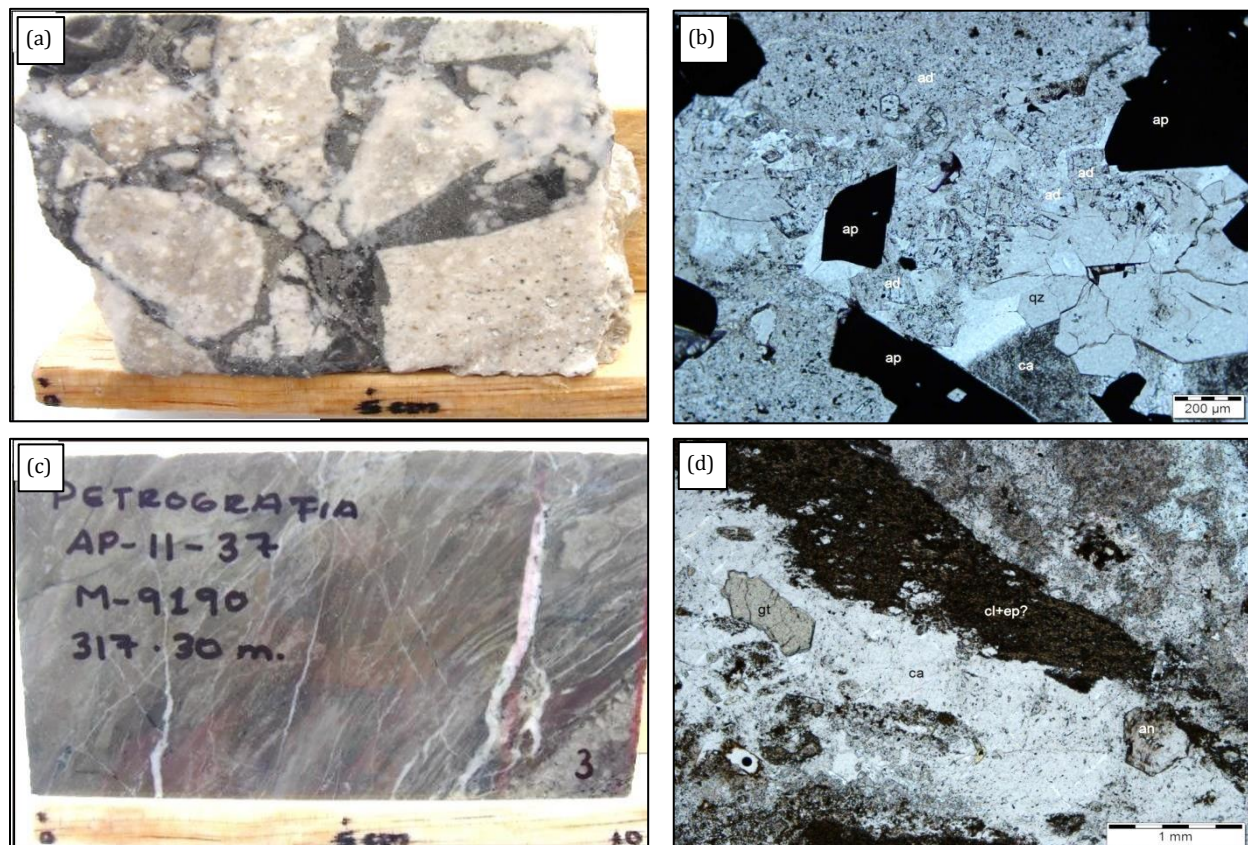
| V.P. No | Mineral 1         | Mineral 2                   | Mineral 3        | Mineral 4 |
|---------|-------------------|-----------------------------|------------------|-----------|
| 1       | Illite            | Actinolite                  | Calcite          | Chlorite  |
| 2a      | Illite            | Kaolinite                   | Muscovite        | Chlorite  |
| 3       | Illite            | Muscovite                   | Chlorite         | Calcite   |
| 5a      | Illite            | Kaolinite                   | Calcite          | Chlorite  |
| 6       | Illite            | Kaolinite                   | Calcite          |           |
| 7       | Illite            | Dickite?                    |                  |           |
| 8       | Kaolinite         | Illite/Smectite             |                  |           |
| 9       | Illite            | Dickite?                    | Calcite          |           |
| 10a     | Chlorite          | Calcite                     | Illite/Smectite? |           |
| 11a     | Illite            | Smectite                    | Muscovite        |           |
| 14      | Kaolinite         | Illite/Smectite             | Muscovite        |           |
| 15a     | Illite            | Kaolinite/Dickite, Calcite? |                  |           |
| 16      | Illite            | Kaolinite/Dickite           |                  |           |
| 17a     | Illite            | Kaolinite                   |                  |           |
| 18      | Kaolinite/Dickite | Illite?                     |                  |           |

Source: IMC(2014). Note: Refer to Table 7-4 for sample correlation

In some of the samples the alteration paragenesis indicated low-sulphidation epithermal conditions; in one case the gold mineralization was associated to the alteration within a gold-bearing adularia-quartz-calcite arsenopyrite hydraulic breccia (AP-11-37 - 121.30 m), Figure 7.18(a) and (b) and Table 7-4. In another sample, a contact metamorphic assemblage was characterized by calcite-epidote-andalusite-garnet [AP-11-37 - 317.30 m]; Figure 7.18(c) and (d) and Table 7-4. In some cases the alteration was overprinted by adularia-bearing assemblages (adularia – calcite – quartz ± pyrite ± arsenopyrite). In one of the samples affected by this alteration, gold was spatially associated with arsenopyrite which in most of its occurrences tends to replace pre-existing pyrite, Figure 7-19.

Colombo, 2012, observed that it seems evident that the mineralization is associated with hydraulic brecciation, intense alteration, and precipitation of pyrite and arsenopyrite. The sulphide deposition is typically accompanied by a strong alteration (clay-calcite±quartz) which selectively replaces plagioclase phenocrysts within the plagioclase-phyric intermediate rock. White mica and clay replaced the biotite, which in some rare cases was observed as relict within the less intensely altered samples. The groundmass was intensely replaced by illite ± kaolinite ± smectites ± calcite ± quartz.

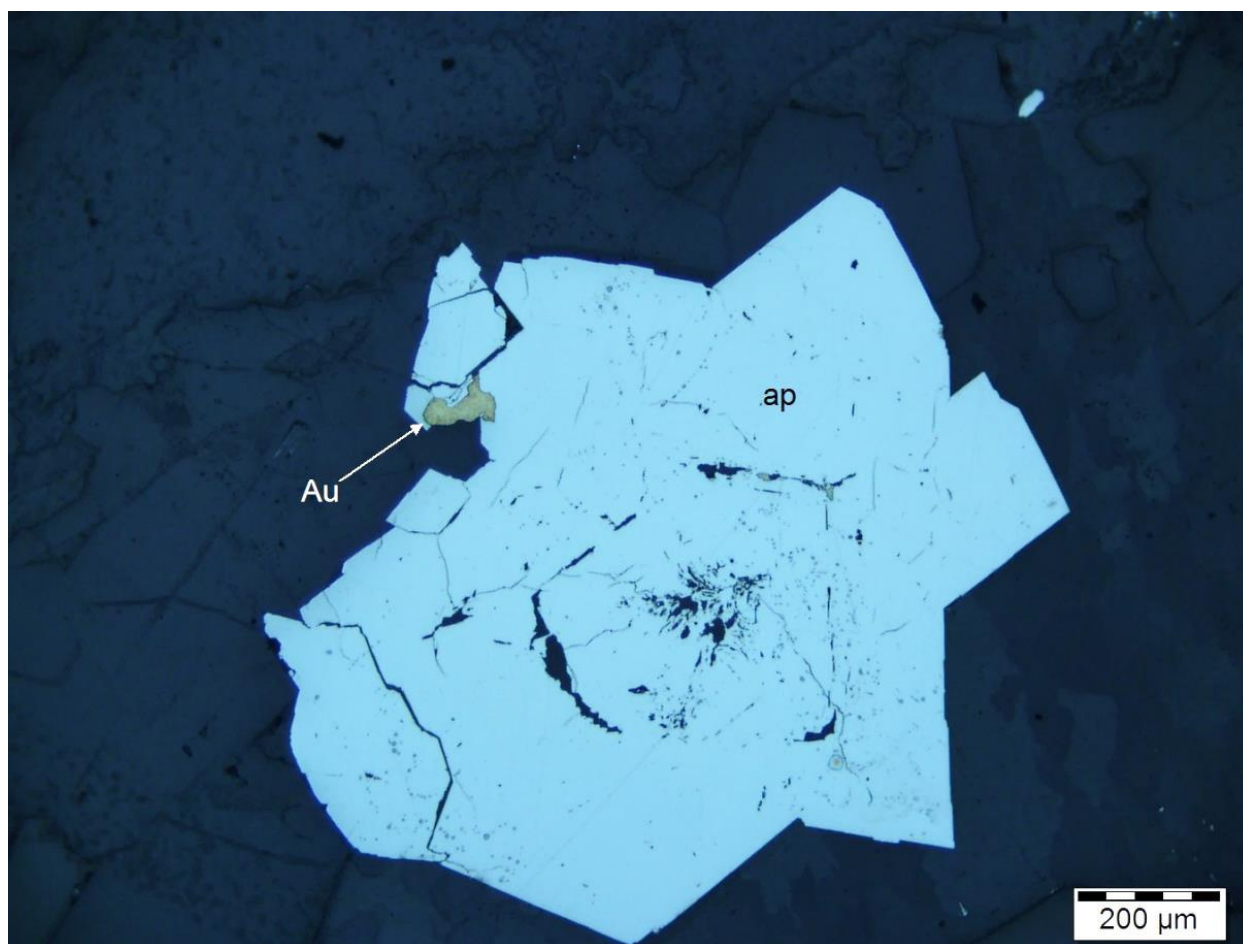
**Figure 7-18: Petrographic Sections**



Source: IMC(2014)

(a) High grade breccia longitudinal split core hand specimen, AP-11-37 - 121.30 m, 18.6 g/t Au and 17.5 g/t Ag, sample #9063; (b) Photomicrograph of (a) shows the contact between the intensely altered rock fragment and the quartz- calcite-arsenopyrite infill (qz, ca and ap) is populated by rhombic adularia (ad). Plane polarized transmitted light; (c) Hornfels, AP-11-37 - 317.30 m, longitudinal split core hand specimen; 0.192 g/t Au, 0.2 g/t Ag, Sample #9190; and; (d) Photomicrograph of (c) shows clay-epidote(?) -rich septa occurs within the calcite- rich vein (ca) which crosscuts the clay-rich schist and hosts andalusite (an) and garnet (gt) crystals. Plane polarized transmitted light

**Figure 7-19: Gold Grain (Au) Located Between Euhedral Arsenopyrite (ap) and Quartz**



Plane polarized reflected light. Photomicrograph 9b, Colombo, 2012.

## 8 Deposit Types

The orogenic deposit model for gold mineralization in the Guerrero Gold Belt (GGB) is considered to be associated with a Pacific Rim style of mineralization as described by Corbett (1998, 2009), Figure 8.1. GGB mineralization is related to a late Cretaceous to Early Tertiary age skarn porphyry continuum emplaced during a 62 to 66 million year old intrusive event associated with Laramide Compressional Orogeny. Early stage, essentially barren calc-silicate skarn alteration associated with one or more intrusive phases is thought to have developed as a contact metamorphic aureole surrounding hydrated intrusive bodies.

Gold deposition at Ana Paula tends to occur both contemporaneous with and post intrusion, exhibiting at least two mineralizing events. The earliest consists of Au-As-(Bi-Te) disseminated mineralization characterized by progressive mineralization over time through deposition of gold in breccias, stockworks, contact skarn (both endoskarn and exoskarn) and other replacement bodies.

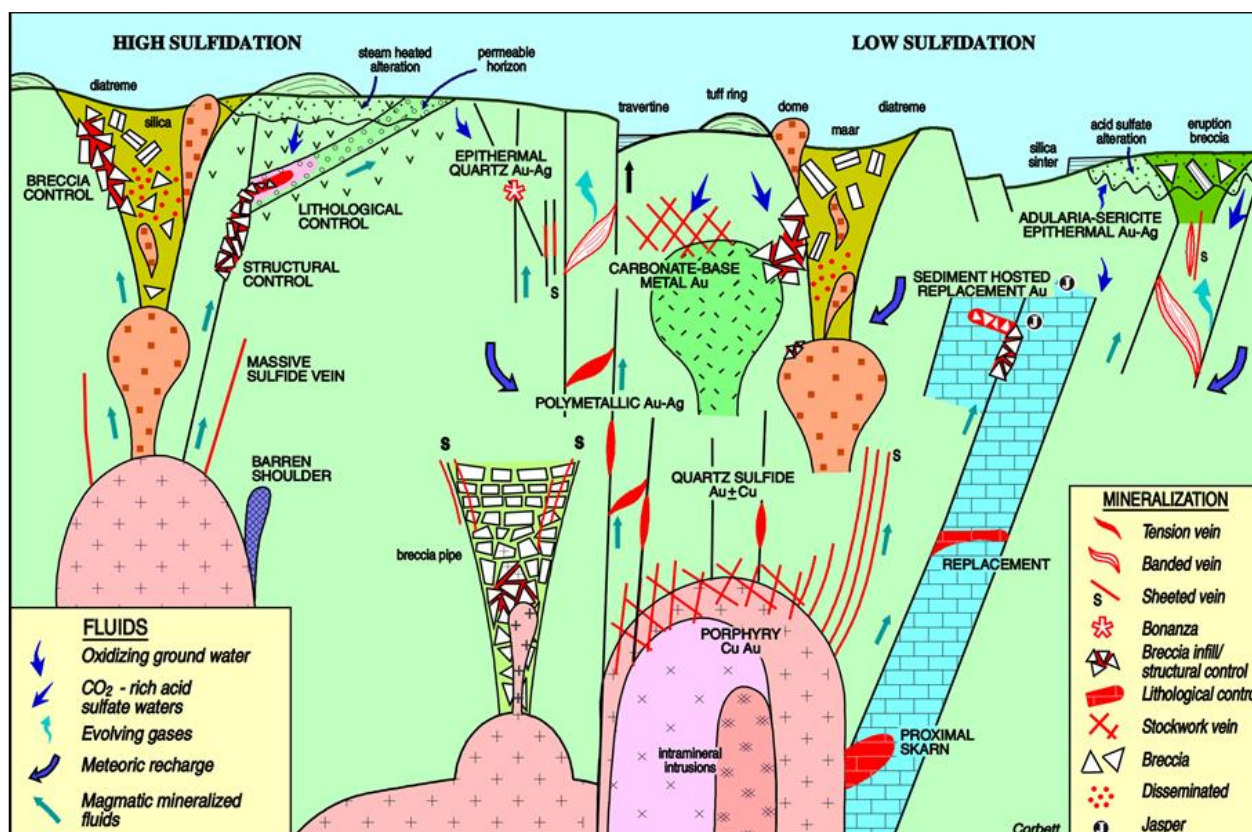
The second mineralization event (Au-Ag-Pb-Zn-Hg-Sb) perhaps related to the epithermal style of alteration discussed in section 7.3.7 may be a later hydrothermal phase of the earliest intrusive event (a retrograde overprint?) or may be younger.

The exact timing of gold deposition and the mechanism of deposition within the GGB and at Ana Paula are not yet fully understood and appears to vary among the known deposits, where each deposit shares important characteristics and differences. Intrusions at Ana Paula have been dated at  $66.0 - 66.7\text{Ma} \pm 0.7 - 1.8\text{Ma}$ , Valencia, V. et al, (2008), which may also date the earliest onset on mineralization.

Results from Ana Paula suggest that the bulk of the gold deposition occurs with the dominant (earlier?) Au-As-(Bi-Te) mineralization, and is largely hosted in a northerly trending and westerly dipping corridor of intrusive rocks, at the contacts with sedimentary rocks and hornfels, and within important breccia bodies. Gold deposition within the high grade core of the deposit is structurally controlled, located at the intersection of at least two fault structures and the host stratigraphy described in Section 7. Both skarn type massive and disseminated sulphide (arsenopyrite  $\pm$  pyrite) replacements and some epithermal overprinting have occurred but the extent and relationship to the oldest intrusive rocks have not been studied in detail.

Economically significant gold deposits in the GGB are hosted within a variety of structural, lithological and/or geochemical traps and frequently occur in clusters about a northwesterly trend of intrusions of similar age and provenance which are defined by a co-incident northwest trend of magnetic anomalies. The trend is known to exceed 55 km along strike and has become known the Guerrero Gold Belt. Since the first discovery was made at Los Filos in the early 1990's, the gold belt has grown to host over 21 million ounces of gold and 99 million ounces of silver in the proven and probable (P+P) and measured and indicated (M+I) categories, Table 8-1.

Figure 8-1: A Pacific Rim Model of Mineralization



Source: IMC(2014)

This diagram illustrates the different styles of mineralization in a magmatic arc porphyry and epithermal Cu-Au-Mo-Ag system (Corbett, 2008).

Table 8-1 Guerrero Gold Belt Gold Deposits

| Company    | Project      | Category    | Tonnes (M) | Au g/t | Ag g/t | Au Moz | Ag Moz |
|------------|--------------|-------------|------------|--------|--------|--------|--------|
| NEWSTRIKE  | Ana Paula    | M+I         | 43.0       | 1.59   | 7.00   | 2.20   | 9.70   |
|            |              | Inferred    | 1.8        | 0.78   | 18.70  | 0.05   | 1.10   |
|            |              |             |            |        |        |        |        |
| Goldcorp   | Los Filos    | P & P       | 310.2      | 0.80   | 5.46   | 7.95   | 54.52  |
|            |              | M & I       | 81.3       | 1.07   | 7.59   | 2.79   | 19.82  |
|            |              | Inferred    | 191.7      | 0.82   | 5.97   | 5.03   | 36.79  |
| Torex Gold | Limon-Guajes | P+P         | 48.8       | 2.61   | 4.35   | 4.09   | 6.81   |
|            |              | M & I       | 53.7       | 2.78   | 4.84   | 4.81   | 8.36   |
|            |              | Inferred    | 10.7       | 1.80   | 4.00   | 0.62   | 1.39   |
| GGB        | Media Luna   | Inferred    | 39.9       | 2.63   | 24.46  | 3.38   | 31.39  |
|            |              |             |            |        |        |        |        |
| GGB        |              | P+P and M+I | 537.0      |        |        | 21.84  | 99.21  |
|            |              | Inferred    | 244.1      |        |        | 9.08   | 70.67  |

- Newstrike Capital Inc NI43-101 Initial resource estimate effective Feb. 26, Welhener et al, (2013)
- Goldcorp press release dated February 13, 2014 available on [www.sedar.com](http://www.sedar.com) and at [www.goldcorp.com](http://www.goldcorp.com)
- Torex: NI43-101 Mineral Resource statements, Limon-Guajes effective Sept 04,2012, Neff et al, (2012). Media Luna effective Sept 13, 2013, Hertel et al, ( 2013).
- All resources are calculated using CIM Definition Standards on Mineral Resources and Mineral Reserves (2010).

## 9 Exploration

Exploration at the Ana Paula Project is conducted under the supervision of Ms. Gillian Kearvell, Vice President of Exploration for Newstrike. Project operations are contracted to the geologic consulting firm Prospección y Desarrollo Minero Del Norte S.A. de C.V. (ProDeMin) of Chihuahua City, Mexico. As of June 26th, 2014, the Project employs 10 professional and support staff, and approximately 43 local labourers.

### 9.1 2010-2013 Exploration Program

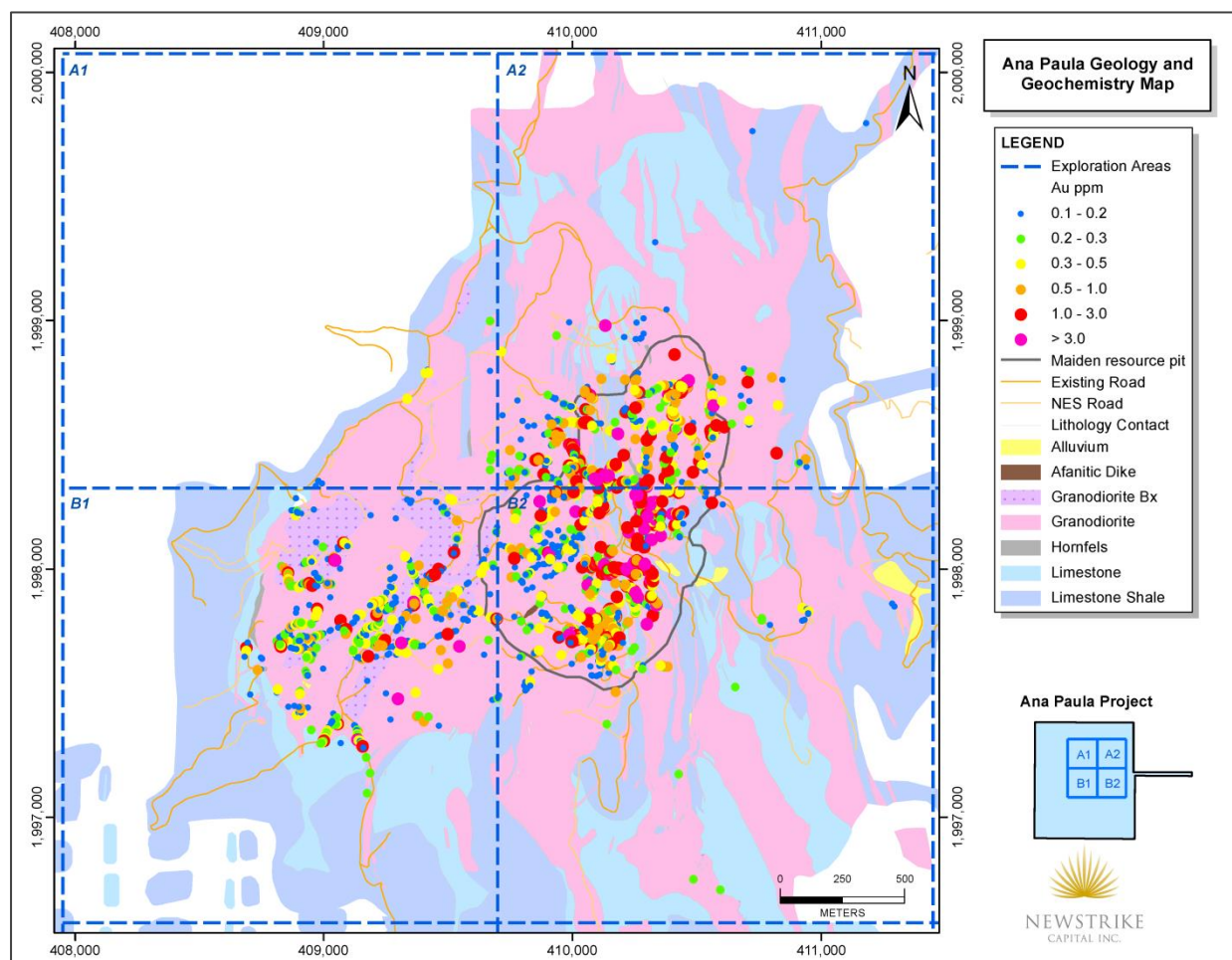
Through to the effective date of this Report Newstrike has completed the following work programs:

- Regional and semi-detailed outcrop mapping and sampling.
- Road cut outcrop mapping and sampling.
- ZTEM and airborne magnetic geophysical surveys, modelling and interpretation
- 110,199.67 m of core drilling in 219 drillholes, from AP-10-12 started October 22, 2010 through AP-13-230 completed on November 2, 2013
- 3,903 On-site density measurements have been completed from 148 drillholes.
- 96,045 geochemical samples from surface and core, including QAQC and check samples.
- Orthophotography and topographic contouring (to 1 m contours).
- Petrographic and SWIR study of 34 core samples.
- Structural and alteration studies.
- Environmental studies including water quality and weather monitoring.
- Pit slope, metallurgical, process design and other engineering studies.
- Deposit modelling.

Concurrent with this work, core logging, storage areas, field offices and drill access roads were built, rehabilitated or expanded to accommodate the accelerated drill program following discovery of the high grade breccia zone in drill hole AP-10-19.

Geologic outcrop mapping has been conducted continuously since June, 2010. Drill operations have continued without interruption since drill start up on October 15, 2010. A local map sheet grid was devised across the Project that is used to systematically plot all Project data, informally subdividing the Project area into nine 1:2000 scale map sheets, designated from north to south and west to east as A1-A2-A3, B1-B2-B3, and C1-C2-C3. The local grid covers an area defined by UTM coordinates 408,000-413,000 m Easting by 1,985,000-2,000,000 m northing (WGS 84 datum), Figure 9-1. Virtually all sampling, geologic mapping and drilling has been conducted within the A1-A2 and B1-B2 map sheets, informally described sometimes as the northwest, northeast, southwest and southeast quadrants respectively. These four map sheets hosts the approximately two by two km exploration target area defined in Section 6.2, Figure 6-1.

The initial resource announced by the Company On March 27<sup>th</sup>, 2013 is located on map sheets A2 and B2 where the greatest density of drilling and sampling has occurred.

**Figure 9-1: Road Cut and Outcrop Sample Map**


Source: IMC(2014). The A1, B1, A2 and B2 map sheets location within the Ana Paula project (blue inset).

### 9.1.1 Surface Mapping and Sampling Methodology

Surface mapping and sampling methods and protocols have remained the same since work on the Project began in mid-2010. Outcrop and road cut locations are registered on handheld GPS (WGS84 datum) and recorded along with lithologic, structure, mineralization, alteration and other relevant details on field map sheets of the same 1:2000 scale that are then transferred first by hand then digitally to the final map sheets. These map sheets are composited into the final Project-wide geologic map shown previously in Figure 7-4.

Prior to sampling, road cut and outcrop exposures are carefully cleaned and intervals to be sampled are measured, numbered with paint, and marked with an aluminium tag. Road cut samples are collected as continuous channels and/or as representative chips, carefully collected along intervals of 1.5 m or less depending on structural/lithologic breaks. Outcrop samples are collected as random or selective chips or panel samples depending on the exposure. Sample material is placed in plastic bags along with a sample tag, which is numbered and sealed at the site, and then double bagged with the corresponding sample number to prevent tearing and sample loss during transport. Samples are transported to the Company's field



offices and secure storage facilities where the individual sample bags are put into appropriately labeled rice sacks, about 5 to 10 per sack to await transport.

Storage facilities are enclosed and kept under 24 hour security. Samples are picked up at scheduled intervals directly by trucks sent from the two respective contracted analytical laboratories, ALS Chemex and SGS. All descriptive data collected in the field is recorded daily into the Company's database under the supervision and control of a database manager. Hand drawn and digital maps are prepared as a permanent record. Once geochemical assay results are received from the laboratory the assay certificates are digitally merged with the descriptive database and verified by the geologist.

### **9.1.2 Road Cut Outcrop Mapping and Sampling**

Road cuts are outcroppings of rock exposed during road building activities. Road cut exposures are systematically mapped and cataloged using the same methodology described in Section 9.1.1. The greatest density of road cuts from existing and new road building has occurred over map sheets A2 and B2 where drill density is also greatest. The objective of the road cut mapping and sampling is to identify new areas of potential mineralization and to refine structural and lithologic controls to mineralization and new road cuts are mapped and systematically sampled as they are built. If warranted, newly identified zones of possible gold mineralization resulting from this program are then proposed for testing by core drilling. An outcrop sample location map showing anomalous gold distribution is shown on Figure 9-1.

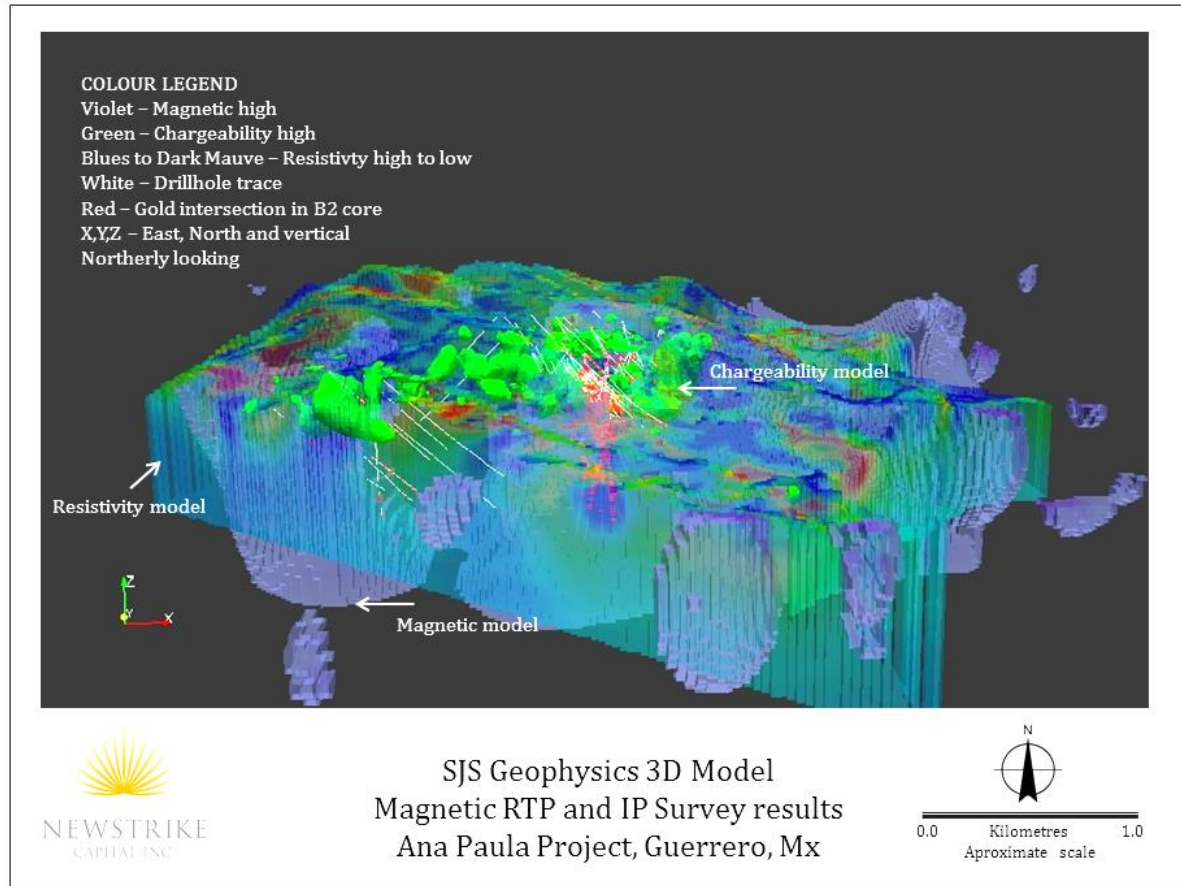
### **9.1.3 Geophysics**

In 2012 Newstrike contracted SJS Geophysics Ltd (SJS) of Vancouver, Canada to undertake certain 3 dimensional modelling interpretations using the existing database acquired from Goldcorp to compare it with the results of drilling. The database includes an aeromagnetic and radiometric (K, Th, U) survey by McPHAR Geoservices Inc. of Manila, Philippines that covers a 225 km<sup>2</sup> area over the Ana Paula Project area, and an Induced Polarization (3 dimensional) geophysical survey by SJS Geophysics of Vancouver, Canada. Results of this interpretation indicate a strong correlation between mineralization and resistivity and magnetic responses, Figure 9-2,

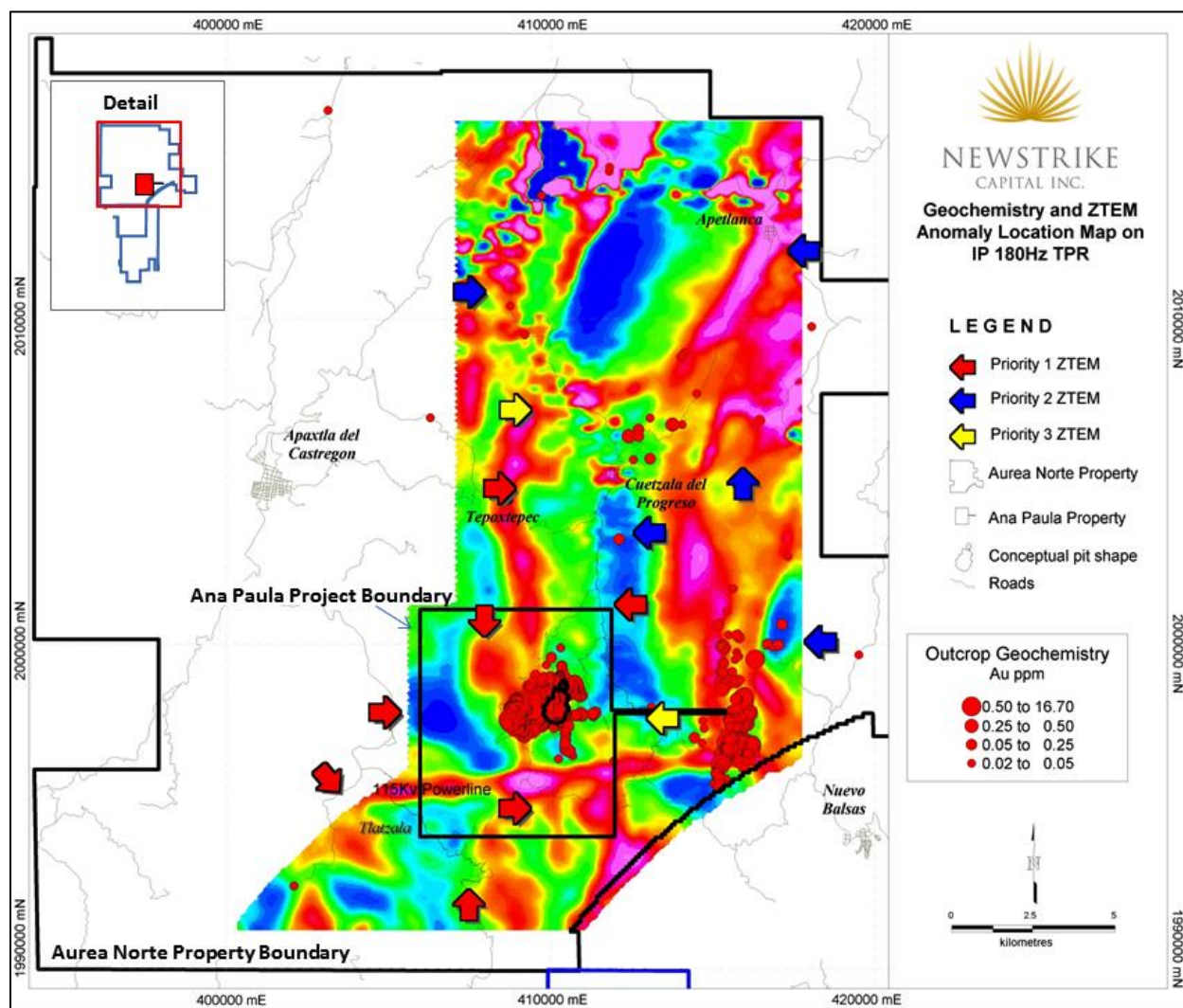
In 2013, Geotech Ltd of Aurora, Ontario, Canada was contracted to complete a ZTEM survey of approximately 250 km<sup>2</sup> encompassing 1,298 flight line km flown at a line spacing of 200m. The survey area encompassed the entire Ana Paula Project area and the eastern portion of the surrounding Aurea Norte Property, also owned 100% by Newstrike. The ZTEM survey is recognized for its ability to map resistivity contrasts associated with the structure and alteration typically associated with porphyry-skarn deposits or with structurally controlled epithermal deposits. ZTEM is capable of penetrating to depth that can exceed 1-2km and is useful in identifying "blind" exploration targets (a buried target that does not outcrop at surface).

The objective of the survey was to locate potentially buried intrusive bodies associated with the GGB mineralization model and to confirm controlling structures along the mineralized San Luis Trend. The new anomalies identified by the ZTEM survey include resistivity contrasts typical of buried silicified intrusions and with alteration commonly associated with skarn-porphyry and epithermal style deposits, Figure 9-3, (Legault, J, 2013).

**Figure 9-2: 3D Model Overlay of Resistivity, Chargeability and RTP Magnetic Survey Results**



Source: SJS, (2012)

**Figure 9-3: ZTEM In Phase 180Hz TPR with Priority Target Locations**


Source: Modified from Legault, J, 2013

### 9.1.4 Exploration Program Results

The results from all exploration work carried out by Newstrike are summarized in the discussion of Project geology in Section 7.3 of this Report. All geochemical roadcut and outcrop sample results collected by Newstrike up to June 26<sup>th</sup>, 2014 that returned anomalous values exceeding 0.2 grams per tonne gold are summarized in Figure 9.1, which also illustrates the focus of the Company's exploration advances.

Since exploration began in 2010, a total of 96,045 samples have been collected from road cuts, outcrop chip and channel samples, stream and soil samples, and from drill core. This number includes blanks and standards inserted systematically every 20<sup>th</sup> sample. In addition, various samples for metallurgy, density measurements and quality assurance and quality control ("QAQC") were collected for geochemical assay, Table 9-1. Results from the ongoing surface exploration program continue to provide encouragement, indicating that alteration and mineralization still remains open in several directions and at depth. Continuing



exploration with surface mapping, ground geophysics, compilation of existing data and drilling is warranted based on results to date.

**Table 9-1: Sample Inventory**

| Year  | Audit | Surface | Drill | QAQC    |       |            | Metallurgy | Density | Overlimits | Total |
|-------|-------|---------|-------|---------|-------|------------|------------|---------|------------|-------|
|       |       |         |       | Rejects | Pulps | Duplicates |            |         |            |       |
| 2010  | 587   | 44      | 2586  |         |       |            |            |         |            | 3217  |
| 2011  |       | 2380    | 20517 | 867     | 458   | 872        |            |         |            | 25094 |
| 2012  |       | 1379    | 30369 | 1       | 172   | 248        |            |         | 1905       | 33826 |
| 2013  |       | 1326    | 28497 | 1368    |       | 97         | 171        | 196     |            | 31425 |
| 2014  |       | 291     |       | 1457    |       |            |            |         |            | 2483  |
| Total | 587   | 5420    | 82670 | 3693    | 630   | 969        | 171        | 0       | 1905       | 96045 |

Source: IMC(2014)

## 10 Drilling and Trenching

Newstrike commenced drilling on October 15, 2010 and discovery hole, AP-10-19, was drilled in December the same year with assay results announced on January 18, 2011 (Newstrike, 2011). This led to an expanded drill campaign that resulted in publication of the Company's initial resource estimate on March 27, 2013. The mineral resource estimate has an effective date of February 26, 2013 and is titled "Ana Paula Project - Technical Report and Initial Resource Estimate, Municipalities of Cuetzala Del Progreso and Apaxtla del Castregon, Guerrero State, Mexico" (the "Report").

The Ana Paula mineral resource estimate was developed by Independent Mining Consultants of Tucson, Arizona, USA (IMC) for Newstrike under the direction of Mr. H.E. Welhener, (2013). The Technical Report is available on SEDAR at [www.sedar.com](http://www.sedar.com). The initial resource is based on 130 diamond core drillholes aggregating 67,943 m and containing 45,512 assay intervals, of which effectively all are assayed for gold and silver. This includes 3,687.53 m of core drilling and 2,853 assay intervals completed in 11 drillholes by Goldcorp in 2005 and 64,255.27 m of core drilling completed by Newstrike in 119 drillholes including drillhole numbers AP-10-12 to AP-12-130. All drill collar and assay information for AP-05-01 through AP-12-130 is described in Welhener, (2013). A complete list of drill results over a 0.2 gram per tonne gold cut off is available on the Company website at [www.newstrikecapital.com](http://www.newstrikecapital.com).

All subsequent activities on the Project focused on fulfilling recommendations made in the Report that were required to bring the project to an updated resource, a preliminary economic assessment, and on new exploration drilling. The work program focused on increasing the confidence of the in pit resource, on testing the potential to increase the resource, on testing the potential to expand the pit walls through pit optimization studies and also tested the exploration potential outside the mineral resource pit shell model outlined in the initial resource estimate.

### 10.1 Drill Methodology

The Company's drilling and sampling program are planned and executed by experienced professionals under the supervision of a qualified person as defined by NI43-101. Drillhole numbering began consecutively from the last drillhole completed by Goldcorp in 2005, drillhole AP-05-11, hence, Newstrike's first drillhole is AP-10-12, using a nomenclature similar to Goldcorp where AP refers to the Ana Paula Project followed by two digits for the year and two or more digits for the consecutive drill hole number as required.

Previous to initiating a drill campaign at Ana Paula, an audit of historic drill results was completed by Newstrike in 2010 on all drill and surface data collected previous to calendar year 2010 by Goldcorp. The audit included statistically proportional re-sampling of selected pulps, rejects,  $\frac{1}{4}$  core splits and, in some cases,  $\frac{1}{2}$  core splits to verify Goldcorp's reported drill results and for QAQC purposes to serve as check assays on Goldcorp's drill results.

All drillholes are planned and sited on the basis of cross section and plan projections using a UTM based local grid system with east trending grid lines stepping out every 50 to 100 m to the north as shown on Figures 10-1 through 10-4. The final drill site is adjusted in the field depending on topography or local

conditions and paint is used to mark the specific collar location in the field. Each drillhole is assigned a specific sequential number and the location is marked with an azimuth, and length. The final drillhole location is recorded in the field using a hand held GPS noting UTM location co-ordinates as northing, easting and elevation.

Drill holes are mostly inclined east at angles of 45 or 60 degrees varying to 90 degrees (vertical). All drilling was completed with HQ (63.5/96.9 millimetre) diameter diamond core drill core rods, reducing to NQ (45.0/75.7 millimetre) diameter core barrels if needed. Deeper drill holes (greater than 1,000 m) use PQ (85.0/122.6 mm) diameter core rods reducing to HQ or NQ diameter as necessary. Core rod dimensions given include inner and outer rod diameters in mm. Core recovery averages 97%. Ground conditions in general are very good and few holes were lost or reduced due to poor ground conditions. Following completion of the drillhole, collars are resurveyed using a total station differential GPS.

Drillholes are mostly oriented to cut approximately perpendicular to stratigraphy. Holes angled at minus 45 degrees are estimated to cut sedimentary units and intrusive sills at about ninety percent of true width. Holes angled at minus 70 degrees may cut down dip of units at less than ninety percent of true width. The local stratigraphy and structural controls on mineralization can vary significantly by location and all reported drill intersections are downhole drill lengths that should not be considered true width, which will be less than the reported intersection.

Down hole inclination and azimuth are recorded every 50 m with a REFLEX EZ-shot that also includes temperature and magnetic measurements. A geologist supervises the drilling operation, completing a "quick log", including visible mineralized zones, structures, and lithology units. A geologist is always present at the planned completion of the drillhole to avoid, to the extent possible, terminating the hole in a mineralized interval. All drill core is boxed and secured before it is transported at the end of each 12 hour drill shift to the Company's secure core logging facility for processing by personnel of the Company or their contractors.

## 10.2 Drill Results

Drilling for the updated resource and PEA was completed on November 18th, 2013 with a total of 45,844.61 m of core drilling in 100 drillholes from AP-12-131 to AP-13-230, aggregating 37,158 sample intervals collected for geochemical assay. All final drill results, including check assay results, were received as of February 18th, 2014, the effective date for drill results and are reported here.

Drillhole locations for AP-12-131 to AP-13-230 are plotted by map sheet on Figures 10-1 through 10-4, using the local grid system described in section 9.1. All drill collar location for hole completed following the initial resource are shown on Table 10-1 and that also identifies the drill hole objective and on which local grid map sheet it is located. All drill hole collar and assay information for AP-05-01 through AP-12-130 is described in Welhener, (2013) A complete list of drill results over a 0.2 gram per tonne gold cut off is available on the Company website at [www.newstrikecapital.com](http://www.newstrikecapital.com).

Assay results from AP-12-131 to AP-13-230 are summarized in Table 10-2, which provides a selection of the best calculated grade-width intersections showing all drill core assay results with greater than 50 gram-metres gold, defined as the weighted gold grade intersection in grams per tonne multiplied by the

downhole length of the same intersection and whose sum is equal to or greater than 50. Drill cross-sections shown as Figures 10.5 and 10.6, are based on east west local grid lines L7700N and 8000N and are typical of the interpreted geology. The cross sections show selected grade intersections that are representative of the four depositional sites of mineralization discussed in Section 7.3.5.

Drill map column refers to Figures 10-1 to 10-4 . Drill coordinates use a UTM Q14 WGS84 datum

**Table 10-1: Newstrike Drill Collar Locations for AP-12-131 through AP-13-230**

| Drillhole | Easting (m) | Northing (m) | Elev. (m) | Azimuth <sup>o</sup> | Dip <sup>o</sup> (-) | Length(m) | Map | Objective            |
|-----------|-------------|--------------|-----------|----------------------|----------------------|-----------|-----|----------------------|
| AP-12-131 | 410501      | 1998430      | 1087      | 20                   | 45                   | 609.40    | A2  | North of pit         |
| AP-12-132 | 409772      | 1997460      | 1041      | 90                   | 47                   | 706.50    | B2  | Explore south of pit |
| AP-12-133 | 410072      | 1998401      | 967       | 100                  | 45                   | 346.00    | B2  | Infill and periphery |
| AP-12-134 | 409694      | 1998302      | 1160      | 270                  | 45                   | 657.10    | A1  | Explore west of pit  |
| AP-12-135 | 410161      | 1997850      | 1050      | 30                   | 60                   | 213.80    | B2  | Infill and periphery |
| AP-12-136 | 410501      | 1998430      | 1087      | 40                   | 45                   | 524.75    | A2  | North of pit         |
| AP-12-137 | 410166      | 1997847      | 1050      | 330                  | 60                   | 427.05    | B2  | Infill and periphery |
| AP-12-138 | 410175      | 1997016      | 907       | 90                   | 45                   | 538.35    | B2  | Explore south of pit |
| AP-12-139 | 409613      | 1998196      | 1187      | 88                   | 50                   | 288.20    | B1  | Explore west of pit  |
| AP-12-140 | 408667      | 1998044      | 1100      | 88                   | 45                   | 774.25    | B1  | Explore Tejacote     |
| AP-12-141 | 409549      | 1998105      | 1189      | 90                   | 46                   | 716.30    | B1  | West pit wall        |
| AP-12-142 | 410561      | 1998746      | 1124      | 90                   | 45                   | 413.95    | A2  | North of pit         |
| AP-12-143 | 410051      | 1996820      | 880       | 90                   | 45                   | 561.30    | B2  | Explore south of pit |
| AP-12-144 | 410453      | 1998927      | 1142      | 90                   | 50                   | 371.75    | A2  | North of pit         |
| AP-12-145 | 410885      | 1998002      | 952       | 90                   | 50                   | 421.65    | A2  | Explore east of pit  |
| AP-12-146 | 410046      | 1996813      | 881       | 270                  | 45                   | 449.80    | B2  | Explore south of pit |
| AP-12-147 | 408724      | 1998203      | 1139      | 90                   | 50                   | 870.25    | B1  | Explore west of pit  |
| AP-12-148 | 409765      | 1998374      | 1100      | 90                   | 60                   | 685.90    | A2  | West pit wall        |
| AP-12-149 | 409983      | 1996500      | 928       | 90                   | 45                   | 664.30    | B2  | Explore south of pit |
| AP-12-150 | 410585      | 1998604      | 1120      | 0                    | 45                   | 383.45    | A2  | North of pit         |
| AP-12-151 | 408643      | 1997796      | 1035      | 90                   | 50                   | 748.85    | B1  | Explore Tejacote     |
| AP-12-152 | 410943      | 1997845      | 936       | 90                   | 60                   | 546.35    | B2  | Explore east of pit  |
| AP-13-153 | 409383      | 1998396      | 1155      | 90                   | 45                   | 968.10    | A1  | West pit wall        |
| AP-13-154 | 409896      | 1998543      | 1003      | 90                   | 45                   | 568.30    | A2  | Explore west of pit  |
| AP-13-155 | 408921      | 1997590      | 1044      | 90                   | 55                   | 744.60    | B1  | Explore Tejacote     |
| AP-13-156 | 409894      | 1998412      | 1058      | 90                   | 45                   | 563.10    | A2  | West pit wall        |
| AP-13-157 | 409769      | 1998208      | 1104      | 270                  | 50                   | 696.10    | B1  | Explore west of pit  |
| AP-13-158 | 409794      | 1998451      | 1068      | 80                   | 50                   | 637.10    | A1  | West pit wall        |
| AP-13-159 | 408884      | 1998202      | 1160      | 90                   | 45                   | 752.20    | B1  | Explore west of pit  |
| AP-13-160 | 408811      | 1997697      | 1051      | 90                   | 45                   | 817.65    | B1  | Explore west of pit  |
| AP-13-161 | 410190      | 1998926      | 1127      | 90                   | 45                   | 403.95    | A2  | North of pit         |
| AP-13-162 | 410124      | 1998023      | 920       | 165                  | 77                   | 1,407.90  | B2  | Deep breccia         |
| AP-13-163 | 409945      | 1998997      | 1105      | 90                   | 45                   | 628.05    | A1  | Explore west of pit  |
| AP-13-164 | 408887      | 1997911      | 1031      | 90                   | 45                   | 749.80    | B1  | Explore Tejacote     |
| AP-13-165 | 408902      | 1997784      | 1010      | 80                   | 50                   | 872.80    | B1  | Explore Tejacote     |
| AP-13-166 | 409886      | 1998409      | 1050      | 85                   | 85                   | 827.20    | B1  | West pit wall        |
| AP-13-167 | 408792      | 1998111      | 1054      | 88                   | 49                   | 751.75    | B1  | Explore Tejacote     |
| AP-13-168 | 409971      | 1998118      | 999       | 90                   | 80                   | 401.45    | B2  | Infill and periphery |
| AP-13-169 | 410480      | 1998592      | 1047      | 355                  | 45                   | 494.50    | A2  | Explore east of pit  |
| AP-13-170 | 408700      | 1997379      | 1003      | 80                   | 45                   | 686.50    | B1  | Explore Tejacote     |
| AP-13-171 | 409980      | 1998026      | 1012      | 0                    | 90                   | 180.50    | B2  | Infill and periphery |

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| Drillhole | Easting (m) | Northing (m) | Elev. (m) | Azimuth° | Dip° (-) | Length(m) | Map | Objective            |
|-----------|-------------|--------------|-----------|----------|----------|-----------|-----|----------------------|
| AP-13-172 | 410117      | 1998090      | 941       | 90       | 65       | 160.60    | B2  | Infill and periphery |
| AP-13-173 | 409076      | 1997760      | 1072      | 80       | 48       | 764.55    | B1  | Explore Tejacote     |
| AP-13-174 | 410172      | 1998236      | 909       | 0        | 90       | 525.45    | B2  | Infill and periphery |
| AP-13-175 | 409762      | 1998372      | 1115      | 270      | 45       | 826.85    | A2  | Explore west of pit  |
| AP-13-176 | 409954      | 1997647      | 1075      | 90       | 60       | 524.55    | B2  | Infill and periphery |
| AP-13-177 | 410187      | 1998200      | 904       | 0        | 90       | 142.80    | B2  | Infill and periphery |
| AP-13-178 | 410162      | 1998150      | 911       | 90       | 65       | 287.90    | B2  | Infill and periphery |
| AP-13-179 | 410004      | 1998507      | 960       | 85       | 60       | 382.10    | A2  | West pit wall        |
| AP-13-180 | 409743      | 1998556      | 1042      | 90       | 50       | 675.70    | A2  | West pit wall        |
| AP-13-181 | 409712      | 1998078      | 1129      | 87       | 65       | 263.35    | A2  | West pit wall        |
| AP-13-182 | 409934      | 1998001      | 1007      | 0        | 90       | 209.25    | A2  | Infill and periphery |
| AP-13-183 | 410005      | 1998051      | 1013      | 0        | 90       | 66.35     | B2  | Infill and periphery |
| AP-13-184 | 410284      | 1998061      | 894       | 0        | 90       | 143.40    | B2  | Infill and periphery |
| AP-13-185 | 409980      | 1998163      | 967       | 87       | 65       | 415.60    | B2  | Infill and periphery |
| AP-13-186 | 410300      | 1997996      | 921       | 0        | 90       | 296.95    | B2  | Infill and periphery |
| AP-13-187 | 409843      | 1998318      | 1080      | 90       | 60       | 484.25    | B2  | West pit wall        |
| AP-13-188 | 410333      | 1997812      | 960       | 290      | 70       | 1,049.36  | B2  | Deep breccia         |
| AP-13-189 | 410146      | 1997993      | 934       | 0        | 90       | 81.65     | B2  | Infill and periphery |
| AP-13-190 | 410090      | 1997990      | 929       | 0        | 90       | 87.50     | B2  | Infill and periphery |
| AP-13-191 | 409970      | 1998548      | 986       | 90       | 45       | 432.35    | A2  | West pit wall        |
| AP-13-192 | 410063      | 1998057      | 973       | 0        | 90       | 354.55    | B2  | Infill and periphery |
| AP-13-193 | 410202      | 1998150      | 899       | 270      | 80       | 460.40    | B2  | Infill and periphery |
| AP-13-194 | 409946      | 1998051      | 1043      | 0        | 90       | 293.85    | B2  | Infill and periphery |
| AP-13-195 | 410407      | 1998738      | 1036      | 90       | 45       | 497.15    | A2  | Infill and periphery |
| AP-13-196 | 410452      | 1998927      | 1143      | 190      | 45       | 252.75    | A2  | Infill and periphery |
| AP-13-197 | 409861      | 1998143      | 1022      | 90       | 70       | 576.95    | B2  | West pit wall        |
| AP-13-198 | 410560      | 1998746      | 1114      | 270      | 60       | 260.30    | A2  | Infill and periphery |
| AP-13-199 | 410210      | 1998498      | 1022      | 150      | 45       | 247.35    | A2  | Infill and periphery |
| AP-13-200 | 410207      | 1998495      | 1023      | 220      | 45       | 258.75    | A2  | Infill and periphery |
| AP-13-201 | 410400      | 1998472      | 1013      | 0        | 45       | 234.90    | A2  | Infill and periphery |
| AP-13-202 | 410134      | 1998499      | 1048      | 90       | 80       | 289.35    | A2  | Infill and periphery |
| AP-13-203 | 409842      | 1998317      | 1099      | 0        | 90       | 662.90    | A2  | West pit wall        |
| AP-13-204 | 410134      | 1998494      | 1057      | 165      | 45       | 242.60    | A2  | Infill and periphery |
| AP-13-205 | 410391      | 1998321      | 1006      | 70       | 45       | 168.40    | A2  | Infill and periphery |
| AP-13-206 | 410328      | 1997808      | 980       | 308      | 75       | 1,040.90  | B2  | Deep breccia         |
| AP-13-207 | 410400      | 1998468      | 1013      | 100      | 45       | 139.80    | A2  | Infill and periphery |
| AP-13-208 | 410438      | 1998323      | 1000      | 355      | 45       | 174.70    | A2  | Infill and periphery |
| AP-13-209 | 410936      | 1998111      | 922       | 90       | 45       | 183.70    | A2  | Explore east of pit  |
| AP-13-210 | 410103      | 1997570      | 1031      | 180      | 45       | 155.60    | B2  | Infill               |
| AP-13-211 | 410285      | 1998216      | 973       | 90       | 60       | 208.40    | A2  | Infill               |
| AP-13-212 | 410217      | 1997558      | 999       | 0        | 90       | 181.35    | A2  | Infill               |
| AP-13-213 | 410061      | 1997749      | 1088      | 90       | 50       | 416.35    | B2  | Infill               |
| AP-13-214 | 410510      | 1997963      | 950       | 0        | 90       | 157.55    | A2  | Infill               |
| AP-13-215 | 410097      | 1997466      | 991       | 0        | 50       | 990.15    | B2  | Deep breccia         |
| AP-13-216 | 410294      | 1998127      | 945       | 90       | 45       | 163.25    | B2  | Infill               |
| AP-13-217 | 410210      | 1998496      | 1034      | 180      | 45       | 364.40    | A2  | Infill               |
| AP-13-218 | 409993      | 1997852      | 1108      | 88       | 50       | 334.00    | B2  | Infill               |
| AP-13-219 | 409993      | 1997852      | 1108      | 90       | 70       | 519.65    | B2  | Infill               |
| AP-13-220 | 410163      | 1998461      | 1030      | 95       | 60       | 300.80    | A2  | Infill               |
| AP-13-221 | 410362      | 1998735      | 1071      | 0        | 90       | 130.30    | A2  | Infill               |
| AP-13-222 | 410275      | 1998703      | 1074      | 0        | 90       | 264.85    | A2  | Infill               |
| AP-13-223 | 409886      | 1997766      | 1120      | 90       | 65       | 495.10    | B2  | Infill               |

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| Drillhole | Easting (m) | Northing (m) | Elev. (m) | Azimuth° | Dip° (-) | Length(m) | Map | Objective |
|-----------|-------------|--------------|-----------|----------|----------|-----------|-----|-----------|
| AP-13-224 | 410100      | 1997800      | 1035      | 90       | 45       | 291.95    | B2  | Infill    |
| AP-13-225 | 410290      | 1998166      | 954       | 90       | 45       | 181.40    | B2  | Infill    |
| AP-13-226 | 410087      | 1998170      | 939       | 90       | 65       | 421.05    | B2  | Infill    |
| AP-13-227 | 410046      | 1997658      | 1052      | 75       | 70       | 242.10    | B2  | Infill    |
| AP-13-228 | 410162      | 1997848      | 1046      | 90       | 65       | 227.20    | B2  | Infill    |
| AP-13-229 | 410039      | 1997957      | 945       | 0        | 90       | 415.85    | B2  | Infill    |
| AP-13-230 | 410286      | 1997641      | 952       | 57       | 45       | 152.70    | A2  | Infill    |

All drill intersections from AP-12-131 through AP-13-230 with greater than 50 gram-metres gold. Intersections may include barren internal intervals and are reported according to protocol.

**Table 10-2 Selected Drill Intersections for AP-12-131 through AP-13-230, Ana Paula Project**

| Drillhole |          | From   | To     | Interval (m) | Au g/t | Ag g/t | Objective            |
|-----------|----------|--------|--------|--------------|--------|--------|----------------------|
| AP-12-137 |          | 224.40 | 368.18 | 143.78       | 2.57   | 2.8    | Infill - Breccia     |
|           | includes | 320.60 | 368.18 | 47.58        | 5.45   | 4.1    | Infill - Breccia     |
|           | and      | 322.14 | 342.26 | 20.12        | 11.00  | 5.5    | Infill - Breccia     |
| AP-13-162 |          | 3.85   | 217.30 | 213.45       | 3.45   | 6.9    | Deep breccia program |
|           | includes | 23.00  | 171.00 | 148.00       | 4.67   | 7.0    | Deep breccia program |
|           | and      | 123.00 | 143.00 | 20.00        | 16.92  | 7.6    | Deep breccia program |
|           |          | 243.82 | 285.75 | 41.93        | 2.54   | 2.7    | Deep breccia program |
|           | includes | 249.43 | 281.54 | 32.11        | 3.21   | 3.4    | Deep breccia program |
|           |          | 417.35 | 550.22 | 132.87       | 1.50   | 1.1    | Deep breccia program |
|           | includes | 418.32 | 505.40 | 87.08        | 2.08   | 1.4    | Deep breccia program |
|           | and      | 479.40 | 502.82 | 23.42        | 4.15   | 2.6    | Deep breccia program |
|           | and      | 479.40 | 485.20 | 5.80         | 11.14  | 3.8    | Deep breccia program |
|           |          | 621.80 | 713.10 | 91.30        | 0.74   | 1.6    | Deep breccia program |
| AP-13-170 |          | 378.94 | 430.00 | 51.06        | 1.00   | 2.6    | Exploration Tejacote |
| AP-13-174 |          | 305.79 | 341.45 | 35.66        | 1.44   | 1.1    | Infill               |
| AP-13-185 |          | 414.20 | 415.60 | 1.40         | 46.00  | 10.4   | Infill               |
| AP-13-186 |          | 0.00   | 64.40  | 64.40        | 4.32   | 5.0    | Infill               |
|           | includes | 8.99   | 20.06  | 11.07        | 12.40  | 6.8    | Infill               |
|           | and      | 12.06  | 13.14  | 1.08         | 52.80  | 19.1   | Infill               |
| AP-13-188 |          | 107.50 | 155.00 | 47.50        | 1.39   | 12.7   | Deep breccia program |
|           |          | 162.26 | 183.05 | 20.79        | 2.85   | 13.1   | Deep breccia program |
|           | includes | 164.23 | 174.00 | 9.77         | 5.42   | 24.3   | Deep breccia program |
| AP-13-190 |          | 25.40  | 87.50  | 62.10        | 3.13   | 5.2    | Infill               |
|           | includes | 73.83  | 87.50  | 13.67        | 6.82   | 5.9    | Infill               |
| AP-13-192 |          | 134.74 | 158.38 | 23.64        | 2.25   | 6.6    | Infill               |
| AP-13-193 |          | 403.15 | 458.50 | 55.35        | 1.24   | 2.9    | Infill               |
|           | includes | 428.69 | 432.50 | 3.81         | 0.12   | 0.7    | Infill               |
| AP-13-211 |          | 7.00   | 42.50  | 35.50        | 1.72   | 9.4    | Infill               |
|           | includes | 9.80   | 19.85  | 10.05        | 5.06   | 18.6   | Infill               |
| AP-13-213 |          | 5.35   | 109.20 | 103.85       | 0.78   | 4.8    | Infill               |
| AP-13-215 |          | 574.10 | 598.60 | 24.50        | 2.15   | 3.2    | Deep breccia program |
|           |          | 675.75 | 747.94 | 72.19        | 3.92   | 5.9    | Deep breccia program |
|           | includes | 677.10 | 716.49 | 39.39        | 6.42   | 9.7    | Deep breccia program |
|           | and      | 680.40 | 681.82 | 1.42         | 43.82  | 35.4   | Deep breccia program |
| AP-13-219 |          | 316.00 | 342.57 | 26.57        | 1.98   | 3.7    | Infill               |
|           | includes | 325.15 | 327.37 | 2.22         | 0.09   | 1.9    | Infill               |
|           | and      | 328.48 | 330.73 | 2.25         | 0.14   | 2.2    | Infill               |
| AP-13-229 |          | 263.00 | 303.24 | 40.24        | 1.92   | 2.8    | Infill               |
|           | includes | 266.88 | 295.40 | 28.52        | 2.45   | 0.1    | Infill               |

Source: IMC(2014)

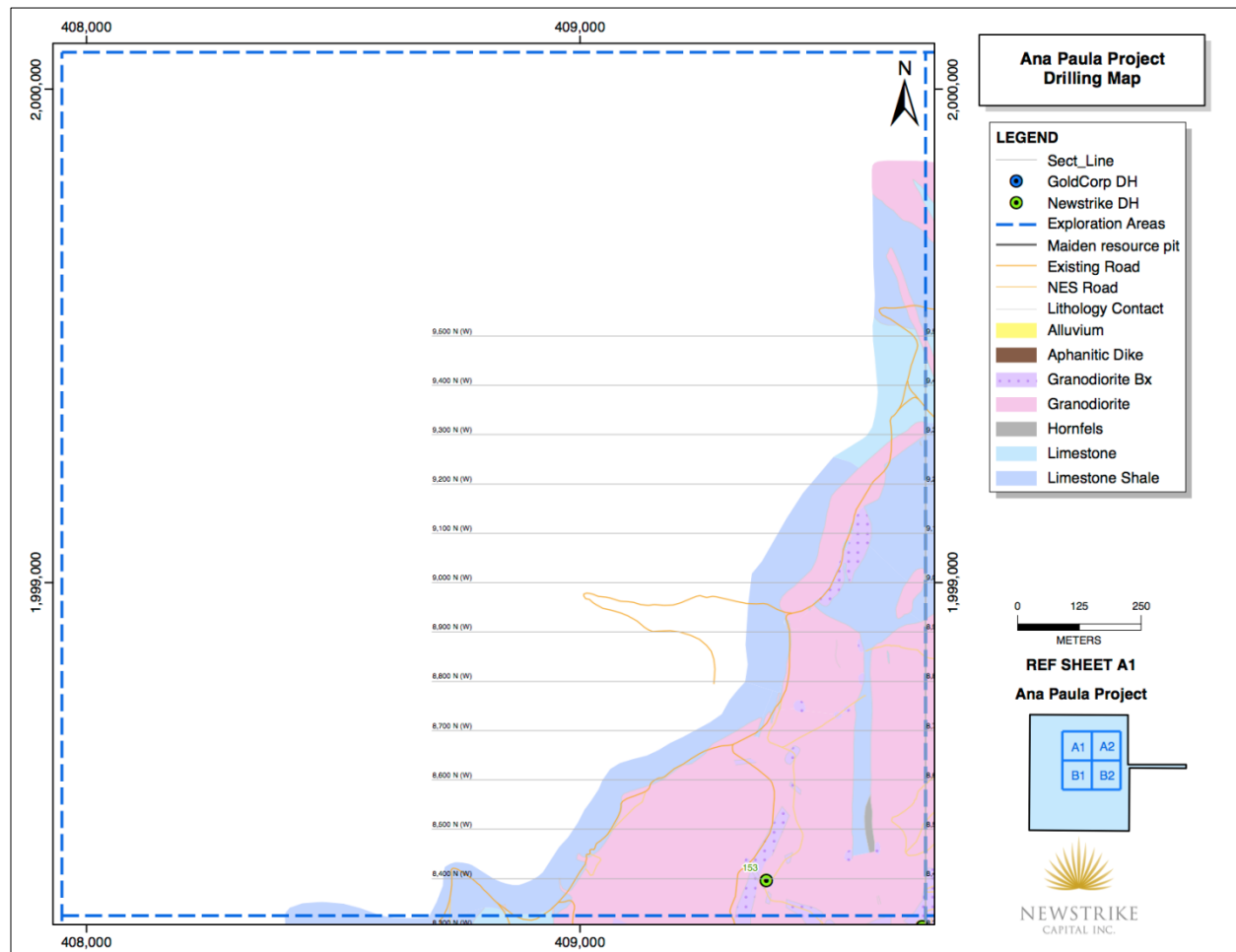
The reported mineralized intervals in core tend to be separated by barren intervals that may or may not contain narrow anomalous sections and local high-grade spikes that are not included in the calculations of mineralized intervals. Unless specified otherwise, reported intersections are calculated according to an established written protocol that uses a 0.20 g/t Au cut off for bounding and internal assays. Reported grade intervals are based on the original uncut assay certificates as received from the assay labs. They do not include check assays pending at the time of reporting.

### **10.3 Drill Summary**

These results are included in the updated database that forms the basis for this Report including drill results completed by the Company between 2010 and 2013, encompassing drillholes AP-10-12 through AP-13-230 for a total of 110,099.88 m drilled in 219 diamond core drillholes, aggregating results from 82,670 downhole drill sample intervals with an average length of 1.4 m, where effectively all are assayed for gold and silver. Including Goldcorp's drill holes the updated resource will have available results from 113,535 m of drilling aggregating 85,523 assay intervals in 230 drill holes ranging from 57.25 to 1,407.90 m in length with an overall average of 494.73 m, of which effectively all are assayed for gold and silver.

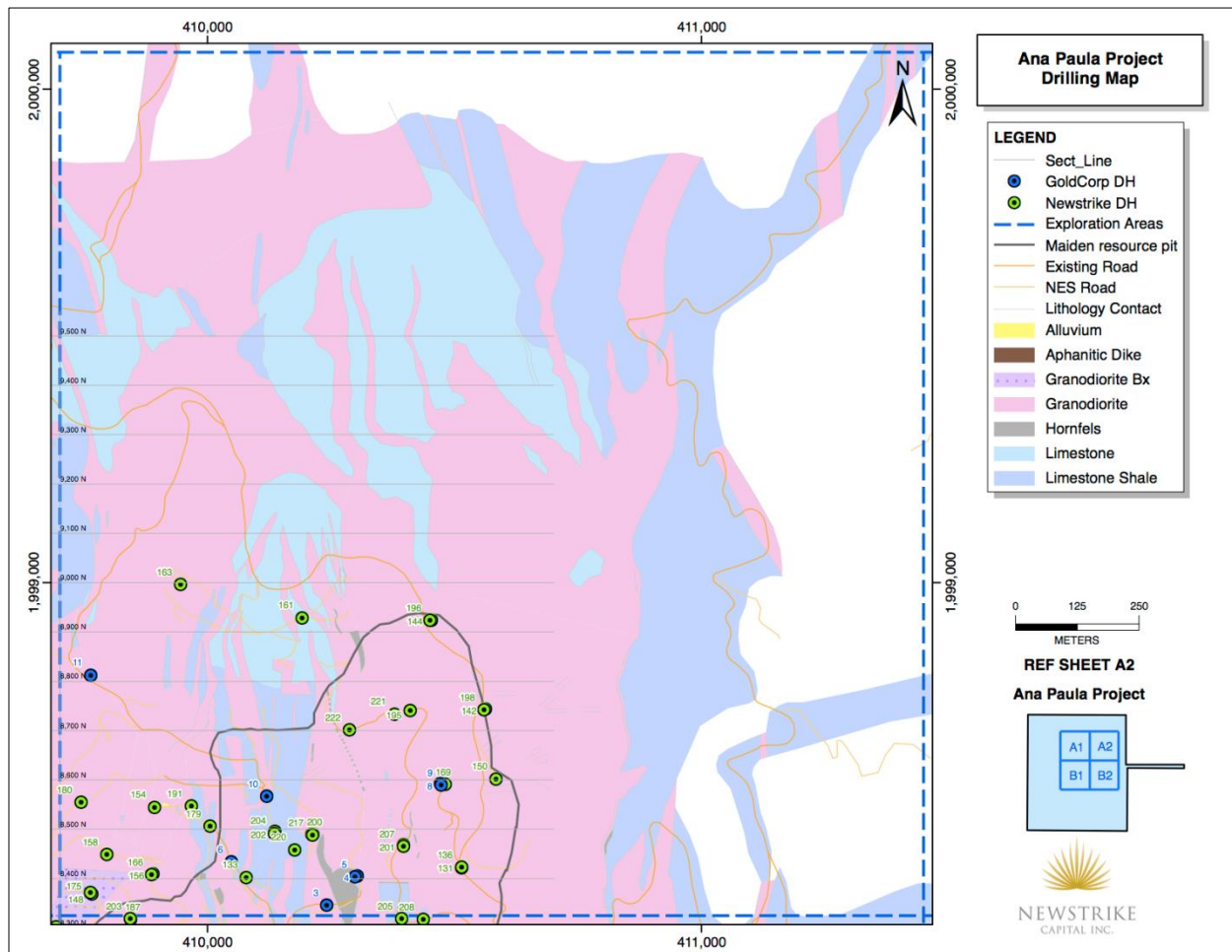
A total of 5,292 QAQC samples were collected, along with 171 samples for metallurgical tests, 4,096 on site density measurements and 1,905 re-assays for overlimits primarily for sulphur and arsenic, Table 9-1. Drilling is contracted to Intercore Perforaciones S. de R.L. de C.V (Intercore) based in Guadalajara, Mexico. Average production with the Intercore rigs is approximately 20-25 m per shift per drill operating two 12 hour shifts daily. The average drill hole spacing is approximately 50 m in the main part of the Ana Paula deposit, with a range of from 25 - 50 m in the high grade Breccia Zone and 50-150 m to the north and south pit extremities.

**Figure 10-1: Drillhole Locations, Map Sheet A1 (the Northwest Quadrant).**



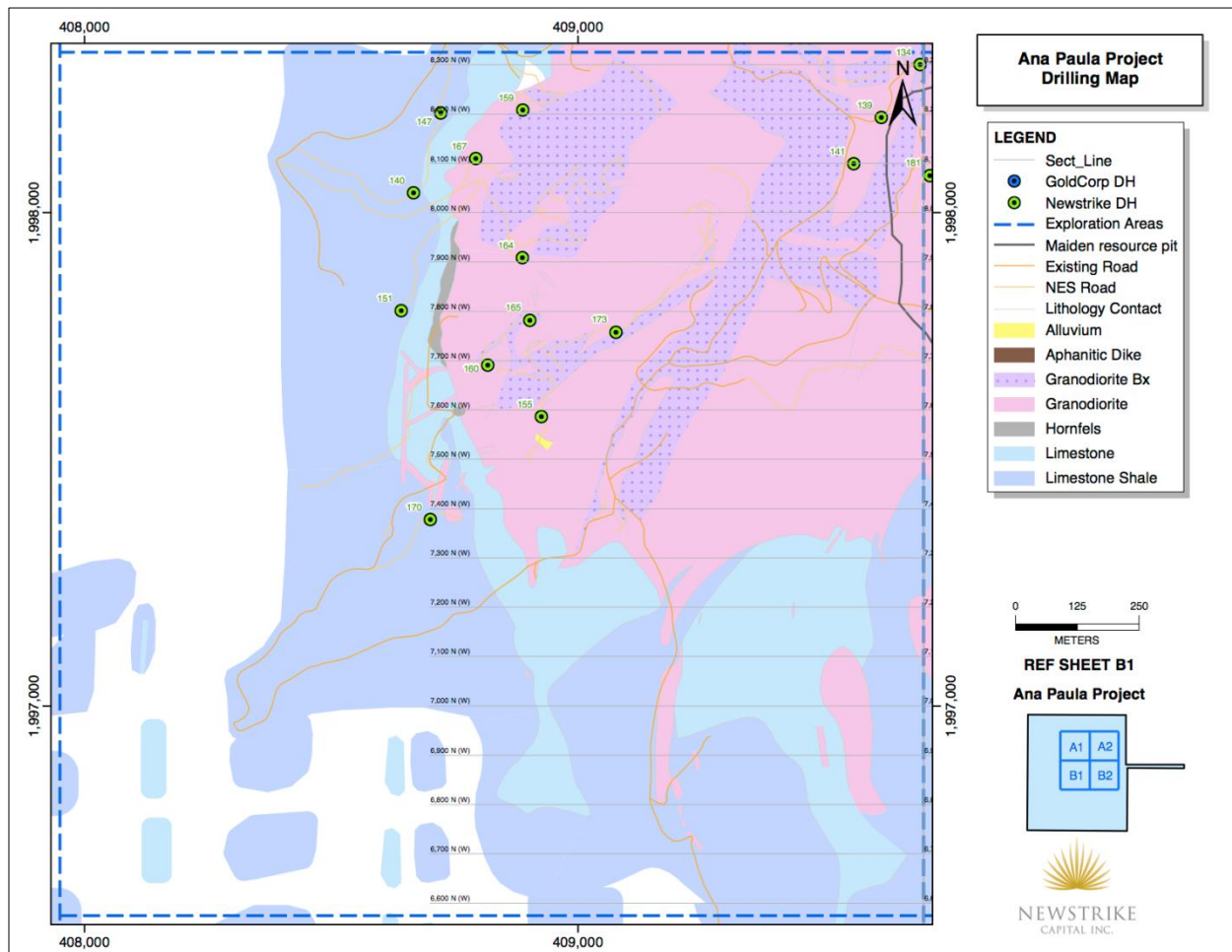
Source: IMC(2014)

**Figure 10-2: Drillhole Locations, Map Sheet A2 (the Northeast Quadrant).**



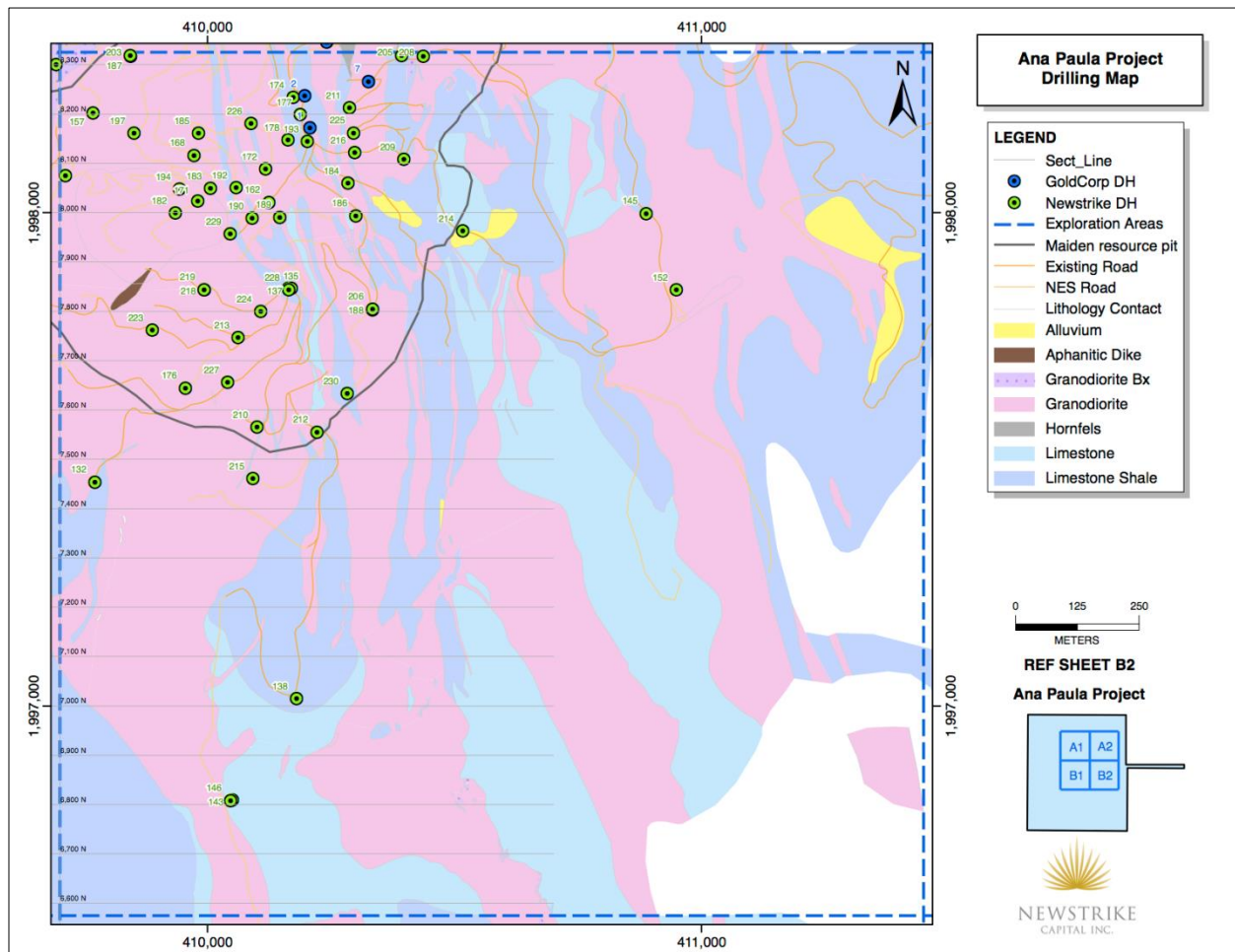
Source: IMC(2014)

**Figure 10-3: Drillhole Locations, Map Sheet B1 (the Southwest Quadrant).**



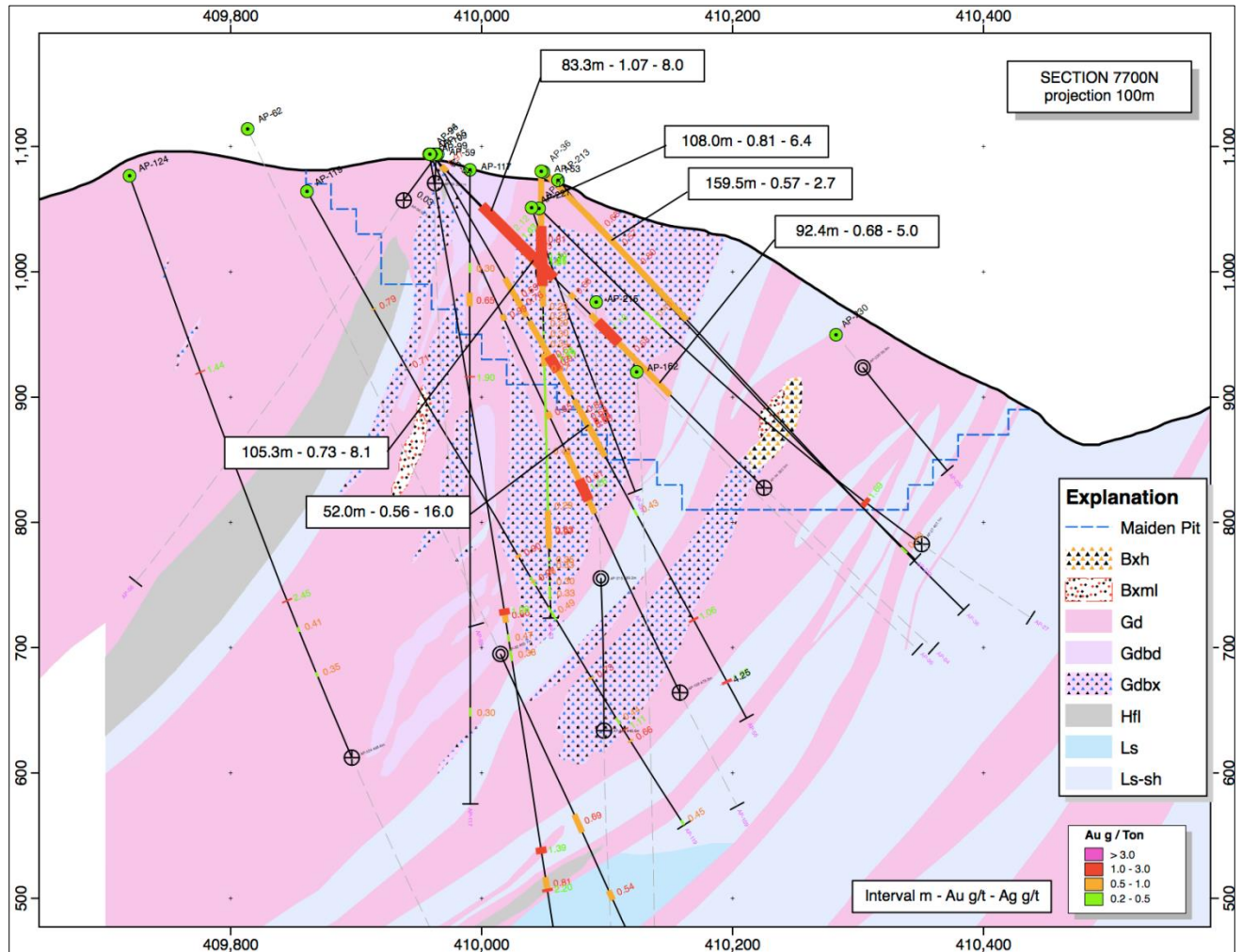
Source: IMC(2014)

**Figure 10-4: Drillhole Locations, Map Sheet B2 (the Southeast Quadrant).**



Source: IMC(2014)

**Figure 10-5: Geological Interpretation and Drillhole Cross-section 7700N.**

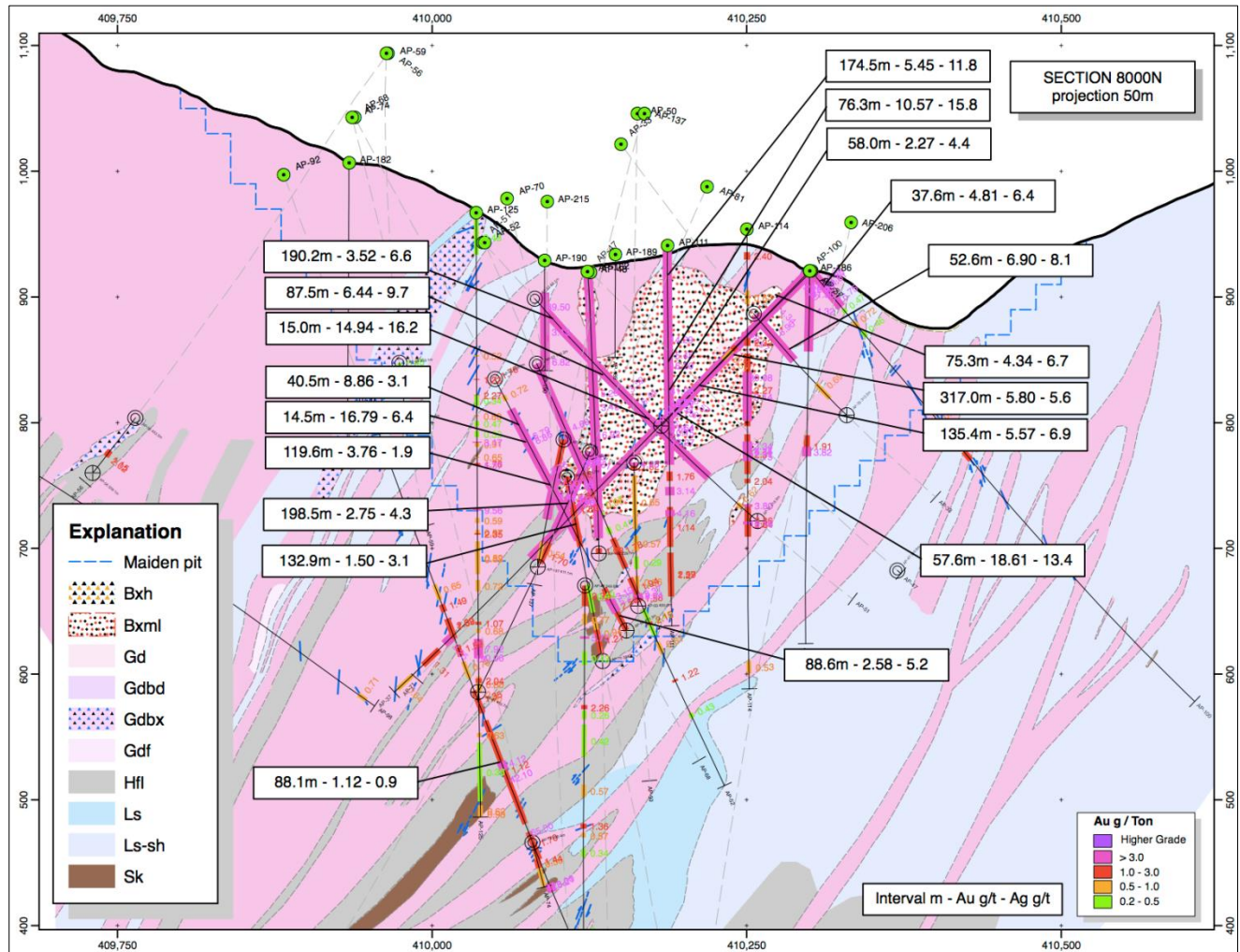


Source: IMC(2014)

Viewed north. Abbreviations are Bxh: hydrothermal breccia, Bxml: multilithic breccia, Gd: granodiorite, Gdbd: banded granodiorite,

Gdbx: granodiorite breccia, Hfl: hornfels, Ls: limestone, and Ls-sh: limestone-shale. Intercepts shown correspond to Table 10-2.

**Figure 10-6: Geological Interpretation and Drillhole Cross-section 8000N.**



Source: IMC(2014)

Viewed north. Bxh: hydrothermal breccia, Bxml: multilithic breccia (the “high grade Breccia Zone”), Gd: granodiorite,

Gdbd: banded granodiorite, Gdbx: granodiorite breccia, Hfl: hornfels, Ls: limestone, and Ls-sh: limestone-shale.

Intercepts shown correspond to Table 10-2.

## 11 Sample Preparation, Analyses, and Security

The following procedures and protocols pertaining to the ongoing drill program are described in a detailed, comprehensive manual prepared by ProDeMin (Gibson, 2010). The manual was completed prior to commencement of the drill program and has been modified slightly after the campaign began (Gibson, Personal Communication, 2014).

The drill is collared with HQ diameter core rods with a 77.8 mm inner diameter, reducing to NQ diameter core rods, a 60.3 mm inner diameter, only if downhole conditions warrant. After core is pulled from the drill rod, it is boxed and transported via flatbed truck to the secure core logging facility. Top boxes are secured with strong rubber retention straps to prevent spillage. To provide complete security the core logging facility has a 24-hour watchman. At the facility the core is geologically described, and recovery (percentage), and Rock Quality Data (RQD) are recorded. Geologic logging is conducted at a graphical scale of 1:100. The core is then marked for sampling with wax crayons and sample characteristics (lithology, alteration, structures, mineralization, gangue, etc.) are coded for later digital compilation. Samples are marked during the core logging procedure and sample divisions are based on geologic features. Within homogeneous zones, samples are divided into relatively equivalent lengths of 1 to 2 m, with 0.5 metre samples taken when mineralization characteristics warrant. Insertion of quality control samples is also planned at this stage.

Quality control samples include standards for gold and for other elements and blanks. Standards are pulps, both commercially prepared and certified samples and those provided by ProDeMin utilized in unrelated projects and previously verified, as well as pulps made from Ana Paula mineralized rock by a certified laboratory. Blanks are generally of  $\frac{1}{4}$  core splits taken from lower grade intervals of core from the project. Further details of the quality control program are given in Section 12 below. After logging and sample marking is completed, the core is photographed in intervals of three boxes and then is sawed longitudinally in half along the sample intervals. A one half split is double bagged in plastic sample bags, and secured with plastic ties. Quality control samples are inserted in the sample stream, and the samples are bagged in rice sacks labelled with the company name, Project, drillhole number, and included sample numbers. A laboratory transmittal sheet is prepared listing the number of bags, and included samples. The remaining half core split is retained in the original core box, ordered by drillhole number and stored in the enclosed core facility in metal storage racks.

ProDeMin geologists, on behalf of Newstrike, are responsible for the collection and preparation of all core prior to pick up. Core is collected directly from the Ana Paula core logging facility, by the analytical laboratory that transports the samples directly to their sample preparation facilities and who are responsible for all subsequent security following collection from site. Newstrike uses only internationally recognized and certified laboratories. ALS Chemex (ALS Chemex), a division of ALS Global Ltd. through Chemex De Mexico, S.A. De C.V is the primary analytical laboratory for the Ana Paula Project located in Guadalajara, Mexico. SGS SA, (SGS) is the secondary laboratory for the Ana Paula Project through SGS de México located in Durango, Mexico.

BSI Inspectorate was used for the preparation and/or verification of blanks, standards and for check assay works. All laboratories are internationally recognized and accredited to ISO 17025 and/or ISO 9001:2008 or better.



As is standard methodology, ALS Chemex employs meticulous sample preparation procedures that are described on their website (<http://www.alsglobal.com/samplepreparation.aspx>). ALS Chemex prepares samples at its lab in Guadalajara, Mexico. From Guadalajara, prepared sample pulps are shipped by air to ALS Chemex's Vancouver laboratory for analysis. Some of the pulp and rejects were later shipped back to the Project site for storage. All core samples and geochemical samples were assayed using the multi-element ICP assay 41-element assay method (ME-ICP41), with gold assayed by fire assay with an AA finish (Au-AA24), using a 50 gram aliquot. Mercury is analyzed separately by (code CV41), since the detection limit in the ICP analysis is too high to be meaningful. SGS also employed a fire assay/AA determination for gold and an ICP analysis to determine multi-element values.

ALS Chemex employs a multi-level approach to analytical testing whereby quality control is built into each step of the process and rely on unambiguous written Quality Work Instructions covering all facets of the analysis from sample receipt through to the issue of final analytical certificates. Final certificates are issued electronically and delivered to Newstrike via email. These assay certificates arrive in excel or as comma separated text (.csv) format and are merged electronically into Newstrike's database and verified for accuracy. A hard copy of all certified assay certificates is delivered by courier to Newstrike's Mexico City offices where they are kept on file for view. Each analytical service has specific quality control procedures built into the methodologies that are appropriate to ensure the data produced is of a quality consistent with the end use of the data.



## 12 Data Verification

The Ana Paula database is maintained by Newstrike in a set of Excel spreadsheets which are updated as new information is available. During the course of the current mineral resource update Newstrike forwards its master assay file to IMC for use. IMC does internal checks on the database as it converts it into the IMC database software. Inconsistencies are flagged and brought to the attention of Newstrike for correction. As noted in Section 11, the assay certificates are provided to Newstrike electronically for incorporation into the database.

Assays on Ana Paula samples have been run by four laboratories, ALS Chemex, SGS, Inspectorate and ACME. The sample preparation and assaying procedures used by these laboratories are described in Section 11. Inspectorate assaying was only on QA/QC samples.

IMC has reviewed 11 percent of the drill holes in the Ana Paula database against the assay certificates. This was about 13 percent of the assayed intervals and has found the data in the database to be the same as the data on the assay certificates.

IMC has reviewed the results of assays run on standard and check samples and finds them to be within currently acceptable industry standards in support of this mineral resource update and PEA.

### 12.1 Comparison of Assays with Original Assay Certificates

Twenty-five drill holes were selected from the Ana Paula database for certificate checks. These drill holes were:

|           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|
| AP-05-02  | AP-10-15  | AP-11-24  | AP-11-33  | AP-11-40  | AP-11-61  |
| AP-11-55  | AP-11-72  | AP-12-83  | AP-12-94  | AP-12-105 | AP-12-114 |
| AP-12-122 | AP-12-128 | AP-12-140 | AP-13-153 | AP-13-162 | AP-13-170 |
| AP-13-179 | AP-13-195 | AP-13-205 | AP-13-212 | AP-13-215 | AP-13-220 |
| AP-13-229 |           |           |           |           |           |

Assays on Ana Paula samples in the database were run by three laboratories, ALS Chemex, SGS, and Acme. Both csv and pdf files were sent for all drilling except for AP-05-02.

Sixteen drill holes of the certificate check data had ALS Chemex listed as their primary lab. Table 12.1 shows the results of four of these drill holes where the assay data did not compare to the ALS Chemex certificates. This table compares the holes assayed by ALS Chemex with assay certificates for silver, gold, arsenic, copper, lead and zinc. For each mineral, in each hole, the total number of assays, the number verifiable on available certificates, and the number of differences are shown. Also, the differences in the database and certificates are explained under the "Description of Differences" column. All assay values which did not match the ALS Chemex certificates are for arsenic and lead and were from Inspectorate Lab Certificates which had been run for check assays on gold values or for over limit values on arsenic.

**Table 12-1: Comparison of Drillhole Database with Assay Certificates - ALS Chemex Laboratory**

| Table 12-1 Comparison of Drillhole Database With Assay Certificates - ALS Chemex Laboratory |          |               |              |      |               |       |                                             |
|---------------------------------------------------------------------------------------------|----------|---------------|--------------|------|---------------|-------|---------------------------------------------|
| Holeid                                                                                      | Analysis | No. of Assays | No. of Certs | %    | No. of Errors | %     | Description of Errors                       |
| AP-11-24                                                                                    | Silver   | 364           | 364          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Gold     | 364           | 364          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Arsenic  | 364           | 364          | 100% | 14            | 3.8%  | Data was from Inspectorate Lab Certificates |
|                                                                                             | Copper   | 364           | 364          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Lead     | 364           | 364          | 100% | 59            | 16.2% | Data was from Inspectorate Lab Certificates |
|                                                                                             | Zinc     | 364           | 364          | 100% | 0             | 0.0%  |                                             |
| AP-11-33                                                                                    | Silver   | 261           | 261          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Gold     | 261           | 261          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Arsenic  | 261           | 261          | 100% | 35            | 13.4% | Data was from Inspectorate Lab Certificates |
|                                                                                             | Copper   | 261           | 261          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Lead     | 261           | 261          | 100% | 47            | 18.0% | Data was from Inspectorate Lab Certificates |
|                                                                                             | Zinc     | 261           | 261          | 100% | 0             | 0.0%  |                                             |
| AP-11-40                                                                                    | Silver   | 239           | 239          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Gold     | 239           | 239          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Arsenic  | 239           | 239          | 100% | 9             | 3.8%  | Data was from Inspectorate Lab Certificates |
|                                                                                             | Copper   | 239           | 239          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Lead     | 239           | 239          | 100% | 2             | 0.8%  | Data was from Inspectorate Lab Certificates |
|                                                                                             | Zinc     | 239           | 239          | 100% | 0             | 0.0%  |                                             |
| AP-11-61                                                                                    | Silver   | 471           | 471          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Gold     | 471           | 471          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Arsenic  | 471           | 471          | 100% | 9             | 1.9%  | Data was from Inspectorate Lab Certificates |
|                                                                                             | Copper   | 471           | 471          | 100% | 0             | 0.0%  |                                             |
|                                                                                             | Lead     | 471           | 471          | 100% | 9             | 1.9%  | Data was from Inspectorate Lab Certificates |
|                                                                                             | Zinc     | 471           | 471          | 100% | 0             | 0.0%  |                                             |

Source: IMC(2014)

Eight drill holes had SGS listed as their primary lab. Table 12.2 shows the results of comparing the holes assayed by SGS with assay certificates. All detection limit values for silver have been truncated to .2 (silver detection limit is .5, ½ of this value is .25). As with the ALS Chemex comparison some values for arsenic and lead have been set to the Inspectorate lab value.

**Table 12-2: Comparison of Drillhole Database With Assay Certificates - SGS Laboratory**

| Table 12-2 Comparison of Drillhole Database With Assay Certificates - SGS Laboratory |          |               |              |      |               |      |                                                 |
|--------------------------------------------------------------------------------------|----------|---------------|--------------|------|---------------|------|-------------------------------------------------|
| Holeid                                                                               | Analysis | No. of Assays | No. of Certs | %    | No. of Errors | %    | Description of Errors                           |
| AP-11-55                                                                             | Silver   | 297           | 297          | 100% | 0             | 0.0% | Data was from Inspectorate Lab Certificates     |
|                                                                                      | Gold     | 297           | 297          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Arsenic  | 297           | 297          | 100% | 16            | 5.4% |                                                 |
|                                                                                      | Copper   | 297           | 297          | 100% | 0             | 0.0% | Data was from Inspectorate Lab Certificates     |
|                                                                                      | Lead     | 297           | 297          | 100% | 20            | 6.7% |                                                 |
|                                                                                      | Zinc     | 297           | 297          | 100% | 0             | 0.0% |                                                 |
| AP-11-72                                                                             | Silver   | 460           | 460          | 100% | 1             | 0.2% | value set to icp14B analysis rather than aas21E |
|                                                                                      | Gold     | 460           | 460          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Arsenic  | 460           | 460          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Copper   | 460           | 460          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Lead     | 460           | 460          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Zinc     | 460           | 460          | 100% | 0             | 0.0% |                                                 |
| AP-12-83                                                                             | Silver   | 610           | 610          | 100% | 2             | 0.3% | value set to icp14B analysis rather than aas21E |
|                                                                                      | Gold     | 610           | 610          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Arsenic  | 610           | 610          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Copper   | 610           | 610          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Lead     | 610           | 610          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Zinc     | 610           | 610          | 100% | 0             | 0.0% |                                                 |
| AP-12-114                                                                            | Silver   | 252           | 252          | 100% | 1             | 0.4% | value set to icp14B analysis rather than aas21E |
|                                                                                      | Gold     | 252           | 252          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Arsenic  | 252           | 252          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Copper   | 252           | 252          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Lead     | 252           | 252          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Zinc     | 252           | 252          | 100% | 0             | 0.0% |                                                 |
| AP-12-122                                                                            | Silver   | 342           | 342          | 100% | 3             | 0.9% | value set to icp14B analysis rather than aas21E |
|                                                                                      | Gold     | 342           | 342          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Arsenic  | 342           | 342          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Copper   | 342           | 342          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Lead     | 342           | 342          | 100% | 0             | 0.0% |                                                 |
|                                                                                      | Zinc     | 342           | 342          | 100% | 0             | 0.0% |                                                 |

Source: IMC(2014)

One drillhole had Acme listed as its primary lab. Table 12-3 shows the results of the comparison for the hole assayed by Acme with assay certificates. Gold was assayed by Acme using two different methods (G6-50 – fire Assay/AAS with overlimits method G6Gr-50 – fire assay/gravimetric and 1F30 fire assay/ICP-ES), the database contains the value of the assay method which had the greatest gold value

**Table 12-3: Comparison of Drillhole Database With Assay Certificates - Acme Laboratory**

| Table 12-3 Comparison of Drillhole Database With Assay Certificates - Acme Laboratory |          |               |              |      |               |       |                                       |
|---------------------------------------------------------------------------------------|----------|---------------|--------------|------|---------------|-------|---------------------------------------|
| Holeid                                                                                | Analysis | No. of Assays | No. of Certs | %    | No. of Errors | %     | Description of Errors                 |
| AP-13-162                                                                             | Silver   | 1204          | 1204         | 100% | 0             | 0.0%  |                                       |
|                                                                                       | Gold     | 1204          | 1204         | 100% | 574           | 47.7% | method G6-50 value was 1f30           |
|                                                                                       | Gold     | 1204          | 1204         | 100% | 628           | 52.2% | method 1f30 value was G6-50           |
|                                                                                       | Arsenic  | 1204          | 1204         | 100% | 4             | 0.3%  | 4 intervals < 10000 set to 7AR values |
|                                                                                       | Copper   | 1204          | 1204         | 100% | 0             | 0.0%  |                                       |
|                                                                                       | Lead     | 1204          | 1204         | 100% | 0             | 0.0%  |                                       |
|                                                                                       | Zinc     | 1204          | 1204         | 100% | 4             | 0.3%  | 4 intervals < 10000 set to 7AR values |

Source: IMC(2014)

The selection of the higher of two assay methods for use in the database should be changed to using the original assay value.

## 12.2 Assays on Standard Samples

During the Newstrike drill campaign, control samples, consisting of standard pulps and blanks, were inserted into the drill sample stream every 20th sample. The control samples were numbered consecutively and generally consisted of alternating 4 standards and blanks. The data provided to IMC consisted of 3,264 assays run on the fourteen standards that were used during the Newstrike drilling program (holes AP-10-12 through AP-13-230), representing the insertion of a standard into the sample stream approximately once every 24th sample. For the most current drilling campaign (AP-12-131 to AP-13-230) there were 1,461 standard assays, which represent the insertion of a standard into the sample stream approximately once every 24th sample. No data were available for Goldcorp holes AP-05-01 through AP-05-11.

The standards used for the two Newstrike programs are:

2010-2012 drilling (AP-10-18 to AP-12-130)

AP-01 AP-02 AP-03 AP-04 AP-05 AP-06 AP-07 AP-08

2012-2013 drilling (AP-12-131 to AP-13-230)

AP-03 AP-04 AP-05 AP-06 AP-07 AP-08 AP-09 AP-10  
AP-11 AP-12 AP-13 AP-14

Grades, standard deviations and 95% confidence limits for the eight standards (AP-01 to AP-08) prepared by Newstrike are summarized on Table 12.4. Mean grades were determined from assays run at the ALS Chemex, SGS, Inspectorate Vancouver and Inspectorate Reno laboratories and standard deviations are calculated from the assay means measured by these laboratories. No mean grades are available for the six early standards (1F, P2, P7B, EXM-1 through -3) that were used for holes AP-10-12 through AP-10-17.

Standards AP-09 and AP-11 both came from CDN Resource Laboratories LTD. Reference Material CDN-ME-1101. Standards AP-10 and AP-12 both came from CDN Resource Laboratories LTD. Reference Material CDN-ME-19. These standards were purchased at different times and given different names by Ana Paula personnel, and are certified for both gold and silver.

**Table 12-4: Standard Grades**

| STANDARD GRADES |          |         |                      |       |          |         |                      |       |
|-----------------|----------|---------|----------------------|-------|----------|---------|----------------------|-------|
| Standard        | Gold     |         |                      |       | Silver   |         |                      |       |
|                 | Mean g/t | St. Dev | 95% confidence limit |       | Mean g/t | St. Dev | 95% confidence limit |       |
|                 |          |         | High                 | Low   |          |         | High                 | Low   |
| AP-01           | 0.317    | 0.034   | 0.327                | 0.307 | 2.60     | 0.87    | 2.86                 | 2.33  |
| AP-02           | 0.544    | 0.035   | 0.555                | 0.533 | 3.11     | 0.64    | 3.31                 | 2.92  |
| AP-03           | 0.689    | 0.035   | 0.700                | 0.678 | 5.07     | 0.83    | 5.33                 | 4.82  |
| AP-04           | 1.289    | 0.160   | 1.338                | 1.240 | 14.98    | 1.79    | 15.52                | 14.43 |
| AP-05           | 0.318    | 0.010   | 0.416                | 0.220 | 2.00     | 0.21    | 2.62                 | 1.39  |
| AP-06           | 0.484    | 0.031   | 0.635                | 0.333 | 2.68     | 0.29    | 3.50                 | 1.86  |
| AP-07           | 0.850    | 0.065   | 1.106                | 0.594 | 3.24     | 0.49    | 4.23                 | 2.25  |
| AP-08           | 1.239    | 0.114   | 1.619                | 0.859 | 9.65     | 0.50    | 12.60                | 6.69  |
| AP-09           | 0.564    | 0.031   | 0.666                | 0.466 | 68.20    | 2.75    | 79.89                | 56.51 |
| AP-10           | 0.620    | 0.039   | 0.720                | 0.520 | 103.00   | 10.69   | 120.04               | 85.96 |
| AP-11           | 0.564    | 0.031   | 0.666                | 0.466 | 68.20    | 2.75    | 79.89                | 56.51 |
| AP-12           | 0.620    | 0.039   | 0.720                | 0.520 | 103.00   | 10.69   | 120.04               | 85.96 |
| AP-13           | 0.799    | 0.028   | 0.931                | 0.667 | NS       |         |                      |       |
| AP-14           | 1.440    | 0.075   | 1.670                | 1.210 | NS       |         |                      |       |

Source: IMC(2014)

The results of the 3,170 assays run on the fourteen standards are compared with the standard grades for assays run by ALS Chemex (1,925 assays) in Table 12-5, by SGS (1,110 assays) in Table 12-6 and by Acme (134 assays) in Table 12-7. Assay medians rather than means are shown to minimize distortions caused by outlier samples. Gold compares to within 5% in all cases except for Acme on standards AP-03, AP-06, and AP-07. These three Acme comparisons are a total of 20 samples thus representing 0.6% of the total checks on standards. The silver comparisons, however, are within 5% in only seventeen of the thirty cases listed. Silver is not a large contributor to the overall project economics.

**Table 12-5: Results of Standard Assays - ALS Chemex**

| RESULTS OF STANDARD ASSAYS, ALS CHEMEX |                  |              |               |                 |                  |              |               |                 |
|----------------------------------------|------------------|--------------|---------------|-----------------|------------------|--------------|---------------|-----------------|
| Standard                               | Gold             |              |               |                 | Silver           |              |               |                 |
|                                        | Number of Assays | Assay Median | Standard Mean | Median/ Mean, % | Number of Assays | Assay Median | Standard Mean | Median/ Mean, % |
| AP-01                                  | 262              | 0.304        | 0.317         | -4              | 261              | 2.10         | 2.60          | -19             |
| AP-02                                  | 163              | 0.547        | 0.544         | 1               | 165              | 2.70         | 3.11          | -13             |
| AP-03                                  | 132              | 0.691        | 0.689         | 0               | 132              | 4.40         | 5.07          | -13             |
| AP-04                                  | 42               | 1.303        | 1.289         | 1               | 43               | 15.80        | 14.98         | 5               |
| AP-05                                  | 259              | 0.313        | 0.318         | -2              | 259              | 2.20         | 2.00          | 10              |
| AP-06                                  | 365              | 0.492        | 0.484         | 2               | 368              | 3.00         | 2.68          | 12              |
| AP-07                                  | 136              | 0.834        | 0.850         | -2              | 139              | 3.40         | 3.24          | 5               |
| AP-08                                  | 31               | 1.240        | 1.239         | 0               | 31               | 10.10        | 9.65          | 5               |
| AP-09                                  | 251              | 0.584        | 0.564         | 4               | 251              | 69.80        | 68.20         | 2               |
| AP-10                                  | 193              | 0.634        | 0.620         | 2               | 194              | 103.00       | 103.00        | 0               |
| AP-11                                  | 43               | 0.577        | 0.564         | 2               | 43               | 69.50        | 68.20         | 2               |
| AP-12                                  | 35               | 0.622        | 0.620         | 0               | 35               | 102.00       | 103.00        | -1              |
| AP-13                                  | 12               | 0.772        | 0.799         | -3              | 12               | 0.80         |               |                 |
| AP-14                                  | 1                | 1.450        | 1.440         | 1               | 1                | 0.06         |               |                 |

Source: IMC(2014)

**Table 12-6: Results of Standard Assays - SGS**

| RESULTS OF STANDARD ASSAYS, SGS |                  |              |               |                 |                  |              |               |                 |
|---------------------------------|------------------|--------------|---------------|-----------------|------------------|--------------|---------------|-----------------|
| Standard                        | Gold             |              |               |                 | Silver           |              |               |                 |
|                                 | Number of Assays | Assay Median | Standard Mean | Median/ Mean, % | Number of Assays | Assay Median | Standard Mean | Median/ Mean, % |
| AP-01                           | 42               | 0.317        | 0.317         | 0               | 42               | 2.00         | 2.60          | -23             |
| AP-02                           | 105              | 0.573        | 0.544         | 5               | 105              | 3.00         | 3.11          | -4              |
| AP-03                           | 46               | 0.714        | 0.689         | 4               | 46               | 5.00         | 5.07          | -1              |
| AP-04                           | 6                | 1.345        | 1.289         | 4               | 7                | 15.80        | 14.98         | 5               |
| AP-05                           | 301              | 0.329        | 0.318         | 3               | 303              | 2.30         | 2.00          | 15              |
| AP-06                           | 308              | 0.507        | 0.484         | 5               | 309              | 3.00         | 2.68          | 12              |
| AP-07                           | 110              | 0.805        | 0.850         | -5              | 112              | 3.50         | 3.24          | 8               |
| AP-08                           | 33               | 1.230        | 1.239         | -1              | 34               | 10.35        | 9.65          | 7               |
| AP-09                           | 74               | 0.595        | 0.564         | 5               | 74               | 64.50        | 68.20         | -5              |
| AP-10                           | 71               | 0.654        | 0.620         | 5               | 71               | 100.00       | 103.00        | -3              |
| AP-11                           | 7                | 0.571        | 0.564         | 1               | 7                | 67.50        | 68.20         | -1              |
| AP-12                           | 0                |              | 0.620         |                 | 0                |              | 103.00        |                 |
| AP-13                           | 0                |              | 0.799         |                 | 0                |              |               |                 |
| AP-14                           | 0                |              | 1.440         |                 | 0                |              |               |                 |

Source: IMC(2014)

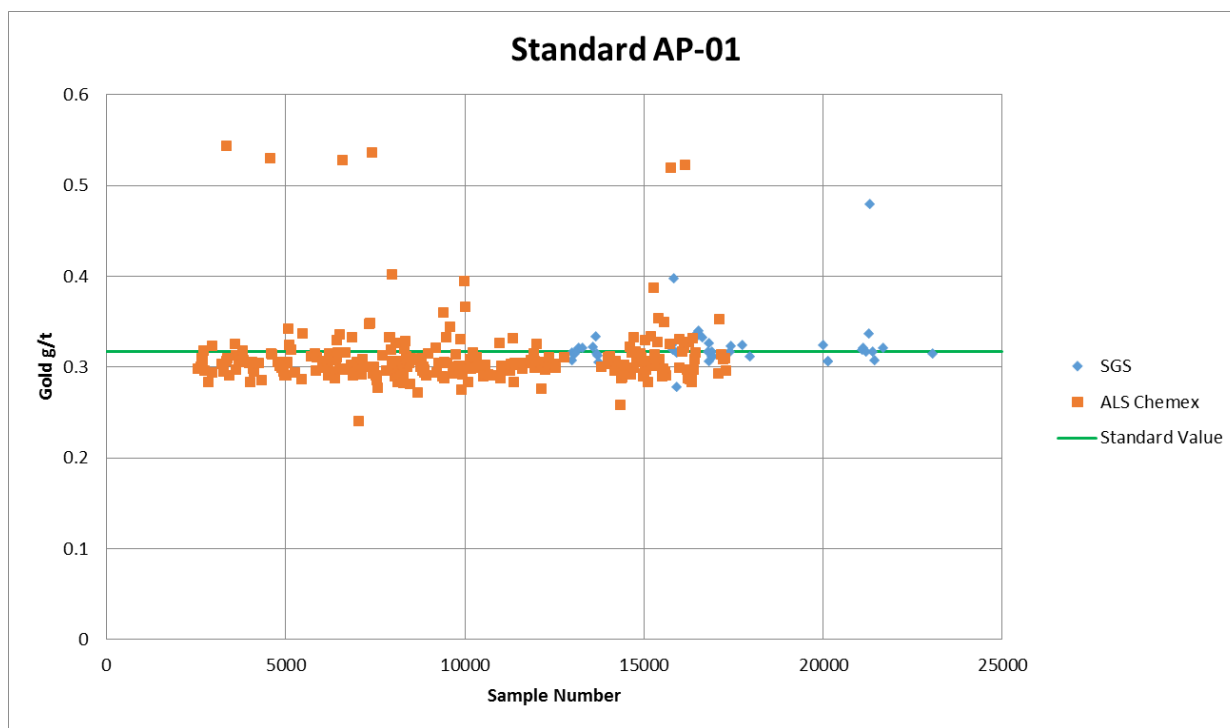
**Table 12-7: Results of Standard Assays - Acme**

| RESULTS OF STANDARD ASSAYS, ACME |                  |              |               |                 |                  |              |               |                 |
|----------------------------------|------------------|--------------|---------------|-----------------|------------------|--------------|---------------|-----------------|
| Standard                         | Gold             |              |               |                 | Silver           |              |               |                 |
|                                  | Number of Assays | Assay Median | Standard Mean | Median/ Mean, % | Number of Assays | Assay Median | Standard Mean | Median/ Mean, % |
| AP-01                            | 0                |              | 0.317         |                 | 0                |              | 2.60          |                 |
| AP-02                            | 0                |              | 0.544         |                 | 0                |              | 3.11          |                 |
| AP-03                            | 10               | 0.792        | 0.689         | 15              | 10               | 4.63         | 5.07          | -9              |
| AP-04                            | 2                | 1.353        | 1.289         | 5               | 2                | 15.62        | 14.98         | 4               |
| AP-05                            | 0                |              | 0.318         |                 | 0                |              | 2.00          |                 |
| AP-06                            | 4                | 0.515        | 0.484         | 6               | 3                | 3.04         | 2.68          | 13              |
| AP-07                            | 5                | 0.919        | 0.850         | 8               | 5                | 3.50         | 3.24          | 8               |
| AP-08                            | 5                | 1.256        | 1.239         | 1               | 5                | 10.04        | 9.65          | 4               |
| AP-09                            | 64               | 0.577        | 0.564         | 2               | 64               | 69.01        | 68.20         | 1               |
| AP-10                            | 44               | 0.647        | 0.620         | 4               | 43               | 98.04        | 103.00        | -5              |
| AP-11                            | 0                |              | 0.564         |                 | 0                |              | 68.20         |                 |
| AP-12                            | 0                |              | 0.620         |                 | 0                |              | 103.00        |                 |
| AP-13                            | 0                |              | 0.799         |                 | 0                |              |               |                 |
| AP-14                            | 0                |              | 1.440         |                 | 0                |              |               |                 |

Source: IMC(2014)

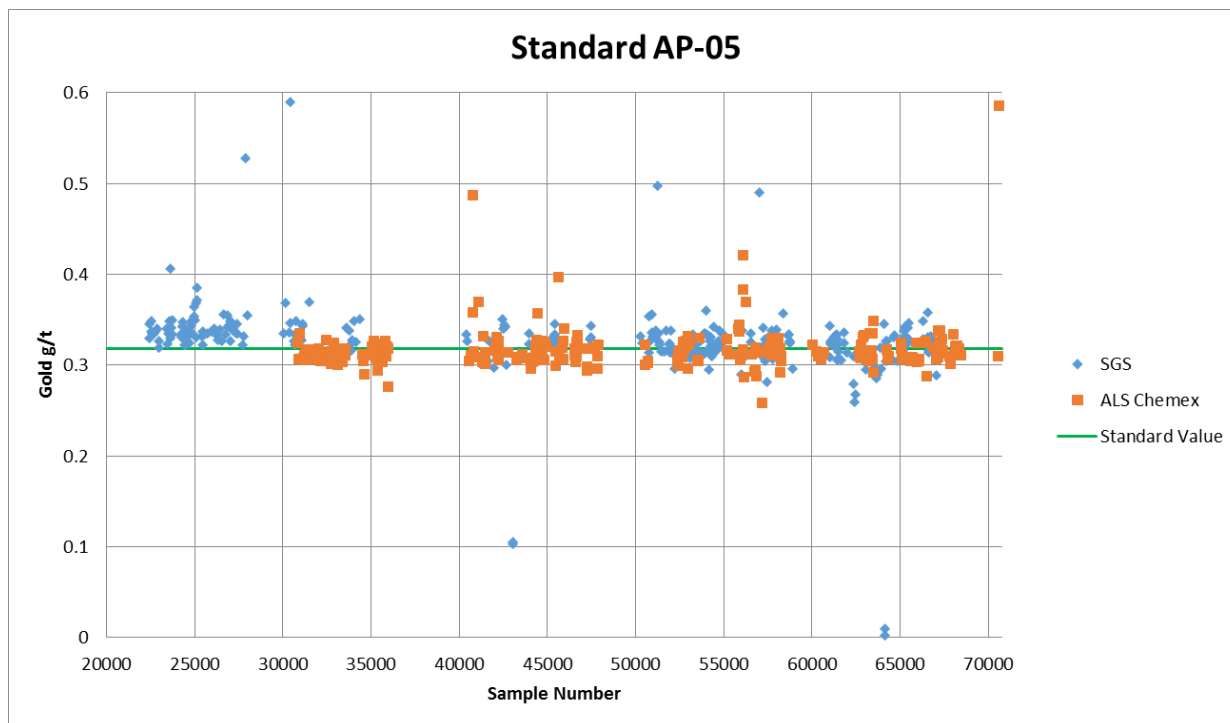
The repeatability of standard assays with time is illustrated in Figure 12-1, Figure 12-2 and Figure 12-3. Figure 12-1 plots the gold assays run on standard AP-1, covering holes AP-10-18 through AP-11-71. Figure 12-2 plots the gold assays run on standard AP-5, covering holes AP-11-66 through AP-13-155. Figure 12-3 which plots the gold assays run on standard AP-10 covering holes AP-13-158 to AP-13-227. Time is analogued by sample number on the X-axis.

**Figure 12-1: Gold Assays Run on Standard AP-01**



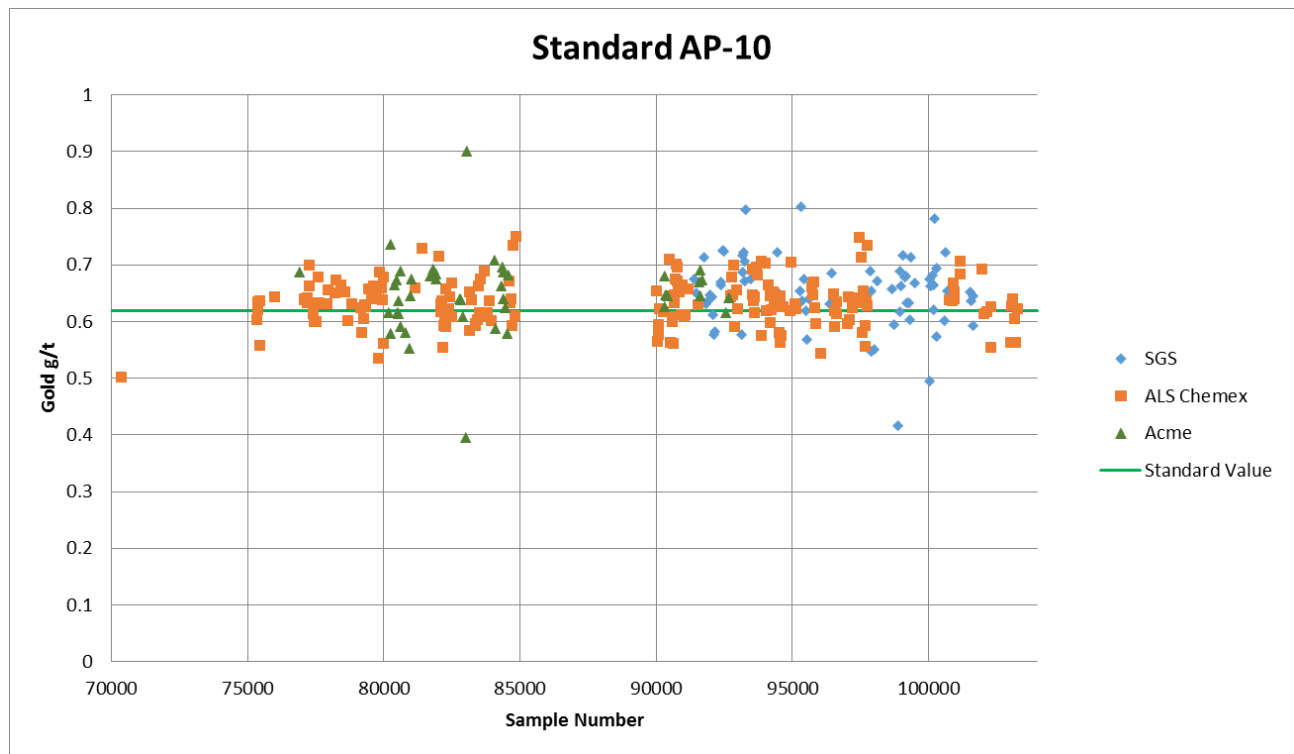
Source: IMC(2014)

**Figure 12-2: Gold Assays Run on Standard AP-05**



Source: IMC(2014)

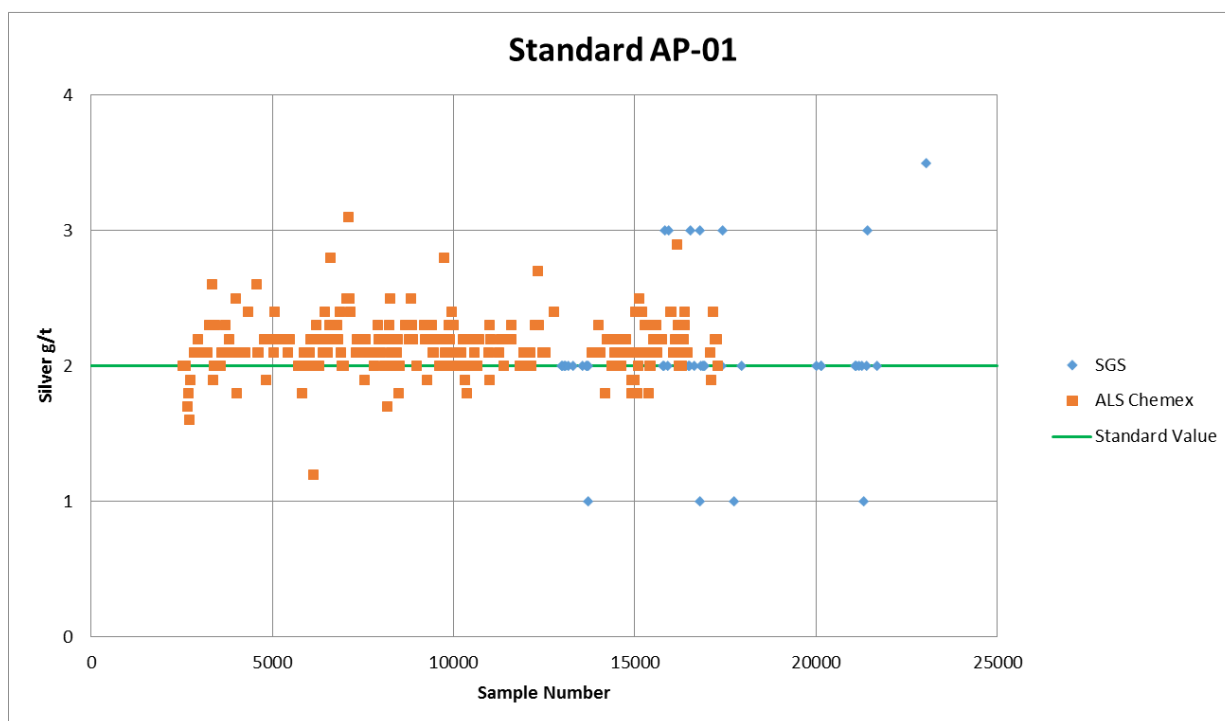
**Figure 12-3: Gold Assays Run on Standard AP-10**



Source: IMC(2014)

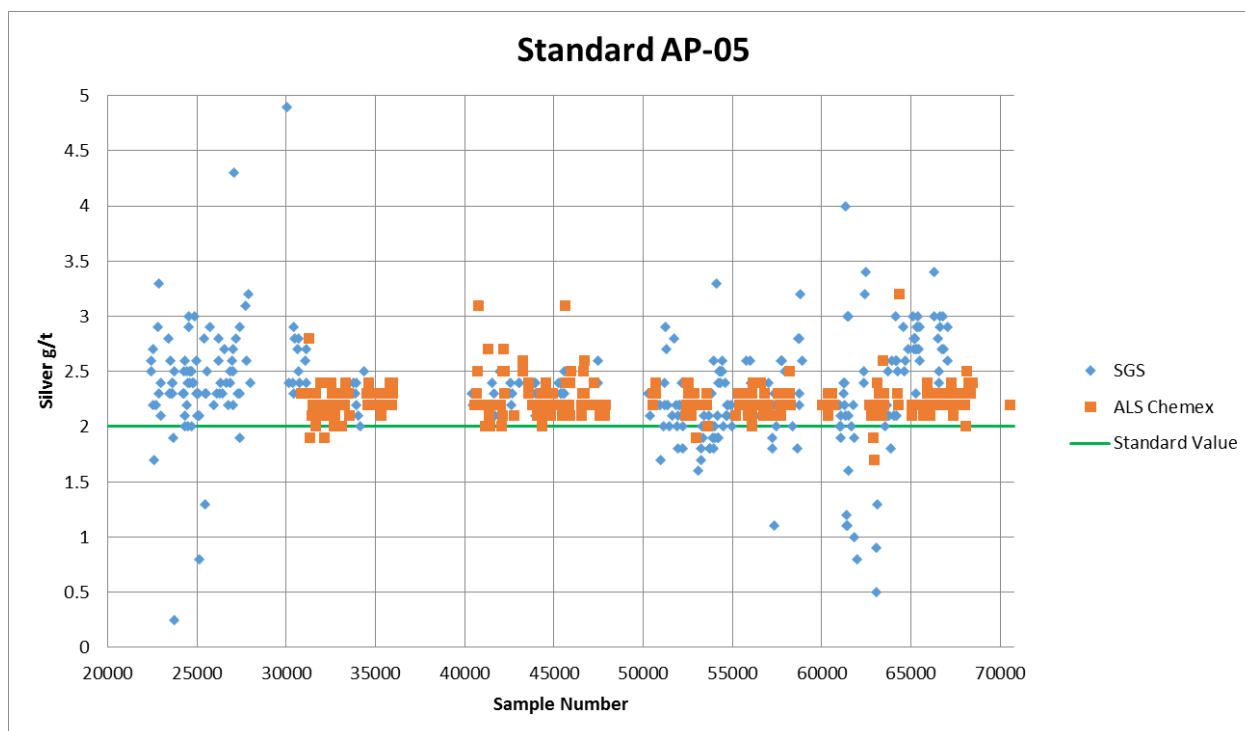
Figure 12-4, Figure 12-5 and Figure 12-6 show the standards AP-01, AP-05 and AP-10 results for silver. Silver also remains stable with time, but the assays exhibit considerable scatter and are not a good match to the standard mean grades.

**Figure 12-4: Silver Assays Run on Standard AP-01**

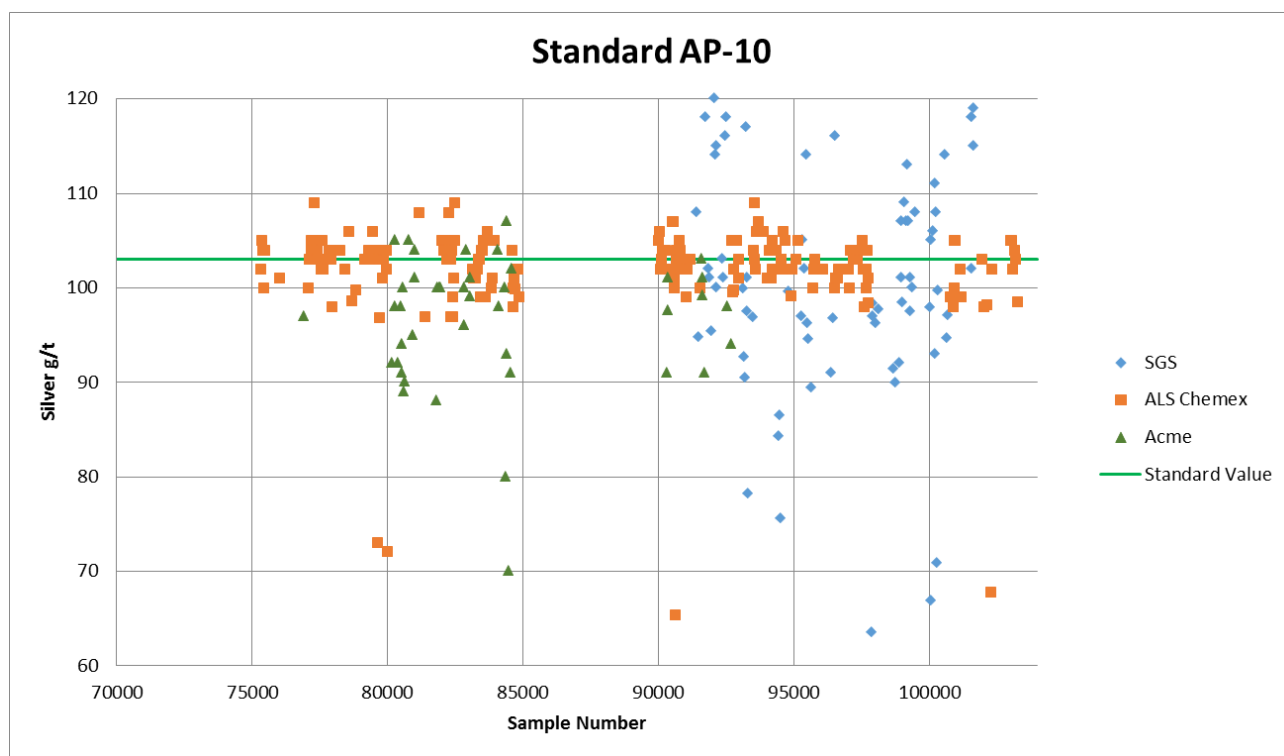


Source: IMC(2014)

**Figure 12-5: Silver Assays Run on Standard AP-05**



Source: IMC(2014)

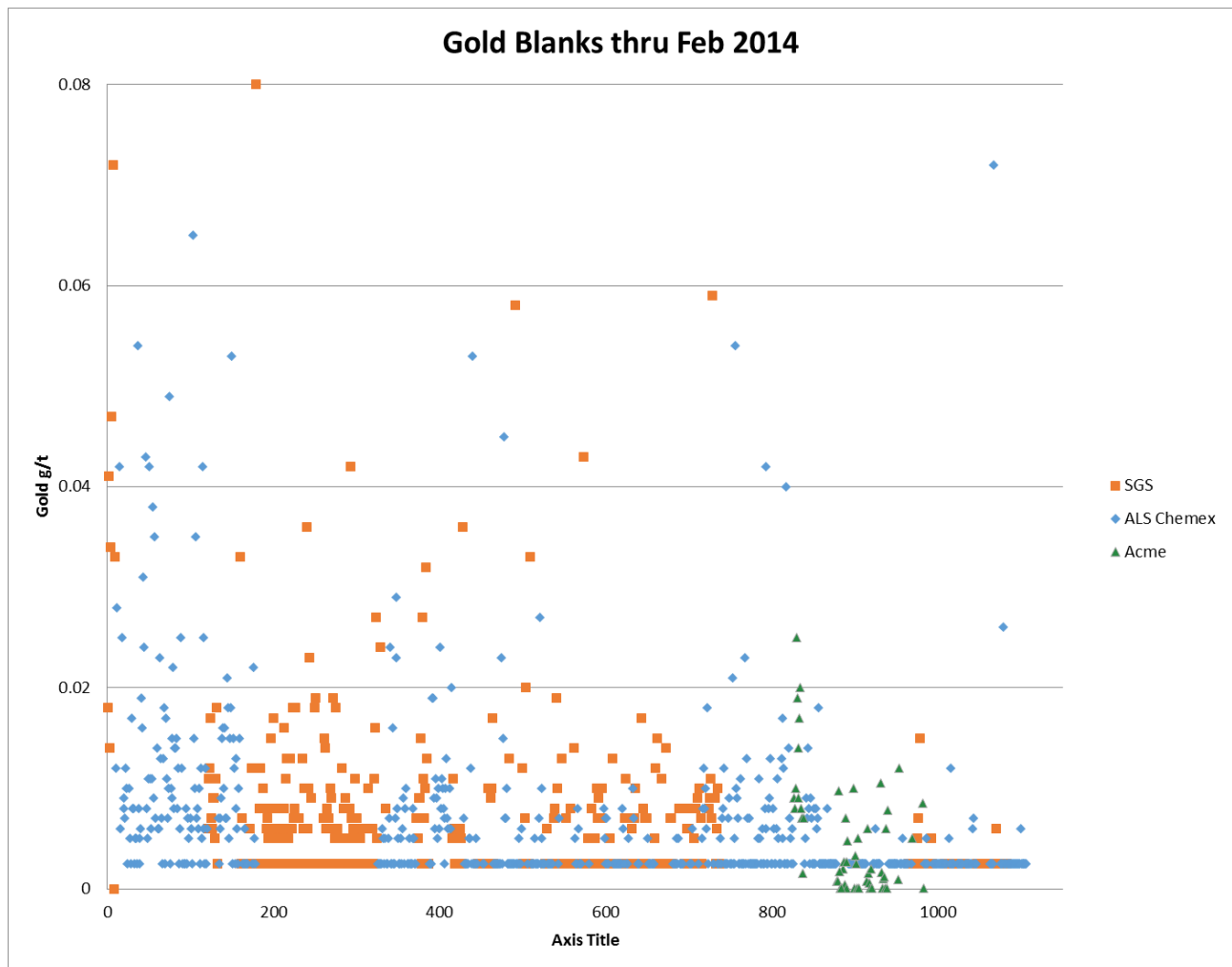
**Figure 12-6: Silver Assays Run on Standard AP-10**


Source: IMC(2014)

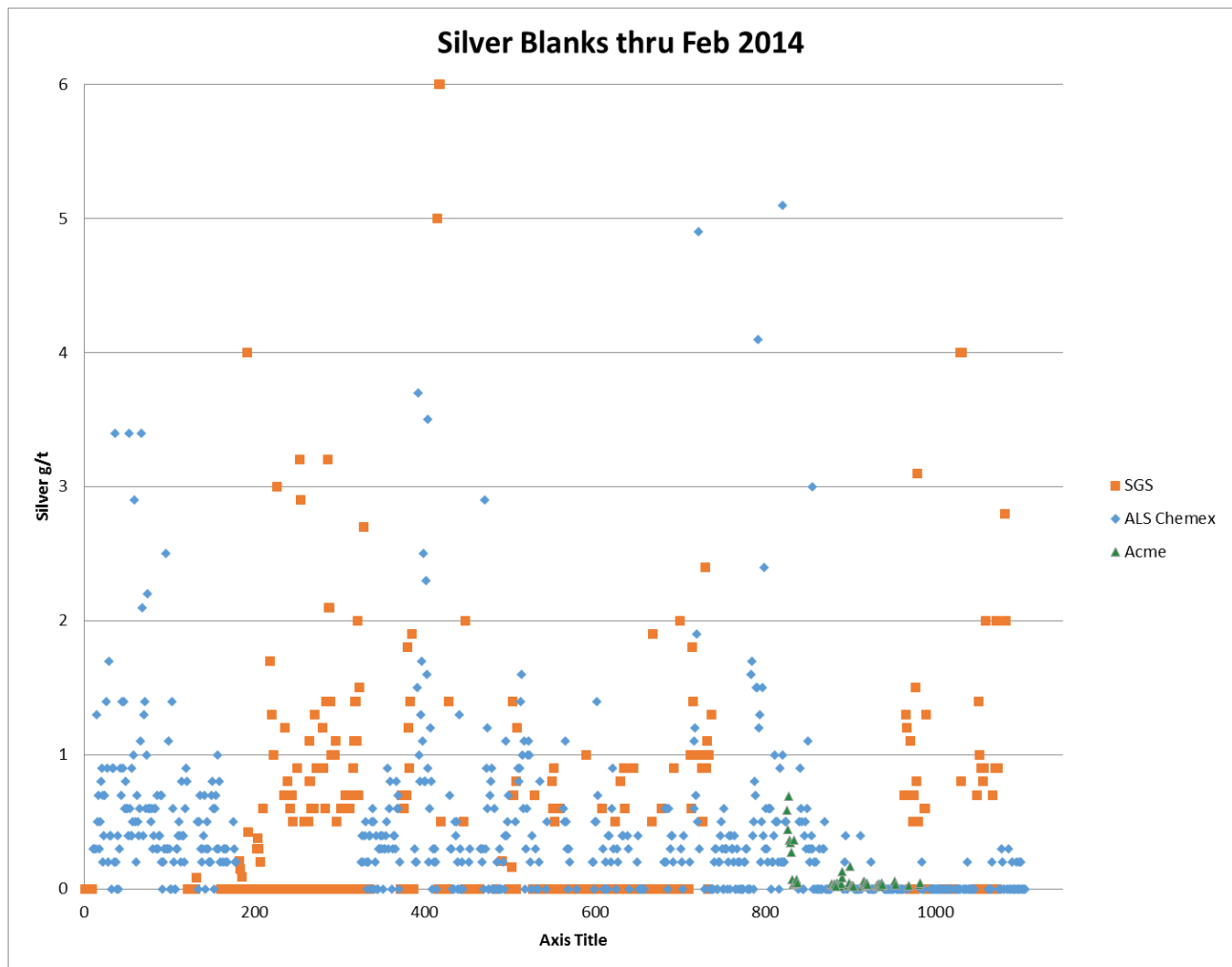
## 12.3 Assays on Blank Samples

The data provided consisted of 1,108 assays run on blank samples during the Newstrike drilling program (holes AP-10-12 through AP-13-230), representing the insertion of a blank into the sample stream approximately once every 70th sample. The protocol for blank insertion included alternating blanks and standards every 20th sample, as well as insertion of a blank within or immediately after mineralized zones. The blanks are numbered sequentially, and samples of quartered or half core with low or below detection limit values were used so that the preparation facility could not identify the sample as a blank. For the most current drilling campaign (AP-12-131 to AP-13-230) there were 499 blank samples, which represents the insertion of a blank into the sample stream approximately once every 70th sample. No data were available for Goldcorp holes AP-05-01 through AP-05-11 or for two short Newstrike holes that did not include a blank, AP-13-183, AP-13-189. Figures 12.7 and 12.8 show the results of gold and silver assays run on blank samples.

**Figure 12-7: Gold Assays Run on Blank Samples**



Source: IMC(2014)

**Figure 12-8: Silver Assays Run on Blank Samples**


Source: IMC(2014)

Assays on blank samples should ideally return grades at or below the lower detection limit, but even allowing for outliers (again probably a result of mislabelling or data entry errors) approximately 35 percent of the ALS Chemex gold assays, 45 percent of the SGS gold assays and 40 percent of the Acme gold assays exceed the 0.005 g/t gold detection limit. 50 percent of the ALS Chemex silver assays, 35 percent of the SGS silver assays and 12 percent of the Acme silver assays exceed the 0.2 g/t silver detection limit (SGS silver assays which had a 2 g/t lower detection limit were omitted from this comparison). However, the fact that all three labs, ALS Chemex, Acme, and SGS show comparable exceedances for gold indicates that the problem lies with the blank material and not with the assays. As noted in Section 11, the blank sample material comes from Ana Paula core material previously assayed as below detection and is not a certified blank material. Newstrike prefers to use this material as a 'blank' so that it has the appearance similar to the other material being assayed. This material will return values greater than a true blank due to the variability of the deposit.



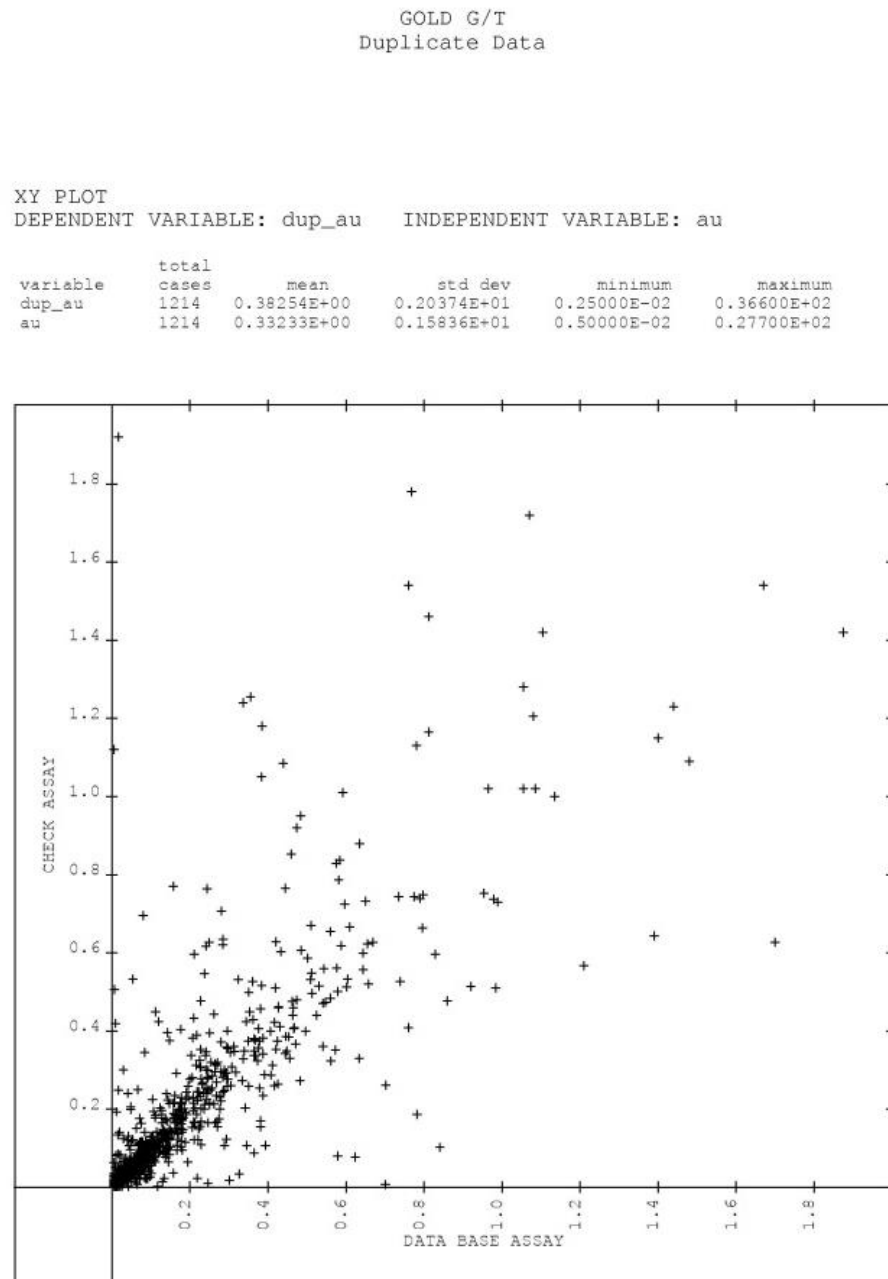
## 12.4 Assays on Duplicate Samples

The data provided consisted of 1,214 assays run on duplicate samples prepared by ALS Chemex and SGS from second-split core from holes AP-10-12 through AP-12-81, representing one duplicate assay approximately every 20<sup>th</sup> sample. No data were available for Goldcorp holes AP-05-01 through AP-05-11 or for Newstrike holes AP-12-82 through AP-13-230.

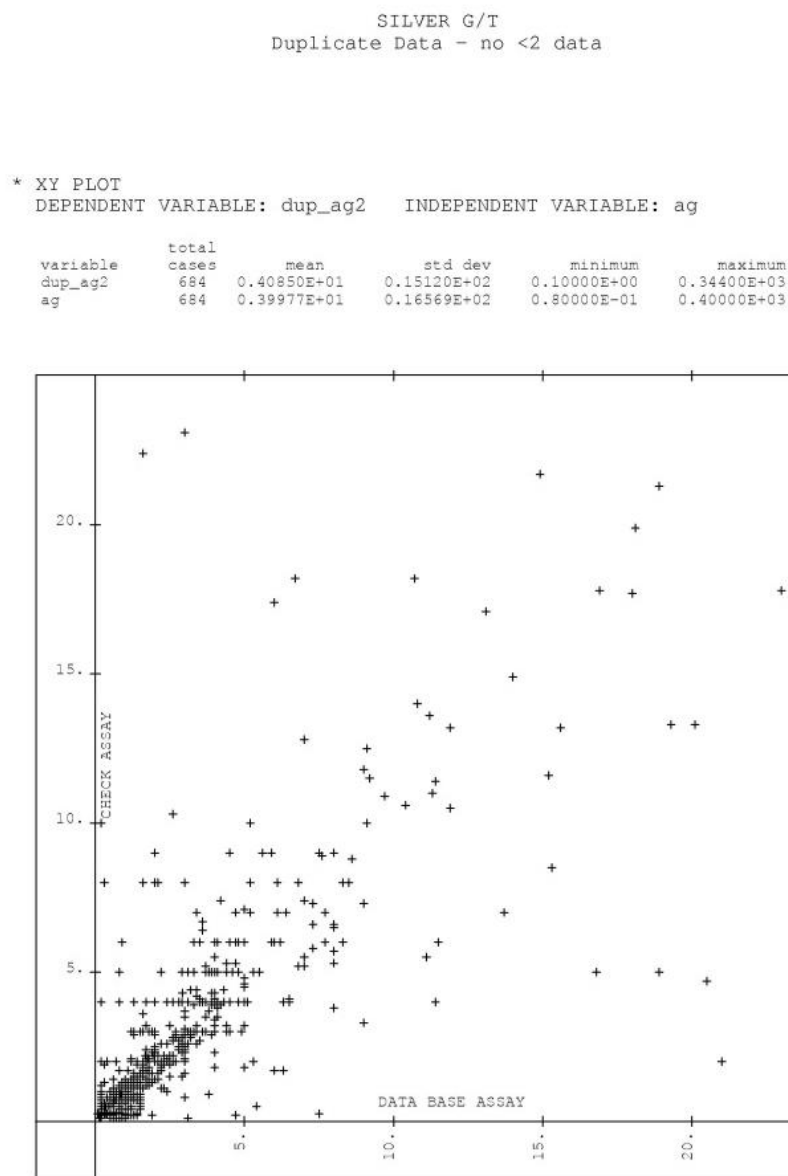
All 1,214 gold samples but only 684 silver samples gave valid comparisons. The 530 silver samples that were entered as <2 g/t, the SGS lower detection limit, were not usable.

The mean duplicate gold grade for all samples is 14% higher than the mean original gold grade (0.33 versus 0.38 g/t) and the silver grade is 2% higher (4.0 versus 4.1 g/t). This suggests that the first splits may be biased low relative to the second splits, but assay1>assay2 counts meet criteria for randomness, suggesting that there is no bias between the splits. The level of scatter on XY plots of duplicate versus original assays, however, is large and it is doubtful that a bias would be detectable even if one were present. Figures 12.9 and 12.10 show the XY-plots scatter for the Assay values VS the Duplicate values for both gold and silver. The duplicate program was not continued for the 2012-2013 drilling program for the reasons mentioned above, as per the recommendations made in the initial resource report by IMC (Welhener et al, 2013).

**Figure 12-9: Database Assays VS Duplicate Assays for Gold**



Source: IMC(2014)

**Figure 12-10: Database Assays VS Duplicate Assays for Silver**


Source: IMC(2014)

## 12.5 Check Assays

The data supplied contained a total of 6,430 check assays run on 5,829 samples from holes AP-10-12 through AP-13-230, representing a check assay at an average of approximately once every 14<sup>th</sup> sample. For the most current drilling campaign (AP-12-131 to AP-13-230) there were 1,662 check samples, which represents a check assay every 21<sup>st</sup> sample. No check assays were available for the Goldcorp holes AP-05-01 through AP-05-11, although some samples were re-analyzed by Newstrike during its audit program. Check assays were also missing for drill holes AP-11-41, AP-13-162, AP-13-168, AP-13-171, AP-13-172,

AP-13-174, AP-13-176, AP-13-177, AP-13-182, AP-13-187, AP-13-189, AP-13-190 and AP-13-221. Newstrike is in the process of running check assays on these holes in order to complete its check assay program. There were over limits and under limits assays run of many of these holes which provide additional assays, but are not included in the check assay protocol.

Gold and silver check assays were run by ALS Chemex, Inspectorate, and SGS on pulps or rejects supplied by SGS when SGS was the primary laboratory and by SGS, Inspectorate, Acme and ALS Chemex on pulps or rejects supplied by ALS Chemex when ALS Chemex was the primary laboratory, generating ten separate comparisons for gold and eight for silver. These comparisons are summarized in Tables 12.8 and 12.9 and in the Figure 12.11 through 12.28 XY plots.

Table 12.8 compares the mean gold grades measured by the primary lab and the check lab for the ten gold comparison cases along with the Figure number for the corresponding XY plot. IMC considers a check/original mean grade comparison within 5% or less to be acceptable, and all of the comparisons on Table 12.8 meet this criterion except for ALS vs ALS rejects. It should also be noted that the check assays run on rejects act as an independent check on the primary lab's sample preparation procedures of generating a well homogenized sample as well as its analytical procedures.

**Table 12-8: Summary of Check Assay Results - Gold**

| SUMMARY OF CHECK ASSAY RESULTS, GOLD |             |              |              |                 |                      |                    |                  |
|--------------------------------------|-------------|--------------|--------------|-----------------|----------------------|--------------------|------------------|
| Figure                               | Primary Lab | Check Lab    | Check run on | Number of Pairs | Primary lab mean g/t | Check lab mean g/t | Check/Primary, % |
| 12.11                                | ALS Chemex  | ALS Chemex   | Rejects      | 1724            | 0.782                | 0.717              | -8               |
| 12.12                                | ALS Chemex  | SGS          | Rejects      | 319             | 2.624                | 2.653              | 1                |
| 12.13                                | ALS Chemex  | Acme         | Pulps        | 96              | 8.173                | 8.425              | 3                |
| 12.14                                | ALS Chemex  | Inspectorate | Rejects      | 168             | 1.711                | 1.537              | -10              |
| 12.15                                | ALS Chemex  | Inspectorate | Pulps        | 335             | 0.718                | 0.712              | -1               |
| 12.16                                | SGS         | SGS          | Rejects      | 1086            | 0.262                | 0.262              | 0                |
| 12.17                                | SGS         | ALS Chemex   | Rejects      | 351             | 0.322                | 0.328              | 2                |
| 12.18                                | SGS         | ALS Chemex   | Pulps        | 171             | 0.288                | 0.286              | -1               |

Source: IMC(2014)

Table 12-9 shows the results of the comparisons for silver. Only two of the six comparisons show mean grade differences below five percent but this is not a matter of serious concern at this time because of the minor economic contribution of silver.

**Table 12-9: Summary of Check Assay Results - Silver**

| SUMMARY OF CHECK ASSAY RESULTS, SILVER |             |              |              |                 |                      |                    |                  |
|----------------------------------------|-------------|--------------|--------------|-----------------|----------------------|--------------------|------------------|
| Figure                                 | Primary Lab | Check Lab    | Check run on | Number of Pairs | Primary lab mean g/t | Check lab mean g/t | Check/Primary, % |
| 12.19                                  | ALS Chemex  | ALS Chemex   | Rejects      | 1723            | 2.65                 | 2.66               | 0                |
| 12.20                                  | ALS Chemex  | Inspectorate | Rejects      | 168             | 4.33                 | 3.85               | -11              |
| 12.21                                  | ALS Chemex  | Inspectorate | Pulps        | 335             | 7.67                 | 6.65               | -13              |
| 12.22                                  | SGS         | SGS          | Rejects      | 1086            | 2.56                 | 2.55               | 0                |
| 12.23                                  | SGS         | ALS Chemex   | Rejects      | 351             | 3.71                 | 4.13               | 11               |
| 12.24                                  | SGS         | ALS Chemex   | Pulps        | 171             | 0.40                 | 1.10               | 175              |

Source: IMC(2014)

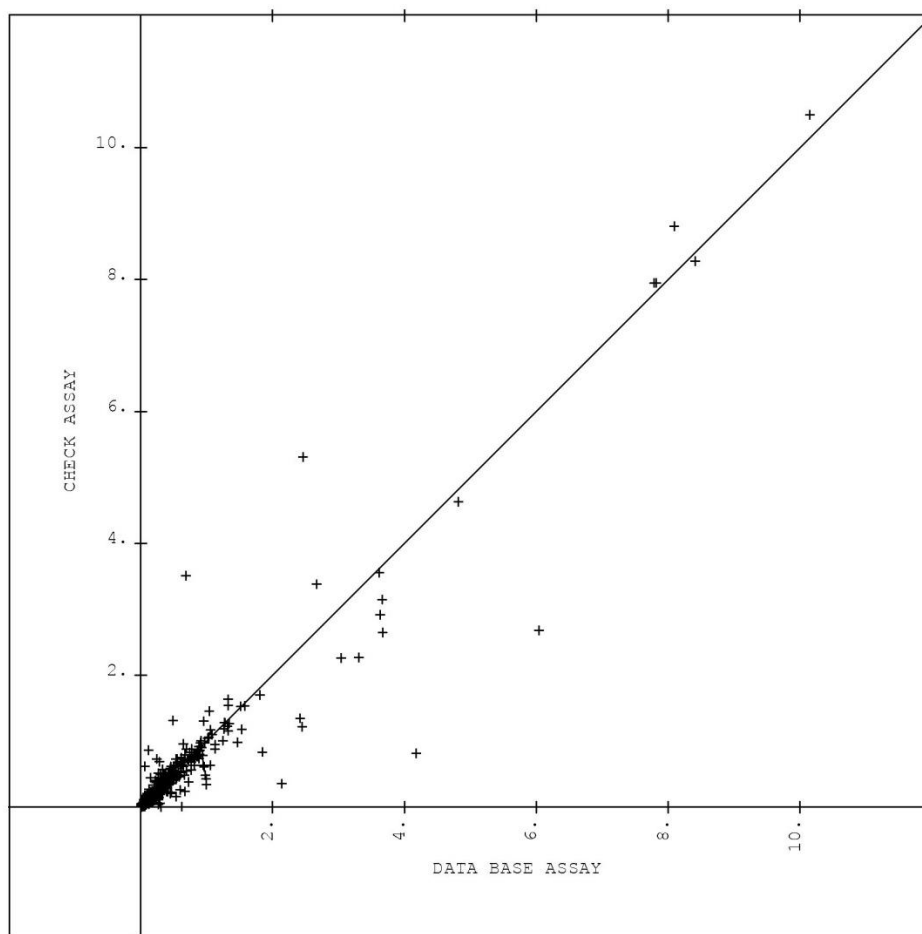
**Figure 12-11: ALS Chemex Data Base vs. ALS Chemex Check Assays on Rejects, Gold**

ALS CHEMEX DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY ALS CHEMEX FROM ALS CHEMEX REJECTS  
GOLD

\* XY PLOT LINE WITH A SLOPE OF 1  
DEPENDENT VARIABLE: crej\_au INDEPENDENT VARIABLE: au  
OPTIONS: through origin

| variable | total cases | mean        | std dev     | minimum     | maximum     |
|----------|-------------|-------------|-------------|-------------|-------------|
| crej_au  | 1724        | 0.71661E+00 | 0.17327E+02 | 0.25000E-02 | 0.71500E+03 |
| au       | 1724        | 0.78215E+00 | 0.18449E+02 | 0.50000E-02 | 0.76000E+03 |

standard error of estimate 1.2682 correlation coefficient 0.9946  
crej\_au = 1.000000 \* au

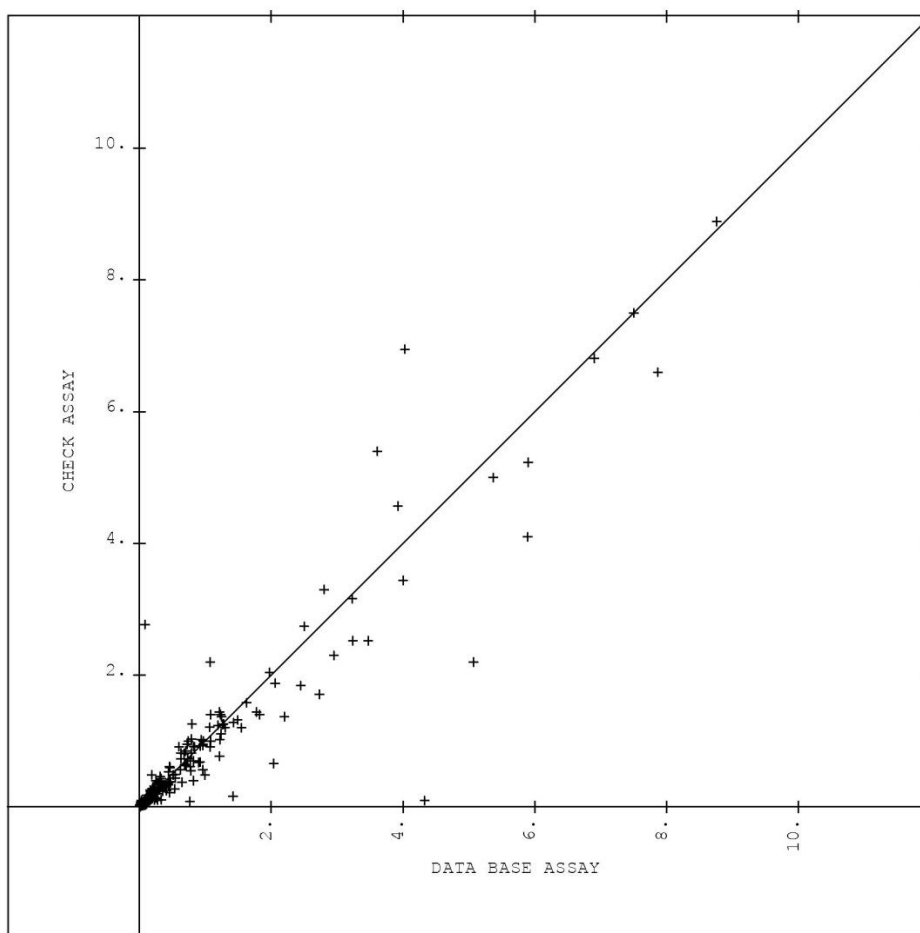


Source: IMC(2014)

ALS CHEMEX DATABASE VERSUS SGS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY SGS FROM ALS CHEMEX REJECTS  
GOLD

```
* XY PLOT                                LINE WITH A SLOPE OF 1
DEPENDENT VARIABLE: crej_au             INDEPENDENT VARIABLE: au
OPTIONS: through origin

variable      total      mean      std dev      minimum      maximum
crej_au       319      0.26534E+01  0.26391E+02  0.25000E-02  0.45229E+03
au            319      0.26236E+01  0.25367E+02  0.50000E-02  0.43900E+03
standard error of estimate      1.8735      correlation coefficient      0.9950
crej_au = 1.000000 * au
```

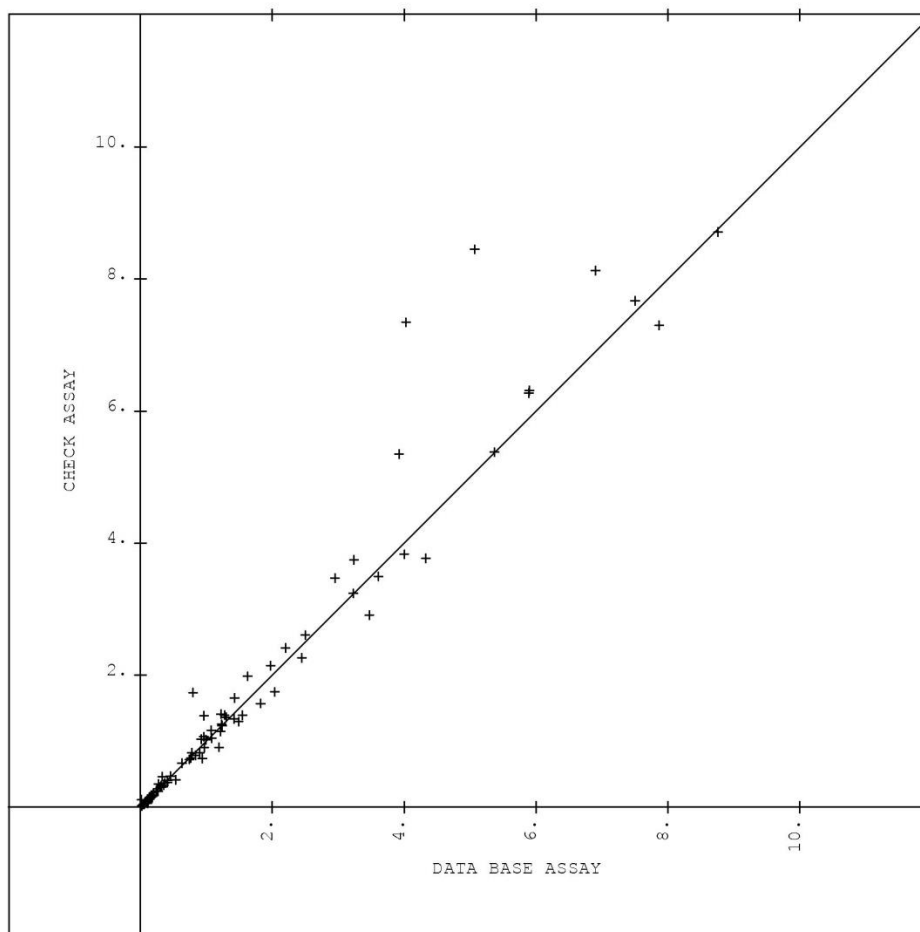


Source: IMC(2014)

ALS CHEMEX DATABASE VERSUS ACME CHECK ASSAYS  
ON ALS CHEMEX PULPS  
GOLD

```
* XY PLOT                                LINE WITH A SLOPE OF 1
DEPENDENT VARIABLE: pulp_au             INDEPENDENT VARIABLE: au
OPTIONS: through origin

variable      total      mean      std dev      minimum      maximum
pulp_au      96      0.84252E+01      0.49255E+02      0.17000E-01      0.47594E+03
au           96      0.81731E+01      0.45924E+02      0.18000E-01      0.43900E+03
standard error of estimate      4.1720      correlation coefficient      0.9928
pulp_au = 1.000000 * au
```



Source: IMC(2014)

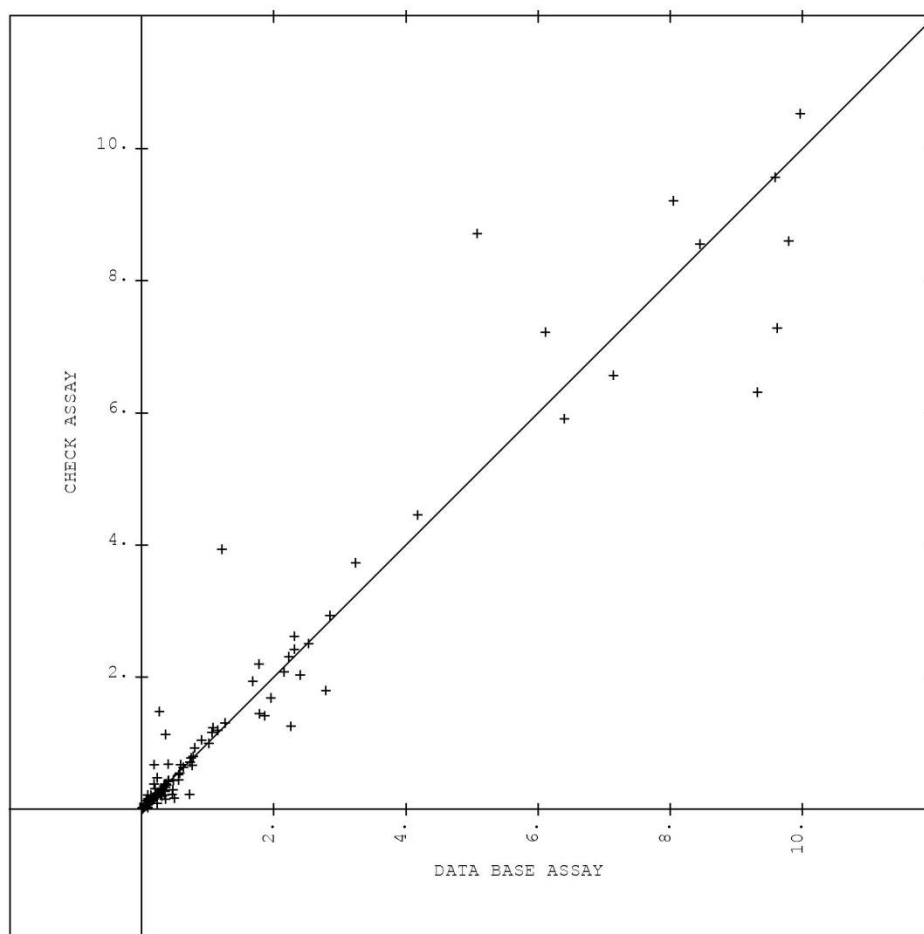
**Figure 12-14: ALS Chemex Data Base vs. Inspectorate Check Assays on Rejects, Gold**

ALS CHEMEX DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY INSPECTORATE FROM ALS CHEMEX REJECTS  
GOLD

\* XY PLOT LINE WITH A SLOPE OF 1  
DEPENDENT VARIABLE: crej\_au INDEPENDENT VARIABLE: au  
OPTIONS: through origin

| variable | total cases | mean        | std dev     | minimum     | maximum     |
|----------|-------------|-------------|-------------|-------------|-------------|
| crej_au  | 168         | 0.15367E+01 | 0.39126E+01 | 0.25000E-02 | 0.30167E+02 |
| au       | 168         | 0.17108E+01 | 0.54487E+01 | 0.50000E-02 | 0.56200E+02 |

standard error of estimate 2.1026 correlation coefficient 0.7112  
crej\_au = 1.000000 \* au



Source: IMC(2014)

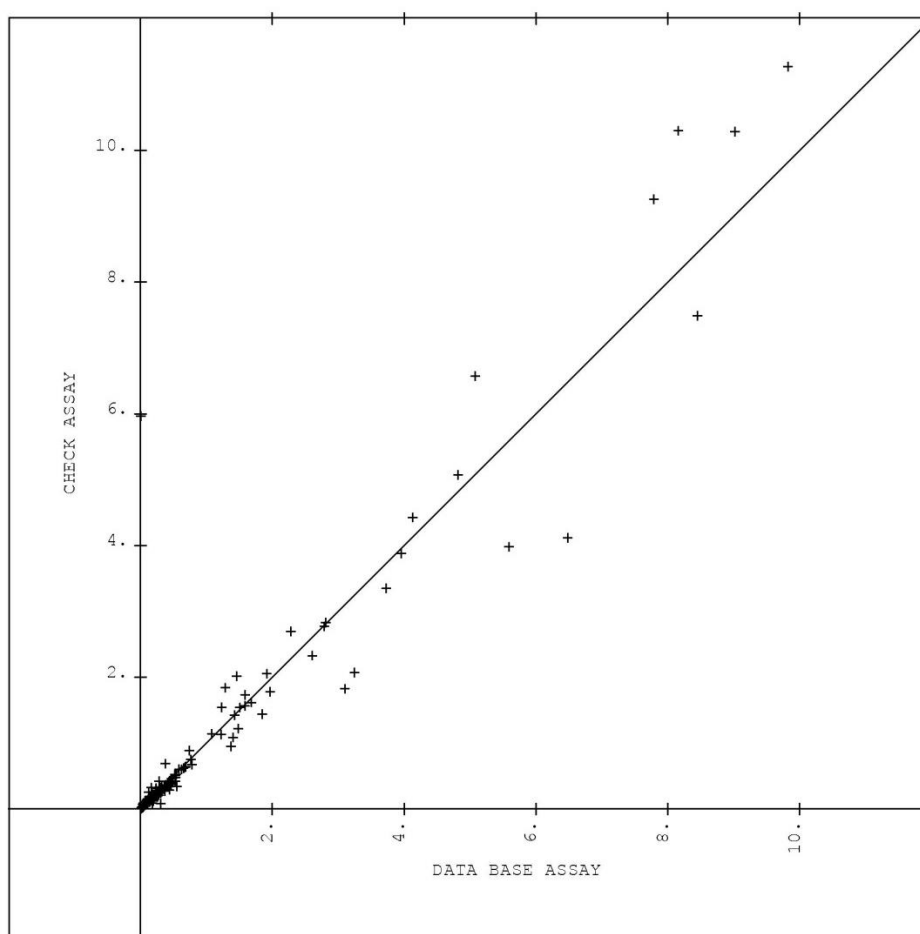
**Figure 12-15: ALS Chemex Data Base vs. Inspectorate Check Assays on Pulps, Gold**

ALS CHEMEX DATABASE VERSUS INSPECTORATE CHECK ASSAYS  
ON ALS CHEMEX PULPS  
GOLD

\* XY PLOT LINE WITH A SLOPE OF 1  
DEPENDENT VARIABLE: pulp\_au INDEPENDENT VARIABLE: au  
OPTIONS: through origin

| variable | total cases | mean        | std dev     | minimum     | maximum     |
|----------|-------------|-------------|-------------|-------------|-------------|
| pulp_au  | 335         | 0.71182E+00 | 0.25128E+01 | 0.25000E-02 | 0.29576E+02 |
| au       | 335         | 0.71837E+00 | 0.25873E+01 | 0.50000E-02 | 0.28900E+02 |

standard error of estimate 0.5115 correlation coefficient 0.9586  
pulp\_au = 1.000000 \* au



Source: IMC(2014)

SGS DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY ALS CHEMEX FROM SGS REJECTS  
GOLD

A scatter plot comparing 'CHECK ASSAY' (y-axis) against 'DATA BASE ASSAY' (x-axis). Both axes range from 0 to 10 with major tick marks every 2 units. A solid diagonal line represents the 1:1 relationship. Data points are marked with '+' symbols. Most points are clustered near the origin (0,0) and follow the diagonal line closely. There are several points that deviate from the line, notably at approximately (3.8, 4.0), (5.5, 5.2), (6.8, 4.4), and (6.8, 7.0).

Source: IMC(2014)

SGS DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY ALS CHEMEX FROM SGS REJECTS  
GOLD

A scatter plot comparing 'CHECK ASSAY' (y-axis) against 'DATA BASE ASSAY' (x-axis). Both axes range from 0 to 10, with major tick marks and labels at 2, 4, 6, 8, and 10. A solid diagonal line representing the identity line (y=x) extends from the origin (0,0) to the top-right corner (10,10). Data points are represented by '+' symbols. There is a high density of points near the origin, where they closely follow the diagonal line. As the assay values increase, the points become more sparse and show increasing deviation from the diagonal line, with several points falling significantly below it at higher values (e.g., around x=3.5, 4.0, 5.5, 6.8).

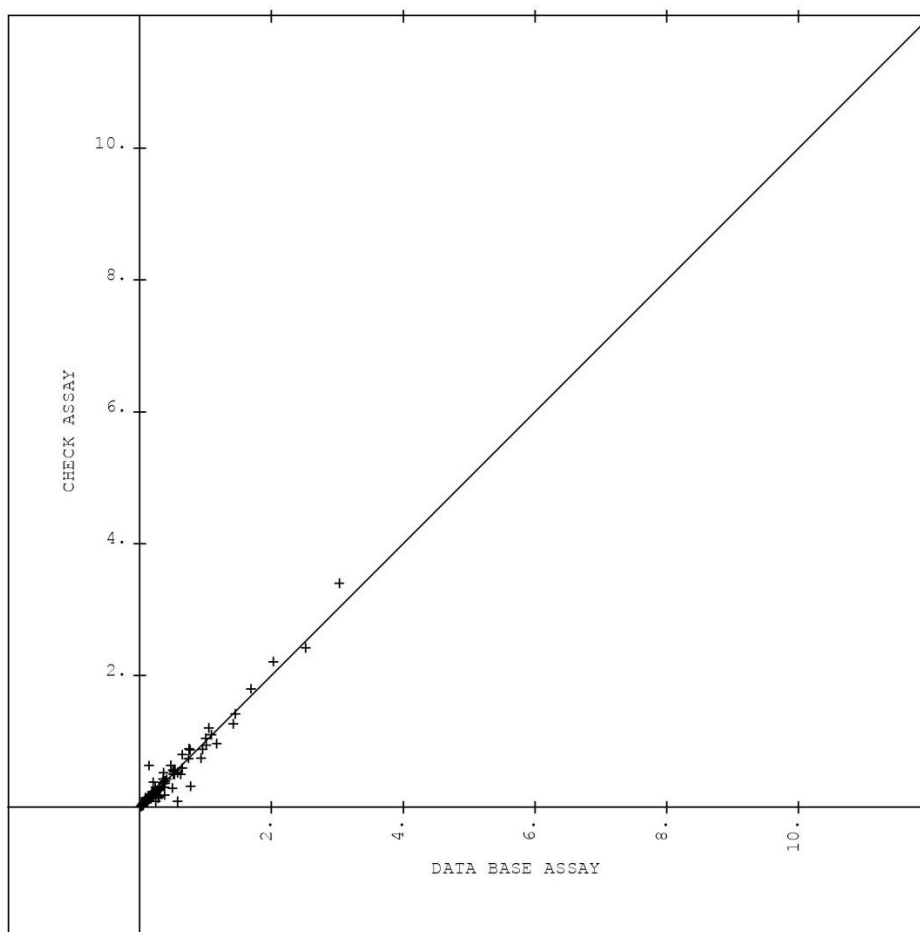
Source: IMC(2014)

**Figure 12-18: SGS Data Base vs. ALS Chemex Check Assays on Pulps, Gold**

SGS DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON SGS PULPS  
GOLD

\* XY PLOT LINE WITH A SLOPE OF 1  
DEPENDENT VARIABLE: pulp\_au INDEPENDENT VARIABLE: au  
OPTIONS: through origin

| variable                   | total cases | mean        | std dev                 | minimum     | maximum     |
|----------------------------|-------------|-------------|-------------------------|-------------|-------------|
| pulp_au                    | 171         | 0.28577E+00 | 0.43747E+00             | 0.10000E-01 | 0.34000E+01 |
| au                         | 171         | 0.28815E+00 | 0.42208E+00             | 0.10000E-01 | 0.30300E+01 |
| standard error of estimate |             | 0.0896      | correlation coefficient |             | 0.9580      |
| pulp_au = 1.000000 * au    |             |             |                         |             |             |



Source: IMC(2014)

ALS CHEMEX DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY ALS CHEMEX ON ALS CHEMEX REJECTS  
SILVER

A scatter plot comparing 'CHECK ASSAY' (Y-axis) against 'DATA BASE ASSAY' (X-axis). The X-axis ranges from 0 to 200 with major ticks at 50, 100, 150, and 200. The Y-axis ranges from 0 to 200 with major ticks at 50, 100, 150, and 200. A solid diagonal line represents the 1:1 relationship. Data points are marked with '+' symbols. Most points are clustered near the origin (0,0) and follow the diagonal line closely. There are several points at higher values, including one at approximately (110, 130), (125, 125), (135, 200), and (155, 135).

Source: IMC(2014)

ALS CHEMEX DATABASE VERSUS INSPECTORATE CHECK ASSAYS  
ON PULPS PREPARED BY INSPECTORATE ON ALS CHEMEX REJECTS  
SILVER

A scatter plot comparing 'CHECK ASSAY' (y-axis) against 'DATA BASE ASSAY' (x-axis). Both axes range from 0 to 70, with major tick marks at 20, 40, and 60. A solid diagonal line represents the 1:1 relationship. Data points are marked with '+' symbols. Most points are clustered near the origin (0,0) and follow the diagonal line closely. There are a few outliers: one point is at approximately (28, 22), and another is at approximately (70, 65).

Source: IMC(2014)

ALS CHEMEX DATABASE VERSUS INSPECTORATE CHECK ASSAYS  
ON ALS CHEMEX PULPS  
SILVER

A scatter plot comparing 'CHECK ASSAY' (y-axis) against 'DATA BASE ASSAY' (x-axis). The axes range from 0 to 250 with major ticks every 50 units. A solid diagonal line represents the 1:1 relationship. Data points are marked with '+' symbols. Most points are clustered near the origin (0,0), with a few points extending up to approximately 210 on both axes. The points generally follow the 1:1 line, indicating good agreement between the two assay types.

Source: IMC(2014)

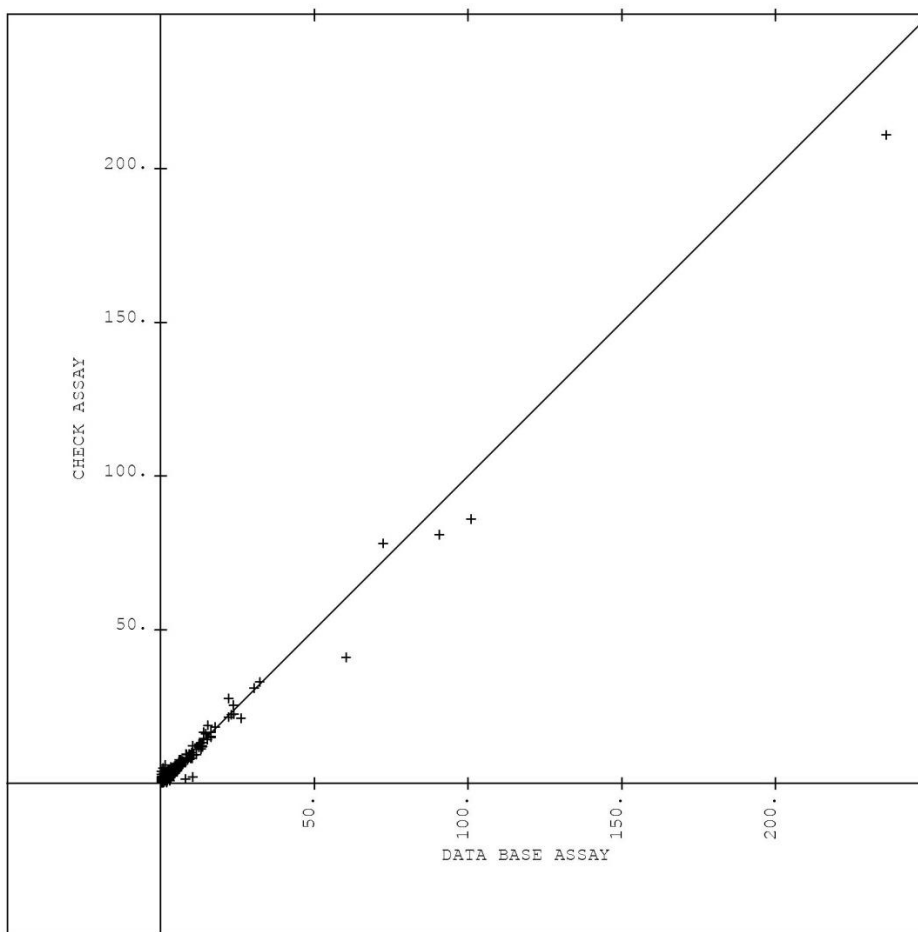
**Figure 12-22: SGS Data Base vs. SGS Check Assays on Rejects, Silver**

SGS DATABASE VERSUS SGS CHECK ASSAYS  
ON PULPS PREPARED BY SGS ON SGS REJECTS  
SILVER

\* XY PLOT LINE WITH A SLOPE OF 1  
DEPENDENT VARIABLE: crej\_ag INDEPENDENT VARIABLE: ag  
OPTIONS: through origin

| variable | total cases | mean        | std dev     | minimum     | maximum     |
|----------|-------------|-------------|-------------|-------------|-------------|
| crej_ag  | 1086        | 0.25461E+01 | 0.82981E+01 | 0.25000E+00 | 0.21100E+03 |
| ag       | 1086        | 0.25610E+01 | 0.91694E+01 | 0.20000E+00 | 0.23600E+03 |

standard error of estimate 1.3889 correlation coefficient 0.9720  
crej\_ag = 1.000000 \* ag



Source: IMC(2014)

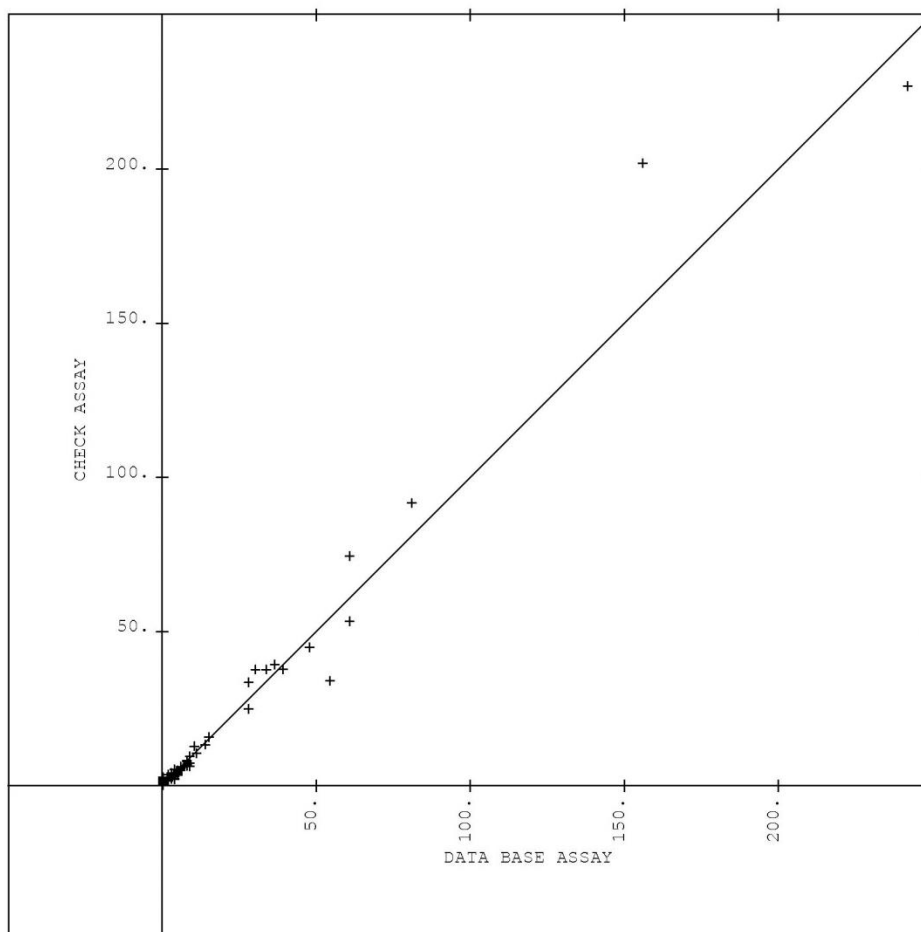
**Figure 12-23: SGS Data Base vs. ALS Chemex Check Assays on Rejects, Silver**

SGS DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON PULPS PREPARED BY ALS CHEMEX ON SGS REJECTS  
SILVER

\* XY PLOT LINE WITH A SLOPE OF 1  
DEPENDENT VARIABLE: crej\_ag INDEPENDENT VARIABLE: ag  
OPTIONS: through origin

| variable | total cases | mean        | std dev     | minimum     | maximum     |
|----------|-------------|-------------|-------------|-------------|-------------|
| crej_ag  | 351         | 0.41251E+01 | 0.18216E+02 | 0.10000E+00 | 0.22700E+03 |
| ag       | 351         | 0.37120E+01 | 0.17411E+02 | 0.20000E+00 | 0.24200E+03 |

standard error of estimate 3.1331 correlation coefficient 0.9704  
crej\_ag = 1.000000 \* ag



Source: IMC(2014)

SGS DATABASE VERSUS ALS CHEMEX CHECK ASSAYS  
ON SGS PULPS  
SILVER

A scatter plot comparing 'CHECK ASSAY' (y-axis) against 'DATA BASE ASSAY' (x-axis). The axes range from 0.0 to 8.0 with major tick marks every 2.0 units. A solid diagonal line represents the 1:1 relationship. Data points are marked with '+' symbols. Most points are clustered near the origin, with a few outliers at higher values. Notably, there are several points on the y-axis where the Data Base Assay is 0.0 but the Check Assay is between 1.0 and 2.0. There are also points where the Check Assay is significantly higher than the Data Base Assay, such as at (0.0, 5.5) and (0.0, 9.0).

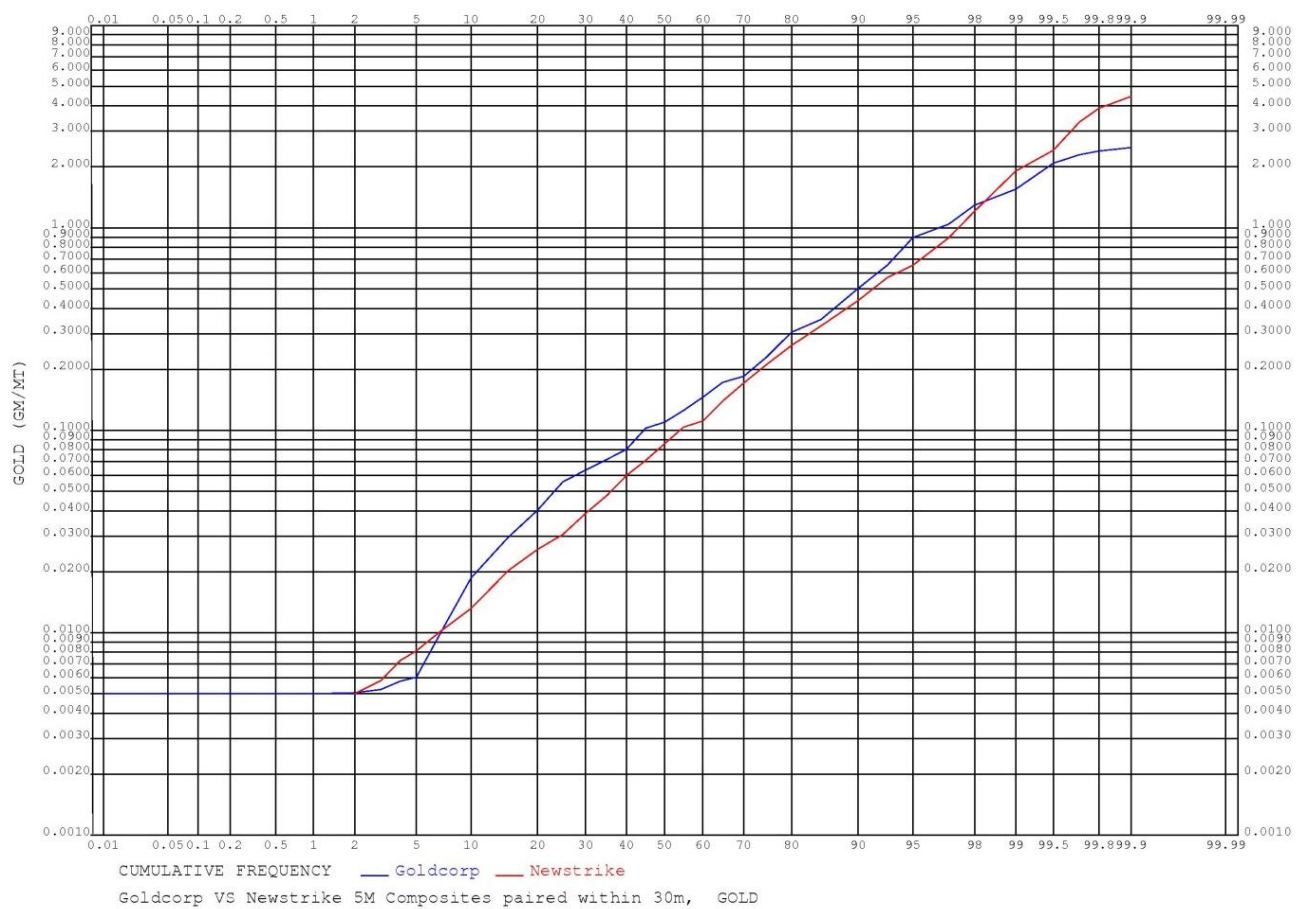
| Data Base Assay | Check Assay |
|-----------------|-------------|
| 0.0             | 0.0         |
| 0.0             | 0.2         |
| 0.0             | 0.4         |
| 0.0             | 0.6         |
| 0.0             | 0.8         |
| 0.0             | 1.0         |
| 0.0             | 1.2         |
| 0.0             | 1.4         |
| 0.0             | 1.6         |
| 0.0             | 1.8         |
| 0.0             | 2.0         |
| 0.0             | 5.5         |
| 0.0             | 9.0         |
| 2.0             | 1.2         |
| 2.0             | 1.6         |
| 2.0             | 2.1         |
| 2.0             | 3.2         |
| 3.0             | 2.4         |
| 3.0             | 3.2         |
| 4.0             | 3.1         |
| 4.0             | 3.6         |
| 5.0             | 4.5         |

Source: IMC(2014)

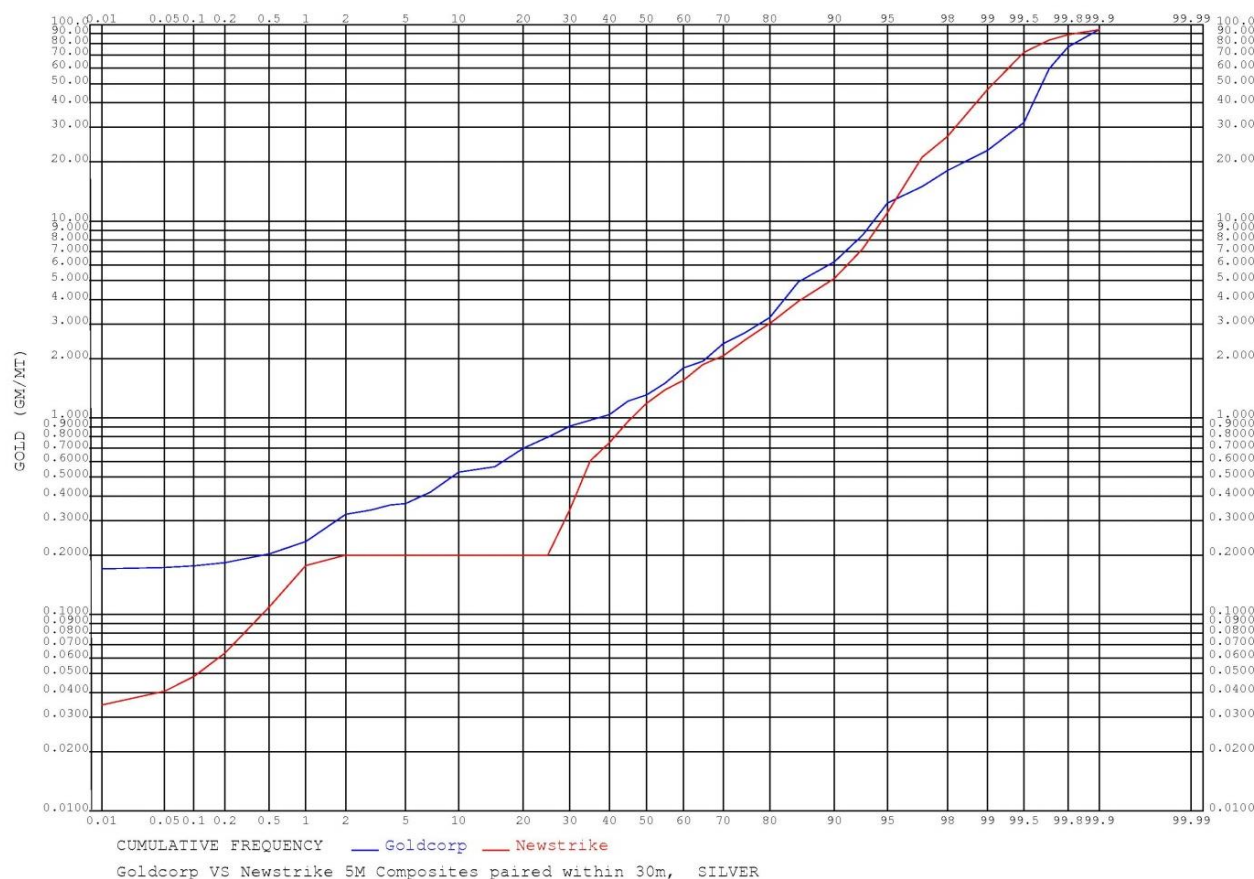
## 12.6 Goldcorp Holes AP-05-01 TO AP-05-11

No QAQC data are available for these earlier holes. Five-metre composite gold and silver grades in these holes were therefore paired over separations of up to 30m with 5m composite gold and silver grades in adjacent Newstrike holes to investigate whether gold and silver grades in the two hole sets were globally comparable. The results are summarized in the Figure 12.29 (gold) and Figure 12.30 (silver) probability plots.

**Figure 12-25: Goldcorp and Newstrike 5m Composites Paired Within 30m, Gold**



Source: IMC(2014)

**Figure 12-26: Goldcorp and Newstrike 5m Composites Paired Within 30m, Silver**


Source: JDS(2014)

The comparisons pair 220 Goldcorp composites with 220 Newstrike composites, i.e. 1,110m of Goldcorp drilling with 1,110m of Newstrike drilling, with an average separation of 18m between the composites. Mean gold grades compare within 7% (Goldcorp 0.203 g/t, Newstrike 0.219 g/t) and the grade distributions show no evidence for systematic bias. Mean silver grades are 3% different (Goldcorp 3.39 g/t, Newstrike 3.28 g/t) again there is no evidence for systematic bias.

## 12.7 Conclusions and Recommendations

Based on the results discussed above IMC considers that the gold and silver assays in the data base supplied to it meet criteria for use in developing a NI 43-101 compliant resource estimate in support of the updated mineral resource and initial PEA.

IMC notes, however, that no check assays are available for holes AP-11-41, AP-13-162, AP-13-168, AP-13-171, AP-13-172, AP-13-174, AP-13-176, AP-13-177, AP-13-182, AP-13-187, AP-13-189, AP-13-190 and AP-13-221. The drillholes AP-13-162 thru AP-13-190 were assayed by ACME lab and have no check assay



data. Newstrike considers the re-assay for over and under limits as checks on these holes and is also looking into running additional check assays by its protocol.

Samples from Goldcorp holes AP-05-01 through 11 were assayed by ALS Chemex and the assays are partially confirmed by the Figure 12-25 and 12.26 results, thus IMC considers these compliant. It would be desirable to confirm this by running additional check assays. It is understood that the Goldcorp samples are in Newstrike's sample storage facility.

The grades of the standards used to date by Newstrike range effectively from 0.3 to 0.9 g/t gold and from 1.5 to 5 g/t silver (higher-grade gold "standards" 4, 7 and 8 are not sufficiently homogeneous to qualify as standards). Three well-homogenized gold standards with grades of around 0.3, 1.5 and 5 g/t would be sufficient to cover the range of grades in the deposit.

The blank material currently being used is clearly not entirely blank, but material from previously drilled holes in the Ana Paula deposit. As mentioned previously, this source of 'blank' material is preferred by Newstrike over a certified blank which does not have the same appearance as the deposit. Efforts should be made to have this material as barren as possible. .

The basic purpose of duplicate assays is to demonstrate that core-splitting procedures are not biasing first-split grades relative to second-split grades. Because of high levels of scatter, however, the duplicate samples run to date are not capable of detecting such biases, and since it is hard to see how core-splitting procedures could have systematically biased the assays over a suite of 45,000 samples a good case can be made for not running any more. The duplicate program was discontinued after drillhole AP-12-81 based on IMC recommendations (Welhener et al, 2013).

The approach of running check assays on large numbers of samples from adjacent holes while running none on samples from large numbers of intervening holes has been discontinued and replaced with a one-every-twentieth-sample check assay schedule, as outlined below. Check assays should be run on fresh pulps prepared by the check lab from rejects to check both the primary lab's sample preparation and analytical procedures. There is no need to submit blanks or standards along with the check assay samples.

ProDeMin adopted the following sample submission based on its June 10, 2013 internal memo.

- One standard every 20<sup>th</sup> sample alternating with blanks.
- Additional blanks inserted after or within visibly mineralized intervals.
- One check assay every 20<sup>th</sup> sample on new pulp material

A regular sample submission schedule of this type will also assist in minimizing sample mislabelling and data entry errors.

Drill holes that have been assayed by Acme laboratory (at this time eleven drill holes) should have the gold values set to the G6-50 assay value, except when an overage occurs (au value > 10), then the gold value should be set to the G6Gr-50 value, if it exists.

Newstrike and ProDeMin should work closely with the assaying labs to determine the reasons for the variance in assaying of silver standards and check samples. Silver does not contribute much value to the project but the variance should be better understood.

## 13 Mineral Processing and Metallurgical Testing

### 13.1 Testwork and Reporting

The Ana Paula project has undergone a number of metallurgical studies covering a range of process options. Testwork has included all the major refractory processing methods, roasting, autoclave, Albion™. Conventional process methods including flotation testing and gravity concentration followed by cyanidation, whole-rock leaching, diagnostic leaching, and heap leaching, were also studied. Basic testwork defining some cyanidation parameters are included with the leach studies, and bond work indices were conducted on some of the rock types.

Test reports are summarized as follows:

1. SGS testwork 2006 – single composite from 84 samples. Test series for cyanidation parameters, diagnostic leaching, flotation parameters, BWi
2. Phillips – Bond Mill Grindability June 2012
3. KCA comprehensive testwork series Jan 2013 summary report date – Five individual reports, Individual BRT report - KCA0120102, BxA700 comprehensive metallurgical report -KCA0120137, BxA700 detailed flotation test program - KCA0120170, Pit composite report – detailed metallurgical test program - KCA0120189, POX testwork on composites BxA700 and Pit composite – KCA0120200 . Work was performed in 2012. This work is assumed to provide the basis for the NI 43-101 report published in May 2013.
4. ALS report testwork Sept 2013 KM3684 – QEMSCAN, preliminary flotation and gravity response, concentrate leach studies
  - a. Composite sample spreadsheet – Jan 2012, description of samples by lithology type and grade. Basis for ALS testwork performed 2012 to 2014
5. Albion report Oct 2013 – produced by Albion for use in a comparison study conducted by KCA
6. SGS report, April 2013 – “Cyanidation of Flotation Concentrates on Samples from the Ana Paula Project” – 1.5kg of concentrate, leaching parameters on 10 small tests
7. ALS report testwork Oct 2013 KM4009 – Results of cyanidation of coarse crush composites
8. ALS report testwork Jan 2014 KM4097 – Preliminary grind and regrind effects on Au recovery, pre-aeration effects on extraction and reagent consumptions.
9. SGS testwork report April 2014 – Interim, Final Report issued June 2014An NI 43-101 report was published on SEDAR in May of 2013 and summarized the testwork completed as of 2012. The section reads as follows:

Metallurgical testwork initiated in 2012 was conducted by Kappes, Cassiday & Associates (KCA) of Reno, Nevada. The higher grade Breccia Zone described in Sections 7.3.4 and 7.3.5 underwent testwork on the near surface portion of the Breccia Zone that included material above 700 metre elevation. This portion of

the Breccia Zone is located in the approximate center of the floating cone pit shape described in Section 14.0 where the Breccia comes to surface and where mining operations would logically be expected to initiate.

Basic scoping, un-optimized metallurgical tests were conducted using common methods, including:

- Whole pulp CIL/CIP cyanide leach over 96 hours ranged 77 to 81 percent Au recovery.
- A process including conventional Froth Flotation followed by leaching of the flotation concentrate was explored; high gold recoveries to the flotation concentrate of 93-96 % were achieved, making flotation a potentially attractive pre- concentration step prior to leaching.
- Conventional CIL/CIP cyanide leach tests of the Flotation Concentrate ranged 79 to 84 percent Au recovery. The CIL test results indicate that the mineralization is not preg- robbing.

The test work has not identified any processing factors or deleterious elements that will have a significant effect on the potential economic gold extraction by leaching at the rates indicated above.

Results obtained are not necessarily representative of all process material types within an ultimate pit shape. Due to the early nature of these studies it is not yet known what, if any factors may exist that could affect economic extraction. Additional testing on carefully selected representative samples underway at G&T Metallurgical Services of Kamloops, BC, Canada, a division of ALS Global Ltd. will deepen the understanding of the Ana Paula Project. Among other results these tests will provide:

- A finer, more optimized grind and whole pulp CIL/CIP cyanide leach to maximize Au recovery.
- A coarser, more optimized grind and rougher flotation followed by deep regrind and cleaner flotation of concentrate to maximize Au recovery and concentrate grade.
- A grind optimized rougher flotation followed by deep regrind and CIL/CIP cyanide leach of the Flotation Concentrate to maximize Au recovery.
- Basic material hardness testing.
- Preliminary results for selected material types representative of the in pit resource.

Technical indicators obtained from tests so far are encouraging enough to warrant further grind and reagent and flotation optimizations studies aimed at obtaining overall gold recoveries of 85 percent or greater and improving silver recoveries.”

## **13.2 Metallurgical Testwork 2013 and 2014**

### **13.2.1 SGS Testwork, April 2013**

In September 2012, SGS received one sample of concentrate, 1.5 kg, generated from the BxA700 composite for testing. This is the material described in the previous NI43-101 report as the breccia above 700m or near surface. The testwork compared leaching parameters, time, cyanide strength and consumption, aeration, lead nitrate verses recovery. The testwork states that the concentrate extracted about 95 percent gold to concentrate at a mass pull of about 20 percent.

Ten tests were performed and two test results were excluded due to poor performance, L1 and L4. Tests were performed on 100 grams of sample at 20 percent solids by weight. Dissolved oxygen and pH were monitored. A target pH was set at 10.5- 11.0 except in test 10 where the target pH was maintained between 9.5 and 10.0 for the first 3-hours and increased to average 10.6 for the remaining 93 hours.

The assay head was 25.6 g/t Au, 23.3 percent sulfide sulphur. Head analyses were also high in arsenic and iron, 12.0 and 27.1 percent, respectively. Silver results were not reported although silver extraction was shown in the test conclusions. Table 13-1 shows the results of the tests.

**Table 13-1: Test Results for Concentrate Leach Tests**

| TEST ID    | Grind P80 $\mu\text{m}$ | Preparation hrs | Additives                                    | Leach     |           | NaCN         |                  | Au g/t      |             | % Au Extraction |
|------------|-------------------------|-----------------|----------------------------------------------|-----------|-----------|--------------|------------------|-------------|-------------|-----------------|
|            |                         |                 |                                              | Leach     | Total     | Strength g/l | Consumption Kg/t | Calc hd     | Residue     |                 |
| <b>L1*</b> | <b>62</b>               | <b>0</b>        | -                                            | <b>0</b>  | <b>96</b> | <b>5</b>     | <b>23.0</b>      | <b>24.0</b> | <b>0.19</b> | <b>99.2</b>     |
| L2         | 5                       | 24              | -                                            | 48        | 96        | 5            | 44.2             | 21.3        | 4.35        | 79.6            |
| L3 (CIL)   | 5                       | 24              | $\text{Pb}(\text{NO}_3)_2 - 100 \text{ g/l}$ | 48        | 96        | 5            | 46.7             | 22.0        | 4.43        | 79.5            |
| <b>L4*</b> | <b>5</b>                | <b>24</b>       | $\text{Pb}(\text{NO}_3)_2 - 100 \text{ g/l}$ | <b>48</b> | <b>96</b> | <b>5</b>     | <b>44.3</b>      | <b>17.4</b> | <b>0.14</b> | <b>96.0</b>     |
| L5         | 5                       | 24              | $\text{H}_2\text{O}_2 - 100 \text{ g/l}$     | 48        | 96        | 5            | 42.0             | 21.6        | 4.39        | 79.7            |
| L6         | 5                       | 24              | $\text{Pb}(\text{NO}_3)_2 - 100 \text{ g/l}$ | 48        | 96        | 15           | 186              | 21.0        | 3.80        | 81.9            |
| L7         | 5                       | 12              | -                                            | 48        | 96        | 5            | 48.9             | 26.8        | 4.44        | 83.5            |
| L8         | 62                      | 0               | -                                            | 0         | 96        | 5            | 18.5             | 28.6        | 5.20        | 81.8            |
| L9         | 23                      | 0               | -                                            | 96        | 96        | 5            | 49.8             | 22.7        | 4.54        | 80.0            |
| L10        | 62                      | 0               | -                                            | 0         | 96        | 5            | 20.8             | 29.0        | 4.92        | 83.0            |

Source: JDS(2014)

SGS recommended a grind of 62 microns, cyanide concentration of 5g/l, no aeration or additives, and a retention time of 96 hours, and lower pH, between 9.5 and 10. Calculated extraction of gold was 83 percent and silver was 38 percent. Most of the gold extracted in the first 24 hours and silver showed a longer leach curve, 96 hours.

Although SGS recommended some parameters, a review of this testwork and testwork conducted by KCA in 2012 (KCA0120137) showed similar results for cyanide extractions from concentrates, KCA 64365A concentrate showed 79 percent extraction and another concentrate sample, reground to +85 percent passing 20 $\mu\text{m}$  showed 81 percent extraction.

### 13.2.2 ALS Testwork October 2013

Testwork performed by ALS laboratories, KM4009, in 2013 included leach studies on coarse crushed composites representing eight rock types. The samples were crushed to 3.35mm and leached in cyanide solutions at a pH of 11 for 240 hours. The purpose of the tests was to determine the heap leaching amenability of the six composites, B1b to Szi, with information from the B2b and limestone, B1l materials added for comparison. Results are shown in Table 13-2:

**Table 13-2: Cyanidation Summary for Coarse Bottle Roll Tests**

| Sample ID     | Head Grade<br>g/t |      | Gold Extraction - Hours |    |    |    |     |     | kg/t Reagent<br>Consumption |      |
|---------------|-------------------|------|-------------------------|----|----|----|-----|-----|-----------------------------|------|
|               | Au                | Ag   | 6                       | 24 | 48 | 72 | 168 | 240 | NaCN                        | Lime |
| Breccia B1b   | 10.4              | 8.2  | 24                      | 32 | 35 | 37 | 40  | 39  | 1.7                         | 0.9  |
| Hornfels B1h  | 4.4               | 9.8  | 20                      | 25 | 27 | 29 | 31  | 30  | 1.9                         | 0.9  |
| Intrusion B1i | 3.3               | 3.8  | 28                      | 37 | 41 | 44 | 48  | 51  | 0.9                         | .04  |
| SMS B1s       | 11.2              | 28.6 | 14                      | 21 | 23 | 25 | 23  | 23  | 3.2                         | 1.6  |
| Intrusion B2i | 0.85              | 4.6  | 26                      | 31 | 36 | 37 | 38  | 36  | 0.9                         | 0.4  |
| Intrusion Szi | 0.92              | 3.3  | 18                      | 29 | 31 | 33 | 34  | 35  | 1.0                         | 0.5  |
| MB B2b        | -                 | -    | 18                      | 2  | 24 | 24 | 28  | 30  | 1.9                         | 0.9  |
| Limestone B1l | -                 | -    | 1                       | 1  | 2  | 3  | 5   | 5   | 1.2                         | 1.3  |

Source: JDS(2014)

These test composites were made from drill core that was also part of the BxA700 composite materials used for the previous testwork conducted by KCA. ALS indicated that the cyanide and lime consumptions were high for the type of material tested.

### 13.2.3 SGS Testwork June 2014

Additional work completed by SGS/Metcon laboratories in Tucson Arizona focused on column testing and heap leaching. The results are shown in Table 13-3.

**Table 13-3: Column Test Results – Final Report values**

| Sample ID                        | Days | Head   |        | Solution  | Extraction % |       | Reagent Consumption |      |
|----------------------------------|------|--------|--------|-----------|--------------|-------|---------------------|------|
|                                  |      | Au g/t | Ag g/t | kl/t Rock | Au           | Ag    | NaCN                | Lime |
| Composite 1 (B1i)                | 88   | 0.95   | 2.3    | 2.77      | 34.44        | 18.06 | 0.25                | 1.31 |
| Composite 2 (Sz)                 | 88   | 0.66   | 6.9    | 2.54      | 13.72        | 12.99 | 0.24                | 0.95 |
| Composite 3 (B2b)                | 90   | 0.58   | 1.7    | 2.98      | 3.95         | 32.31 | 0.33                | 3.17 |
| Composite 4 (B2i)                | 91   | 0.57   | 4.0    | 2.95      | 84.10        | 14.60 | 0.19                | 3.62 |
| Composite 5 (Tejocote Intrusion) | 89   | 0.49   | 4.5    | 2.81      | 13.11        | 24.47 | 0.16                | 1.62 |

The SGS report indicates that of the rock types tested composite 4, B2i, appears to be leachable with gold recovery at 84 percent. Silver recovery was low at 14.6 percent. Cyanide consumption was low and lime consumption was moderate to high. A similar trend was observed for gold and silver recoveries and reagent consumptions with the bottle roll leach tests.

### 13.2.4 ALS Testwork January 2014

Testwork KM4097 used a composite made up of seven rock types representing the first four years of mining activity. The rock types are the same as those used in the coarse bottle roll tests with the exception of the rock type B1s which was not utilized in making this composite. The composite is described with each rock type contribution and their individual analyses. The testwork is very limited in scope, focusing on extraction

from concentrates based on hand panning and bench-top flotation studies. Its primary purpose was to investigate the effects of primary and regrind size on leach extraction and the use of pre-aeration on extraction and reagent consumption.

The testwork conducted was not designed to fully define the process and should be regarded as preliminary in nature. The flowsheet proposed is based on similar material types and is a common method of extraction for precious metals in sulfide concentrates.

Mineralogical studies conducted for KM4097 composite rocks describe the rock types as partially refractory. Most of the material is available for leaching with two rock types showing metal locking in silica and arsenopyrite. The results of these mineralogical investigations are similar to those conducted by KCA.

The composite description is given in Table 13-4. The rock type descriptions are the same as those used in KM4009. The rock type SMS B1s was not part of the composite. Sample analyses were conducted on heads and reported in KM3684.

**Table 13-4: Composite Year 1-4**

| Sample ID         | Sample wt<br>kg | Head Grade g/t (KM4009) |     | Head Grade g/t (KM3684) |      |
|-------------------|-----------------|-------------------------|-----|-------------------------|------|
|                   |                 | Au                      | Ag  | Au                      | Ag   |
| Breccia B1b       | 30.5            | 10.4                    | 8.2 | 8.32                    | 9.0  |
| Hornfels B1h      | 5.8             | 4.4                     | 9.8 | 4.55                    | 11.0 |
| Intrusion B1i     | 115.4           | 3.3                     | 3.8 | 3.65                    | 4.0  |
| Limestone B1l     | 15.0            | Not Stated              |     | 3.37                    | 7.0  |
| MB B2b            | 5.5             |                         |     | 0.98                    | 11.0 |
| Intrusion B2i     | 8.2             | 0.85                    | 4.6 | 1.42                    | 5.0  |
| Intrusion Szi     | 16.9            | 0.92                    | 3.3 | 0.96                    | 3.0  |
| Calculated Head   |                 |                         |     | 3.98                    | 5.36 |
| Assay Head KM3684 |                 |                         |     | 3.44                    | 5.00 |
| Assay Head KM4097 |                 |                         |     | 3.08                    | 6.00 |

Source: JDS(2014)

There is a variation between the measured heads from KM3684 and KM4097 and the measured heads from KM4009 where assays were available. The variation could be attributed to particulate gold or the nugget effect.

Gravity and flotation studies on the composite showed the material successfully concentrates as a sulfide which is leachable by conventional means.

The testwork compared grind sizes for gravity/flotation. The sizes ranged from 197µm to 73µm. Gold and silver concentrated very well at a coarse size, 95 percent of the gold and 87 percent of the silver values reporting to the flotation concentrate at 197µm. More than 40 percent of the gold reported to the gravity fraction with 1.1 percent of the initial mass. The remaining gold values reported to the flotation concentrate with a total mass pull to the rougher flotation concentrate of 18.9 percent. Silver values to the gravity concentrate were 14 percent with 73 percent reporting the to the rougher flotation concentrate. These

concentrates were produced by panning. In the next phase of testwork, the whole-rock should be tested using a laboratory sized gravity concentration machine.

A cleaner concentrate was produced so that leach studies could be conducted on the final sulfide concentrate. The cleaner reduced the amount of arsenic reporting to the concentrate but also reduced the total amount of precious metals. Total gold reporting to concentrate was 90 percent and silver was reduced to 60 percent. The resulting mass pull was 7.1 percent of the whole-rock mass.

Pre-aeration studies on the cleaner concentrate showed no benefit to leaching in terms of extraction but did reduce the amount of cyanide needed to achieve results. The slurry was reground to 43 $\mu$ m and aerated with oxygen for 16 hours or leached directly. Leach tests were conducted at 20 percent solids for 48 hours. Silver extraction was significantly affected, reducing it from 72 percent to 58 percent.

The cyanide consumption of the cleaner concentrate was 32kg/tonne of rock, or 2.2kg/tonne of whole rock, and 1.6kg/tonne of lime or 0.1kg/tonne of whole-rock before aeration. The aerated slurry reduced the total cyanide consumption to 18.3 kg/tonne or 1.3 kg/tonne of whole rock, a reduction of 43 percent on cyanide consumption. The increased lime consumption may have been the result of sulfide oxidation from aeration.

### **13.3 Metallurgical Basis for Process Design**

The proposed Ana Paula flowsheet was based on the results of testwork performed by ALS, Report KM4097, on year 1-4 composite sample. This work was considered the most reliable for use as a basis in designing a processing plant and superior to whole-rock leach based on the reagent consumption. The results of the composite tests showing the first four years of production seem to correlate with the previous works done on composite BxA700, showing similar flotation results in terms of mass pull, and leaching results reported by SGS.

While the conclusions of the leach studies for KM4097 were different from SGS leach studies, the following should be noted: in both cases, a single composite was used to generate a concentrate that was later used in leach testing. For the SGS leach studies that composite was a rougher concentrate and for ALS leach studies the composite was a cleaner concentrate. The amount of sulfide present does appear to affect the amount of cyanide required.

The work index chosen as a basis for design was the BXA700 composite sample which gave a BWi of 19.8 kWh/tonne. This index is high and because it is based on a single sample should be considered conservative.

The plant basis uses the parameters cited in BXA700 but assumes a rougher concentrate will be leached. Additional work is needed to confirm these parameters and to confirm the reagent consumptions. This work is part of a proposal for the next phase of engineering.

While whole-rock leaching produced similar results to the flotation/leaching of concentrates, a comparison of the operating reagent costs did show the flotation system as more economically favorable. Additional work to confirm the reagent consumptions will be recommended in the next phase of engineering.

There are concerns about the comparability of reagent consumption results from different laboratories because each laboratory uses different weight percent solids when conducting cyanidation testing. SGS laboratories use 30 percent solids by weight, ALS laboratories use 20 percent solids by weight. This

difference in mass densities has an effect on cyanide oxidation and can lead to erroneous results. In future testing, the samples will be leached at the same density proposed for the plant, approximately 40 to 45 percent solids. Results from these tests will be used to compare whole-rock leach and flotation-concentrate leach systems.

## 13.4 Recommended Testwork

The following metallurgical testing programs are recommended:

- Grinding and work crushing indices
  - SPI, BWi, CWi, abrasion testing, full scale impact testing
  - JKSimMet report using testing parameters
- Gravity concentration testing with Knelson or Falcon benchtop machines
  - Include tests to leach gravity concentrate in an Acacia or similar circuit
- Lock-cycle Flotation testwork
- Mineralogical studies and primary grind characterizations
- Aeration and leaching optimization
- Regrind studies
- Thickening, filtration, rheology parameters
- Cyanide destruction methods
- Tailings deposition options – trade-off studies

The estimated cost for this testwork is expected to be approximately \$720K.

## 14 Mineral Resource Estimate

This mineral resource has been prepared in accordance with NI 43-101 Standards of Disclosure for Mineral Projects including changes to NI 43-101 policy that became effective on June 30, 2011. The NI 43-101 definition of a Mineral Resource states *"In this Instrument, the terms "mineral resource", "inferred mineral resource", "indicated mineral resource" and "measured mineral resource" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as amended"*, NI 43-101, 2011.

The mineral resource estimate for Ana Paula contemplates an open pit extraction method. At this stage, only preliminary studies have been conducted to develop the input parameters used to define the pit shell used in this report and no studies have been completed to determine the viability of underground extraction methods. In the absence of input parameters optimized to the Ana Paula Project certain technical and economic assumptions were made which are considered to be a best estimate given existing conditions. The recommendations from this report will be used to optimize input parameters and advance the economic viability of the Ana Paula resource.

### 14.1 Summary of Ana Paula Mineral Resource

The Ana Paula mineral resource estimate has an effective date of August 8, 2014 and was developed using an update mineral resource model based on 223 drill holes within the model limits, an updated geologic interpretation, metallurgical recovery data discussed in Section 13, updated costs provided by JDS Mining and a geotechnical study by Steffen, Roberts & Kirsten Consulting of Denver, Colorado ("SRK"), which was completed in late November, 2012 (Ross-Brown, Levy, 2012). The deposit has been modeled using an inverse distance squared operator applied to 5m gold and silver drill hole composite lengths which respected lithology units. Model blocks are classified as measured, indicated or inferred based on kriging variance, the number of holes inside the search ellipsoid and distance from the closest hole. Tonnages are estimated using the average of the density data by lithology.

Table 14-1 is a summary of the input parameters to define the portion of the mineral inventory which falls within a resource shell and thus tabulated as the mineral resource. A summary of the mineral resource is presented in Table 14-2, tabulated at an internal cutoff of 0.46 g/t gold equivalent (AuEq). The calculation of AuEq includes the gold and silver prices and recoveries presented in Table 14-1. AuEq equals  $Au + 0.011 \times Ag$ .

**Table 14-1: Input Parameters to Define the Mineral Resource Open Pit Shell Geometry**

|                            | Process Recovery                                        | Metal Price |
|----------------------------|---------------------------------------------------------|-------------|
| Gold Price                 | 80%                                                     | \$1450/oz   |
| Silver Price               | 55%                                                     | \$23/oz     |
| Costs:                     |                                                         |             |
| Process                    | \$15.60/t                                               |             |
| General and Administrative | \$1.65/t                                                |             |
| Mining                     | \$1.85/t,, plus \$0.02/t per bench below 900m elevation |             |
| Pit overall slope angles   | 55 degrees on west<br>45 degrees on all others          |             |

Source: IMC(2014)

**Table 14-2: Summary of the Mineral Resource of ID2 Model**

| Category           | Tonnage & Grades $\geq 0.46$ g/t AuEq Cutoff |              |              |             | Contained Ounces (000's) |              |
|--------------------|----------------------------------------------|--------------|--------------|-------------|--------------------------|--------------|
|                    | Ktonnes                                      | AuEq, g/t    | Au, g/t      | Ag, g/t     | Gold                     | Silver       |
| Measured           | 22,767                                       | 1.661        | 1.608        | 4.90        | 1,177                    | 3,587        |
| Indicated          | 18,243                                       | 1.229        | 1.163        | 5.95        | 682                      | 3,489        |
| <b>Sum M&amp;I</b> | <b>41,010</b>                                | <b>1.469</b> | <b>1.410</b> | <b>5.37</b> | <b>1,859</b>             | <b>7,076</b> |
|                    |                                              |              |              |             |                          |              |
| Inferred           | 1,904                                        | 1.233        | 1.113        | 10.85       | 68                       | 664          |

## 14.2 Drilling and Assay Data

Drilling and assaying statistics for the drill hole data base used to construct the model are summarized in Table 14-3. The statistics are for drill holes that are within the mineral resource model limits (1,997,100 to 1,999,400 north and 408,500 to 410,800 east, elevation 110 to 1390) and exclude 7holes which are in the drill hole database but fall outside the block model limits. Figure 14-1 shows the drill holes by the three drill programs (blue = Goldcorp drilling, green = Newstrike 2010-2012 drilling and red = Newstrike 2012-2013 drilling). Holes are mostly inclined east at angles of 45 or 60 degrees and all were drilled diamond core. Drill hole diameter is HQ with reduction to NQ in some of the deeper holes. Core recovery averages 97 percent with 95 percent of the samples having better than 90 percent recovery. The average drill hole spacing is approximately 50 m in the main part of the Ana Paula deposit, with a range of from 25 -50 m in the high grade Breccia Zone and 50-150 m in the lesser mineralized areas to the north and south of the breccia zone.

**Table 14-3: Drilling and Assaying Statistics**

| Data                                 | Goldcorp | Newstrike | Newstrike | Total     |
|--------------------------------------|----------|-----------|-----------|-----------|
| Drill Program Date                   | 2005     | 2010-2012 | 2012-2013 |           |
| Total Program - Number of holes      | 11       | 119       | 100       | 230       |
| Total Program - Metres drilled       | 3,687.5  | 59,623.9  | 50,476.0  | 113,787.4 |
| <b>Inside Mineral Resource Model</b> |          |           |           |           |
| Number of Holes                      | 11       | 113       | 99        | 223       |
| Metres drilled                       | 3,687.5  | 56,414.1  | 49,929.6  | 110,031.2 |
| Number of assay intervals            | 2,862    | 37,786    | 36,535    | 77,183    |
| Average assay interval, m            | 1.29     | 1.49      | 1.37      | 1.43      |
| Assayed for gold                     | 2,853    | 37,765    | 36,528    | 77,146    |
| Percent complete                     | 99.69    | 99.94     | 99.98     | 99.95     |
| Assayed for silver                   | 2,853    | 37,765    | 36,528    | 77,146    |
| Percent complete                     | 99.69    | 99.94     | 99.98     | 99.95     |

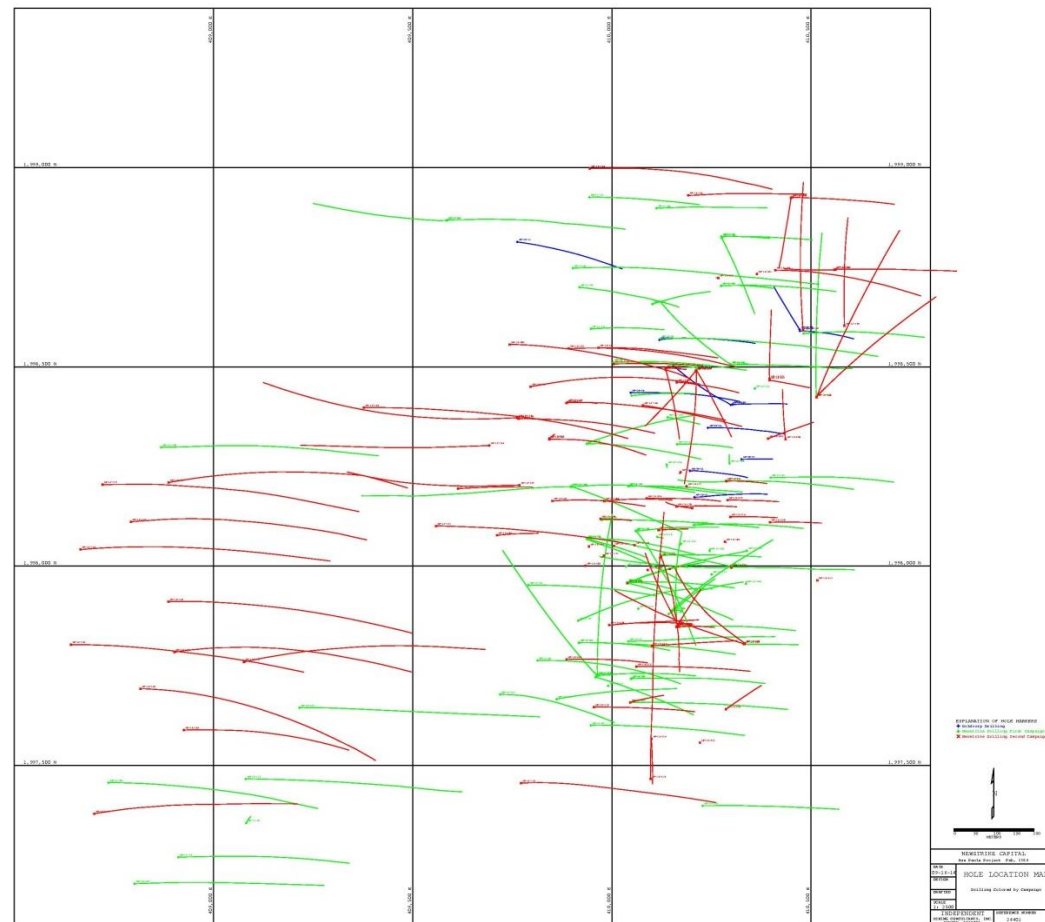
Source: IMC(2014)

The data base also contained essentially complete assay data for sulphur, arsenic and other elements, along with percent core recovery and RQD values. All assayed intervals were coded for the logged lithology and alteration type. The database was back assigned the lithology codes from the block model. The block model lithology was interpreted on cross sections and wire frames were created of the major lithologic units.

The gold and silver assays were reviewed to determine if any high end outliers should be cut prior to compositing the assays into more or less equal length 5m composites. Based on this review, eight gold assays were capped at 100 g/t (original assay values ranged from 105 to 760 g/t for a total of 6.52m of core length) and nine silver assays were capped at 500 g/t (original assay values ranged from 558 to 1120 g/t for a total of 8.16m of core length). Figures 14-2 and 14-3 are box plots of the drill hole uncapped assays for gold and silver by the major lithology units in the block model. The lithology units from left to right on the figures are:

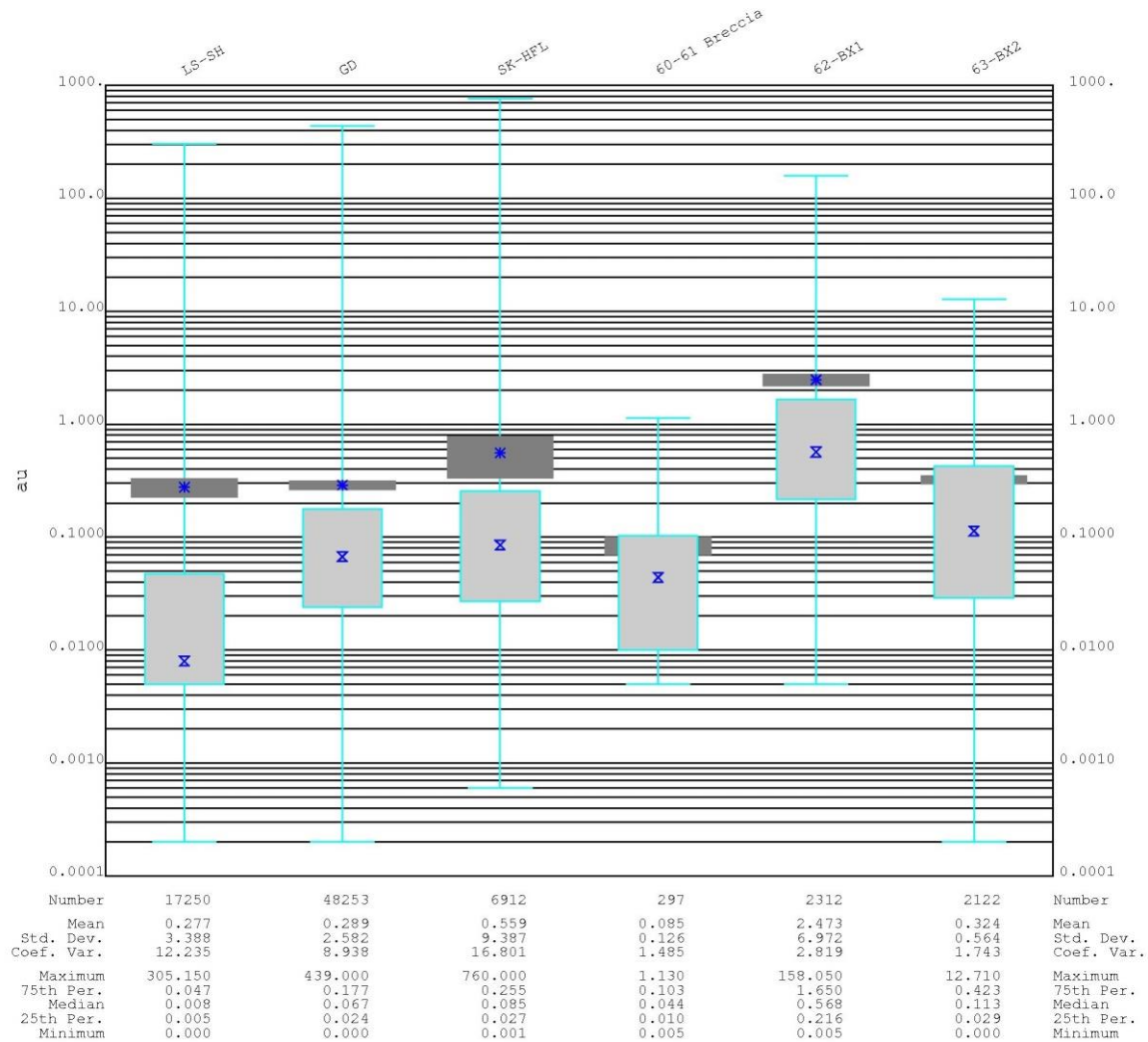
- Combined limestone & shale (code 12)
- Granodiorite (code 20)
- Skarn & Hornfels (code 40 for skarn, 41 for hornfels)
- Breccia units (multi-lithic, 61-hydrothermal)
- BX1 (62 – high grade breccia unit)
- BX2 (63 – lower grade breccia unit)

**Figure 14-1: Drill Hole Locations**



Source: IMC(2014) Plan View. Goldcorp drilling in blue, Newstrike 2010-2012 drilling in green, Newstrike 2012-2013 drilling in red. Grid spacing = 500m

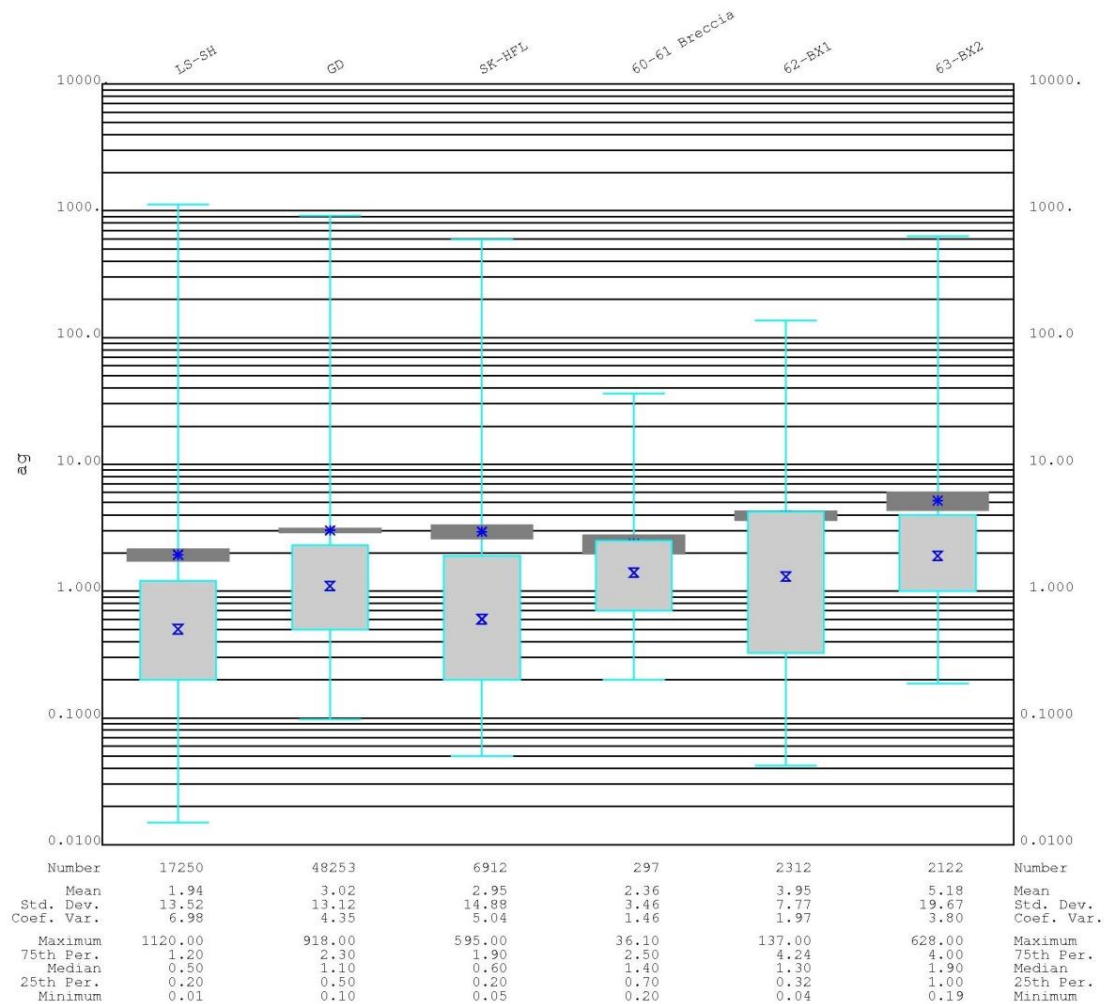
**Figure 14-2: Box Plot of Gold Assays**



Anapaula - Au by Grouped diplitr variable - Assays  
July 30, 2014

Source: IMC(2014)

**Figure 14-3: Box Plot of Silver Assays**



Anapaula - Ag by Grouped diplitr variable - Assays  
July 30, 2014

Source: IMC(2014)

Table 14-4 is a summary of the gold and silver assay statistics by drill program and the block model lithology assigned to the assay intervals. The table compares the assay statistics used from the November 2012 mineral resource estimate (Goldcorp plus Newstrike 2010-2012 drilling, holes 1 - 130) with the additional drilling by Newstrike in 2012-2013. Both tabulations use the capped gold and silver assay values. The Newstrike 2012-2013 drill program intersected lower average grades in many of the rock types. There does not appear to be any changes in assaying or sampling protocol and the lower grades are attributed to the drill hole locations within the deposit.

**Table 14-4: Summary of Assay statistics (within block model limits)**

|           |                   | Holes 1 - 130                  |         |         | Holes 131 - 230     |         |         |
|-----------|-------------------|--------------------------------|---------|---------|---------------------|---------|---------|
|           |                   | Goldcorp + Newstrike 2010-2012 |         |         | Newstrike 2012-2013 |         |         |
| Lithology |                   | No. Assays                     | Au, g/t | Ag, g/t | No. Assays          | Au, g/t | Ag, g/t |
| 12        | Lms-shale         | 10,380                         | 0.272   | 1.89    | 6,870               | 0.250   | 1.92    |
| 20        | Granodiorite      | 23,965                         | 0.320   | 3.06    | 24,288              | 0.240   | 2.93    |
| 40        | Skarn             | 604                            | 0.602   | 4.32    | 634                 | 0.316   | 3.45    |
| 41        | Hornfels          | 3,024                          | 0.387   | 2.84    | 2,650               | 0.554   | 2.61    |
| 60        | Bx – multi-lithic | 15                             | 0.150   | 1.11    | 73                  | 0.091   | 2.52    |
| 61        | Bx – hydro.       | 138                            | 0.043   | 2.92    | 71                  | 0.146   | 1.37    |
| 62        | BX1 – hi grade    | 1,300                          | 3.126   | 5.04    | 1,012               | 1.565   | 2.54    |
| 63        | BX2 – low grade   | 1,192                          | 0.276   | 5.18    | 930                 | 0.385   | 5.05    |
| Total     |                   | 40,618                         | 0.404   | 2.89    | 36,528              | 0.306   | 2.77    |

Source: JDS(2014). Note: Average gold and silver grades at 0.00 g/t cut-off 37 assay intervals have no gold and silver assays

### 14.3 Composite Grade Statistics

Gold and silver assays were composited into approximately 5 metre equal length intervals based on the lithology contacts of the block model geology. Based on the review of the 5m composite grades of drill holes on either side of the major contacts, selected lithology units were combined prior to compositing as there was minor difference in gold grades when the contact was crossed. Comparison across other contacts showed larger differences and these contacts were respected when developing the final set of composites used for grade estimation. The combined lithology units for compositing are granodiorite, skarn, hornfels, multi-lithic breccia and hydrothermal breccia (codes 20, 40, 41, 60 and 61), with the limestone-shale, BX1 and BX2 breccias (codes 12, 62 and 63) composited uniquely.

Table 14-5 summarizes the total assay and five metre composite databases within the model limits that are used for the grade estimations for gold and silver. Figures 14-4 and 14-5 are box plots of the five metre composites for gold and silver and have the same format as Figures 14-2 and 14-3 that illustrate the assay data.

**Table 14-5: Comparison of Assay and 5m Composites**

|           |                   | Assays                            |         |         | 5 m Composites                    |         |         |
|-----------|-------------------|-----------------------------------|---------|---------|-----------------------------------|---------|---------|
|           |                   | Holes 1-230 (within model limits) |         |         | Holes 1-230 (within model limits) |         |         |
| Lithology |                   | No. Assays                        | Au, g/t | Ag, g/t | No. Composites                    | Au, g/t | Ag, g/t |
| 12        | Lms-shale         | 17,250                            | 0.263   | 1.90    | 5,540                             | 0.177   | 1.49    |
| 20        | Granodiorite      | 48,253                            | 0.280   | 3.00    | 13,033                            | 0.248   | 2.68    |
| 40        | Skarn             | 1,238                             | 0.456   | 3.87    | 330                               | 0.367   | 3.13    |
| 41        | Hornfels          | 5,674                             | 0.465   | 2.73    | 1,598                             | 0.359   | 2.21    |
| 60        | Bx – multi-lithic | 88                                | 0.101   | 2.28    | 23                                | 0.102   | 2.27    |
| 61        | Bx – hydro.       | 209                               | 0.078   | 2.39    | 59                                | 0.072   | 3.06    |
| 62        | BX1 – hi grade    | 2,312                             | 2.443   | 3.95    | 604                               | 2.338   | 3.78    |
| 63        | BX2 – low grade   | 2,122                             | 0.324   | 5.12    | 606                               | 0.310   | 5.10    |
| Total     |                   | 77,146                            | 0.358   | 2.83    | 21,793                            | 0.299   | 2.45    |

Note: Average gold and silver grades at 0.00 g/t cut off 34 composite intervals have no gold and silver assays

The patterns of grade distribution in the deposit are illustrated in Figures 14-6 and 14-7, which are east west sections along 1998000N (the Breccia zone) and 1998400N showing 5m composite gold grades, and the block model lithology.

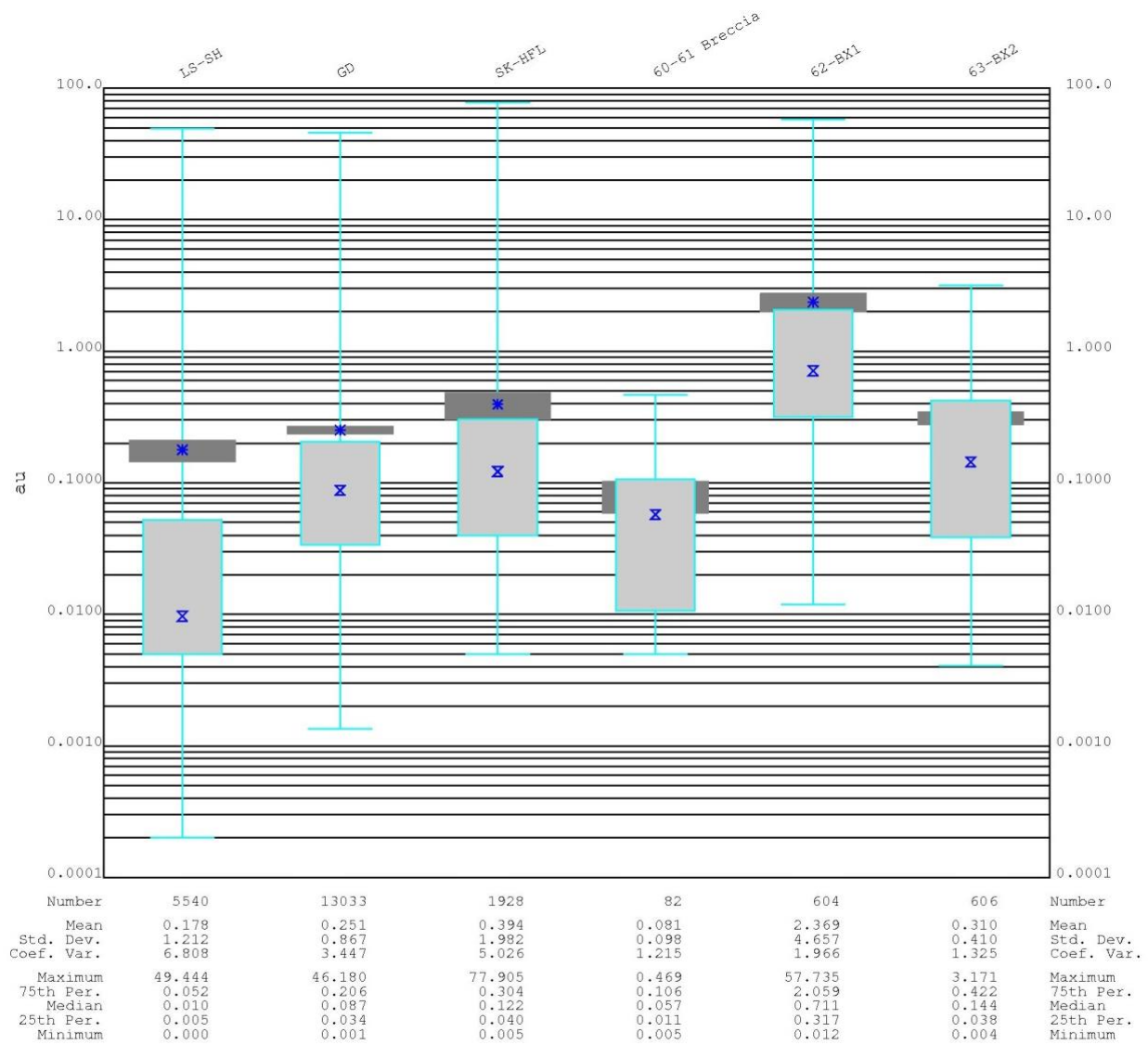
The lithology color codes are:

- Limestone-shale (12) – green
- Granodiorite (20) – red
- Skarn – hornfels (40, 41) dark blue
- Breccia (62, 63) – light blue

The 5m composites color codes of gold values (g/t) on the drill hole traces are:

- < 0.50 g/t – gray
- 0.50 – 1.00 g/t – blue
- 1.00 – 2.00 g/t – dark blue
- 2.00 – 5.00 g/t – green
- 5.00 – 10.00 g/t – red
- >= 10.00 g/t – magenta

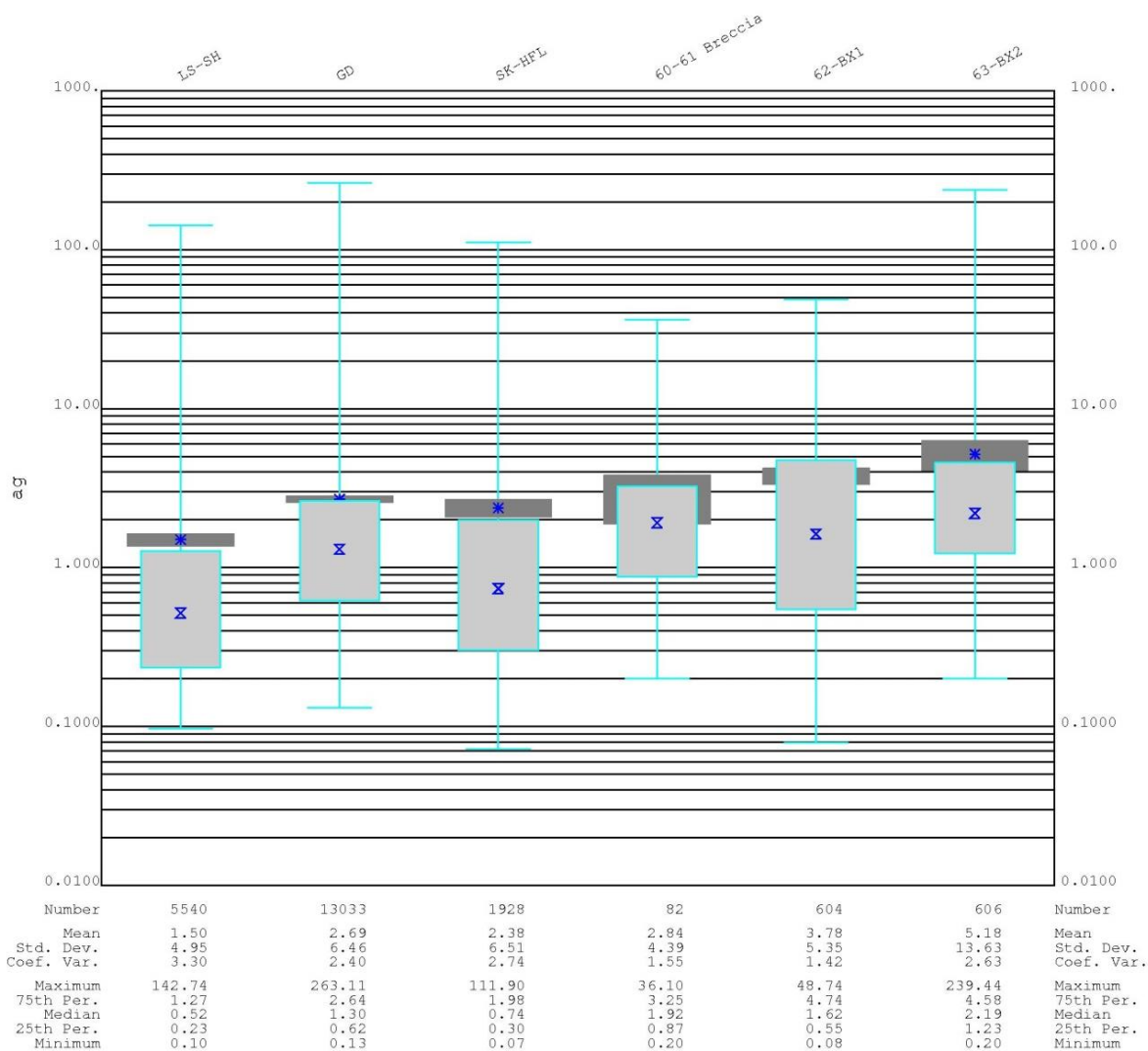
**Figure 14-4: Box Plot of Gold Drillhole Composites**



Anapaula - Au by Grouped diplitr variable - 5m Composites  
July 30, 2014

Source: IMC(2014)

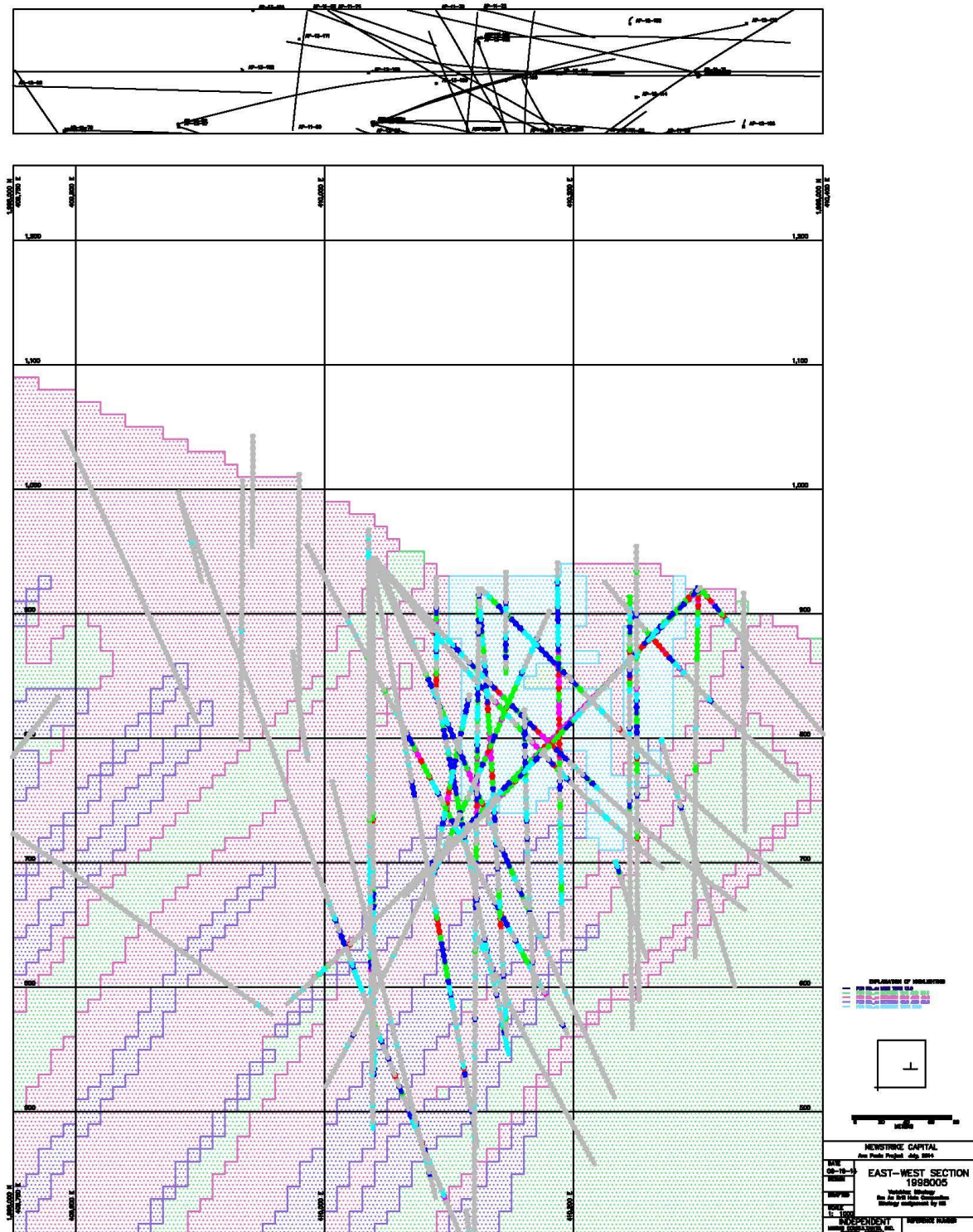
**Figure 14-5: Box Plot of Silver Drillhole Composites**



Anapaula - Ag by Grouped diplithrx variable - 5m Composites  
July 30, 2014

Source: IMC(2014)

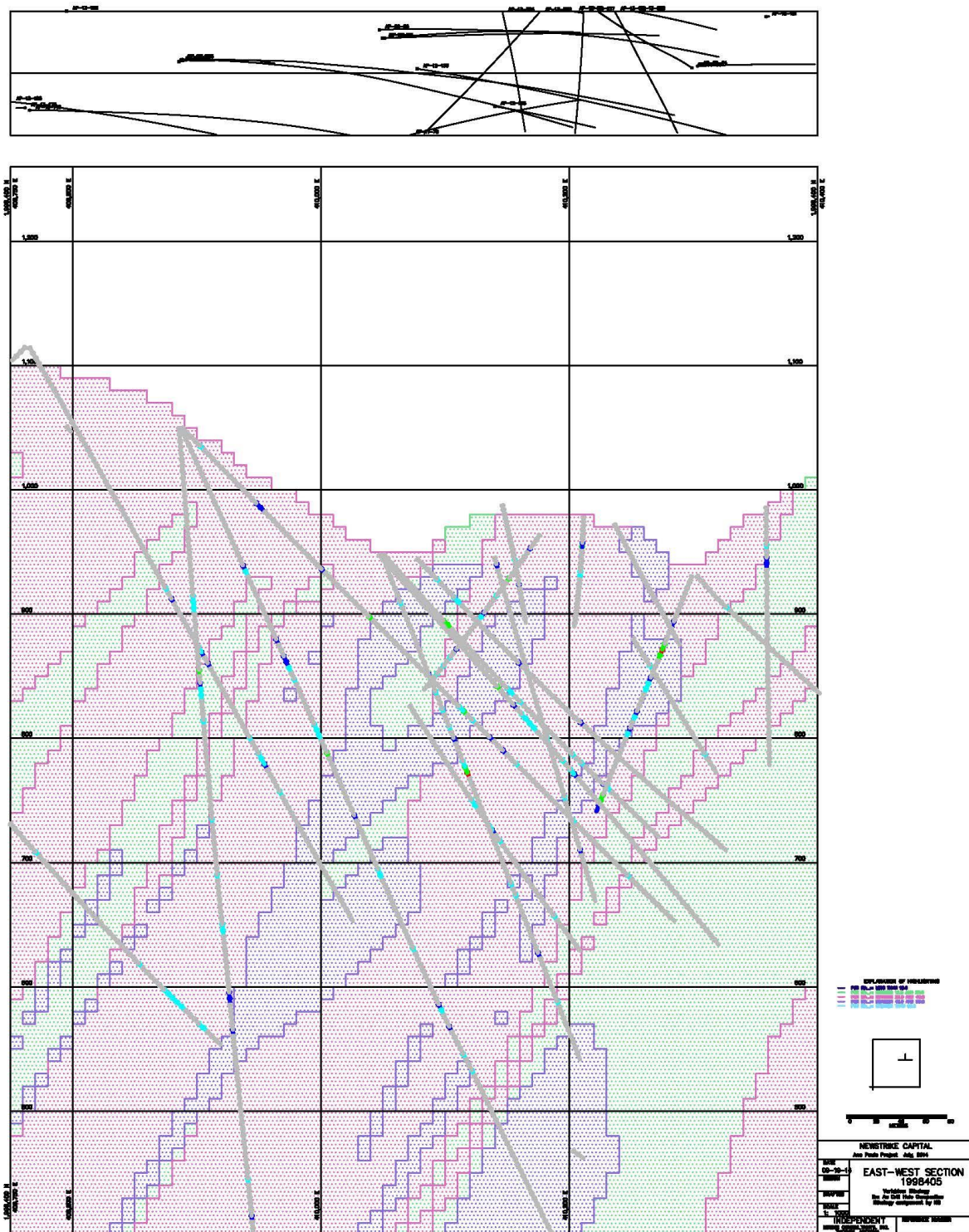
Figure 14-6: East-West Cross Section at 1,998,000N



Source: IMC(2014)

Showing Model Lithology & 5m Composite Gold Grades. North looking. Grid spacing

Figure 14-7: East-West Cross Section at 1,998,400N



Source: IMC(2014)

Showing Model Lithology & 5m Composite Gold Grades. North looking. Grid spacing

## 14.4 Lithology Controls

The block model lithology was interpreted by Newstrike/ProDeMin and provided to IMC as both wireframes of the major lithology units and assigned to the block model, coding the 10x10x10m blocks. IMC reviewed the assignments to the model and agrees with the interpretation. The interpretation assigned to the model is simplified and minor occurrences of rock types within larger runs of different lithology units in the logged drill core have been lumped with the major units for the model interpretation. The limestone-shale and granodiorite units are the major lithology types, which are inter-bedded, and the skarn and hornfels being alteration units. There are four breccia units identified in the model lithology, two of which (multi-lithic breccia, 60 and hydrothermal breccia 61) are minor units for resource estimation. The other two breccias, BX1 (high grade) and BX2 (lower grade gold and high silver) are interpreted based in part on metallurgical criteria for separation into unique breccia types. Table 14-6 is a comparison of the 5m composites logged lithology compared to the model lithology assigned to the composite based on its location in the model.

**Table 14-6: Comparison of Model and Logged Lithology in 5m Composites**

| Model Lithology | # of Composites | Logged Lithology (in order of % matching model lithology) |                  |                   |           |
|-----------------|-----------------|-----------------------------------------------------------|------------------|-------------------|-----------|
| Lms-shale       | 5,540           | 73% Lms-shale                                             | 18% Granodiorite | 7% Hornfels-skarn | 2% Other  |
| Granodiorite    | 13,032          | 90% Granodiorite                                          | 6% Lms-shale     | 3% Hornfels-skarn | 2% Other  |
| Skarn           | 330             | 50% Skarn                                                 | 32% Hornfels     | 16% Granodiorite  | 2% Other  |
| Hornfels        | 1,598           | 71% Hornfels                                              | 21% Granodiorite | 6% Lms-shale      | 2% Other  |
| BX-Multi-lithic | 23              | 65% Multi-lithic                                          | 17% Hydrothermal | 18% Other         |           |
| BX-hydrothermal | 59              | 21% Hydrothermal                                          | 48% Multi-lithic | 20% Granodiorite  | 11% Other |
| BX1 (hi grade)  | 604             | 78% BX1                                                   | 14% Granodiorite | 8% Other          |           |
| BX2             | 606             | 17% BX2                                                   | 36% Other BX     | 42% Granodiorite  | 5% Other  |

Source: IMC(2014)

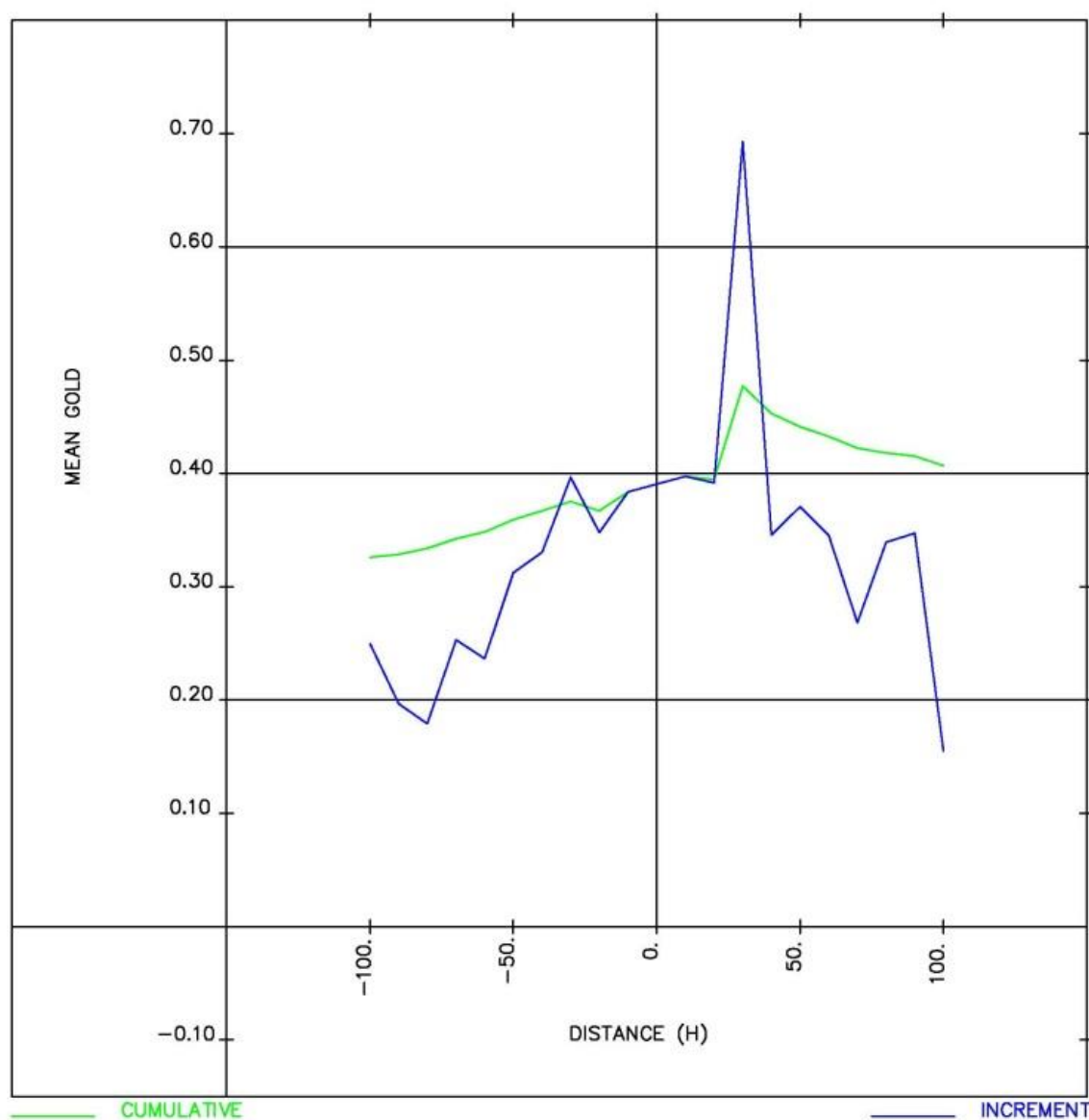
Comparison of the average grades of the 5m composites by the model lithology (shown on Table 14-6) indicates that some of the lithology units could be combined for the estimation of grades and other units should be uniquely estimated. To confirm this, composite grades on each side of the lithology contacts for various combinations of the model lithology units were compared. The results indicate that the limestone-shale, BX1 and BX2 units should be estimated uniquely and the granodiorite, skarn, hornfels and the two minor breccia units (multi-lithic and hydrothermal) can be combined for grade estimation. Graphs of the comparisons are included as Figure 14-7 through Figure 14-13. These show the composite gold grades as a function of distance away from the contact between two lithology units (the first unit in the title on the left of the zero distance line and the second unit on the right side).

- Figure 14-8 compares the granodiorite with the combined skarn, hornfels, and two minor breccias. There is one outlier, but otherwise the grades are similar in the granodiorite and the combined other lithologies.

- Figure 14-9 compares the granodiorite with the BX1 breccia, with the BX1 breccia showing a higher grade at the contact.
- Figure 14-10 compares the granodiorite with the BX2 breccia, with the BX2 breccia showing a higher grade at the contact.
- Figure 14-11 compares the limestone – shale with the BX2 breccia, with the BX1 breccia showing a higher grade at the contact.
- Figure 14-12 compares the limestone – shale with the BX1 breccia, with the BX2 breccia showing a higher grade at the contact.
- Figure 14-13 compares the limestone – shale with the combined granodiorite, skarn and minor breccias. The grades are similar in both groups near the contact, but the limestone – shale grades are lower moving away from the contact and within the search distance for grade estimation. It was decided to treat these two lithology groups separately for grade estimation.

**Figure 14-8: Cross Contact Gold Grades: Granodiorite with Combined Skarn, Hornfels and Minor Breccias**

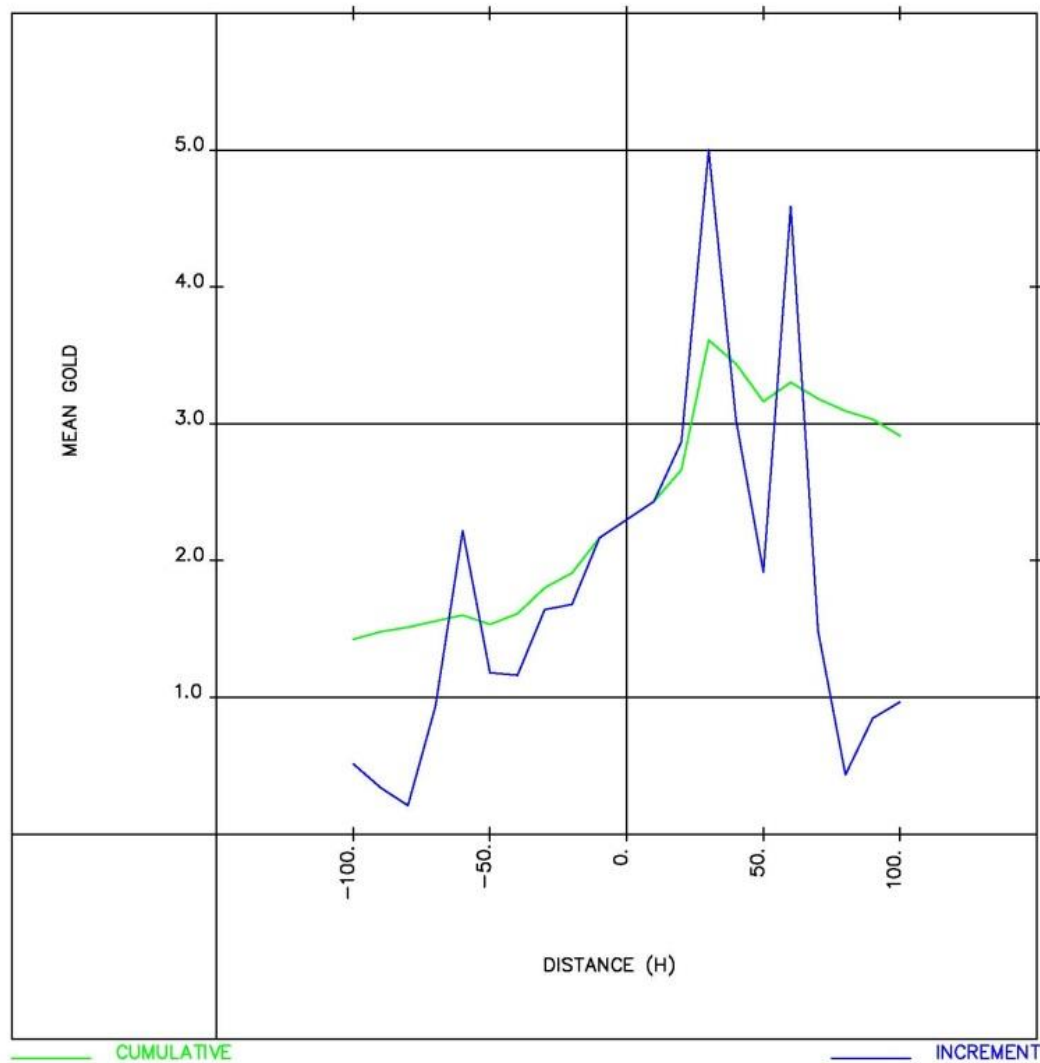
Anapaula 5m Lith Comps  
Granodiorite vs SK, HFL, BXML, BXH  
July 20, 2014



Source: IMC(2014)

**Figure 14-9: Cross Contact Gold Grades: Granodiorite with BX1 Breccia**

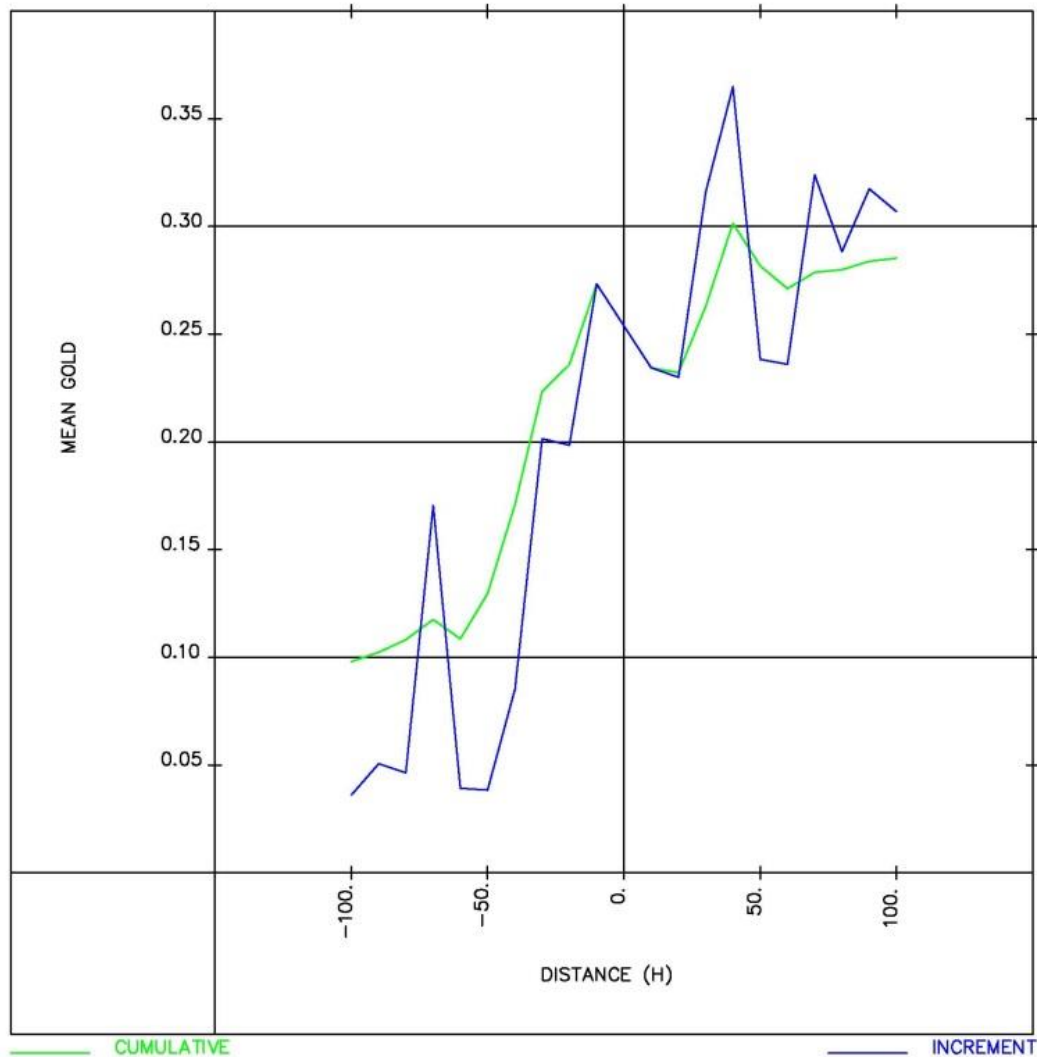
Anapaula 5m Lith Comps  
Granodiorite vs BX1  
July 20, 2014



Source: IMC(2014)

**Figure 14-10: Cross Contact Gold Grades: Granodiorite with BX2 Breccia**

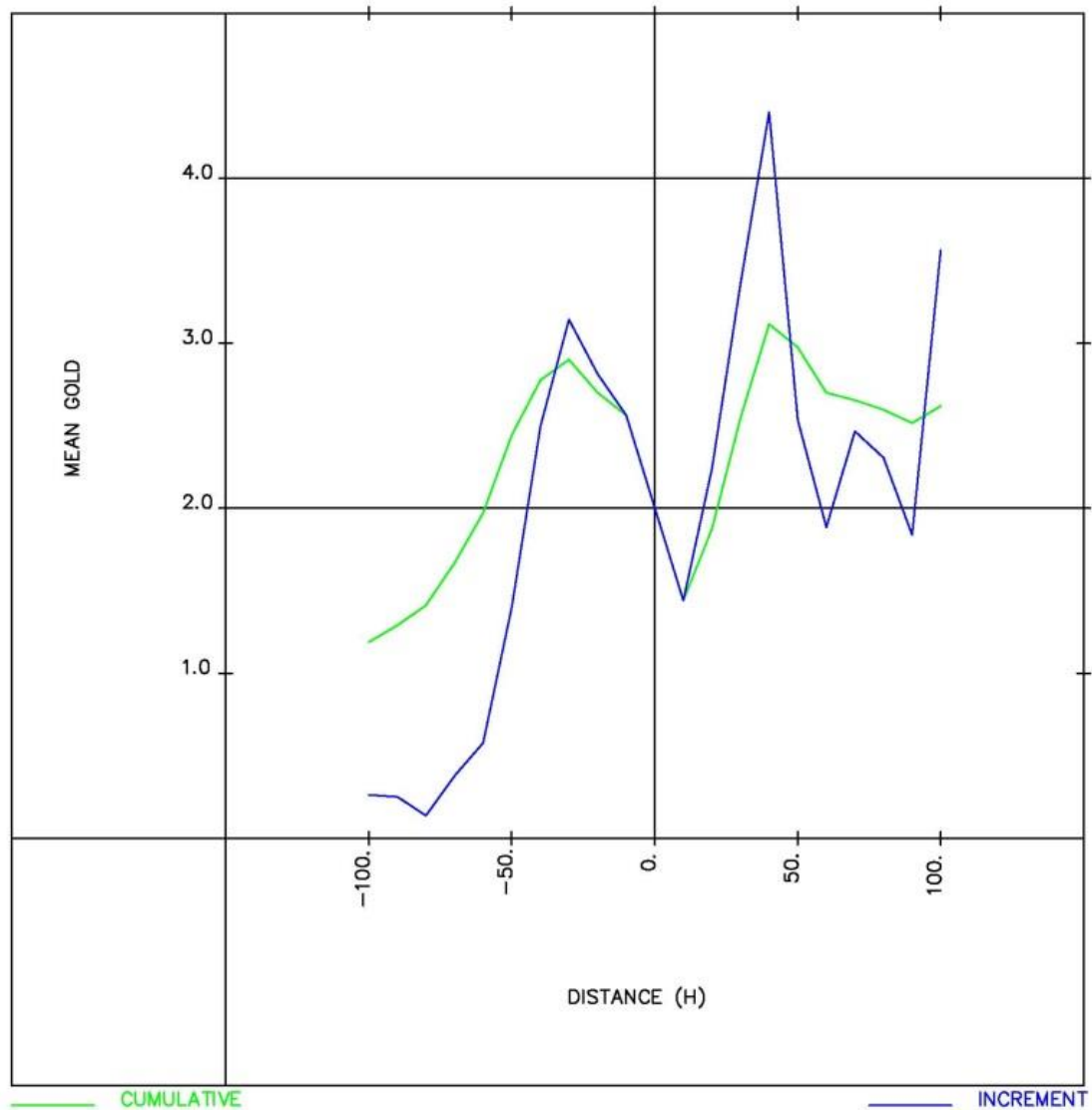
Anapaula 5m Lith Comps  
Limestone-Shale vs BX2  
July 20, 2014



Source: IMC(2014)

**Figure 14-11: Cross Contact Gold Grades: Limestone – Shale with BX1 breccia**

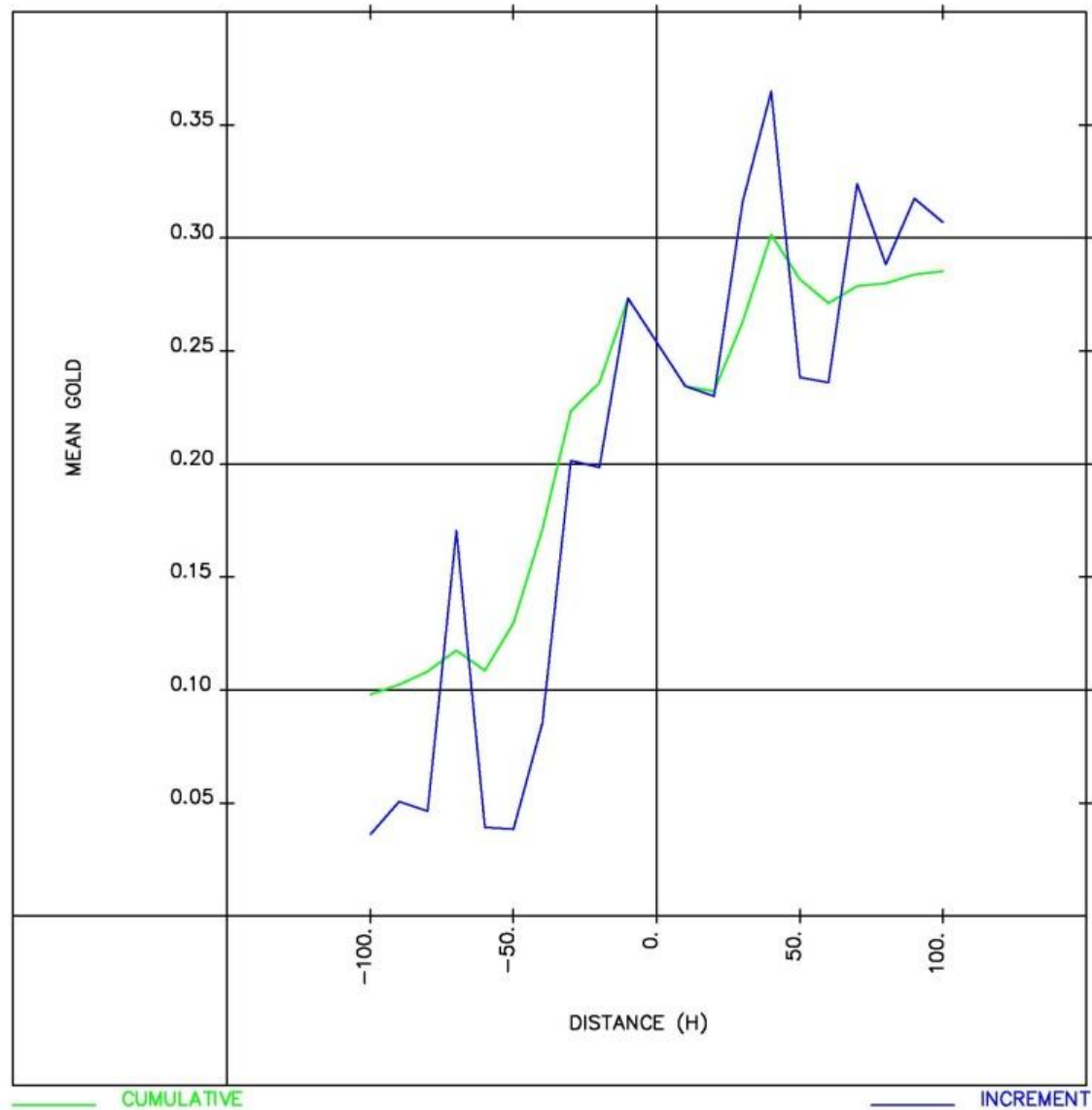
Anapaula 5m Lith Comps  
Limestone–Shale vs BX1  
July 20, 2014



Source: IMC(2014)

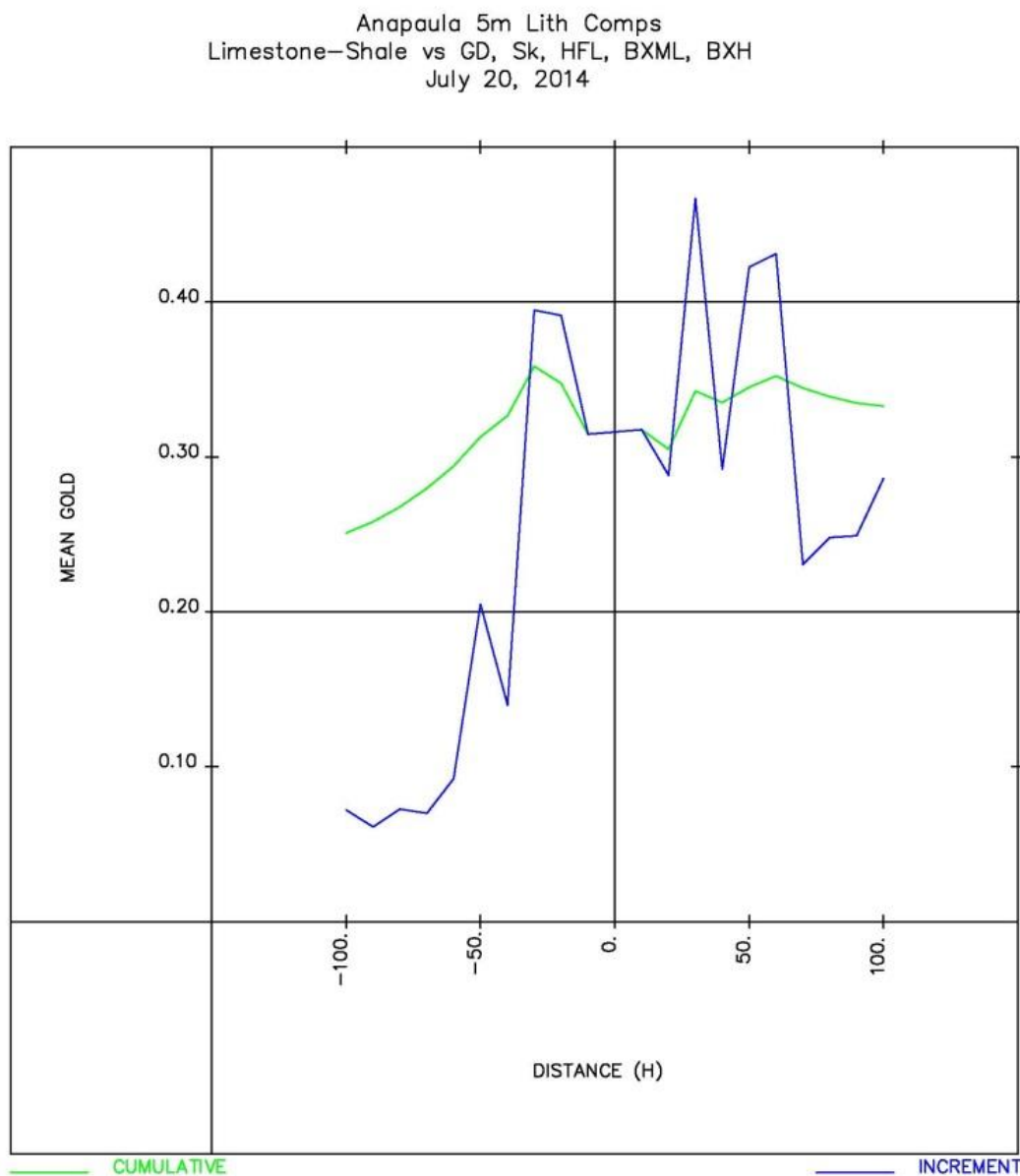
**Figure 14-12: Cross Contact Gold Grades: Limestone – Shale with BX2 breccia**

Anapaula 5m Lith Comps  
Limestone–Shale vs BX2  
July 20, 2014



Source: IMC(2014)

**Figure 14-13: Cross Contact Gold Grades: Limestone – Shale with Combined Granodiorite Skarn and minor breccias**



Source: IMC(2014)

## 14.5 Variograms

Variograms were run for the four unique lithology groupings to establish the orientation and search distances for the estimation of gold and silver grades into the block model. Table 14-7 is a summary of the variogram parameters and Figure 14-14 through Figure 14-17 are the fitted variograms.

**Table 14-7: Variogram Parameters**

| Block<br>Rock Type | Composite<br>Rock Type | Variogram Parameters |     |        |         |       |
|--------------------|------------------------|----------------------|-----|--------|---------|-------|
|                    |                        | Azimuth              | Dip | Nugget | Sill    | Range |
| 12 - LS            | 12                     | 270                  | -70 | 0.1221 | 1.4700  | 175   |
| 20 - GD            | 20, 40, 41, 60, 61     | 270                  | -70 | 0.8750 | 1.1600  | 165   |
| 40 - SK            | 20, 40, 41, 60, 61     | 270                  | -70 | 0.8750 | 1.1600  | 165   |
| 41 - HFL           | 20, 40, 41, 60, 61     | 270                  | -70 | 0.8750 | 1.1600  | 165   |
| 60 - BXML          | 20, 40, 41, 60, 61     | 270                  | -70 | 0.8750 | 1.1600  | 165   |
| 61 - BXH           | 20, 40, 41, 60, 61     | 270                  | -70 | 0.8750 | 1.1600  | 165   |
| 62 - BX1           | 62                     | 0                    | -80 | 9.9160 | 21.7000 | 90    |
| 63 - BX2           | 63                     | 0                    | -70 | 0.0816 | 0.1680  | 100   |
| 3 - Undefined      | All                    | 270                  | -70 | 0.1265 | 0.2050  | 135   |

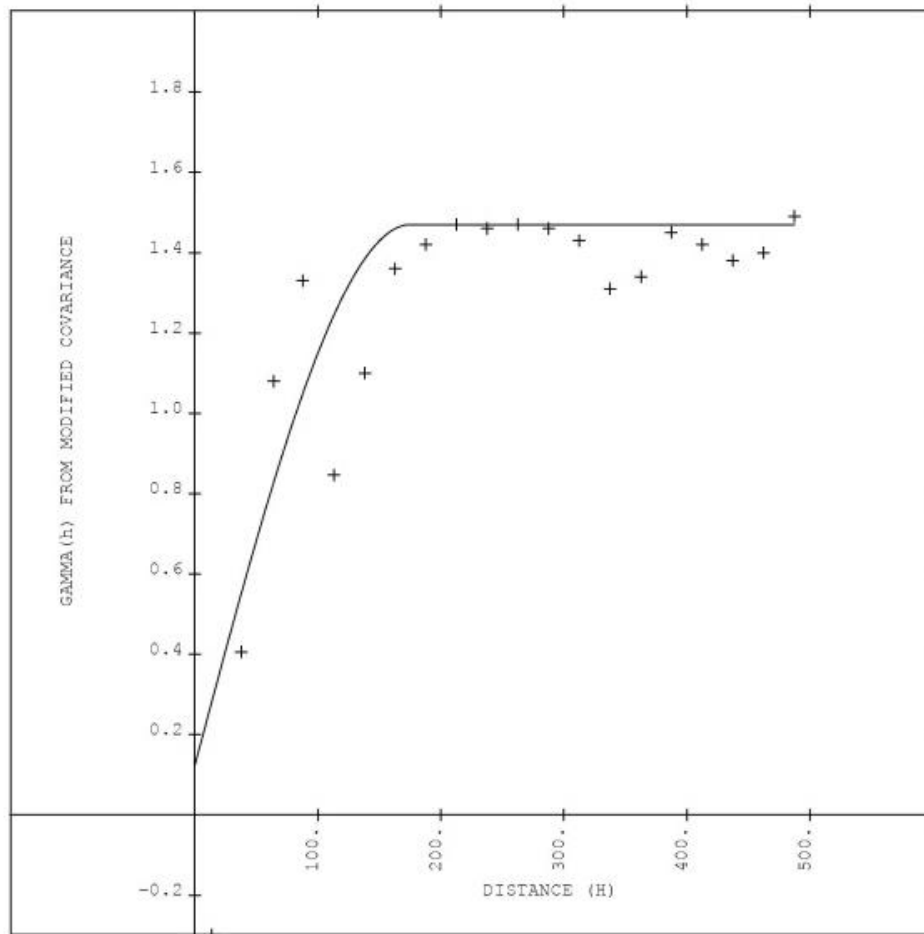
Source: IMC(2014)

**Figure 14-14: Limestone – Shale Variogram**

Anapaula Limestone  
 MODIFIED COVARIANCE VARIOGRAM OF: au  
 West 70. DIP  
 Azimuth: 270.0 Dip: 70.0 JULY 30, 2014  
 Gamma(h) From Modified Covariance  
 \* variogram analysis of : au  
 data transformation : none  
 lag option : 1 class size 25.  
 file/variogram number : ls.avg 5

|                   |       |                |        |
|-------------------|-------|----------------|--------|
| azimuth           | 270.0 | direction      | West   |
| dip angle         | 70.0  | mean           | 0.1780 |
| horizontal window | 20.0  | variance       | 1.4700 |
| vertical window   | 20.0  | no. of samples | 5540   |

spherical: c 0.1348E+01 range 0.1756E+03  
 nugget 0.1221E+00 sill 0.1470E+01



Source: IMC(2014)

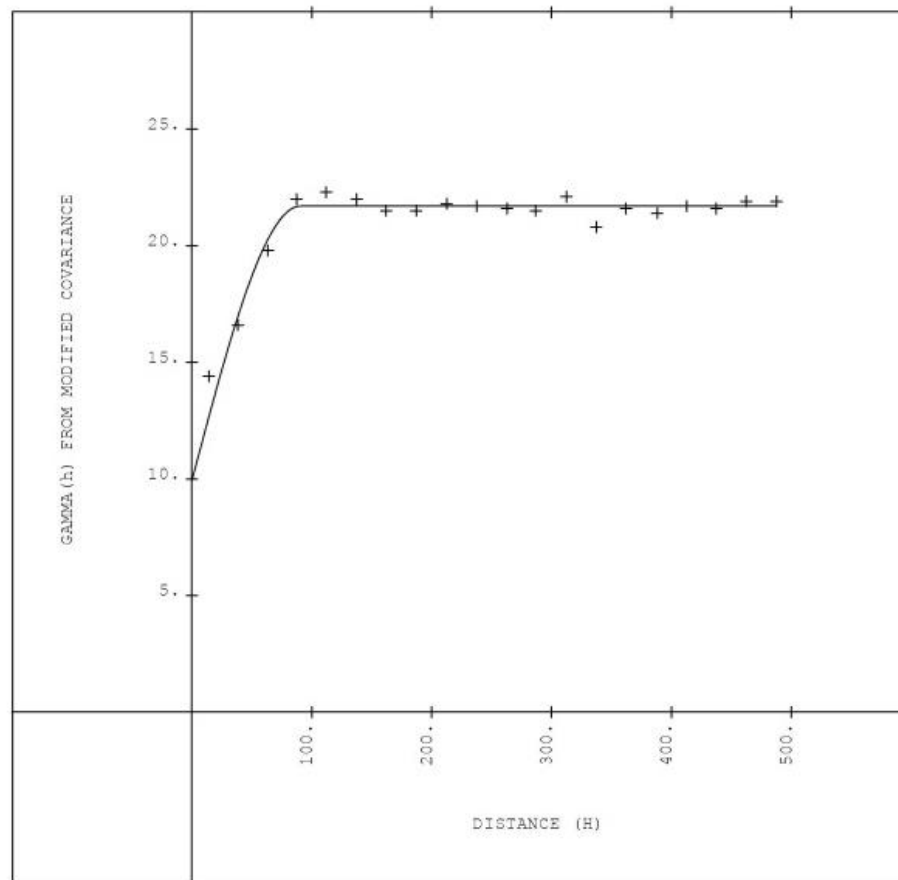
**Figure 14-15: BX1 Variogram**

```

Anapaula BX1
MODIFIED COVARIANCE VARIOGRAM OF: au
North 80. DIP
Azimuth: 0.0 Dip: 80.0 JULY 29, 2014
Gamma(h) From Modified Covariance
* variogram analysis of : au
  data transformation : none
  lag option          : 1      class size 25.
  file/variogram number : bxl.avg      3

azimuth      0.0    direction      North
dip angle    80.0    mean           2.3700
horizontal window 20.0 variance      21.7000
vertical window 20.0 no. of samples 604

spherical:  c      0.1178E+02 range 0.9050E+02
nugget      0.9916E+01 sill 0.2170E+02
  
```



Source: IMC(2014)

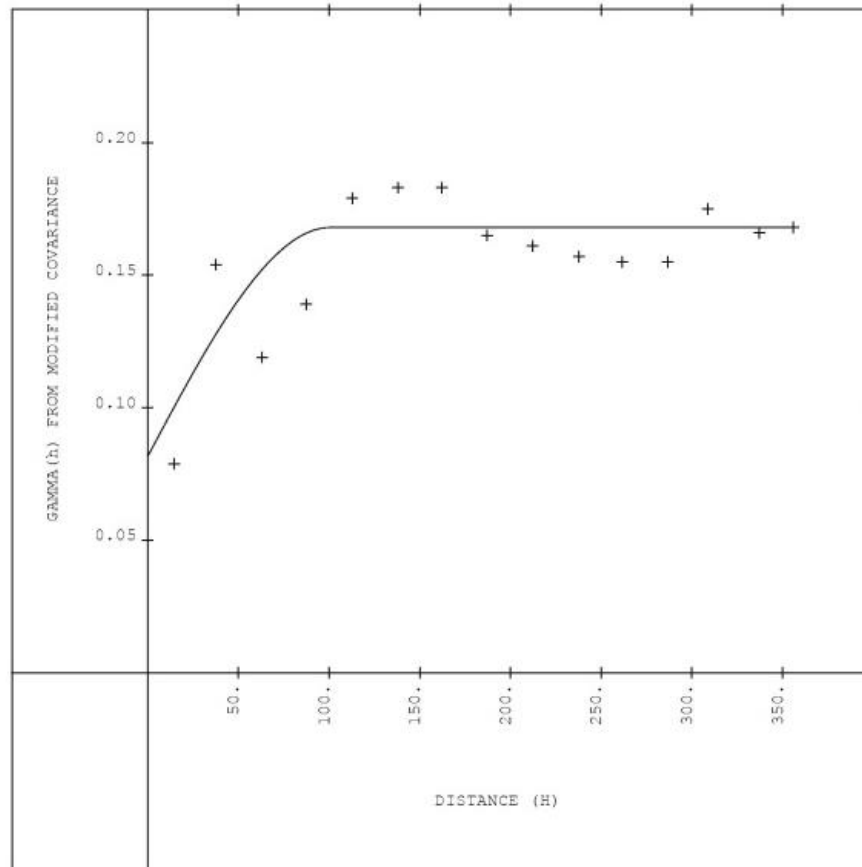
**Figure 14-16: BX2 Variogram**

```

Anapaula BX2
MODIFIED COVARIANCE VARIOGRAM OF: au
North 70. DIP
Azimuth: 0.0 Dip: 70.0 JULY 29, 2014
Gamma(h) From Modified Covariance
* variogram analysis of : au
  data transformation : none
  lag option          : 1      class size  25.
  file/variogram number : bx2.avg      3

azimuth      0.0    direction      North
dip angle    70.0    mean           0.3100
horizontal window 20.0 variance      0.1680
vertical window 20.0 no. of samples 606

spherical:   c      0.8643E-01 range0.1008E+03
nugget       0.8157E-01 sill 0.1680E+00
  
```



Source: IMC(2014)

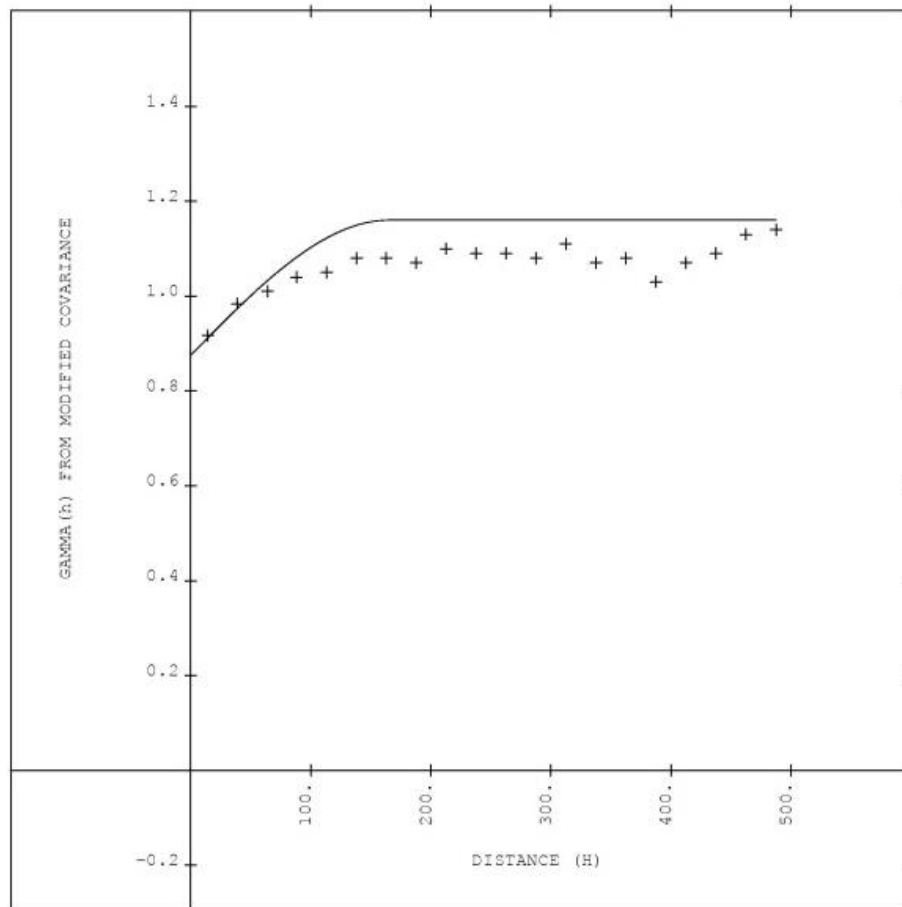
**Figure 14-17: Combined Granodiorite, Skarn, Hornfels and Minor Breccias Variogram**

```

Anapaula, Combined 20,40,41,60,61
MODIFIED COVARIANCE VARIOGRAM OF: au
      West 70. DIP
Azimuth: 270.0 Dip: 70.0    JULY 30, 2014
Gamma(h) From Modified Covariance
* variogram analysis of : au
  data transformation   : none
  lag option           : 1      class size   25.
  file/variogram number : gd.avg      5

azimuth      270.0    direction      West
dip angle     70.0    mean            0.2690
horizontal window 20.0    variance      1.1600
vertical window 20.0    no. of samples 15043

spherical:  c    0.2850E+00 range0.1650E+03
nugget      0.8750E+00 sill 0.1160E+01
  
```



Source: IMC(2014)

## 14.6 Block Grade Estimation

The Ana Paula block model covers the area from section lines 1997100N to 1999400N, from 408500E to 410800E and from the 110 meter to the 1260 metre elevation. With a block size of 10x10x10 m it contains 230 columns, 230 rows and 128 tiers for a total of 6,083,500 blocks.

Gold and silver grades were estimated to the model blocks using an inverse distance squared (ID2) operator for the statement of mineral resources and by ordinary kriging (OK) as a comparison estimate. The grades were estimated for each rock type using the composites by rock type as shown in Table 14-8. The limestone – shale, BX1 and BX2 rock types were each estimated separately using only the same rock types. The granodiorite (20), skarn (40), hornfels (41), multilithic breccia (60) and hydrothermal breccia (61) were estimated using the combined drill hole composites for these rock types. The orientation and estimation distances used for the grade estimations are included in Table 14-8. The initial estimation distance was used as the first pass for grade estimates to the block model and the maximum distance represents about 67 to 70 percent of the variogram ranges. The search distances were extended to the full range of the variogram to fill in blocks not previously assigned a grade and all blocks from this estimate received an inferred classification. The estimates used a maximum of 12 drill hole composites and a minimum of two composites with no more than three composites coming from a particular drill hole.

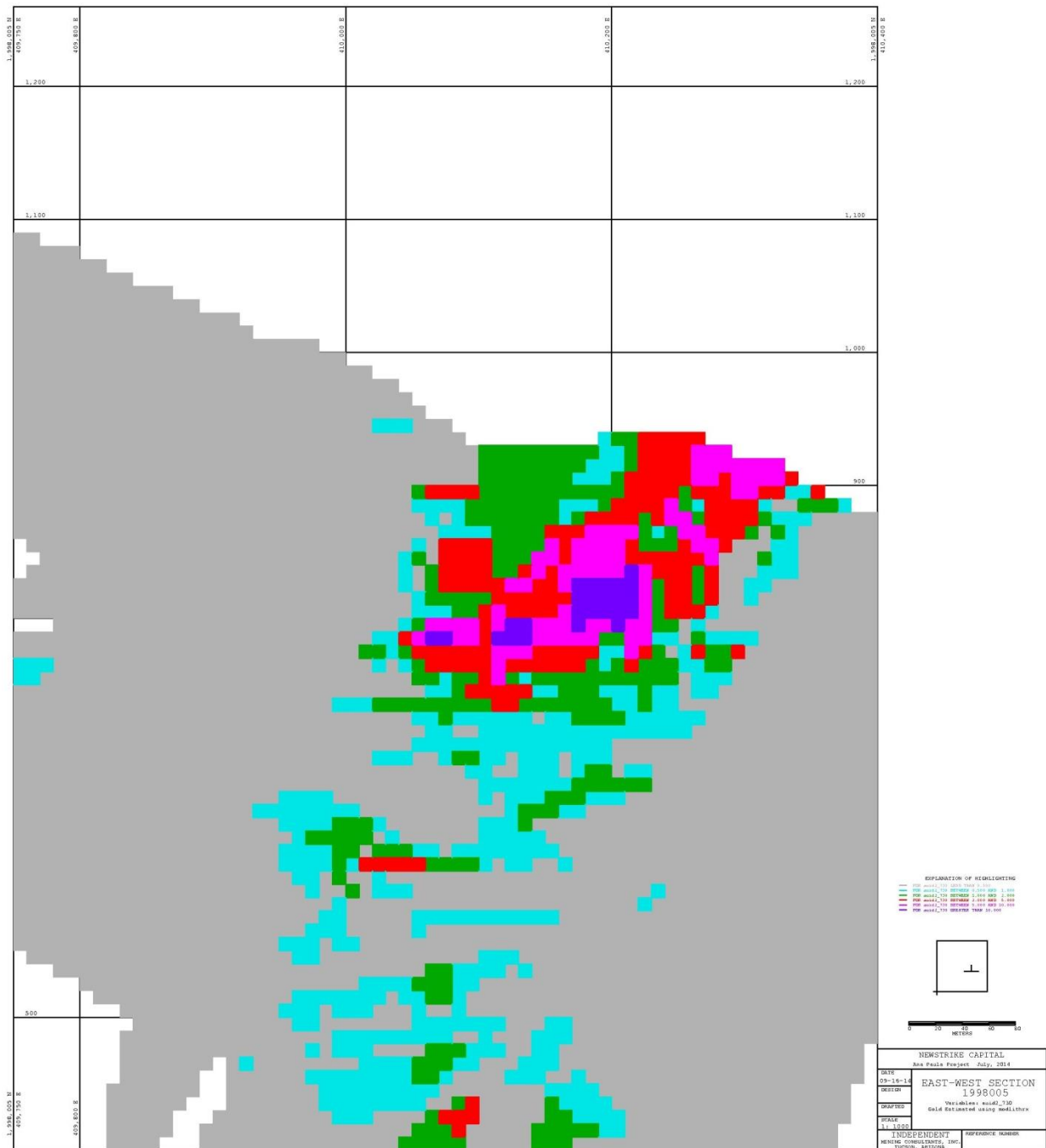
**Table 14-8: Gold and Silver Grades Estimation Parameters**

| Block<br>Rock Type | Composite<br>Rock Type | Estimation Orientation |     | Initial Estimation Distance |       |           | Expanded Estimation Distance |       |           |
|--------------------|------------------------|------------------------|-----|-----------------------------|-------|-----------|------------------------------|-------|-----------|
|                    |                        | Azimuth                | Dip | East                        | North | Elevation | East                         | North | Elevation |
| 12 - LS            | 12                     | 270                    | -70 | 115                         | 85    | 85        | 175                          | 130   | 130       |
| 20 - GD            | 20, 40, 41, 60, 61     | 270                    | -70 | 110                         | 80    | 80        | 165                          | 120   | 120       |
| 40 - SK            | 20, 40, 41, 60, 61     | 270                    | -70 | 110                         | 80    | 80        | 165                          | 120   | 120       |
| 41 - HFL           | 20, 40, 41, 60, 61     | 270                    | -70 | 110                         | 80    | 80        | 165                          | 120   | 120       |
| 60 - BXML          | 20, 40, 41, 60, 61     | 270                    | -70 | 110                         | 80    | 80        | 165                          | 120   | 120       |
| 61 - BXH           | 20, 40, 41, 60, 61     | 270                    | -70 | 110                         | 80    | 80        | 165                          | 120   | 120       |
| 62 - BX1           | 62                     | 270                    | -80 | 60                          | 60    | 60        | 90                           | 90    | 90        |
| 63 - BX2           | 63                     | 270                    | -70 | 70                          | 70    | 55        | 100                          | 100   | 85        |
| 3 - Undefined      | All                    | 270                    | -70 | 90                          | 90    | 50        | 135                          | 135   | 50        |

Source: IMC(2014)

Figure 14-18 and Figure 14-19 are east-west cross sections showing the gold grade distribution in the ID2 model at 1,998,000N and 1,998,400N which correspond to the drill hole composite sections 14-6 and 14-7 respectively.

**Figure 14-18: Gold Block Grades from ID2 Model**



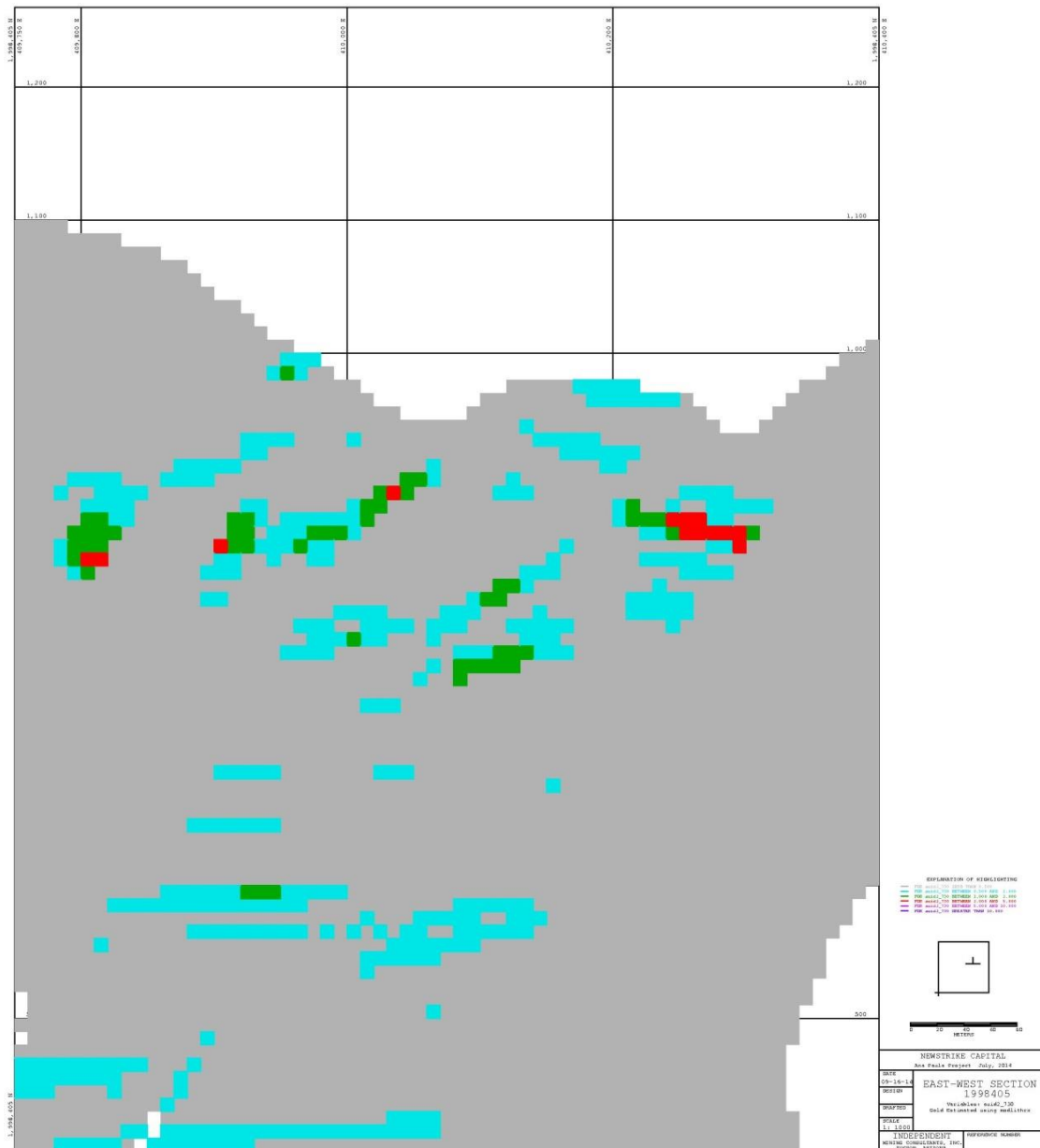
Source: IMC(2014)

Section 1,998,000N

Gray<0.5, Blue=0.5–1.0, Green=1.0-2.0, Red=2.0-5.0, Pink 5.0-10.0, Purple=>10.0g/t.

100m vertical grid spacing and 200m E-W grid spacing on cross section. Looking north.

**Figure 14-19: Gold Block Grades**



Source: IMC(2014)

Section 1,998,400N

Gray<0.5, Blue=0.5–1.0, Green=1.0-2.0, Red=2.0-5.0, Pink 5.0-10.0, Purple=>10.0g/t.

100m vertical grid spacing and 200m E-W grid spacing on cross section. Looking north.

## 14.7 Model Classification

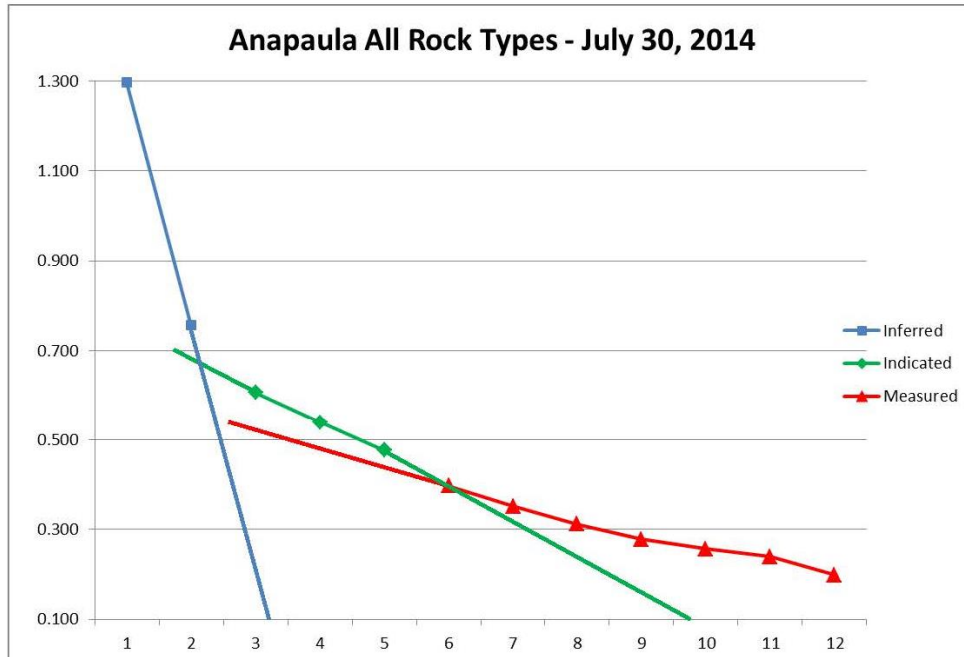
Individual model blocks were classified as follows:

|           |                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measured  | Seven or more drillholes within the initial search ellipsoid distance (Table 14-8) centered on the block and no farther than 25m from the closest hole |
| Indicated | Between three and six drillholes within the initial estimation search ellipsoid                                                                        |
| Inferred  | Fewer than three drillholes within the search ellipsoid (of either the initial or expanded estimation distances)                                       |

These criteria are supported by kriging variances, which are a measure of the errors to which individual block grade estimates are subject. Figure 14-20, which plots kriging variance against the number of drillholes in the search ellipsoid, shows kriging variance increasing slowly as the number of holes decreases from twelve to seven, increasing more rapidly between seven and three and then breaking abruptly upwards below three, as illustrated by the regression lines. The inflections at three and seven holes are used as confidence thresholds for segregating measured, indicated and inferred material.

**Figure 14-20: Number of Holes Within Search Radius vs Kriging Variance**

Source: JDS(2014)

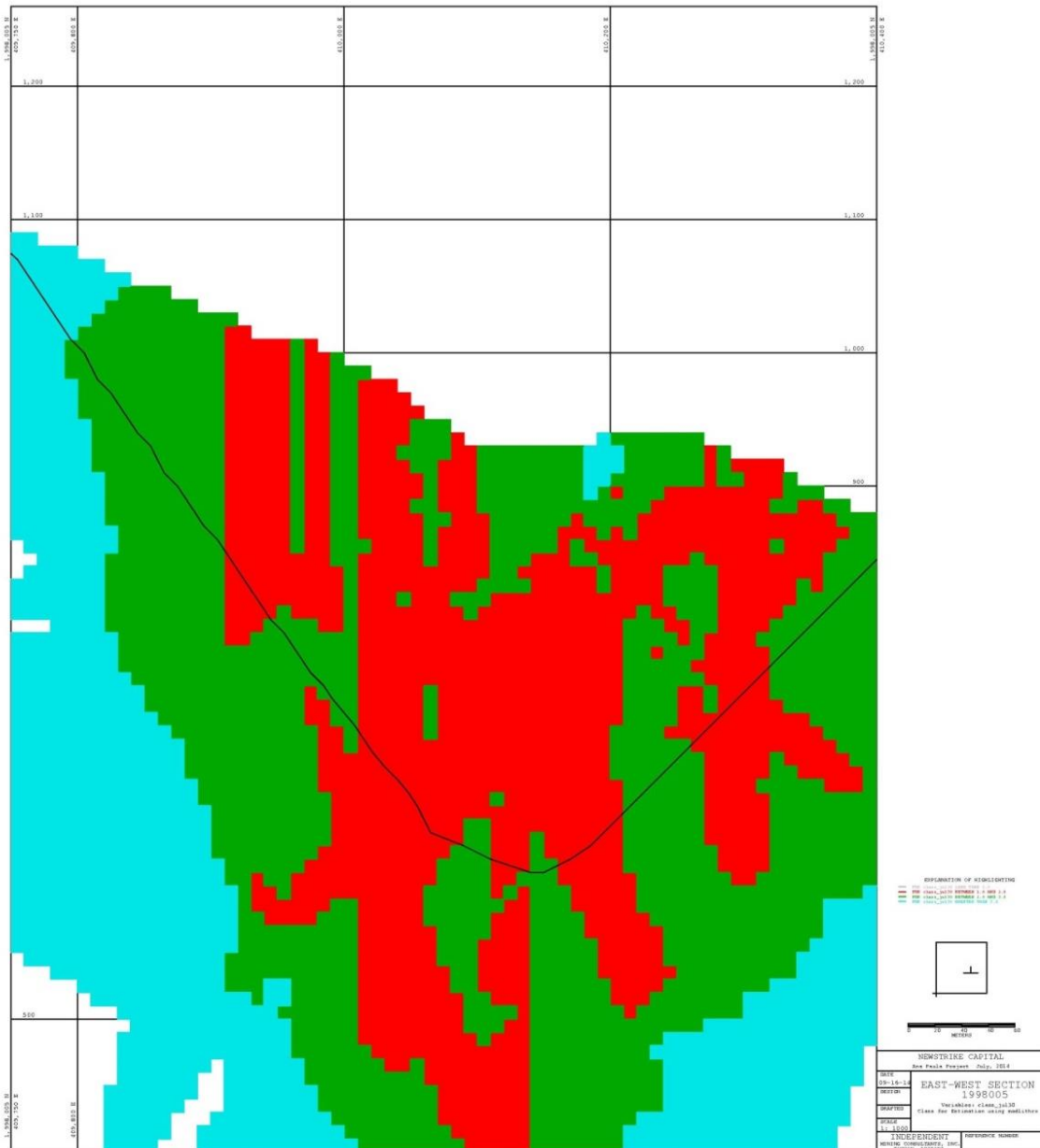


Source: IMC(2014)

The criteria for measured blocks were, however, tightened to avoid possible overstatement by applying the 25 metre maximum distance constraint, which is equal to one half or less of the length of the search

ellipsoid minor axis. Figure 14-21 and Figure 14-22 show the distribution of measured indicated and inferred blocks on the 1998000N and 1998400N sections. The outline of the mineral resource pit shell is shown on each section. The majority of the material within the mineral resource shell is in the area of the denser drilling and is classified as measured or indicated with the inferred to the peripheral in areas of less drilling and generally lower gold grades.

**Figure 14-21: Model Block Classification**



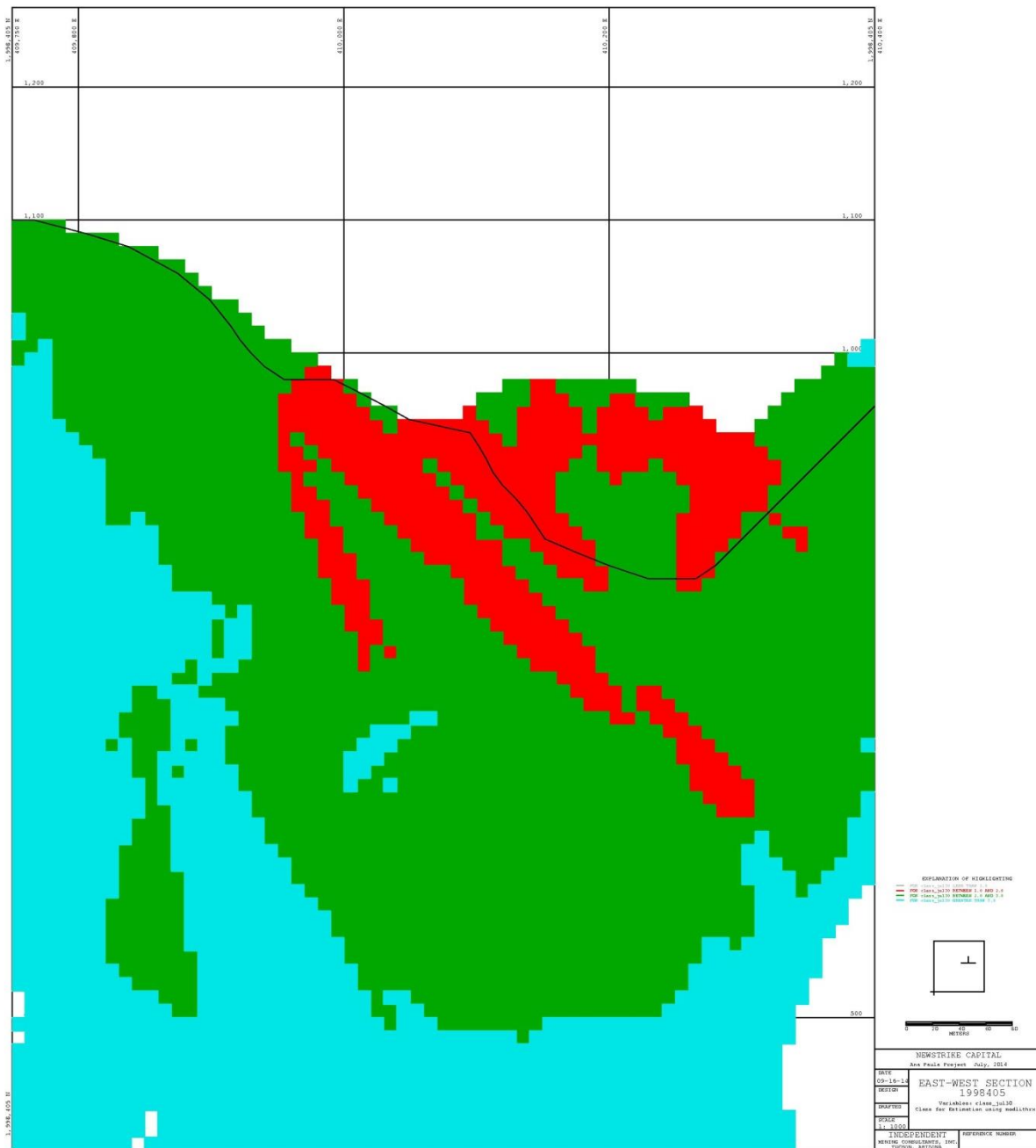
Source: IMC(2014)

Section 1998000N

Blue=Inferred, Green=Indicated, Red=Measured.

100m vertical grid spacing and 200m E-W spacing on cross section. Looking north.

**Figure 14-22: Model Block Classification from ID2 Model**



Source: IMC(2014)

## Section 1998400N

Blue=Inferred, Green=Indicated, Red=Measured.

100m vertical grid spacing and 200m E-W spacing on cross section. Looking north.

## 14.8 Tonnage Estimation

Tonnages were estimated by assigning the means of the core sample specific gravity measurements supplied by Newstrike in each main lithologic unit to the corresponding block lithology codes in the geologic model. The specific gravity values used to estimate tonnages are shown in Table 14-9. The combination of the specific gravity measurement completed by ProDeMin and the SGS commercial laboratory was used for each model lithology.

**Table 14-9: Specific Gravity Values**

| Model Lithology | Newstrike density |       | SGS Density |       | Combined |       | Used for Tonnage Est. |
|-----------------|-------------------|-------|-------------|-------|----------|-------|-----------------------|
|                 | Number            | Mean  | Number      | Mean  | Number   | Mean  |                       |
| 12 LS-SH        | 1118              | 2.655 | 99          | 2.701 | 1217     | 2.659 | 2.66                  |
| 20 GD           | 2363              | 2.618 | 245         | 2.632 | 2608     | 2.619 | 2.62                  |
| 40 SK           | 113               | 2.805 | 8           | 2.686 | 121      | 2.797 | 2.80                  |
| 41 HFL          | 475               | 2.738 | 43          | 2.848 | 618      | 2.744 | 2.74                  |
| 60 BXML         | 94                | 2.583 | 13          | 2.678 | 107      | 2.594 | 2.59                  |
| 61 BXH          | 45                | 2.444 | 7           | 2.529 | 52       | 2.455 | 2.46                  |
| 62 BX1          | 294               | 2.677 | 41          | 2.748 | 335      | 2.685 | 2.68                  |
| 63 BX2          | 156               | 2.518 | 33          | 2.553 | 189      | 2.525 | 2.52                  |

## 14.9 Geotechnical Investigations

From October to November 2012, SRK conducted a preliminary assessment of pit slope angles for use in ultimate pit design for the Ana Paula Project. SRK's program began with a site visit to the Project on October 11-12, 2012 which included a review of available geologic and hydrogeologic information, a field visit to the proposed open pit area, a review of core logging procedures, an inspection of typical core for the major lithologies present in the slopes of a pit model provided by the Company, and collection of six representative core samples for laboratory strength testing

Uniaxial compressive strength tests were conducted on 6 core samples, which included two each for typical granodiorite, limestone and mineralized breccia rock types. A summary of the test results are included in the following Table 14-10.

**Table 14-10: Compressive Strength of Lithology Units**

| Sample No. | Rock Type    | Wet Density (gms/cc) | UCS (MPa) |
|------------|--------------|----------------------|-----------|
| A1         | Granodiorite | 2.629                | 128       |
| A2         | Granodiorite | 2.641                | 130       |

|   |              |       |     |
|---|--------------|-------|-----|
| B | Limestone    | 2.741 | 33  |
| C | Limestone    | 2.603 | 42  |
| D | Min. Breccia | 2.560 | 115 |
| E | Min. Breccia | 2.558 | 41  |

The granodiorite was characterized as strong with an average UCS strength of approximately 129 Mega Pascal's (MPa), and the limestone was characterized as weak, with an average UCS strength of approximately 37 MPa. The mineralized breccia showed a wide variation in strength, appearing to lie between the values of the other two rock types.

Examination of the core and estimation of parameters comprising the Barton (1974) Q and Bieniawski (1989) Rock Mass Rating (RMR) systems of classification, Table 14-11, resulted in the following design values of RMR and GSI (Geological Strength Index) to be used in design of pit slope angles, Table 14-12.

**Table 14-11: Quality of Rock Mass Rating**

| RMR      | Rock Quality |
|----------|--------------|
| 0 – 20   | Very poor    |
| 21 – 40  | Poor         |
| 41 – 60  | Fair         |
| 61 – 80  | Good         |
| 81 – 100 | Very good    |

Source: JDS(2014)

**Table 14-12: Rock Mass Rating by Lithology**

| Rock Type    | RMR | GSI |
|--------------|-----|-----|
| Granodiorite | 84  | 79  |
| Limestone    | 73  | 68  |
| Breccia      | 59  | 54  |
| Hornfels     | 59  | 54  |

Source: JDS(2014)

The results indicate that the overall rock mass strength where the pit walls will most likely be situated range from fair to very good. However, it is anticipated in the study by SRK that geologic structures will be the controlling factor for pit slope stability rather than intact rock strength or overall rock mass strength, especially on the east slope of the pit where structures, contacts and bedding planes dip into the pit at angles of 45 to 55 degrees.

The preliminary maximum overall slope angles recommended in the SRK study were as follows:

- 55 degrees on the west slope
- 45 degrees on the east slope
- 45 degrees on the north and south slopes

## 14.10 Tabulation of Mineral Resource

A tabulation of the mineral resource was developed based on the following inputs. The mineral resource is within an open pit shell geometry.

- The ID2 resource block model
- The estimate of gold and silver recoveries
- The gold and silver sales prices
- Preliminary estimates of the process, G&A and mining costs
- Preliminary estimates of pit overall slope angles.

A floating cone algorithm was run with the input parameters shown on Table 14-13. This defined the portion of the mineral inventory which has a reasonable potential of extraction by open pit mining methods. No underground resource has been defined at this time. Figure 14-23 shows the geometry of the mineral resource shell. Table 14-14 is the tabulation of the mineral resource by lithology tabulated at an internal cutoff of 0.46 g/t gold equivalent (AuEq). The calculation of AuEq includes the gold and silver prices and recoveries presented in Table 14-13.  $\text{AuEq} = \text{Au} + 0.011 \times \text{Ag}$ . No dilution has been applied.

An alternative resource block model was created using ordinary kriging to estimate the gold and silver grades in the model. All of the estimation and classification parameters were the same, but slightly different inputs to generate the open pit shell. A tabulation of the ordinary kriged tonnage and grade within an independently generated open pit shell is shown on Table 14-16. The tonnage and grade is similar to the ID2 mineral resource, in part because of the close spaced drilling. Other mineral inventory estimates were completed, some within the same lithology restrictions, and all inventories within a pit shell were within about 5 to 10 percent of each other.

**Table 14-13: Input Parameters to Define the Open Pit Mineral Resource Shell Geometry**

|                          | Process Recovery                                        | Metal Price |
|--------------------------|---------------------------------------------------------|-------------|
| Gold Price               | 80%                                                     | \$1450/oz   |
| Silver Price             | 55%                                                     | \$23/oz     |
| Costs:                   |                                                         |             |
| Process                  | \$15.60/t                                               |             |
| G&A                      | \$1.65/t                                                |             |
| Mining                   | \$1.85/t,, plus \$0.02/t per bench below 900m elevation |             |
| Pit overall slope angles | 55 degrees on west<br>45 degrees on all others          |             |

Source: JDS(2014)

**Table 14-14: Summary of ID2 Mineral Resource**

| Category  | Tonnage & Grades $\geq 0.46$ g/t AuEq Cutoff |           |         |         | Contained Ounces (000's) |        |
|-----------|----------------------------------------------|-----------|---------|---------|--------------------------|--------|
|           | Ktonnes                                      | AuEq, g/t | Au, g/t | Ag, g/t | Gold                     | Silver |
| Measured  | 22,767                                       | 1.661     | 1.608   | 4.90    | 1,177                    | 3,587  |
| Indicated | 18,243                                       | 1.229     | 1.163   | 5.95    | 682                      | 3,489  |
| Sum M&I   | 41,010                                       | 1.469     | 1.410   | 5.37    | 1,859                    | 7,076  |
|           |                                              |           |         |         |                          |        |
| Inferred  | 1,904                                        | 1.233     | 1.113   | 10.85   | 68                       | 664    |

Source: JDS(2014)



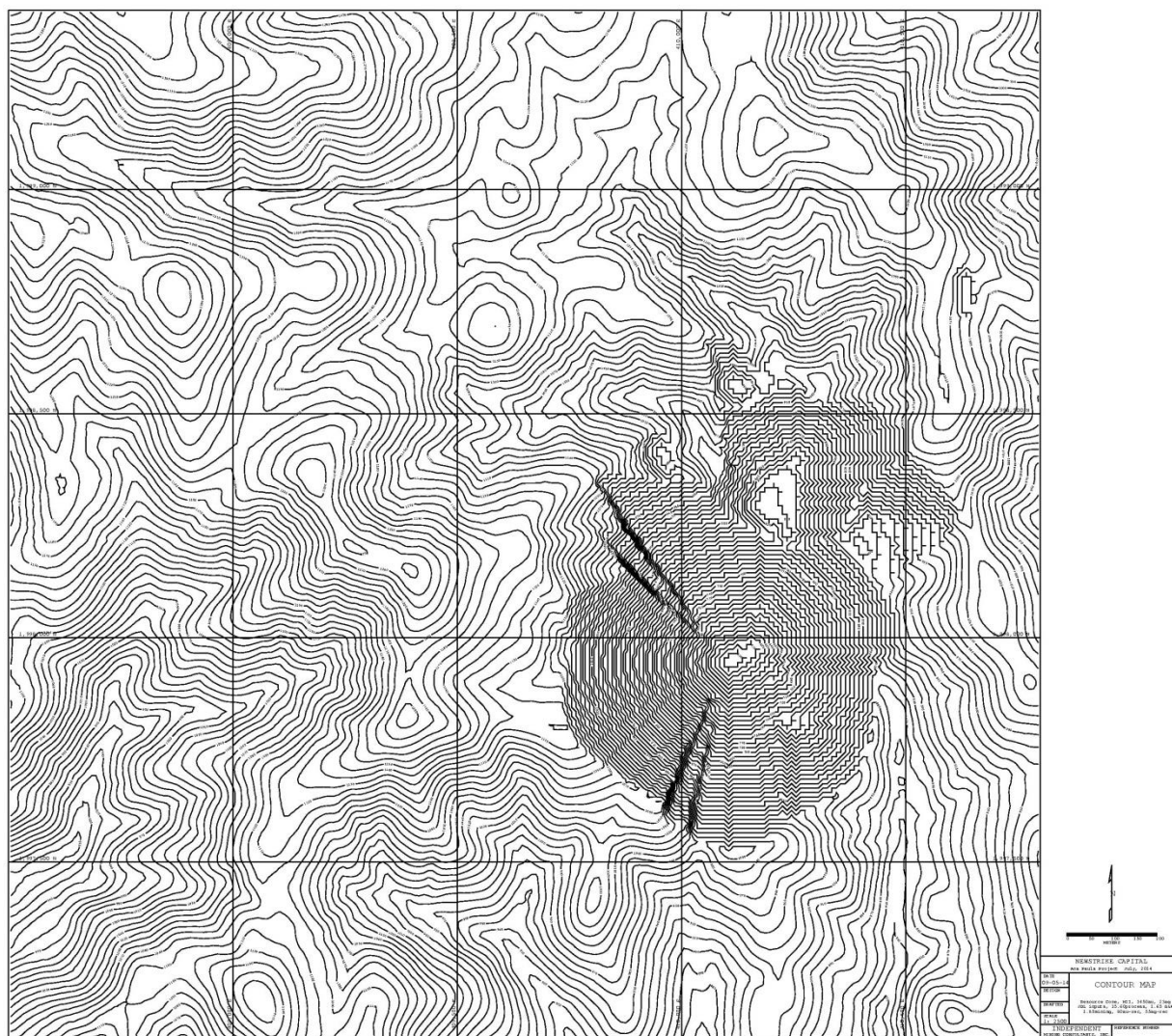
**Table 14-15: Mineral Resource by Lithology**

| Lithology |                  | Measured |         |       |         | Indicated |         |       |         | Sum Measured + Indicated |         |       |         |                                |           |
|-----------|------------------|----------|---------|-------|---------|-----------|---------|-------|---------|--------------------------|---------|-------|---------|--------------------------------|-----------|
| Code      | Description      | ktonnes  | Au, g/t |       | Ag, g/t | ktonnes   | Au, g/t |       | Ag, g/t | ktonnes                  | Au, g/t |       | Ag, g/t | Contained Ounces<br>GoldSilver |           |
| 12        | LMS-shale        | 2,407    | 2.703   | 2.637 | 5.96    | 2,169     | 1.397   | 1.336 | 5.51    | 4,576                    | 2.084   | 2.020 | 5.75    | 297,240                        | 845,478   |
| 20        | Granodiorite     | 16,283   | 1.244   | 1.195 | 4.48    | 9,543     | 0.980   | 0.930 | 4.51    | 25,826                   | 1.146   | 1.097 | 4.49    | 910,947                        | 3,729,118 |
| 40        | Skarn            | 182      | 1.435   | 1.351 | 7.62    | 73        | 0.962   | 0.879 | 7.48    | 255                      | 1.300   | 1.216 | 7.58    | 9,968                          | 62,144    |
| 41        | Hornfels         | 1,344    | 1.073   | 1.035 | 3.44    | 592       | 0.970   | 0.869 | 9.13    | 1,936                    | 1.042   | 0.984 | 5.18    | 61,264                         | 322,423   |
| 60        | Bx, multi-lithic | 0        |         |       |         | 0         |         |       |         | 0                        |         |       |         | 0                              | 0         |
| 61        | Bx, hydrothermal | 0        |         |       |         | 0         |         |       |         | 0                        |         |       |         | 0                              | 0         |
| 62        | Bx, BX1          | 1,755    | 4.950   | 4.874 | 6.92    | 2,454     | 2.817   | 2.756 | 5.52    | 4,209                    | 3.706   | 3.639 | 6.10    | 492,464                        | 825,987   |
| 63        | Bx, BX2          | 796      | 0.843   | 0.759 | 7.69    | 3,412     | 0.726   | 0.617 | 9.97    | 4,208                    | 0.748   | 0.644 | 9.54    | 87,110                         | 1,290,515 |
| Total     |                  | 22,767   | 1.661   | 1.608 | 4.90    | 18,243    | 1.229   | 1.163 | 5.95    | 41,010                   | 1.469   | 1.410 | 5.37    | 1,858,993                      | 7,075,665 |

| Lithology |                  | Inferred |           |         |         | Contained Ounces |         |
|-----------|------------------|----------|-----------|---------|---------|------------------|---------|
| Code      | Description      | ktonnes  | AuEq, g/t | Au, g/t | Ag, g/t | Gold             | Silver  |
| 12        | LMS-shale        | 584      | 1.462     | 1.308   | 14.00   | 24,563           | 262,782 |
| 20        | Granodiorite     | 257      | 0.993     | 0.764   | 20.86   | 6,312            | 172,364 |
| 40        | Skarn            | 6        | 0.956     | 0.699   | 23.38   | 135              | 4,510   |
| 41        | Hornfels         | 27       | 1.072     | 0.662   | 37.32   | 575              | 32,397  |
| 60        | Bx, multi-lithic | 0        |           |         |         | 0                | 0       |
| 61        | Bx, hydrothermal | 9        | 0.496     | 0.228   | 24.37   | 66               | 7,052   |
| 62        | Bx, BX1          | 334      | 2.251     | 2.187   | 5.75    | 23,485           | 61,746  |
| 63        | Bx, BX2          | 687      | 0.651     | 0.589   | 5.60    | 13,009           | 123,633 |
| Total     |                  | 1,904    | 1.233     | 1.113   | 10.85   | 68,145           | 664,484 |

Source: IMC(2014)

**Figure 14-23: Mineral Resource Shell**



Source: IMC(2014)

Plan View. Grid Spacing



**Table 14-16: Summary of Ordinary Kriged Inventory within a Pit Shell**

| Category  | Tonnage & Grades $\geq 0.46$ g/t AuEq Cutoff |           |         |         | Contained Ounces (000's) |        |
|-----------|----------------------------------------------|-----------|---------|---------|--------------------------|--------|
|           | Ktonnes                                      | AuEq, g/t | Au, g/t | Ag, g/t | Gold                     | Silver |
| Measured  | 22,400                                       | 1.628     | 1.578   | 4.50    | 1,137                    | 3,238  |
| Indicated | 16,877                                       | 1.240     | 1.175   | 5.84    | 638                      | 3,169  |
| Sum M&I   | 36,277                                       | 1.462     | 1.405   | 5.07    | 1,774                    | 6,407  |
|           |                                              |           |         |         |                          |        |
| Inferred  | 1,916                                        | 1.196     | 1.081   | 10.34   | 67                       | 637    |

Source: JDS(2014)



## 15 Mineral Reserve Estimate

The project has no declared Mineral Reserves as per CIM definitions.

## 16 Mining Methods

Mine design and planning for the Ana Paula project is based on the IMC resource model, as detailed in Section 14 of this report. Mine planning and optimization results are based on measured, indicated and inferred resources for gold and silver.

This section outlines the parameters and procedures used to perform pit optimization and subsequent mine planning work for the Ana Paula project.

### 16.1 Overview

The deposit will be a conventional, open pit, truck-and-shovel operation. A mill feed of approximately 6,000 t/d is planned over an 8-year mine life. There will be pre-strip material in Year -1, with a full production ramp-up in year 1.

The mine planning and cut-off grade reporting was completed using the Maptek Vulcan™ software, then transferred into Geovia Whittle™ pit optimization software. Using the Lerchs-Grossman (LG) algorithm, the optimization performs a series of nested shells by varying revenue factors. The ultimate pit and phases were then selected and used to develop the life of mine plan (LOM).

The waste rock, acid base accounting testing was not yet available at the time of this study; the next level of study will include management of waste as it is categorized.

Table 16-1 shows the key results from the LOM plan. Waste material mined and associated strip ratio includes pre-stripping activities in Year -1.

**Table 16-1: LOM Plan Key Results**

| Description                   | Units   | Value |
|-------------------------------|---------|-------|
| Ore Material Mined            | Mtonnes | 17.75 |
| Average Gold Equivalent Grade | g/t     | 2.31  |
| Average Gold Grade            | g/t     | 2.24  |
| Average Silver Grade          | g/t     | 6.89  |
|                               |         |       |
| Waste Material Mined          | Mtonnes | 46.11 |
| Rahandle                      | Mtonnes | 4.22  |
| Strip Ratio                   | w:o     | 2.6   |
| Milling Rate                  | t/d     | 6,000 |
| Mine Life                     | years   | 8     |

Source: JDS(2014)

### 16.2 Geotechnical

The geotechnical information provided is referenced in Section 14.9 of this report.

#### 16.2.1 Optimization Wall Slopes

Table 16-2 shows the Whittle™ optimization overall wall slope parameters by sector.

**Table 16-2: Whittle Optimization Overall Wall Slope Parameters**

| Overall Slope Angles for Whittle™ | Unit    | Angle |
|-----------------------------------|---------|-------|
| West Slope Sectors                | degrees | 55    |
| North, East & South Sectors       | degrees | 45    |

Source: JDS(2014)

Due to the natural terrain of the deposit, the Southeast sector is the lowest part of the topography. This would be proposed as the main ramp (entrance/exit) location. The 90t class truck should be considered in the ramp width and mining 20m benches for the overall slope calculation for the geotechnical study.

## 16.3 Open Pit Optimization

### 16.3.1 Optimization Parameters

The block model was provided by IMC in an ASCII format with a 10m-(X) by 10m-(Y) by 10m-(Z) block size. The block model was then transferred into Geovia Whittle™ software and due to the geological complexity of the model, it was re-blocked to 20m-(X) by 20m-(Y) by 20m-(Z) block size within the Geovia Whittle™ software to reduce the optimization run-time.

Parameters defined and outlined in Table 16-3 were estimated using the limited information available. No capital costs were considered at the time of this study. Optimizations were run using measured, indicated and inferred mineral resources.

**Table 16-3: Pit Optimization Parameters**

| Parameter               | Unit         | Value                                   |
|-------------------------|--------------|-----------------------------------------|
| Gold Price*             | US\$/oz      | \$1,300.00                              |
| Silver Price**          | US\$/oz      | \$20.00                                 |
| Processing and G&A Cost | US\$/t       | \$17.81                                 |
| G&A Costs               | US\$/t       | \$2.49                                  |
| Mining Cost             | US\$/t mined | \$2.12                                  |
| Mining Dilution         | %            | 0%                                      |
| Au Recovery             | %            | 75%                                     |
| Ag Recovery             | %            | 50%                                     |
| Au Payable              | %            | 99.80%                                  |
| Ag Payable              | %            | 99.75%                                  |
| Au Selling Costs        | US\$/oz      | 0.71                                    |
| Ag Selling Costs        | US\$/oz      | 0.22                                    |
| NSR Royalty             | %            | 2%                                      |
| Discount Rate           | %            | 5%                                      |
| Pit Slopes              | degrees (°)  | 55° West slope, 45° on all other slopes |

\*Au Price: Lesser of (August 2014 three year trailing average \$1508 or Kitco price of \$1309.75) as of August 8th, 2014. \*\*Ag Price: Lesser of (August 2014 three year trailing average \$27.00 or Kitco price of \$20.13) as of August 8th, 2014. Source: JDS, 2014.

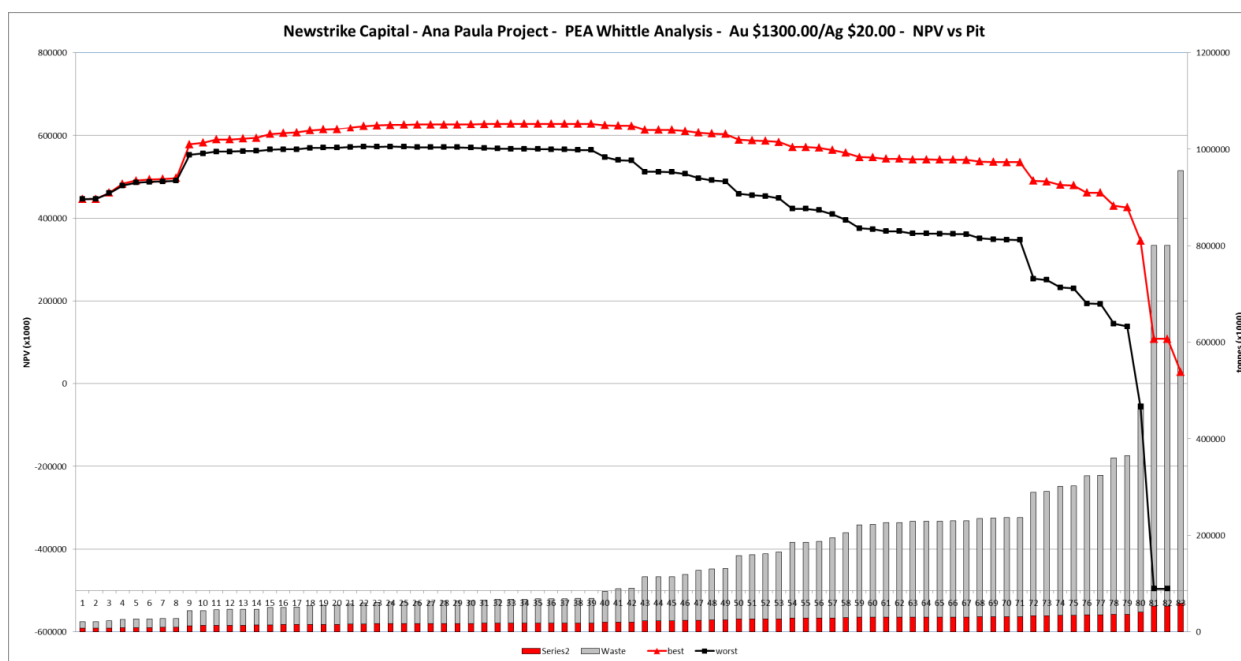
### 16.3.2 Optimization Results

Series of nested shells were generated using a revenue factor. The line graphs in Figure 16-1 represent the best- and worst-case value scenarios for each shell by varying revenue factors.

The best-case graph plots discounted values based on the mining performed shell by shell; the worst-case graph plots discounted values based on the mining performed bench by bench. This gives a representation of where the optimized pit shell lies for each best- and worst-case curve. Note that the optimization results are reported in short tons.

The revenue factor ranged from 0.3 to 2.0, with a 0.02 step size increment. The discounted value of each pit shell was estimated using a discount rate of five percent. The tabulation of data from Figure 16-1 is shown in Table 16-4.

**Figure 16-1: Optimization Results**



Source: JDS(2014)

**Table 16-4: Whittle Optimization Results**

| Pit Shell # | Revenue Factor | Rock Tonnes (x1000) | Mineralized Tonnes (x1000) | Strip Ratio (W:O) | Au Grade (g/t) | Ag Grade (g/t) | DCF Best (x1000) | DCF Worst (x1000) | Mine Life (yrs) |
|-------------|----------------|---------------------|----------------------------|-------------------|----------------|----------------|------------------|-------------------|-----------------|
| 1           | 0.30           | 20,997              | 3,249                      | 5.46              | 5.41           | 8.68           | 445,907          | 445,907           | 3.38            |
| 2           | 0.32           | 21,024              | 3,420                      | 5.15              | 5.24           | 8.53           | 446,566          | 446,483           | 3.39            |
| 3           | 0.34           | 22,626              | 3,816                      | 4.93              | 5.00           | 8.44           | 461,628          | 460,132           | 3.60            |
| 4           | 0.36           | 25,884              | 4,258                      | 5.08              | 4.83           | 8.34           | 483,219          | 478,437           | 3.95            |
| 5           | 0.38           | 26,875              | 4,573                      | 4.88              | 4.66           | 8.19           | 491,087          | 485,634           | 4.10            |
| 6           | 0.40           | 27,011              | 4,833                      | 4.59              | 4.50           | 8.24           | 493,610          | 487,789           | 4.15            |
| 7           | 0.42           | 27,057              | 5,099                      | 4.31              | 4.35           | 8.23           | 494,754          | 488,737           | 4.17            |
| 8           | 0.44           | 27,159              | 5,360                      | 4.07              | 4.21           | 8.32           | 496,744          | 490,267           | 4.21            |
| 9           | 0.46           | 43,483              | 7,301                      | 4.96              | 3.85           | 7.86           | 578,415          | 553,227           | 5.91            |
| 10          | 0.48           | 43,941              | 7,643                      | 4.75              | 3.75           | 7.78           | 582,509          | 556,228           | 6.03            |
| 11          | 0.50           | 46,051              | 8,080                      | 4.70              | 3.65           | 7.71           | 590,270          | 560,808           | 6.24            |

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| Pit Shell # | Revenue Factor | Rock Tonnes (x1000) | Mineralized Tonnes (x1000) | Strip Ratio (W:O) | Au Grade (g/t) | Ag Grade (g/t) | DCF Best (x1000) | DCF Worst (x1000) | Mine Life (yrs) |
|-------------|----------------|---------------------|----------------------------|-------------------|----------------|----------------|------------------|-------------------|-----------------|
| 12          | 0.52           | 46,056              | 8,345                      | 4.52              | 3.58           | 7.66           | 590,304          | 560,830           | 6.24            |
| 13          | 0.54           | 46,340              | 8,659                      | 4.35              | 3.49           | 7.66           | 592,157          | 561,920           | 6.31            |
| 14          | 0.56           | 46,607              | 8,997                      | 4.18              | 3.41           | 7.68           | 594,135          | 562,320           | 6.39            |
| 15          | 0.58           | 50,162              | 9,572                      | 4.24              | 3.32           | 7.65           | 603,718          | 566,002           | 6.74            |
| 16          | 0.60           | 50,679              | 9,895                      | 4.12              | 3.25           | 7.67           | 605,687          | 566,234           | 6.83            |
| 17          | 0.62           | 51,176              | 10,189                     | 4.02              | 3.19           | 7.62           | 607,126          | 566,560           | 6.89            |
| 18          | 0.64           | 54,562              | 10,718                     | 4.09              | 3.12           | 7.50           | 612,605          | 569,548           | 7.05            |
| 19          | 0.66           | 55,298              | 11,185                     | 3.94              | 3.04           | 7.48           | 614,656          | 569,983           | 7.17            |
| 20          | 0.68           | 55,452              | 11,489                     | 3.83              | 2.98           | 7.48           | 614,977          | 570,196           | 7.18            |
| 21          | 0.70           | 57,943              | 12,000                     | 3.83              | 2.92           | 7.39           | 618,810          | 572,009           | 7.35            |
| 22          | 0.72           | 59,951              | 12,555                     | 3.78              | 2.85           | 7.31           | 622,109          | 572,969           | 7.55            |
| 23          | 0.74           | 61,236              | 13,015                     | 3.70              | 2.78           | 7.29           | 623,971          | 572,220           | 7.70            |
| 24          | 0.76           | 62,107              | 13,365                     | 3.65              | 2.74           | 7.24           | 624,930          | 572,735           | 7.75            |
| 25          | 0.80           | 62,542              | 13,702                     | 3.56              | 2.70           | 7.20           | 625,561          | 572,179           | 7.81            |
| 26          | 0.82           | 63,073              | 14,420                     | 3.37              | 2.60           | 7.12           | 626,127          | 571,218           | 7.89            |
| 27          | 0.84           | 63,094              | 14,763                     | 3.27              | 2.56           | 7.11           | 626,168          | 571,231           | 7.90            |
| 28          | 0.86           | 63,182              | 15,045                     | 3.20              | 2.53           | 7.08           | 626,227          | 571,062           | 7.91            |
| 29          | 0.88           | 63,203              | 15,334                     | 3.12              | 2.49           | 7.07           | 626,253          | 571,063           | 7.91            |
| 30          | 0.90           | 64,342              | 15,894                     | 3.05              | 2.43           | 7.03           | 626,808          | 570,044           | 8.04            |
| 31          | 0.92           | 65,699              | 16,339                     | 3.02              | 2.39           | 6.99           | 627,240          | 569,116           | 8.12            |
| 32          | 0.94           | 67,305              | 17,000                     | 2.96              | 2.33           | 6.94           | 627,823          | 568,035           | 8.29            |
| 33          | 0.96           | 67,619              | 17,400                     | 2.89              | 2.30           | 6.88           | 627,899          | 567,676           | 8.33            |
| 34          | 0.98           | 67,862              | 17,769                     | 2.82              | 2.26           | 6.86           | 627,924          | 567,323           | 8.36            |
| 35          | 1.00           | 68,079              | 18,123                     | 2.76              | 2.23           | 6.85           | 627,928          | 566,906           | 8.39            |
| 36          | 1.02           | 68,657              | 18,496                     | 2.71              | 2.20           | 6.80           | 627,881          | 566,291           | 8.44            |
| 37          | 1.04           | 68,812              | 18,871                     | 2.65              | 2.17           | 6.79           | 627,860          | 565,794           | 8.45            |
| 38          | 1.06           | 69,234              | 19,274                     | 2.59              | 2.14           | 6.77           | 627,772          | 564,736           | 8.49            |
| 39          | 1.08           | 69,276              | 19,592                     | 2.54              | 2.11           | 6.74           | 627,747          | 564,430           | 8.50            |
| 40          | 1.10           | 83,312              | 21,210                     | 2.93              | 2.04           | 6.64           | 624,779          | 547,482           | 9.02            |
| 41          | 1.12           | 89,312              | 22,118                     | 3.04              | 2.00           | 6.56           | 623,213          | 540,445           | 9.26            |
| 42          | 1.14           | 90,099              | 22,666                     | 2.98              | 1.96           | 6.50           | 622,858          | 539,288           | 9.32            |
| 43          | 1.16           | 113,698             | 26,562                     | 3.28              | 1.81           | 6.27           | 613,618          | 512,242           | 10.53           |
| 44          | 1.18           | 113,803             | 27,088                     | 3.20              | 1.79           | 6.24           | 613,556          | 511,942           | 10.54           |
| 45          | 1.20           | 114,027             | 27,607                     | 3.13              | 1.77           | 6.22           | 613,432          | 511,524           | 10.56           |
| 46          | 1.24           | 119,168             | 28,678                     | 3.16              | 1.73           | 6.14           | 610,826          | 506,802           | 10.78           |
| 47          | 1.26           | 127,190             | 30,537                     | 3.17              | 1.67           | 6.03           | 606,744          | 496,695           | 11.09           |
| 48          | 1.28           | 130,214             | 31,491                     | 3.13              | 1.64           | 6.08           | 604,658          | 491,414           | 11.26           |
| 49          | 1.30           | 131,461             | 32,199                     | 3.08              | 1.62           | 6.05           | 603,737          | 488,858           | 11.33           |
| 50          | 1.32           | 157,612             | 35,381                     | 3.45              | 1.56           | 5.84           | 589,873          | 458,516           | 12.14           |
| 51          | 1.36           | 159,776             | 36,367                     | 3.39              | 1.53           | 5.79           | 588,072          | 455,627           | 12.28           |
| 52          | 1.38           | 161,564             | 37,614                     | 3.30              | 1.50           | 5.74           | 586,833          | 453,089           | 12.36           |
| 53          | 1.40           | 165,072             | 38,634                     | 3.27              | 1.47           | 5.69           | 584,265          | 448,370           | 12.49           |
| 54          | 1.42           | 184,979             | 41,226                     | 3.49              | 1.44           | 5.56           | 571,858          | 422,820           | 13.04           |
| 55          | 1.44           | 185,076             | 41,925                     | 3.41              | 1.42           | 5.54           | 571,756          | 422,525           | 13.05           |
| 56          | 1.46           | 187,590             | 42,796                     | 3.38              | 1.40           | 5.51           | 570,029          | 419,471           | 13.11           |
| 57          | 1.48           | 195,110             | 44,299                     | 3.40              | 1.38           | 5.52           | 564,598          | 409,161           | 13.35           |
| 58          | 1.50           | 205,674             | 45,965                     | 3.47              | 1.35           | 5.45           | 557,921          | 395,468           | 13.61           |
| 59          | 1.52           | 221,833             | 48,094                     | 3.61              | 1.33           | 5.43           | 547,654          | 375,382           | 13.96           |
| 60          | 1.54           | 222,708             | 49,042                     | 3.54              | 1.31           | 5.42           | 546,883          | 373,522           | 13.98           |
| 61          | 1.56           | 226,580             | 50,153                     | 3.52              | 1.29           | 5.37           | 543,868          | 368,244           | 14.10           |
| 62          | 1.58           | 226,616             | 50,825                     | 3.46              | 1.28           | 5.35           | 543,827          | 368,172           | 14.10           |
| 63          | 1.60           | 229,219             | 51,756                     | 3.43              | 1.27           | 5.37           | 541,870          | 362,887           | 14.18           |
| 64          | 1.62           | 229,301             | 52,533                     | 3.36              | 1.25           | 5.37           | 541,781          | 362,721           | 14.18           |
| 65          | 1.64           | 229,485             | 53,240                     | 3.31              | 1.24           | 5.35           | 541,572          | 362,336           | 14.18           |
| 66          | 1.66           | 229,845             | 54,040                     | 3.25              | 1.23           | 5.33           | 541,193          | 361,525           | 14.18           |
| 67          | 1.68           | 230,044             | 54,913                     | 3.19              | 1.22           | 5.31           | 540,982          | 361,124           | 14.18           |
| 68          | 1.70           | 234,656             | 56,350                     | 3.16              | 1.20           | 5.51           | 537,035          | 351,053           | 14.31           |
| 69          | 1.72           | 235,769             | 57,889                     | 3.07              | 1.17           | 5.47           | 535,865          | 348,734           | 14.32           |
| 70          | 1.74           | 236,333             | 58,832                     | 3.02              | 1.16           | 5.45           | 535,273          | 347,704           | 14.32           |
| 71          | 1.76           | 236,517             | 59,734                     | 2.96              | 1.15           | 5.46           | 535,081          | 347,309           | 14.32           |
| 72          | 1.78           | 289,007             | 68,903                     | 3.19              | 1.07           | 5.50           | 490,105          | 253,475           | 15.47           |

| Pit Shell # | Revenue Factor | Rock Tonnes (x1000) | Mineralized Tonnes (x1000) | Strip Ratio (W:O) | Au Grade (g/t) | Ag Grade (g/t) | DCF Best (x1000) | DCF Worst (x1000) | Mine Life (yrs) |
|-------------|----------------|---------------------|----------------------------|-------------------|----------------|----------------|------------------|-------------------|-----------------|
| 73          | 1.80           | 290,691             | 70,019                     | 3.15              | 1.06           | 5.49           | 488,780          | 250,477           | 15.49           |
| 74          | 1.82           | 301,420             | 72,273                     | 3.17              | 1.04           | 5.52           | 480,486          | 232,226           | 15.71           |
| 75          | 1.84           | 302,637             | 73,449                     | 3.12              | 1.03           | 5.51           | 479,354          | 230,007           | 15.74           |
| 76          | 1.86           | 323,422             | 78,228                     | 3.13              | 1.00           | 5.64           | 461,709          | 193,624           | 16.07           |
| 77          | 1.88           | 323,914             | 79,432                     | 3.08              | 0.99           | 5.63           | 461,216          | 192,626           | 16.08           |
| 78          | 1.90           | 360,694             | 86,142                     | 3.19              | 0.95           | 5.37           | 429,612          | 144,717           | 16.71           |
| 79          | 1.92           | 364,838             | 88,066                     | 3.14              | 0.94           | 5.37           | 425,901          | 138,226           | 16.80           |
| 80          | 1.94           | 472,947             | 101,840                    | 3.64              | 0.88           | 6.30           | 345,442          | -56,424           | 18.89           |
| 81          | 1.96           | 800,887             | 135,994                    | 4.89              | 0.84           | 5.57           | 108,197          | -495,865          | 24.83           |
| 82          | 1.98           | 801,011             | 137,447                    | 4.83              | 0.83           | 5.55           | 108,095          | -496,048          | 24.83           |
| 83          | 2.00           | 956,142             | 150,978                    | 5.33              | 0.83           | 5.26           | 27,663           | -706,393          | 27.29           |

Source: JDS(2014)

## 16.4 Mine Planning

### 16.4.1 Pit Shell Selection & Mine Design

The key focus of the preliminary assessment was to maximize the open pit resources and to show 'reasonable potential for economic extraction'. The final pit selection was based on the revenue factor of 0.9 (90 percent) of the gold and silver prices used in the optimization. Using a 0.9 revenue factor eliminates any marginal grade sitting along the final pit wall. Therefore, pit shell 30, where the revenue factor is equal to 0.9, was selected for the final shell.

A detailed mine design was not completed for this study, but mining will be performed on 10m benches and 60 m minimum mining widths. A series of shells were analyzed, and shells 4 (revenue factor 0.36) and 30 where selected for mine planning.

### 16.4.2 Gold Equivalent Calculation (AuEq)

A gold equivalent calculation was developed to aid in the reporting of gold and silver for mine planning purposes. The gold equivalent calculation is as follows using the optimization parameters provided in Table 16-3:

$$\text{AuEq} = \text{Au Grade (g/t)} + [\text{Ag Grade (g/t)} * \text{Factor}]$$

$$\text{Factor} = \frac{[(\text{Ag Price} - \text{Ag Selling Cost}) * \text{Ag Recovery} * \text{Ag Payable} * (1 - \text{NSR Royalty})]}{[(\text{Au Price} - \text{Au Selling Cost}) * \text{Au Recovery} * \text{Au Payable} * (1 - \text{NSR Royalty})]}$$

The gold equivalent calculation was completed in the Maptek Vulcan<sup>TM</sup> software using the gold and silver grades provided by the IMC resource model.

### 16.4.3 Gold Equivalent Cut-Off Grade

A Gold equivalent cut-off calculation is based on optimization parameters provided in Table 16-4. Mine and Mill cut-off grades calculations were determined for the mine production schedule:

$$\text{Mine AuEq Cutoff Grade} = \frac{(\text{Mine+Mill+G\&A Costs})}{\frac{((\text{Au Price} - \text{Au Selling Cost})/31.1035 * \text{Au Recovery} * \text{Au Payable}) + ((\text{Ag Price} - \text{Ag Selling Cost})/31.1035 * \text{Ag Recovery} * \text{Ag Payable})) * (1 - \text{NSR Royalty})}$$

Mine AuEq Cutoff Grade =  $(2.12+17.81+2.49)/[(((1300-0.71)/31.1035*75\%*99.80\%)+((20-0.22)/31.1035*55\%*99.75\%))*(1-2\%)] = 0.72 \text{ g/t}$

The milling AuEq cut-off calculation ignores the mining costs in the calculation; also called marginal grade.

Mill AuEq Cutoff Grade = 0.64 g/t

To maximize a higher value during the mine life, a mining cut-off was applied and any material between the milling and mining cut-off would be stockpiled and processed at the end of mine life of approximately 1.620 million tonnes.

#### 16.4.4 Mine Production Schedule

The mining production schedule was developed based on a maximum mill capacity of approximately 6000 t/d. The Ana Paula project life is 10 years, including one year of pre-stripping followed by 9-years of operations. The throughput rate is assumed to achieve full capacity Year 1 of operation. Table 16-5 below, outlines the mine production schedule by year.

**Table 16-5: Mine Production Schedule by Year**

| Year  | Recourses to the Mill |            |          |          | Waste (Mt) | Rehandle (Mt) | Total EXPIT (Mt) | S.R. (W:O) |
|-------|-----------------------|------------|----------|----------|------------|---------------|------------------|------------|
|       | Tonnes (Mt)*          | AuEq (g/t) | Au (g/t) | Ag (g/t) |            |               |                  |            |
| -1    |                       |            |          |          | 6.65       | 0.00          | 7.27             | 10.73      |
| 1     | 2.16                  | 2.18       | 2.06     | 11.48    | 7.93       | 0.47          | 9.82             | 4.18       |
| 2     | 2.16                  | 2.50       | 2.43     | 6.40     | 6.26       | 0.00          | 9.47             | 1.95       |
| 3     | 2.16                  | 3.28       | 3.20     | 7.18     | 5.57       | 0.00          | 9.33             | 1.48       |
| 4     | 2.16                  | 2.93       | 2.80     | 12.29    | 7.63       | 0.67          | 9.27             | 4.64       |
| 5     | 2.16                  | 2.14       | 2.08     | 5.71     | 8.03       | 1.18          | 9.24             | 6.65       |
| 6     | 2.16                  | 1.67       | 1.63     | 4.08     | 3.43       | 0.25          | 5.62             | 1.57       |
| 7     | 2.16                  | 2.59       | 2.56     | 3.36     | 0.52       | 0.00          | 2.77             | 0.23       |
| 8     | 2.16                  | 1.56       | 1.51     | 4.88     | 0.10       | 1.17          | 1.08             | 0.10       |
| 9     | 0.47                  | 0.68       | 0.62     | 5.51     | 0.00       | 0.47          | 0.00             | 0.00       |
| Total | 17.75                 | 2.31       | 2.24     | 6.89     | 46.11      | 4.22          | 63.86            | 2.60       |

Source: JDS(2014)

During the mine scheduling exercise, the goal was to mine the highest-grade material first, while deferring the pre-stripping requirements until later. This would allow for early payback and to help improve the economics of this deposit. Only 6.65 Mt of waste will be required to be moved during pre-stripping. The level of organics that will need to be moved is unknown at the time of this study. It is JDS opinion that only a small percentage of the pre-stripping requirements are likely to be associated to the removal of organics.

Approximately 4.22 million tonnes of rehandled material will required during the mine life from two stockpiles. This will be required to manage the mill throughput and to smooth out the strip ratios in years 4 and 5. The first stockpile will contain material above a 0.72 g/t AuEq,cutoff which will be rehandled throughout the mine

life of approximately 2.60 million tonnes. The second stockpile will contain marginal grade for material ranging between 0.64 g/t and 0.72 g/t AuEq of approximately 1.620 million tonnes to be rehandled at the end of the mine life.

## 16.5 Mine Rock Management

Over the life of mine, the open pit will produce approximately 46 Mt of waste rock. At the time of this study, the mine rock acid-base accounting information was not available; therefore, all mine rock has been categorized as NAG waste rock.

## 16.6 Contractor Mine Equipment

All mine and support mine equipment will be provided by contractors. The equipment description in this section provides general information of the size and/or capacity of the selected equipment.

This operation will be a conventional, open pit, truck-and-shovel operation. JDS prefers conventional, proven 90-tonne class trucks, 12.5 m<sup>3</sup> class hydraulic shovels for open pit loading and hauling.

Blast-hole track-mounted drills either rotary drilling or down-the-hole (DTH), are planned for the project. Due to the size of the operation, all equipment on site will be diesel powered.

### 16.6.1 Contractor Mine Equipment Parameters

The mine will operate 24 hours per day, 365 days per year. The contractor's equipment is expected to have long-term mechanical availability of 85%. Utilization has been assumed to be 85%. This gives approximately 7446 gross operating hours per year.

### 16.6.2 Contractor Mine Equipment Requirements

Major mine equipment provided by contractors has been estimated based on the equipment parameters above. They are listed in Table 16-6 below.

**Table 16-6: Major Mine Equipment Requirements**

| Equipment Type                                                      | Initial | Ultimate |
|---------------------------------------------------------------------|---------|----------|
| Crawler-mounted, rotary tri-cone, 7-7/8" (200 mm) dia.              | 1       | 1        |
| Crawler-mounted, 4.5" LexiROC D65, Support/Grade Control/Pioneering | 1       | 1        |
| Diesel, 16 yd <sup>3</sup> (12.5 m <sup>3</sup> ) hydraulic shovel  | 1       | 1        |
| Diesel, 16 yd <sup>3</sup> (12.5 m <sup>3</sup> ) wheel loader      |         | 1        |
| 100-ton (90-tonne) class haul truck                                 | 4       | 5        |
| D10-class track dozer                                               | 1       | 1        |
| 16H-class grader                                                    | 1       | 1        |

Source: JDS(2014)

Contract support mine equipment will consist of:

- Small excavator

- Mechanical trucks
- Service & lube truck
- Welding trucks
- Fuel truck
- ANFO truck
- Small crane
- Zoom boom
- Tire handler
- Ambulance
- Fire truck
- Flat decks
- Snow plow
- Bus
- Crew van
- Pickups

## 16.7 Contractor Explosives

Explosives will be supplied by a single service contract, using conventional heavy ANFO and delivered by an on-site mixing truck to the blast hole.

Blast design is based on 10m benches, using powder factors 0.26. Over the life of mine, the project will use approximately 16.6 Mkg of ammonium nitrate (AN) with an average use of 1.84 Mkg per year during years 1 through 8.

The project will use conventional blasting products: nonels, detonating cords, delays and boosters.

Owner mine operations personnel will be responsible for the blasting pattern design and the contractor personnel for loading holes and tie-ins.

Pre-Shearing explosive products should be evaluated at the next stage of the study to determine if higher blasting costs to steepen the overall wall angle will reduce the overall mining of waste and costs.

## 16.8 Mine Personnel

The management staff, technical personnel will only operate on a single 12-hour day shift, on 4 days in, 3 days out, as where contractor mine crews will operate on two 12-hour shifts per day, 365 days per year. This will require four mining and maintenance crews. Crews will work a standard rotation of two weeks on, two weeks off. Personnel requirements are estimated based on the peak number of equipment units operating. Peak mine personnel requirements are estimated and summarized in Table 16-7 to Table 16-11.

**Table 16-7: Mine Supervision Personnel Summary - Owner**

| Position                         | Quantity | Hourly/Salary |
|----------------------------------|----------|---------------|
| Mine Manager                     | 1        | Salary        |
| Mine Superintendent              | 1        | Salary        |
| Mine Shift Foreman               | 2        | Salary        |
| Maintenance General Foreman      | 1        | Salary        |
| Mine Trainer                     | 1        | Salary        |
| Mine Clerk                       | 1        | Salary        |
| Mine Supervision Personnel Total | 7        |               |

Source: JDS(2014)

**Table 16-8: Mine Operations Personnel Summary - Contractors**

| Position                    | Quantity | Hourly/Salary |
|-----------------------------|----------|---------------|
| Driller                     | 6        | Hourly        |
| Blaster                     | 2        | Hourly        |
| Blasting Helper             | 2        | Hourly        |
| Shovel/Loader Operator      | 6        | Hourly        |
| Truck Driver                | 20       | Hourly        |
| Support Equipment Operators | 2        | Hourly        |
| Mine Services               | 2        | Hourly        |
| Mine Operations Total       | 40       |               |

Source: JDS(2014)

**Table 16-9: Mine Maintenance Personnel Per Shift - Contractors**

| Position                 | Quantity | Hourly/Salary |
|--------------------------|----------|---------------|
| Heavy Equipment Mechanic | 4        | Hourly        |
| Mechanics and Welders    | 4        | Hourly        |
| Services – Fuel & Lube   | 2        | Hourly        |
| Labourer/Trainee         | 2        | Hourly        |
| Mine Maintenance Total   | 12       |               |

Source: JDS(2014)

**Table 16-10: Technical Services Personnel Summary - Owners**

| Position                 | Quantity | Hourly/Salary |
|--------------------------|----------|---------------|
| Chief Engineer           | 1        | Salary        |
| Production Engineer      | 2        | Salary        |
| Grade Control Geologist  | 2        | Salary        |
| Mine Geologist           | 1        | Salary        |
| Sampler                  | 2        | Salary        |
| Surveyor                 | 2        | Salary        |
| Technical Services Total | 10       |               |

Source: JDS(2014)

**Table 16-11: Total Mine Personnel Summary**

| Team                      | Personnel |
|---------------------------|-----------|
| Supervision - Owners      | 7         |
| Operations - Contractors  | 40        |
| Maintenance - Contractors | 12        |
| Technical Services        | 10        |
| Total Mine Personnel      | 69        |

Source: JDS(2014)

## 17 Recovery Methods

The Ana Paula process plant is designed to process 2,160,000 tons per annum at a design rate of 6,000 tpd based on an overall mechanical equipment availability of 92 percent. The plant is designed to run 360 days/year, 24 hours/day. The crushing circuit is designed with a mechanical equipment availability of 70 percent on the same 360/24 schedule.

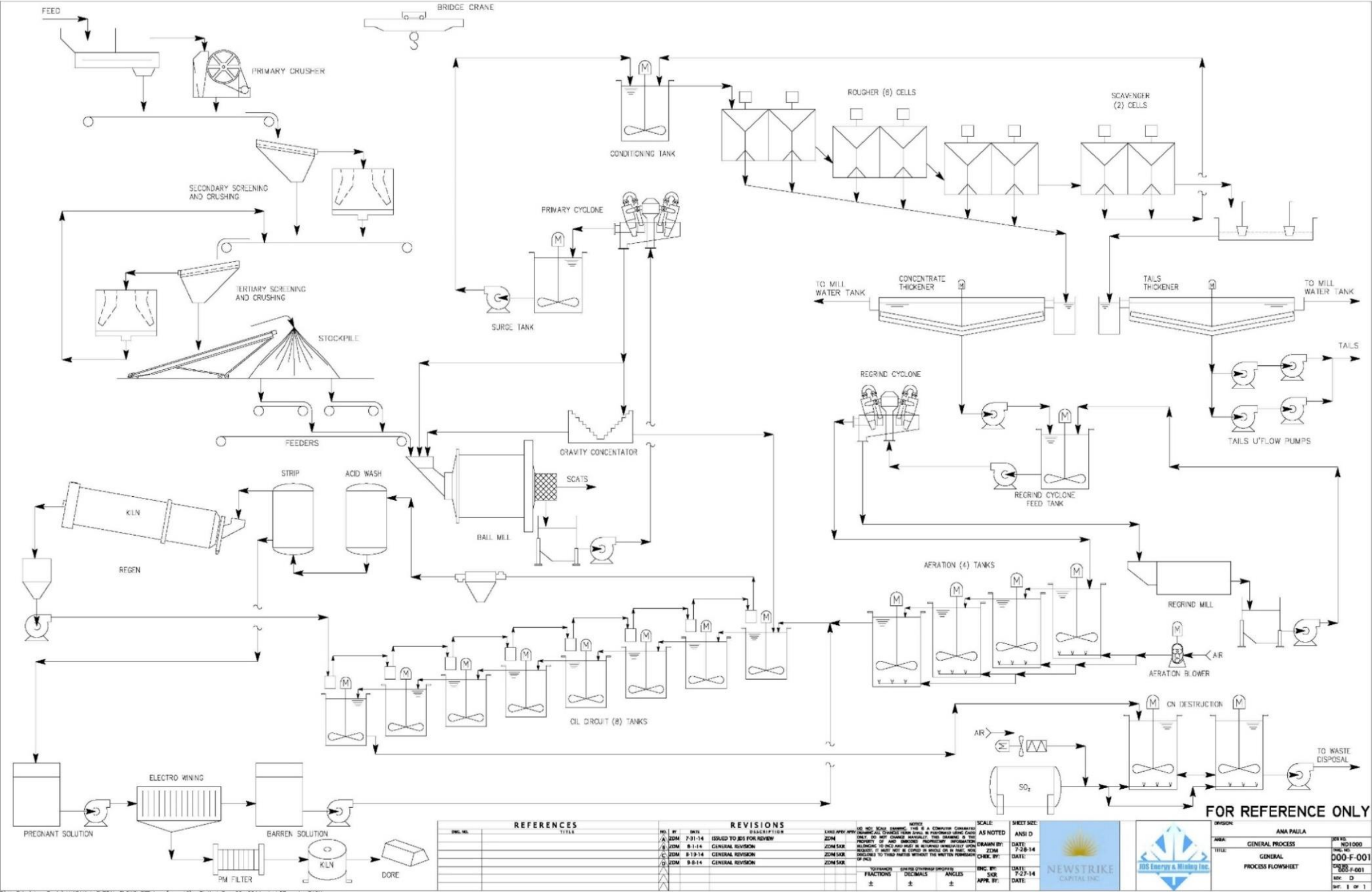
The proposed process for Ana Paula, based on a review of the available testwork, is a gravity/sulfide concentrate circuit followed by cyanide leach. The plant will include:

- Tertiary Crushing
- Ball Mill and Gravity Concentration
- Flotation of sulfides
- Thickening and disposal of flotation tails in a conventional tailings management facility
- Regrinding of the concentrates
- Aeration and carbon-in-leach (CIL) of the reground and gravity concentrates
- Conventional ADR circuit for production of precious metal doré
- Cyanide destruction and disposal of leached concentrates in the conventional tailings management facility

At the preliminary level of this study, some assumptions have been made in order to make reasonable estimates for equipment sizing and tailings disposal. These assumptions will be reviewed in the next phase of engineering. A design criteria was developed based on the available testwork and is included as part of the appendix. The design criteria include the calculations or information basis for each piece of major equipment.



Figure 17-1 General Process Flowsheet



## 17.1 Crushing Circuit

The proposed flowsheet for Ana Paula begins with a tertiary crushing system equipped with a grizzly feeder and scalping screen, jaw crusher, secondary screen and secondary cone crusher, and a closed circuit tertiary screen and short-head cone crusher. The crushing system operates 24 hours/day and has an assumed mechanical availability of 70 percent. The annual output from crushing matches the milling rate of 2,160,000 tonnes/annum. The crushing index and feed size are assumed and should be determined in the next phase of engineering. The circuit was simulated using Bruno© simulation software. The sizing of each crusher is an equivalent of typical equipment available from Metso but does not necessarily need to be purchased from this vendor.

The crushing circuit is fed material from the mine with an assumed top size of 900 mm. The method of feeding the crushing system can be by truck or loader but has yet to be determined. A scalping screen separates rock particles under 900mm from the feed stream to the jaw crusher, 42" x 55", with an estimated closed-side setting (CSS) to 130 mm. This fraction joins the crushed rock at the secondary screen.

The secondary screen is an inclined, dual deck screen. The upper panels have 75mm openings and the secondary deck is stacked with 25 mm panels. The oversize from both panels reports to a 5' standard head cone crusher. The crusher CSS is 30 mm. Undersize from the secondary joins the crushed materials at the tertiary screen.

The tertiary screen is also an inclined, dual deck screen. The upper panels have 28 mm openings and the lower panels have 14 mm openings. The tertiary cone crusher is an 8' short-head cone with a CSS set to 12 mm. The crushed materials recycle to the tertiary screen as a 'closed circuit'. The undersized materials from the screen are product size particles which are conveyed to a stacker and stockpile.

## 17.2 Grinding Circuit

The grinding circuit consists of a closed circuit ball mill and gravity concentrator. The mill is fed from the stockpile using two apron feeders at a new feed rate of 272 t/h. The circuit operates 24 hours/day at an assumed mechanical availability of 92 percent. The annual throughput matches the crushing circuit production rate of 2,160,000 tonnes/annum. Mill sizing has been calculated based on one Bond Work test conducted by Phillips laboratories in Golden, Co. Additional work will be done in the next phase of engineering to confirm hardness indices and mill sizing parameters.

The ball mill is fed from the stockpile by dual apron feeders arranged in parallel. The conveyor transports the feed to the ball mill feed chute where it joins with cyclone underflow. The ball mill is sized to produce a product with 80 percent passing 197 micron from a 9 mm feed material. The mill size calculated to have a diameter of 5.5m $\phi$  and a length of 8.8m is equipped with a 5,222 kW (7,000 hp) motor. The estimated power draw is 4,713 kW. The mill is equipped with an overflow screen designed to remove ball chips and scats.

Ball mill discharge reports to a sump where mill water is added to reduce the slurry density from approximately 68 percent to 55 percent solids by weight. The slurry is pumped into a cyclone nest equipped with 5-26" operating cyclones. The cyclones separate the particles, generating an overflow of finer particles and underflow of coarse particles. The D50 separation size, the size at which 50 percent of the particles can

report to either the overflow or the underflow, is calculated as 58 microns, based on the information available. The overflow reports to the flotation surge tank while the underflow returns to the mill, closing the circuit.

About 25 percent of the underflow is diverted to a gravity concentrator. According to the testwork, 41 percent of the gold and 14 percent of the silver will be recovered to a gravity concentrate.

The gravity concentrator is a device designed to remove free gold and silver particles from gangue materials. The concentrator is fed from a trash screen underflow which removes any oversized particles and dilutes the feed slurry to approximately 40 percent solids. The gravity machine spins the slurry at a high velocity, collecting heavy particles on the inside ribs. These machines are batch machines operating on a set cycle to concentrate and then flush heavy materials to a downstream leach system. The tailings from the gravity operation is discharged to the ball mill feed chute with the cyclone underflow. The concentrate is currently assumed to report to the cyanidation leach circuit.

### **17.3 Flotation**

The flotation circuit was sized based on testwork performed by ALS KM4097, in January 2014. Because of the preliminary nature of the testwork, a scale-up factor of 3 was applied to the flotation time used to calculate the cell sizes. Common scale-up factors for pyrite flotation range from 2 to 3, depending on amount of testwork and the level of confidence.

The circuit consists of a conditioning tank, single bank of six-42.5m<sup>3</sup> self-aspirating flotation cells arranged in pairs, and a single pair of scavenger cells which provide the operations with the ability to recirculate low-grade concentrates back to the conditioning tank. This concept provides flexibility and enough retention time as needed according to the limited testwork.

The material is floated at a natural pH. The collecting agent, potassium amyl-xanthate, or PAX, along with the cyclone overflow slurry is conditioned in an agitated tank prior to the flotation circuit. A frother, similar to methyl-isobutyl carbinol (MIBC), is added as needed to each set of cells to enhance froth production. The mineral adheres to the bubble surface, and an overflowing concentrate from the first six flotation cells is collected by weirs and reports to a thickener. The concentrate from the scavenger cells recycles back to the conditioning tank.

The tailings from the flotation circuit reports to a thickener. The thickener underflow is the final tailings for the process and can be disposed of by either being pumped to a conventional tailings impoundment, made into a paste and report to a paste tailings impoundment, or filtered and dry stacked. No work has been done to determine which option will be used by Ana Paula but will be studied in next phase of work for the purposes of this PEA a conventional tailings facility has been assumed.

### **17.4 Leaching**

The thickened concentrate underflow goes on to the regrind circuit while the overflow water is returned to a mill water collection circuit.

Testwork performed on concentrate shows that regrinding is necessary to extract the precious metals from the gangue. The flowsheet proposes a conventional cyclone/ball mill circuit for regrinding the concentrate. The cyclone nest is fed by a small surge tank or sump with an overflow reporting to the aeration circuit. The underflow reports to the ball mill. The leach target size is 80 percent passing 43 microns. The ball mill proposed is based on estimates used for the primary ball mill. Additional studies are required in the next phase of engineering to establish design parameters for the regrind circuit.

After regrinding, the slurry reports to a set of aeration tanks designed for 16 hours of retention time. Air is blown into the tanks using a roots type low pressure blower. The oxygen in the air is assumed to passivate sulfide minerals, reducing their potential to serve as cyanicides.

After sulfide passivation, the slurry undergoes cyanide leaching in a carbon-in-leach circuit. Milk of Lime (MOL) and liquid sodium cyanide are added to the leaching circuit. The MOL adjusts the pH to 10.5 or higher, reducing the loss of aqueous cyanide. The cyanide molecule dissolves precious metals from the rock.

Carbon-in-leach refers to a process where cyanide is added to slurries in the presence of carbon. A set of eight tanks, provides 48 hours of leaching for the dissolution of precious metals. The tanks are arranged as overflow tanks and are complete with agitators and carbon screens. The slurry moves downstream by gravity and the carbon is pumped uphill in a counter current arrangement. This carbon movement allows the most active carbon to be in contact with the lowest concentration solutions, improving the adsorption of metals to the carbon surfaces. Once the precious metals have leached from the rock particles they adsorb to the surface of coconut carbon.

At the top of the tank train the carbon is screened from the slurry and reports to the ADR plant. The leach tailings reports to cyanide destruction circuit before being released to a downstream tailings impoundment or to other disposal systems. No testwork has been performed to date to determine the residual cyanide level or method of cyanide destruction. This will be performed in the next phase.

## **17.5 Adsorption, desorption, recovery (ADR)**

Once the loaded carbon is screened from the leached slurry it is transported to the ADR plant. The ADR plant washes the carbon and strips the precious metals values, producing a concentrated electrolyte. The carbon then undergoes regeneration in a rotating kiln. The electrolyte is pumped through electrowinning cells where the metals are recovered from the solution into a precious metals sludge. The sludge is fluxed and poured into doré bars. The regenerated carbon is returned to the last tank of the leach circuit.

The Ana Paula plant is expected to strip and regenerate approximately 5 tonnes of carbon each day. The carbon is expected to load about 225 ounces of total metal value, one-third of this as gold and the remaining values as silver. Other metals will load on carbon as well, most notably copper. Confirmation of the loading capacity for carbon will be done in the next phase.

## **17.6 Energy, Water, Reagents**

It is assumed that the Ana Paula project will have access to the local power grid and will be able to take advantage of existing infrastructure. Makeup water requirements for the plant are unknown at this time. Generally, plants of this type require 1 tonne of makeup water per tonne of rock processed. This



requirement depends largely on local weather and tailings disposal methods. An overall water balance should be performed in support of the next phase of engineering. A process water balance will be part of the next study. This balance will define the water needs of the process facility.

Reagent consumption has been based on the limited testwork performed on the composite sample and is considered accurate at this level of study.

## **17.7 Recommendations for Continued Work**

In the next phase of study, the number of metallurgical samples required to better define the Ana Paula property should include composites from the first 3-years of operation by rock type. This is commonly referred to as a variability study. From this testwork, Ana Paula can proceed with some confidence towards a full-scale pre-feasibility or feasibility level study.

- Engineering work should include:
- Trade-off study for tailings disposal methods
- Trade-off study comparing whole-rock leach and Flot/Leach
- Updated design criteria
- Detailed mass and process water balance calculations
- Equipment sizing and specifications
- Detailed operational and capital cost estimates
- Flowsheets for each unit operation

Costs for engineering work can vary greatly, however, an estimated cost range should be between \$550K and \$720K for process engineering.

## **18 Project Infrastructure**

### **18.1 Site Access**

The Ana Paula project is located in the state of Guerrero, Mexico, approximately 170km southwest of Mexico City, roughly equidistant between Mexico City and Acapulco. The project is accessible from Highway 51 along a stretch of gravel roads that will require some improvement to enable access for the larger trucks carrying heavy mine equipment and supply loads for the mine site. The mine site lies approximately 30 km south of Highway 51, and this section of gravel road can be relatively easily upgraded to service the project. Iguala is the nearest major city and is serviced by direct airline flights from several major Mexican cities.

The mine and process facilities are planned to lie between the open pit and the tailings storage facility and at a higher elevation. A crusher station and conveyor will be placed on a lower saddle point closer to the pit ramp and will deliver the crushed rock to the mill, where further processing will be accomplished.

### Figure 18-1: Site Layout

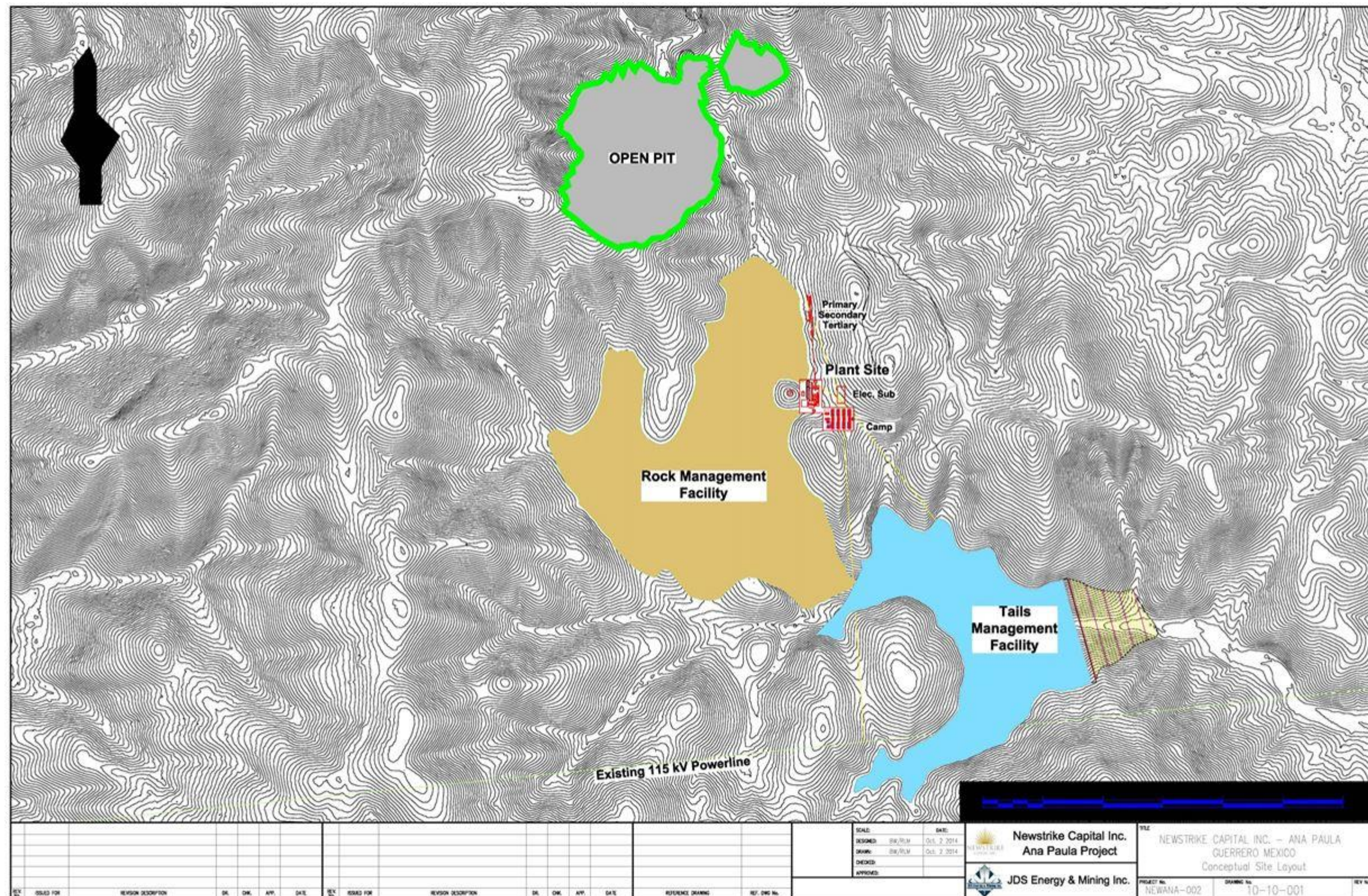
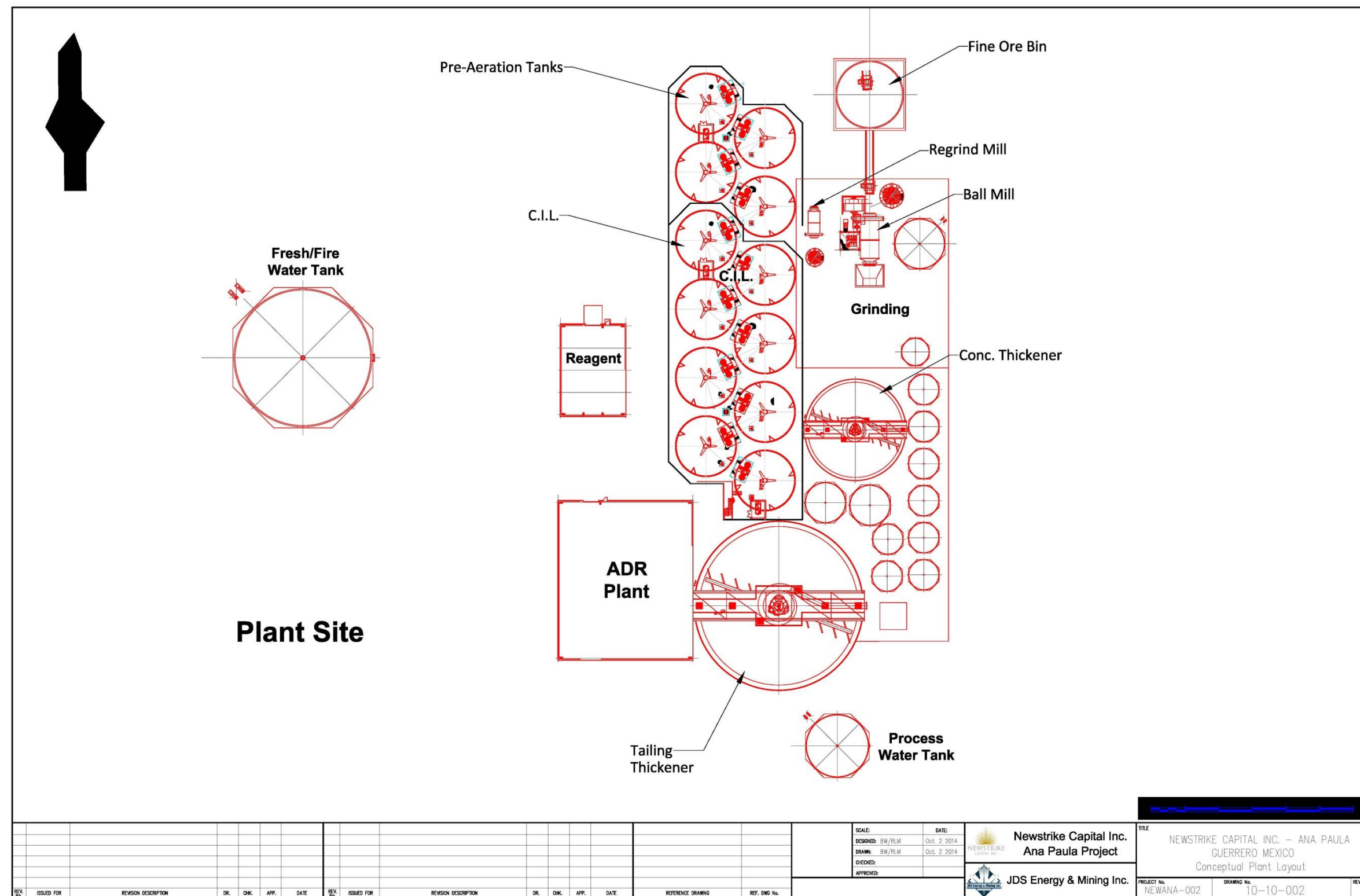


Figure 18-2: Plant Layout



## **18.2 Tailings Management Facility**

A lined tailings management facility has been located, preliminarily sized, and costed to facilitate the tailings anticipated to result from processing the 17.8 million tonnes of projected mineralized material to be mined in the base case mine plan.. Additional space for storm water runoff, surge, and wave action have been incorporated into the preliminary design as freeboard for the tailings management facility.

The tailings storage facility and dam as laid out for the purposes of this study involve a mapped area of approximately 392,000 m<sup>2</sup> or 39.2 hectares. The tailings storage facility has been situated directly downstream of the rock management facility such that impacted runoff from the rock management is controlled and can be introduced into the process water stream for mineral processing in the plant. The tailings storage facility is also in close proximity and at a lower elevation than the plant, further simplifying tailings placement.

Surplus water from the conveyance and placement of tailings material will be recovered and pumped back to the plant for reuse in the mineral processing activities.

## **18.3 Rock Management Facility**

The single rock management facility has been located and sized for approximately 46 million tonnes of mine rock based on the base case mining scenario evaluated for this PEA study. The rock management facility has been located adjacent to the pit with runoff being captured by the downstream located tailings management facility. This downstream placement of the tailings management facility enables this water to be captured and incorporated into the process water for mineral processing activities without the addition of any pumping equipment or catchments beneath the rock management facility.

Slopes and layout of the rock management facility are preliminary, but are anticipated to be sufficiently shallow to account for the seismicity of the region.

## **18.4 Process Plant**

The process facility is comprised of a gravity/flotation/carbon-in-leach (CIL) process plant, storage tanks, tailings thickening area, assay lab, and lay-down area. Adequate warehouse and office space have been accounted for along with sewage treatment and potable water treatment facilities.

## **18.5 Mine Support and Ancillary Buildings**

Support and ancillary buildings for the site include a covered, partially enclosed equipment maintenance shop, administration office building, fuel storage/dispensing system, truck scale, warehouse, and security trailer. Some additional facilities may be brought in by the contract miner. The mine scenario evaluated in this PEA study includes the construction of an on-site camp capable of housing up to approximately 128 people. Security issues and effectively expanding the region or area from which skilled labor can be drawn to this mine will both be enhanced by having a camp enabling the housing of workers at the site.

## 18.6 Power Supply and Distribution

Line power is available within 1.5 km of the proposed plant site and is supplied via a 115 kV line running generally east-west adjacent to the site property. A 1.5 km power line will be constructed with appropriate tie-ins and switching to deliver power at 115Kv to a substation that will be constructed in close proximity to the plant site. The substation will drop the supply voltage to either 25 kV for general distribution around the site or to 4,160 kV for distribution to the large motor loads such as the crusher facilities. Power usage has been estimated at +/-10 megawatts and the Federal Power Agency in Mexico (CFE), has reported that the line has sufficient capacity to handle the +/-10 megawatt load anticipated from the site. A site visit by CFE and obtaining written confirmation to secure the power will be the next steps in acquiring power for the mine operations at site.

## 18.7 Water Supply

The average water usage for the project is estimated to be 2,400 gpm. Surface water impacted by the tailings management facility and surplus water from tailings deposition will be returned to the process facility for reuse to help minimize the amount of water needed from the water supply well clusters. The vast majority of water supply is anticipated to be obtainable from proximal groundwater sources.

Mexico recognizes water as a national resource and regulates the use of water through the Comisión Nacional del Agua (CNA). The aquifer targeted for supply of the needed groundwater for the Ana Paula project site will require a new water concession application to be made with the CNA. A water concession will need to be granted by the Mexican water agency, Comisión Nacional del Agua (CNA), based on a permit application. The permit application will need to be supported by a technical study demonstrating that water availability and sufficient quantity exist in the area.

The next level of study should include a preliminary hydrologic study that would include determination of likely supply well cluster locations based upon the proposed groundwater source locations and the conducting of a field program to characterize aquifer characteristics and both water quality and quantity to support the proposed water supply requirements and the environmental baseline study.

To the extent practicable, storm water run-off will be diverted around the tailings management facility and process facilities via engineered diversion conveyances/channels with the intent of delivering unimpacted water back to its original drainage.

## **19 Market Studies and Contracts**

### **19.1 Market Studies**

At this time, no market studies have been completed as the gold to be produced at Ana Paula can be readily sold in the open market. Gold refining charges were estimated based on similar projects, to be US\$0.71/payable oz. Silver refining charges were estimated to be US\$0.22/payable oz.

### **19.2 Contracts**

No contractual arrangements for concentrate trucking, port usage, shipping, smelting or refining exist at this time. Furthermore, no contractual arrangements have been made for the sale of gold doré at this time.

### **19.3 Royalties**

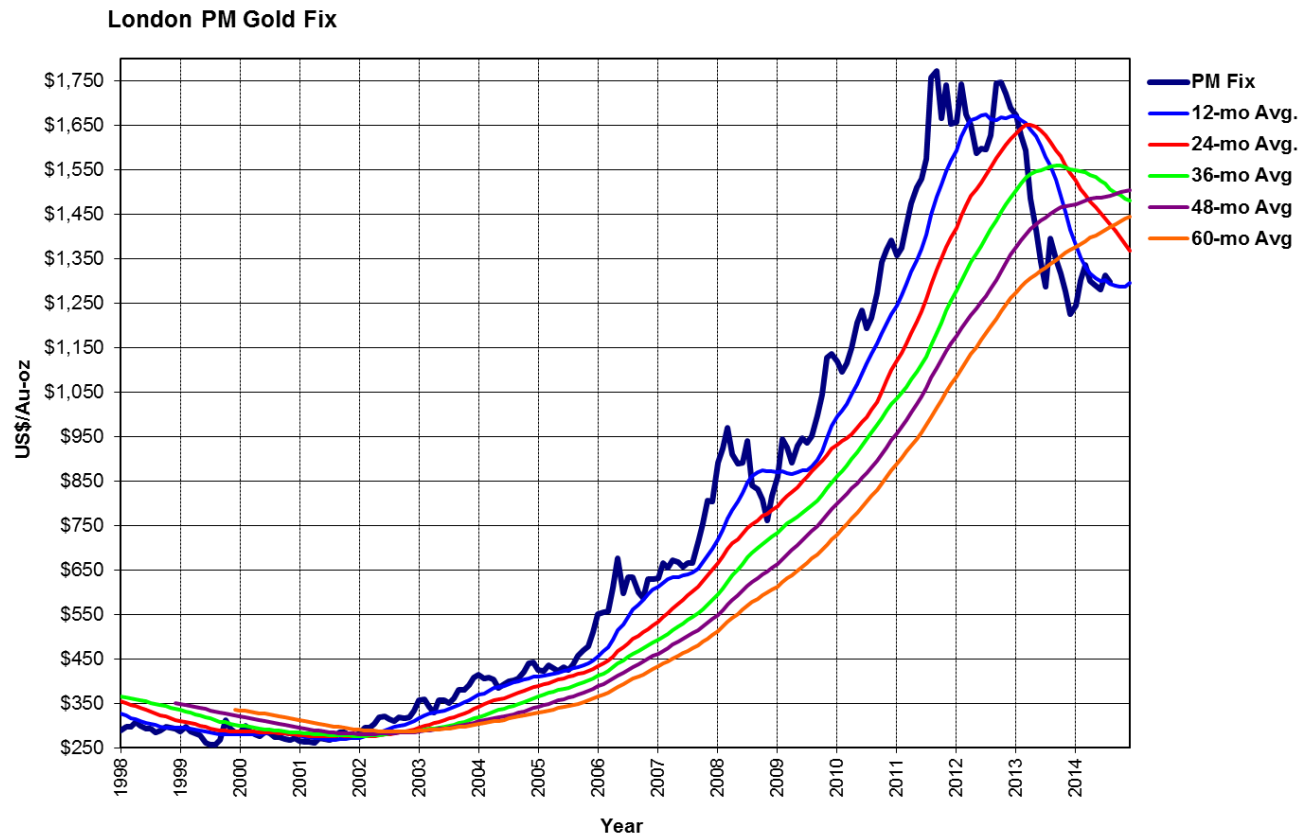
The project was evaluated utilizing the following royalties:

- 2.0 percent NSR Royalty to Gold Corp
- 7.5 percent royalty is included in the Mexican Mining Tax
- 0.5 percent royalty for Mexican Precious Metals Tax

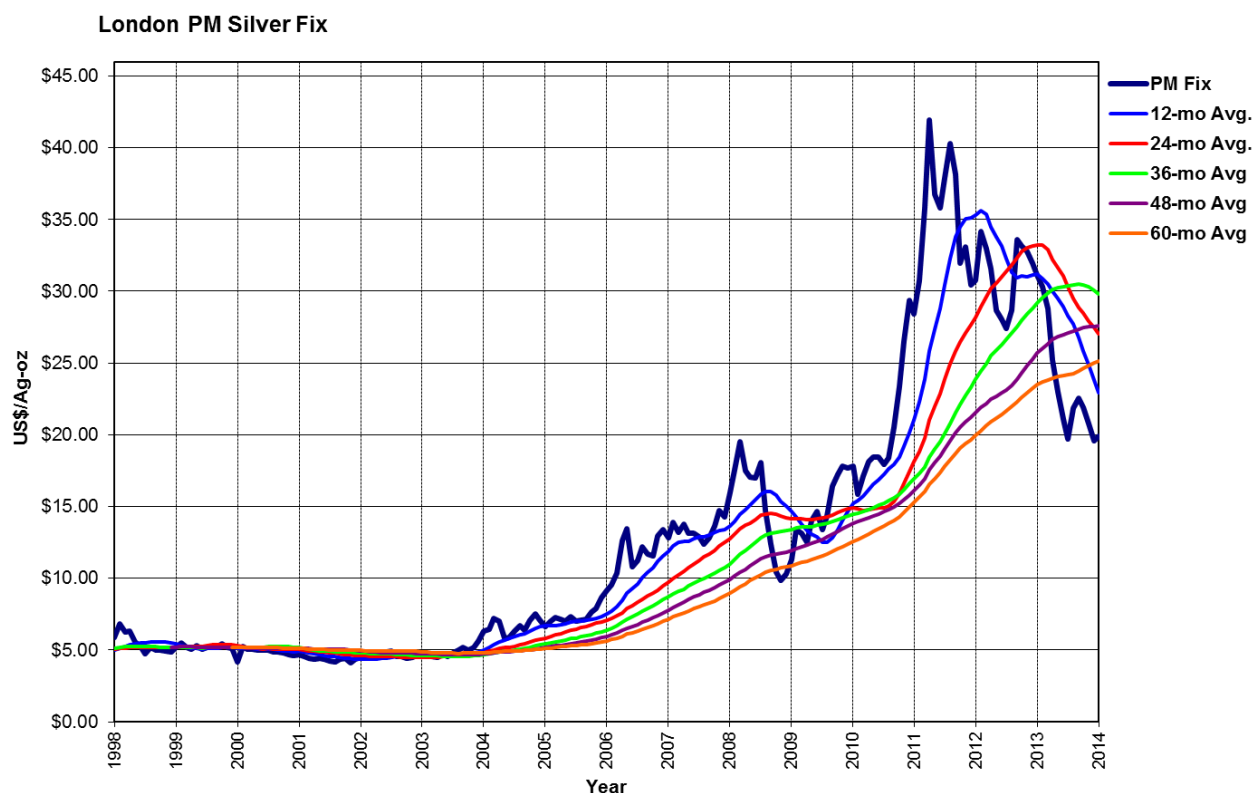
### **19.4 Metal Prices**

The base and precious metal markets benefit from terminal markets around the world (London, New York, Tokyo, Hong Kong) and fluctuate on an almost continuous basis. Historical metal price for gold and silver are shown in Figure 19-1 and Figure 19-2 and demonstrate the change in metal price from 1998 through to June 2014.

**Figure 19-1: Average Gold Cash Price as at August 2014**



Source: JDS(2014)

**Figure 19-2: Average Silver Cash Price as at August 2014**


Source: JDS(2014)

Base Case pricing is based on spot pricing as at August 8, 2014 (the effective date of the PEA). The Base Case pricing was used in the parameters established for mine planning.

Table 19-1 summarizes the metal prices and exchange rates used to run various scenarios in the economic analysis.

**Table 19-1: Metal prices and Foreign Exchange Rates used in Economic Analysis**

| Parameter    | Unit    | Base Case |
|--------------|---------|-----------|
| Gold Price   | US\$/oz | 1,300     |
| Silver Price | US\$/oz | 20.00     |

Source: JDS(2014)

## **20 Environmental Studies, Permitting, and Social or Community Impact**

Currently the Project is permitted for the exploration drilling, but no permits are in place for the proposed mining operations. A description of the permitting process for mining operations is presented below.

### **20.1 Environmental Studies**

ProDeMin has started collecting basic environmental information about the area, and has one person assigned one-half time to environmental issues. Formal environmental baseline studies have not been initiated. The project site is located in a mining district in the Sierra Madre del Sur mountain range in southern Mexico. Vegetation of the area is primarily tropical deciduous forest.

The project area is not within a known environmental protection area.

The Owner has installed a site-specific weather station near the core shack at the coordinates W 0411703 N 2004037. Local data for precipitation and temperature have been collected since 2000, plus wind speed and wind direction have been collected since 2012. The area is subject to summer storms and hurricanes.

Water management and supply will be an important part of the project development. Surface water bodies in the area include the Cuetzala River, Chilapilla River, Arroyo Hondo, Arroyo de Amaja and Arroyo de La Guadalupe. In the community of Cuetzala, water is sourced from several springs (Ojo de Agua and Cañitas) plus the Cuetzala River.

There is a hydroelectric dam (El Caracol) on the Rio Balsas. The water reservoir is the predominant surface water feature in the region. The reservoir was formed following construction of El Caracol Dam (formerly the Carlos Ramirez Ulloa Dam) in 1986. The reservoir supports an important commercial and subsistence fishery, and is part of the hydroelectric system. Potable water for the mining operation could come from a local well or be sourced from the water reservoir. A hydrologic study is needed to characterize the local groundwater conditions.

The mine will generate mine rock and tailings as part of the operations. Waste characterization studies have not yet been started.

There are presently no known environmental issues that could materially impact Newstrike Capital's ability to extract the mineral resources and process material. The only known environmental liabilities are associated with the exploration site activities and access roads. Remediation of surface disturbances and any resultant contamination is required as part of the exploration environmental permits.

### **20.2 Permitting**

Guidance for the federal environmental requirements, including conservation of soils, water quality, flora and fauna, noise emissions, air quality, and hazardous waste management, derives primarily from the Ley General del Equilibrio Ecológico y la Protección al Ambiente ("LGEEPA"), the Ley General para la Prevención y Gestión Integral de los Residuos and the Ley de Aguas Nacionales ("LAN"). Article 28 of the



LGEEPA specifies that SEMARNAT must issue prior approval to parties intending to develop a mine and mineral processing plant. On June 7, 2013, the Federal Law of Environmental Liability (Ley Federal de Responsabilidad Ambiental) was enacted. According to this law, any person or entity that by its action or omission, directly or indirectly, causes damage to the environment will be liable and obliged to repair the damage, or to pay compensation in the event that the repair is not possible. This liability is in addition to penalties imposed under any other judicial, administrative or criminal proceeding.

Environmental permitting in the mining industry in Mexico is mainly administered by the federal government body SEMARNAT, the federal regulatory agency that establishes the minimum standards for environmental compliance. SEMARNAT has set regulatory standards for air emissions, discharges, biodiversity, noise, mining wastes, tailings, hazardous wastes, and soils. The regulatory standards apply to construction and operation activities.

There are three main SEMARNAT permits required prior to construction and development of a mining project. An Environmental Impact Statement (by Mexican regulations called a Manifestación de Impacto Ambiental, or "MIA", for its initials in Spanish) is the document that must be filed with SEMARNAT for its evaluation and, if applicable, further approval by SEMARNAT through the issuance of an Environmental Impact Authorization. In addition, the Ley General de Desarrollo Forestal Sustentable indicates that authorizations must be granted by SEMARNAT for land use changes to industrial purposes. An application for change in land use or Cambio de Uso de Suelo Forestal, must be accompanied by a technical study that supports the environmental permit application (Estudio Técnico Justificativo or "ETJ", for its initials in Spanish). In cases requiring a change in forestry land use, a Land Use Environmental Impact Assessment is also required. Mining projects also need to include a risk analysis for the use of regulated substances (Análisis de Riesgo) and an accident prevention program, which are reviewed and authorized by an interministerial governmental body.

Once the MIA is submitted for review, the government publishes an announcement to allow for public review of the proposed project. If the government receives requests, a formal public hearing will be conducted. The government also requires that the mining company publish announcements in the local papers to provide an opportunity for public comment. Government review, comment and approval of the environmental permit documents are estimated to be completed in three to six months; however it should be noted that permitting can be delayed with requests for information or for political reasons.

Following the main project approval and receipt of the Change of Land Use authorization, there are a number of permits that need to be acquired from various federal agencies. The LAN provides authority to the Comisión Nacional del Agua ("CNA"), an agency within SEMARNAT, to issue water extraction and discharge concessions, and specifies certain requirements to be met by applicants. Key permits include approval from the National Water Commission for construction of the tailings dam in creek basins that are considered to be federal zones; an archaeological release letter is required from the National Institute of Anthropology and History ("INAH", for its initials in Spanish); an explosives permit is required from the Ministry of Defense ("SEDENA", for its initials in Spanish) before construction begins; and a water discharge and usage must be granted by the CNA.

A project-specific environmental license (Licencia Ambiental Única or "LAU", for its initials in Spanish), which states the operational conditions and requirements to be met, is issued by SEMARNAT when the agency has approved the project operations. A construction permit is required from the local municipality. Other local

permits regarding non-hazardous waste handling and municipal safety and operating authorizations may also be required. The permitting process requires that the mining company has acquired the necessary surface titles, rights and agreements for the land to be used for the project.

Hazardous wastes from the mining industry are highly regulated and specific handling requirements must be met once they are generated, such as hazardous waste generator documentation, log books and handling manifests. Hazardous waste storage areas must comply with federal requirements.

The key permits and the stages at which they are required are summarised in Table 20-1.

**Table 20-1: Key Permits and Status**

| Permit                               | Mining Stage                          | Agency       |
|--------------------------------------|---------------------------------------|--------------|
| Environmental Impact Statement – MIA | Construction/Operation/Post-operation | SEMARNAT     |
| Land Use Change – ETJ & Land Use MIA | Construction/Operation                | SEMARNAT     |
| Risk Analysis                        | Construction/Operation                | SEMARNAT     |
| Construction Permit                  | Construction                          | Municipality |
| Explosive & Storage Permits          | Construction/Operation                | SEDENA       |
| Archaeological Release               | Construction                          | INAH         |
| Water Use Concession                 | Construction/Operation                | CNA          |
| Water Discharge Permit               | Operation                             | CNA          |
| Project-specific License (LAU)       | Operation                             | SEMARNAT     |
| Accident Prevention Plan             | Operation                             | SEMARNAT     |

Source: JDS(2014)

## 20.3 Mining Wastes Management

The mine will generate mine rock and tailings as part of the operations. Waste characterization studies have not yet been started.

## 20.4 Social and Community Impact

Community relations programs are carried out by ProDeMin, which has been conducting exploration activities and preliminary environmental characterization at the Project for Newstrike Capital. Stakeholders include the nearby communities, Ejidos, individual property owners, and government. ProDeMin's internal policy for social responsibility and community relations is based on respect and equality and transparent communication with stakeholders.

Communities nearby to the project include the following:

- Apetlanca, 16.5 km NE
- Cuaxilotla, 11.5 km N
- Cuetzala del Progreso, 7.5 Km N

- Tomixtlahuacan, 3.5 km SE
- San Luis, 5.4 km SE
- Tianquizolco
- San Francisco de la Lagunita
- Ahuaxotitla

The estimated population of the area is about 6,000 inhabitants. The surrounding land supports subsistence-level agriculture, including production of corn, beans, cattle and mangoes. The project will not need to relocate any houses during development. It is a rural area that has a high level of social programs for the underprivileged.

Local personnel for the exploration activities are sourced primarily from Cuetzala del Progreso for the current project needs, which includes 44 ProDeMin workers and nine employees of Intercore Drilling. It is anticipated that about 35 percent of the area's population is actively working, and could be employed in the proposed mining operations as general labor, domestic help, technicians and office employees.

ProDeMin has agreements with the owners of the land where the Project is located. One group is comprised of 29 unionized small property owners (locally known as "El Grupo de Pequeños Propietarios") represented by Javier Velazquez. ProDeMin has individual contracts with each owner for exploration activities for a period of 10 years starting in October 2010. As part of the agreement ProDeMin gives preferential hiring to the group members or their designees. The contracts have an annual inflation increase clause, plus there is an annual meeting to determine increases based on various factors. The second group with a formal agreement is a group of property owners called "El Ejido", which has 22 members and is represented by Rodimiro Luna. ProDeMin has the same type of contract with this ejido group as with the small property owners. It is ProDeMin's policy to avoid differences between groups and thus use the same conditions in contracts.

ProDeMin interacts directly with the municipal president of Cuetzala del Progreso for local permitting and to provide support to the community.

Activities carried out as part of the community relations have included economic support and material support to the unions, Christmas holiday parties for the workers, participation and representation in annual sporting events in Cuetzala del Progreso, support to schools in the way of machinery and materials, sports uniforms, prizes, and medicine donations.

Personal security continues to be an issue in this area due in part to the production and transportation of illegal drugs. Project access risks are associated with the area safety issues.

## 20.5 Closure and Reclamation

The Project is in early stage exploration and there are no final plans for waste and tailings disposal, site monitoring and water management. During future phases the environmental management program will need to consider these aspects over the life of mine, including closure and post-closure activities. No closure costs have been developed; however an allowance of \$15/oz Au was applied for final closure activities. It is assumed that reclamation will take place concurrent with mining activities to the extent practical. Closure



and reclamation planning incorporated into the mine and tailings designs, and implemented during operations, will minimize end-of-mine closure liabilities.

## 21 Capital and Operating Costs

### 21.1 Capital Cost Summary

The capital cost estimate (CAPEX) is based on a combination of first-principles build-up, experience, reference projects, budgetary quotes and factors as appropriate with a preliminary study.

The CAPEX estimate includes the costs required to develop, sustain, and close the operation for the planned 8 year mine life. The construction schedule is based on an approximate 1-year build period. The intended accuracy of this estimate is +/-25 percent. The CAPEX estimate summary is shown in Table 21-1.

**Table 21-1: Capital Costs**

| Capital Costs                    | Pre-Production (\$M) | Sustaining/Closure (\$M) | LOM (\$M)    |
|----------------------------------|----------------------|--------------------------|--------------|
| Capitalized Stripping            | 16.7                 | 13.4                     | 30.2         |
| Contractor Mob/Demob             | 0.4                  | 0.4                      | 0.8          |
| Process Plant                    | 45.7                 | 2.8                      | 48.5         |
| General Site & Utilities         | 5.1                  | 0                        | 5.1          |
| Laboratory                       | 1.5                  | 0                        | 1.5          |
| Construction Camp                | 0.6                  | 0                        | 0.6          |
| Camp Site (Operations)           | 1.5                  | 0.3                      | 1.8          |
| Administration Facilities        | 1.1                  | 0.2                      | 1.3          |
| Tailings Facility                | 13                   | 14.8                     | 27.8         |
| Electrical Supply & Distribution | 4.6                  | 0.2                      | 4.8          |
| Water Supply & Distribution      | 1.8                  | 0                        | 1.8          |
| Royalty Purchase                 | 2.8                  | 0                        | 2.8          |
| Reclamation/Closure              | 0                    | 14.4                     | 14.4         |
| Indirects                        | 22.4                 | 0                        | 22.4         |
| EPCM                             | 15.4                 | 0                        | 15.4         |
| Owners Costs                     | 4.4                  | 0                        | 4.4          |
| <b>Subtotal</b>                  | <b>137.1</b>         | <b>46.5</b>              | <b>183.6</b> |
| Contingency (20%)                | 26.9                 | 9.3                      | 36.2         |
| <b>Total Capital Costs</b>       | <b>163.9</b>         | <b>55.8</b>              | <b>219.7</b> |

Source: JDS(2014)

## 21.2 Mine Capital Cost

All mining is assumed to be contracted. No mine equipment or facilities expenditures are used in this evaluation with the exception of equipment mobilization charges estimated at \$0.42 million without contingency applied.

## 21.3 Process Plant Capital Cost

Process capital costs were based on the flowsheet developed by testwork. Major equipment items were based on solicited bids or recent database. All capital costs are based in \$US, Table 21-2. Factors for piping, electrical were utilized to build up the direct cost estimate.

All major equipment items, including mills, crushers, tanks, thickeners were calculated based on parameters from testwork results or calculated based on estimated parameters from similar projects. A Bruno simulation was performed for the crushing circuit with the feed size estimated.

**Table 21-2: Process Plant Direct Capital Costs**

| Area | Description        | Total(USD\$) |
|------|--------------------|--------------|
|      | Initial Capital    | 45,734,000   |
| 10   | Crushing Area      | 9,177,000    |
| 20   | Grinding Area      | 11,645,000   |
| 30   | Flotation Area     | 5,577,000    |
| 40   | Leach Area         | 15,662,000   |
| 50   | Tailings Area      | 1,063,000    |
| 60   | Utility Area       | 2,611,000    |
|      | Sustaining Capital | 2,800,000    |
|      | Total              | 48,494,000   |

Source: JDS(2014)

## 21.4 Operating Costs

The operating cost estimates are based on a combination of first-principles build-up, reference projects, budgetary quotes and factors as appropriate for a preliminary study.

These costs include direct mining and re-handle by a contractor, and processing and disposal of the mineralized feed to the plant including dore produced on-site and transportation and refining charges, Table 21-3.

**Table 21-3: Operating Costs Summary**

| Operating Cost              | \$/t processed | LOM \$M | \$M/yr |
|-----------------------------|----------------|---------|--------|
| Mining                      | 6.58           | 116.7   | 14.2   |
| Ore Rehandle                | 0.12           | 2.1     | 0.3    |
| Processing                  | 17.75          | 315.0   | 38.3   |
| G&A                         | 2.49           | 44.2    | 5.4    |
| Total                       | 26.93          | 478.1   | 58.2   |
| * Based on \$2.30/t mined   |                |         |        |
| ‡ Based on 0.50/t rehandled |                |         |        |

‡Mining Cost is based on \$2.30/t mined

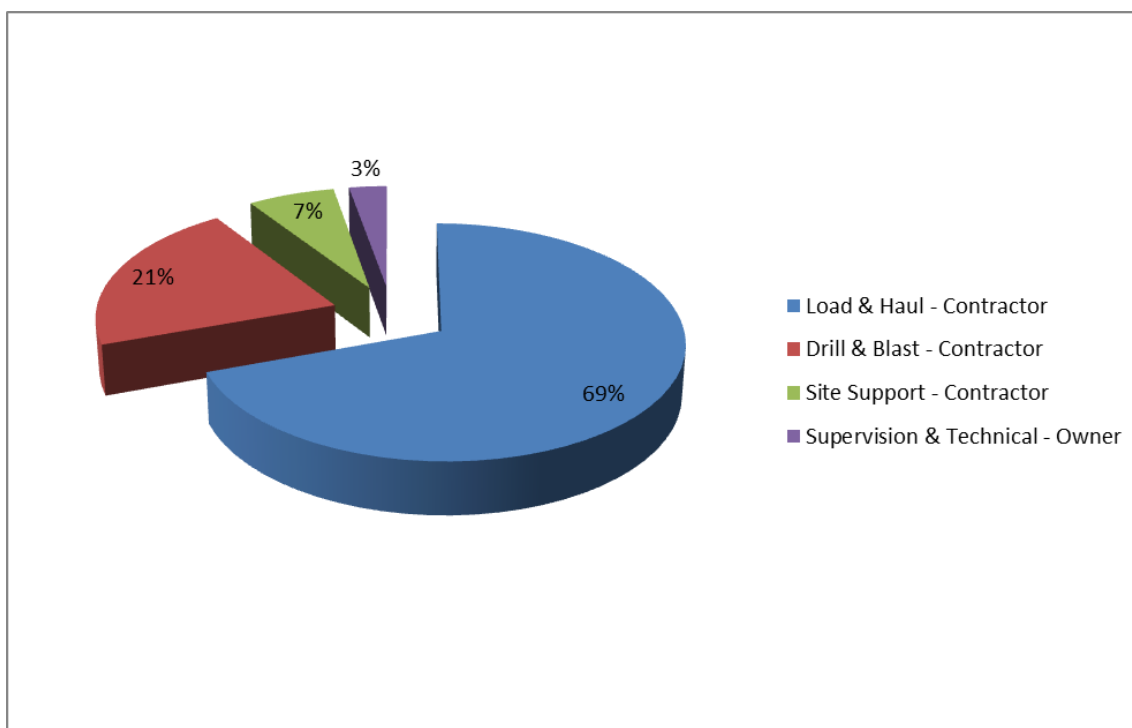
\*Rehandle Cost is based on \$0.50/t rehandled

### 21.4.1 Mining Operating Costs

Operating costs were based on the following criteria:

- Mining operating costs have been estimated based on contractors for an eight-year operating mine life.
- Mine operations will be conducted on 24 hours per day, 365 days per year based on 12-hour shifts using a work schedule of 14-days on and 14-days off.
- Mining costs include fuel at \$US1.06/liter.
- Supervision and Technical is included in the mining costs.
- Costs exclude pre-stripping, which has been capitalized as described in Section 21.1 of this report.

A summary of LOM operating costs by activity are shown in Table 21-5. Mine operating cost allocation is shown in Figure 21-1.

**Figure 21-1: Mining Operation Cost Allocation during Production**


Source: JDS(2014)

### 21.4.2 Processing Operating Costs

Operating costs were based on the design criteria calculated from testwork, labor rates from previous projects, quotations and estimates for chemicals, and grid power. The total annual cost for operating the process plant is \$38,331,000 or \$17.75/tonne processed.

Labor rates are estimated based on previous work conducted in Mexico. The overhead factor includes basic benefits required by Mexican labor law, including basic benefits, labor insurance, severance payments, and payroll taxes, Table 21-6. Totals have been rounded to the nearest \$1,000.

**Table 21-4: Summary of Life of Mine Operating Cost by Activity**

| By Activity                         | (US\$/t mined) |
|-------------------------------------|----------------|
| Load & Haul - Contractor            | \$1.60         |
| Drill & Blast - Contractor          | \$0.49         |
| Site Support - Contractor           | \$0.15         |
| Supervision & Technical - Owner     | \$0.06         |
| <b>Life of Mine Operating Costs</b> | <b>\$2.30</b>  |

Source: JDS(2014)

**Table 21-5: Labor Costs**

| DESCRIPTION                     | #                            | Total<br>w/Benefits |
|---------------------------------|------------------------------|---------------------|
| <b>Staff</b>                    | <b>Overhead Factor 1.562</b> |                     |
| Mill Superintendent             | 1                            |                     |
| Metallurgist                    | 1                            |                     |
| Plant Technician                | 2                            |                     |
| Planner/Scheduler/Reliability   | 1                            |                     |
| Shift Foreman                   | 4                            |                     |
| Mill Clerk                      | 1                            |                     |
| Mill Maintenance Superintendent | 1                            |                     |
| Mill Maintenance Foremen        | 4                            |                     |
| Lab Manager                     | 1                            |                     |
| Lab Metallurgical Technician    | 2                            |                     |
| Assay Technicians - Senior      | 2                            |                     |
| Assay Technicians - Junior      | 4                            |                     |
| <b>Sub-Total Staff</b>          | <b>24</b>                    | <b>\$ 1,451,000</b> |
| <b>Hourly</b>                   |                              |                     |
| Loader Operators                | 4                            |                     |
| Crushing Operators              | 4                            |                     |
| Gold Room Operator              | 2                            |                     |
| Control Room Operators          | 4                            |                     |
| Grinding Operators              | 4                            |                     |
| Leach Operators                 | 4                            |                     |
| General Labours                 | 8                            |                     |
| Day Crew                        | 2                            |                     |
| Mechanics                       | 8                            |                     |
| Electrician                     | 4                            |                     |
| Instrument Technicians          | 4                            |                     |
| Welders                         | 4                            |                     |
| Crane / Equipment Operators     | 4                            |                     |
| Helpers- Elec/Mechanical        | 8                            |                     |
| Sample Prep Labours             | 4                            |                     |
| <b>Sub-Total Hourly</b>         | <b>68</b>                    | <b>\$ 2,324,000</b> |
|                                 |                              | Yearly cost         |
| <b>Total</b>                    | <b>92</b>                    | <b>\$ 3,775,000</b> |

Source: JDS(2014)

Reagent costs are based on quotations from vendors. Sodium hydroxide and hydrochloric acid unit costs are estimates. Consumption rates are calculated from testwork or estimated based on common factors. Cyanide represents 87 percent of the total reagent costs and its consumption rate is taken directly from testwork. The cyanide reagent cost is a vendor quotation. All reagent costs are subject to change based on market conditions.

**Table 21-6: Reagent Costs**

| Description | kg/t  | \$/kg   | \$/tonne | Yearly Cost   |
|-------------|-------|---------|----------|---------------|
| Cyanide     | 3.45  | \$ 2.52 | \$ 8.69  | \$ 18,779,000 |
| Lime        | 0.98  | \$ 0.35 | \$ 0.34  | \$ 743,000    |
| Flocculant  | 0.05  | \$ 5.70 | \$ 0.29  | \$ 616,000    |
| Antiscalant | 0.004 | \$ 5.45 | \$ 0.02  | \$ 47,000     |
| Carbon      | 0.070 | \$ 3.03 | \$ 0.21  | \$ 461,000    |
| HCl         | 0.01  | \$ 5.00 | \$ 0.05  | \$ 108,000    |
| NaOH        | 0.012 | \$ 5.00 | \$ 0.06  | \$ 130,000    |
| PAX         | 0.07  | \$ 2.60 | \$ 0.18  | \$ 393,000    |
| Frother     | 0.039 | \$ 3.00 | \$ 0.12  | \$ 253,000    |
| SO2         | 0.33  | \$ 0.20 | \$ 0.07  | \$ 143,000    |
|             |       |         | \$ 10.03 | \$ 21,672,000 |

Source: JDS(2014)

Infrastructure to support the process plant includes access to grid power. The total power consumption for the Ana Paula Plant is estimated based on an equipment list developed from the flowsheet with equipment sizing based on a calculated mass balance. Major equipment sizing calculations were performed to provide power associated with crushers, mills, agitators, and pumps.

**Table 21-7: Power Cost**

| kW/t  | \$/kW | \$/t    | Yearly Cost  |
|-------|-------|---------|--------------|
| 34.23 | 0.095 | \$ 3.25 | \$ 7,023,000 |

Source: JDS(2014)

Steel consumption is based on estimates for liner replacements and ball consumption of similar sized plants with high rock hardness.

**Table 21-8: Mill and Crusher Liners and Grind Media Costs**

| Description    | kg/t  | \$/kg | \$/tonne | Yearly Cost  |
|----------------|-------|-------|----------|--------------|
| Crusher Liners |       |       |          |              |
| Primary Jaw    | 0.024 | 3.78  | \$ 0.09  | \$ 196,000   |
| Secondary      | 0.012 | 3.78  | \$ 0.05  | \$ 98,000    |
| Tertiary       | 0.012 | 3.78  | \$ 0.05  | \$ 98,000    |
| Mill Liners    |       |       |          | \$ -         |
| Primary        | 0.09  | 3.78  | \$ 0.36  | \$ 768,000   |
| Regrind        | 0.05  | 3.78  | \$ 0.19  | \$ 408,000   |
| Grind Media    | 0.96  | 1.49  | \$ 1.43  | \$ 3,099,000 |
|                |       |       | \$ 2.16  | \$ 4,667,000 |

Source: JDS(2014)

### 21.4.3 General and Administration Operating Costs

Costs for G&A are summarized in Table 21-9.

**Table 21-9: Costs for G&A**

| Cost Area                     | M\$/yr              | \$/tonne Milled |
|-------------------------------|---------------------|-----------------|
| <b>Labor</b>                  | <b>1,502,505</b>    | <b>\$ 0.70</b>  |
| <b>Expenses</b>               | <b>\$ 3,879,043</b> | <b>\$ 1.80</b>  |
| <i>Water Supply</i>           | <i>\$ 2,197,800</i> |                 |
| <i>Electricity Admin/Camp</i> | <i>\$ 266,440</i>   |                 |
| <i>Camp Services</i>          | <i>\$ 398,803</i>   |                 |
| <i>General Expenses</i>       | <i>\$ 736,000</i>   |                 |
| <i>Vehicles</i>               | <i>\$ 280,000</i>   |                 |
| <b>Total G&amp;A</b>          | <b>\$ 5,381,548</b> | <b>\$ 2.49</b>  |

Source: JDS(2014)

G&A labor is comprised of 35 administrative staff for the following functions:

- Management
- Accounting
- Human Resources
- Safety
- Medical
- Community Relations
- Environment
- Purchasing
- Training

G&A expenses include water supply at an estimated cost of \$0.55 per cubic meter and electric power for the camp, administration and truck shop.

Camp services allowed for \$16.67 per person-day including meals, housekeeping, and laundry. Given the proximity to Cutezala and other residential areas, it was assumed, that 70 percent of employees would be housed at camp and 30 percent would reside locally. Required camp beds are estimated at 70 per day for a combined total of 161 salaried and hourly personnel.

General Expenses include allowances for off-site road maintenance, community relations, consultants, travel expenses, security, safety programs and training.

## 22 Economic Analysis

An engineering economic model was developed to estimate annual cash flows and sensitivities of the project. Pre-tax estimates of project values were prepared for comparative purposes, while after-tax estimates were developed and are likely to approximate the true investment value. It must be noted, however, that tax estimates involve many complex variables that can only be accurately calculated during operations and, as such, the after-tax results are only approximations.

Sensitivity analyses were performed for variations in metal prices, head grades, operating costs, capital costs, and discount rates to determine their relative importance as project value drivers.

This technical report contains forward-looking information regarding projected mine production rates, construction schedules and forecasts of resulting cash flows as part of this study. The mill head grades are based on sufficient sampling that is reasonably expected to be representative of the realized grades from actual mining operations. Factors such as the ability to obtain permits to construct and operate a mine, or to obtain major equipment or skilled labour on a timely basis, to achieve the assumed mine production rates at the assumed grades, may cause actual results to differ materially from those presented in this economic analysis.

The estimates of capital and operating costs have been developed specifically for this project and are summarized in Section 21 of this report (presented in 2014 dollars). The economic analysis has been run with no inflation (constant dollar basis).

### 22.1 Assumptions

One metal price scenario was utilized to prepare the economic analysis. However a sensitivity analysis on the metal prices was completed and outlined in Section 22.8.

All costs, metal prices and economic results are reported in US dollars unless stated otherwise. LOM plan tonnage and grade estimates are demonstrated in Table 22-1.



**Table 22-1: LOM Plan Summary**

| Summary of Results          |                 |             |
|-----------------------------|-----------------|-------------|
| Mine Life                   | Years           | 8.2         |
| Total Resource              | M tonnes        | 17.8        |
| Total Waste                 | M tonnes        | 33.6        |
| Total Capitalized Waste     | M tonnes        | 12.5        |
| <b>Total Mined</b>          | <b>M tonnes</b> | <b>63.9</b> |
| Strip Ratio                 | w:o             | 2.60        |
| Mining Rate                 | tpd             | 21,600      |
| Plant Throughput            | tpd             | 6,000       |
| Pre-Strip/Capitalized Waste | M tonnes        | 12.5        |
| Average Head Grades         |                 |             |
| Au                          | g/t             | 2.24        |
| Ag                          | g/t             | 6.89        |
| Payable Metal               |                 |             |
| Au                          | LOM k oz        | 957         |
|                             | k oz/yr         | 116         |
| Ag                          | LOM k oz        | 1,961       |
|                             | k oz/yr         | 239         |

Source: JDS(2014)

Economic factors include the following:

- Discount rate of five percent (sensitivities using other discount rates have been calculated for each scenario).
- Closure cost of \$14.4 million was considered.
- Nominal 2014 dollars.
- Revenues, costs, taxes are calculated for each period in which they occur rather than actual outgoing/incoming payment.
- Working capital calculated as 1.5 months of operating costs (mining, processing, G&A) in Year 1 based on a 360 day operation.
- Results are presented on 100 percent ownership.
- No management fees or financing costs (equity fund-raising was assumed)
- Exclusion of all pre-development and sunk costs up to the start of detailed engineering (i.e. exploration and resource definition costs, engineering fieldwork and studies costs, environmental baseline studies costs, etc.)

Table 22-2 outlines the metal price assumptions used in economic analysis. Metal pricing is based on spot metal prices published by the London Metals Exchange as at August 8, 2014 (effective date of PEA). This pricing was also used in the parameters established for mine planning.

The reader is cautioned that the gold prices used in this study are only estimates based on recent historical performance and there is absolutely no guarantee that they will be realized if the project is taken into



production. The metal prices are based on many complex factors and there are no reliable long-term predictive tools.

**Table 22-2: Metal prices used in the Economic Analysis Scenarios**

| Parameter    | Unit    | Base Case |
|--------------|---------|-----------|
| Gold Price   | US\$/oz | 1,300     |
| Silver Price | US\$/oz | 20.00     |

Source: JDS(2014)

## 22.2 Revenues & NSR Parameters

Mine revenue is derived from the sale of doré into the international marketplace. No contractual arrangements for refining exist at this time. Details regarding the terms used for the economic analysis can be found in the Market Studies Section 19 of this report. Table 22-3 indicates the NSR parameters that were used in the economic analysis. Figure 22-1 and Figure 22-2 show breakdowns of the amount of gold and silver recovered during the mine life – a total of 957 koz of gold and 1,961 koz of silver is produced during the mine life.

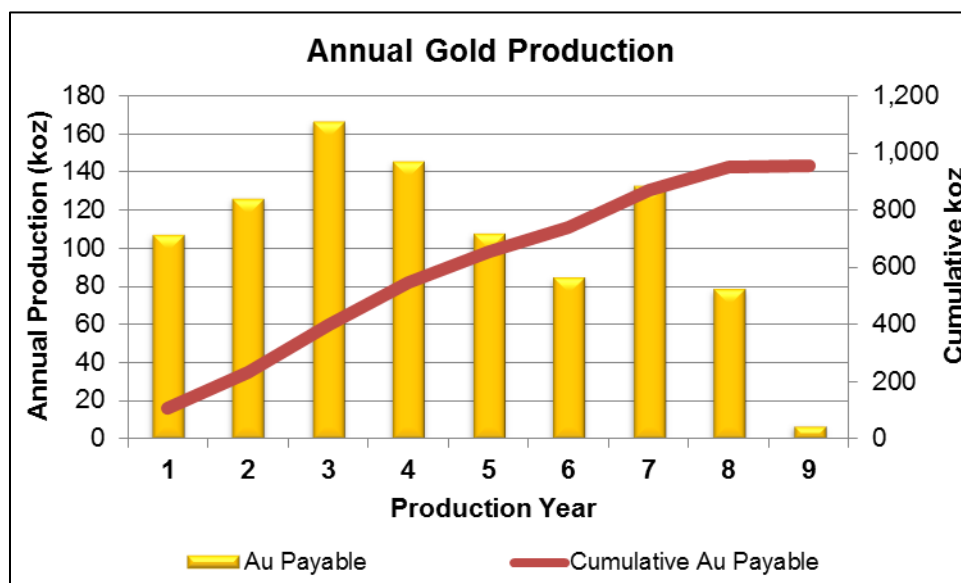
Figure 22-3 demonstrates the breakdown of LOM Net Smelter Return for the Base Case which amounted to \$361.6M.

**Table 22-3: NSR Parameters Used in Economic Analysis**

| Inputs & Assumptions |               |        |
|----------------------|---------------|--------|
| Operating Days       | days per year | 360    |
| Working Capital      | # mos         | 1.5    |
| Recoveries           |               |        |
| Au Recovery          |               | 75.0%  |
| Ag Recovery          |               | 50.0%  |
| NSR Parameters       |               |        |
| Au Payable           |               | 99.80% |
| Au Refining Charge   | US\$/oz       | \$0.71 |
| Ag Payable           |               | 99.80% |
| Ag Refining Charge   | US\$/oz       | \$0.22 |
| NSR Royalty          |               | 2.0%   |

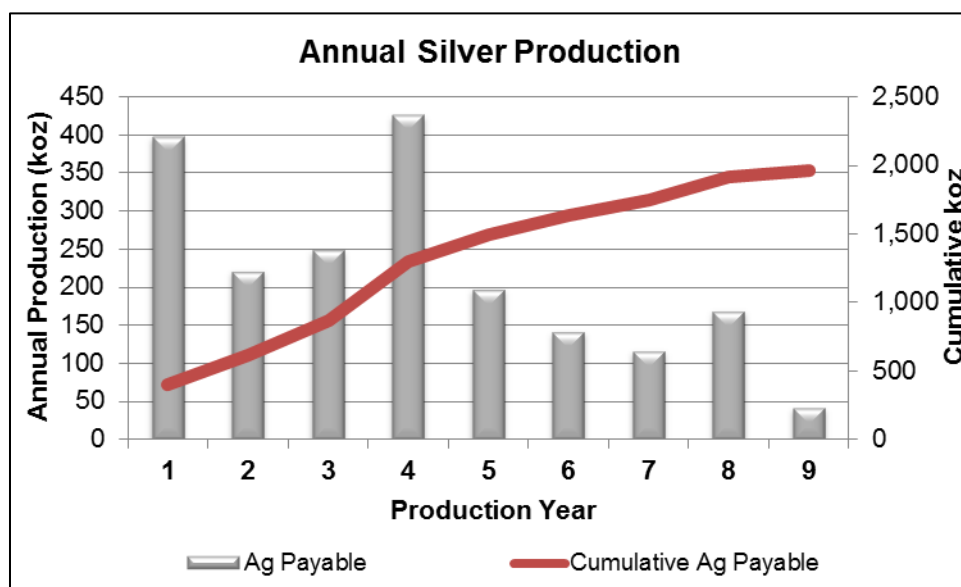
Source: JDS(2014)

**Figure 22-1: Payable Gold Doré Production by Year**



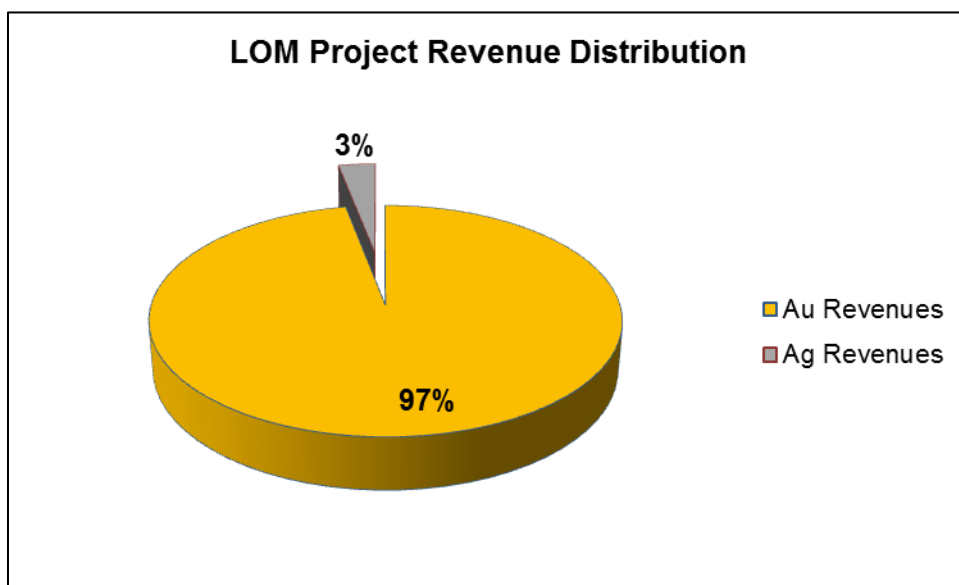
Source: JDS(2014)

**Figure 22-2: Payable Silver Doré Production by Year**



Source: JDS(2014)

**Figure 22-3: LOM Project Net Revenue Breakdown**



Source: JDS(2014)

## 22.3 Summary of Capital Cost Estimate

During the two year pre-production period, the initial capital costs amount to \$163.9M. This includes costs for pre-stripping, site development, processing plant, on-site infrastructure, tailings management facility, etc. A 20 percent contingency is included in the initial capital costs. A breakdown of the initial capital costs is shown in Table 22-4 and Figure 22-4.

Sustaining and closure capital cost estimates amount to \$55.8M and were assumed to occur from Year 1 to Year 9 with a majority of these costs for the tailings management facility in Year 4. A 20 percent contingency is included in the sustaining and closure capital expenditures. A breakdown of the sustaining and capital costs is shown in Table 22-4 and Figure 22-4.

Closure costs of \$4.5M net of salvage value of \$3.1M plus contingency were assumed to occur in Year 6.

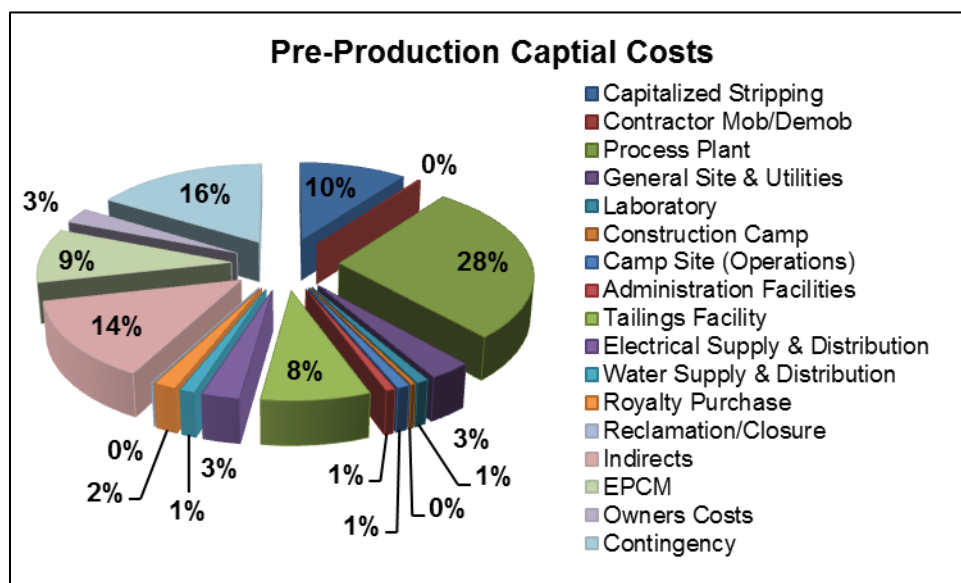
Details on the capital costs can be found in Section 21 of this report.

**Table 22-4: Summary of LOM Capital Costs**

| Capital Costs                    | Pre-Production (\$M) | Sustaining/Closure (\$M) | LOM (\$M)    |
|----------------------------------|----------------------|--------------------------|--------------|
| Capitalized Stripping            | 16.7                 | 13.4                     | 30.2         |
| Contractor Mob/Demob             | 0.4                  | 0.4                      | 0.8          |
| Process Plant                    | 45.7                 | 2.8                      | 48.5         |
| General Site & Utilities         | 5.1                  | 0                        | 5.1          |
| Laboratory                       | 1.5                  | 0                        | 1.5          |
| Construction Camp                | 0.6                  | 0                        | 0.6          |
| Camp Site (Operations)           | 1.5                  | 0.3                      | 1.8          |
| Administration Facilities        | 1.1                  | 0.2                      | 1.3          |
| Tailings Facility                | 13                   | 14.8                     | 27.8         |
| Electrical Supply & Distribution | 4.6                  | 0.2                      | 4.8          |
| Water Supply & Distribution      | 1.8                  | 0                        | 1.8          |
| Royalty Purchase                 | 2.8                  | 0                        | 2.8          |
| Reclamation/Closure              | 0                    | 14.4                     | 14.4         |
| Indirects                        | 22.4                 | 0                        | 22.4         |
| EPCM                             | 15.4                 | 0                        | 15.4         |
| Owners Costs                     | 4.4                  | 0                        | 4.4          |
| <b>Subtotal</b>                  | <b>137.1</b>         | <b>46.5</b>              | <b>183.6</b> |
| Contingency (20%)                | 26.9                 | 9.3                      | 36.2         |
| <b>Total Capital Costs</b>       | <b>163.9</b>         | <b>55.8</b>              | <b>219.7</b> |

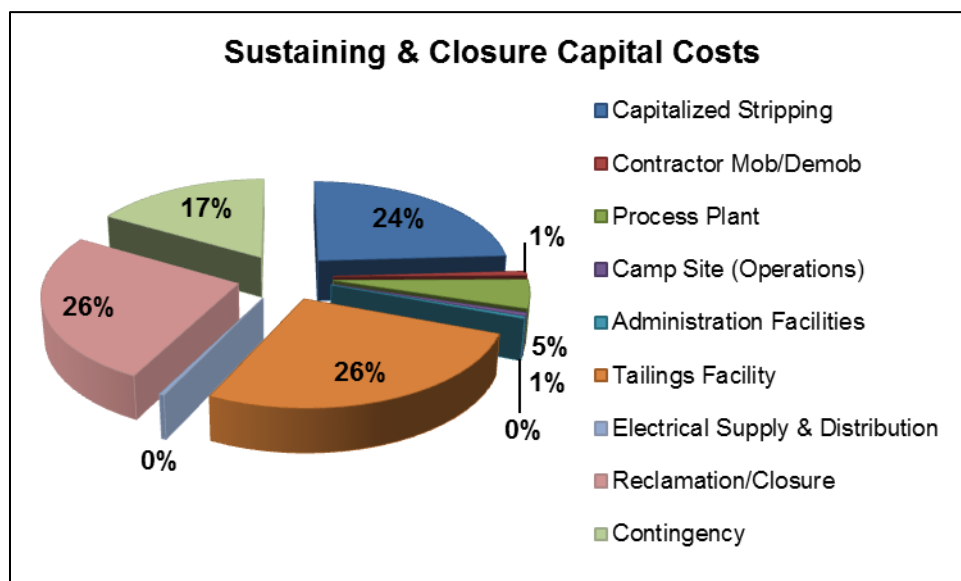
Source: JDS(2014)

**Figure 22-4: Breakdown of Pre-Production Capital Costs**



Source: JDS(2014)

**Figure 22-5: Breakdown of Capital Expenditures during Production**



Source: JDS(2014)

## 22.4 Summary of Operating Cost Estimates

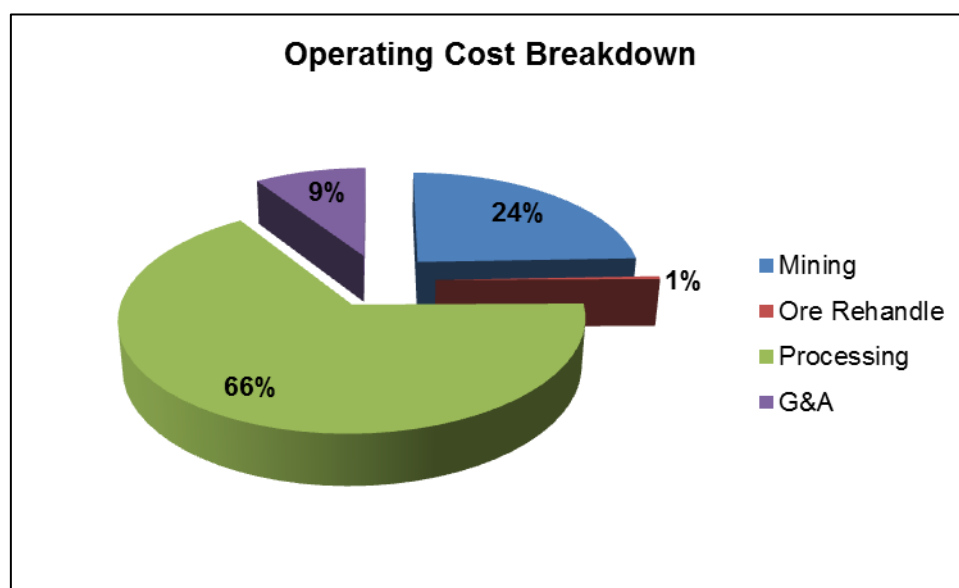
Total LOM operating costs amount to \$478.1M. The total LOM operating costs translate to an average cost of \$26.93/tonne processed. A breakdown of these costs is outlined in Table 22-5 and Figure 22-6.

**Table 22-5: Operating Costs**

| Operating Cost | \$/t processed | LOM \$M      | \$M/yr      |
|----------------|----------------|--------------|-------------|
| Mining*        | 6.58           | 116.7        | 14.2        |
| Ore Rehandle‡  | 0.12           | 2.1          | 0.3         |
| Processing     | 17.75          | 315.0        | 38.3        |
| G&A            | 2.49           | 44.2         | 5.4         |
| <b>Total</b>   | <b>26.93</b>   | <b>478.1</b> | <b>58.2</b> |

\* Based on \$2.30/t mined

‡ Based on 0.50/t rehandled

**Figure 22-6: Breakdown of Operating Costs**


Source: JDS(2014)

## 22.5 Taxes

The project has been evaluated on an after-tax basis in order to provide a more indicative, but still approximate, value of the potential project economics. A tax model was prepared by Pricewaterhouse Coopers (PwC) located in Vancouver, Canada. The tax model contains the following assumptions:

- 30 percent federal income tax rate
- 7.5 percent EBITDA royalty
- 0.5 percent EBITDA royalty on precious metals
- Straight-line depreciation of capital assets utilizing an 8.3 year useful life.

Total taxes for the project amount to \$223.6M.



## 22.6 Royalties

The economic analysis for the project accounts for the following royalties:

- 2.0 percent NSR Royalty to Gold Corp.

Total NSR royalties for the LOM amount to \$25.6M.

## 22.7 Economic Results

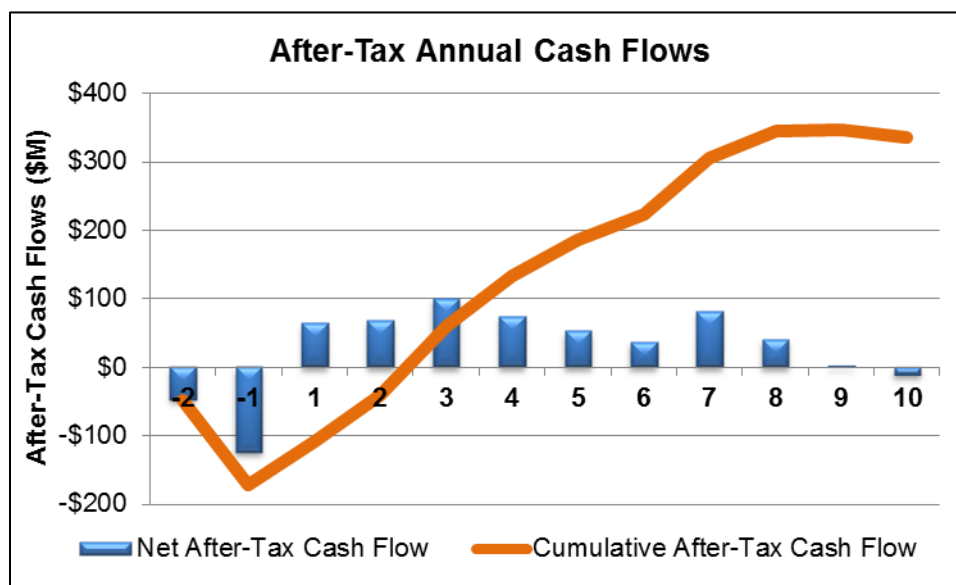
The project is economically viable with an after-tax internal rate of return (IRR) of 32.8 percent and a net present value using a five percent discount rate ( $NPV_{5\%}$ ) of \$232.1M using the Base Case metal prices. Table 22-6 summarizes the economic results of each scenario evaluated.

The break-even gold price for the project's Base Case is approximately US\$805/oz, based on the LOM plan presented herein and a silver price of US\$20/oz. Figure 22-7 shows the projected cash flows for the project used in the different scenarios of the economic analysis.



**Table 22-6: Summary of Results for Base Case Scenario – Au \$1,300/oz; Ag \$20/oz**

| Summary of Results                    | Unit             | Value        |
|---------------------------------------|------------------|--------------|
| Mine Life                             | Years            | 8.2          |
| Total Resource                        | M tonnes         | 17.8         |
| Total Waste                           | M tonnes         | 33.6         |
| Total Capitalized Waste               | M tonnes         | 12.5         |
| <b>Total Mined</b>                    | <b>M tonnes</b>  | <b>63.9</b>  |
| Strip Ratio                           | w:o              | 2.60         |
| Mining Rate                           | tpd              | 23,385       |
| Plant Throughput                      | tpd              | 6,000        |
| Pre-Strip/Capitalized Waste           | M tonnes         | 12.5         |
| <b>Average Head Grades</b>            |                  |              |
| Au                                    | g/t              | 2.24         |
| Ag                                    | g/t              | 6.89         |
| <b>Payable Metal</b>                  |                  |              |
| Au                                    | LOM k oz         | 957          |
|                                       | k oz/yr          | 116          |
| Ag                                    | LOM k oz         | 1,961        |
|                                       | k oz/yr          | 239          |
| NSR (Net of Royalties)                | \$M              | 1,257        |
|                                       | \$/t processed   | 70.82        |
| Operating Costs                       | \$M              | 478          |
|                                       | \$/t processed   | 26.93        |
| Au Cash Cost                          | \$/Payable Au oz | 527          |
| Au Cash Cost (Net of By-Product)      | \$/Payable Au oz | 486          |
| <b>Capital Costs</b>                  |                  |              |
| Pre-Production Capital                | \$M              | 137          |
| Pre-Production Contingency            | \$M              | 26.9         |
| Total Pre-Production Capital          | \$M              | 163.9        |
|                                       | \$/t processed   | 9.23         |
| Sustaining & Closure Capital          | \$M              | 46.5         |
| Sustaining & Closure Contingency      | \$M              | 9.3          |
| Total Sustaining & Closure Capital    | \$M              | 55.8         |
|                                       | \$/t processed   | 3.14         |
| Total Capital Costs Incl. Contingency | \$M              | 219.71       |
|                                       | \$/t processed   | 12.38        |
| Working Capital                       | \$M              | 7.8          |
| Pre-Tax Cash Flow                     | \$M              | 559.4        |
| Taxes                                 | \$M              | 223.6        |
| After-Tax Cash Flow                   | \$M              | 335.8        |
| <b>Economic Results</b>               |                  |              |
| <b>Pre-Tax NPV<sub>5%</sub></b>       | <b>\$M</b>       | <b>405.3</b> |
| <b>Pre-Tax IRR</b>                    | <b>%</b>         | <b>47.5%</b> |
| <b>Pre-Tax Payback</b>                | <b>Years</b>     | <b>2.0</b>   |
| <b>After-Tax NPV<sub>5%</sub></b>     | <b>\$M</b>       | <b>232.1</b> |
| <b>After-Tax IRR</b>                  | <b>%</b>         | <b>32.8%</b> |
| <b>After-Tax Payback</b>              | <b>Years</b>     | <b>2.4</b>   |

**Figure 22-7: Annual After-Tax Cash Flows for Base Case Scenario**


Source: JDS(2014)

## 22.8 Sensitivities

A sensitivity analysis was performed on the Base Case metal pricing scenarios to determine which factors most affected the project economics. The analysis revealed that the project is most sensitive to metal prices, followed by head grades and operating costs. The project showed the least sensitivity to capital costs. Table 22-7 along with Figure 22-8 outline the results of the sensitivity tests performed on after-tax NPV<sub>5%</sub> for the Base Case evaluated.

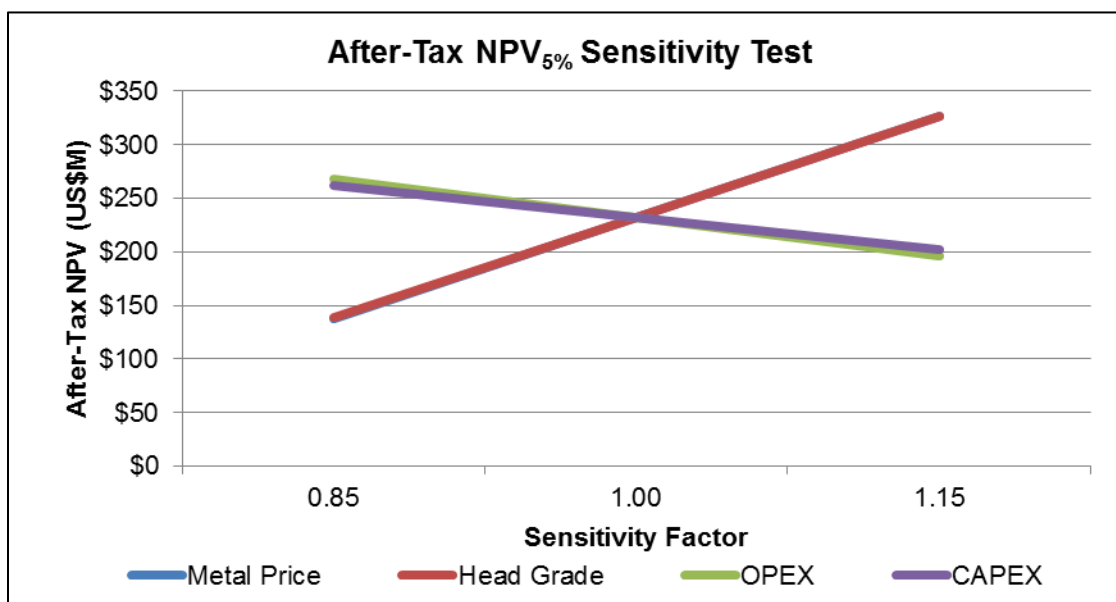
In addition, various scenarios were evaluated showing the project's sensitivity to gold and silver price. Table 22-8 shows the economic results of the project using various gold and silver prices.

The project was also tested under various discount rates. The results of these tests for the Base Case are demonstrated in Table 22-9.

**Table 22-7: Sensitivity Results for Base Case Scenario**

| Variable        | After-Tax NPV <sub>5%</sub> (\$M) |       |       |
|-----------------|-----------------------------------|-------|-------|
|                 | -15%                              | 100%  | +15%  |
| Metal Prices    | 137.8                             | 232.1 | 326.4 |
| Head Grade      | 138.1                             | 232.1 | 326.0 |
| Operating Costs | 268.1                             | 232.1 | 196.0 |
| Capital Costs   | 261.9                             | 232.1 | 202.2 |

Source: JDS(2014)

**Figure 22-8: Sensitivity Results for Base Case Scenario**


Source: JDS(2014)

**Table 22-8: Project Sensitivity to Gold Prices**

| Gold Price (US\$/oz)              | 1,000 | 1,100 | 1,200 | 1,300 | 1,400 | 1,500 |
|-----------------------------------|-------|-------|-------|-------|-------|-------|
| Pre-Tax NPV <sub>5%</sub> (\$M)   | 186.7 | 259.6 | 332.4 | 405.3 | 478.2 | 551.1 |
| After-Tax NPV <sub>5%</sub> (\$M) | 91.5  | 138.4 | 185.2 | 232.1 | 278.9 | 325.8 |
| Pre-Tax IRR                       | 27.8% | 34.8% | 41.4% | 47.5% | 53.3% | 58.8% |
| After-Tax IRR                     | 17.6% | 23.1% | 28.1% | 32.8% | 37.2% | 41.4% |
| Pre-Tax Payback (Yrs)             | 2.6   | 2.4   | 2.1   | 2.0   | 1.8   | 1.6   |
| After-Tax Payback (Yrs)           | 3.3   | 2.9   | 2.6   | 2.4   | 2.2   | 2.1   |

Source: JDS(2014)

**Table 22-9: Base Case Scenario Discount Rate Sensitivity**

| Discount Rate | Pre-Tax NPV \$M | After-Tax NPV \$M |
|---------------|-----------------|-------------------|
| 0%            | 559.4           | 335.8             |
| 5%            | 405.3           | 232.1             |
| 7%            | 356.9           | 199.5             |
| 10%           | 295.1           | 158.0             |
| 12%           | 259.9           | 134.4             |
| 0%            | 559.4           | 335.8             |

Source: JDS(2014)

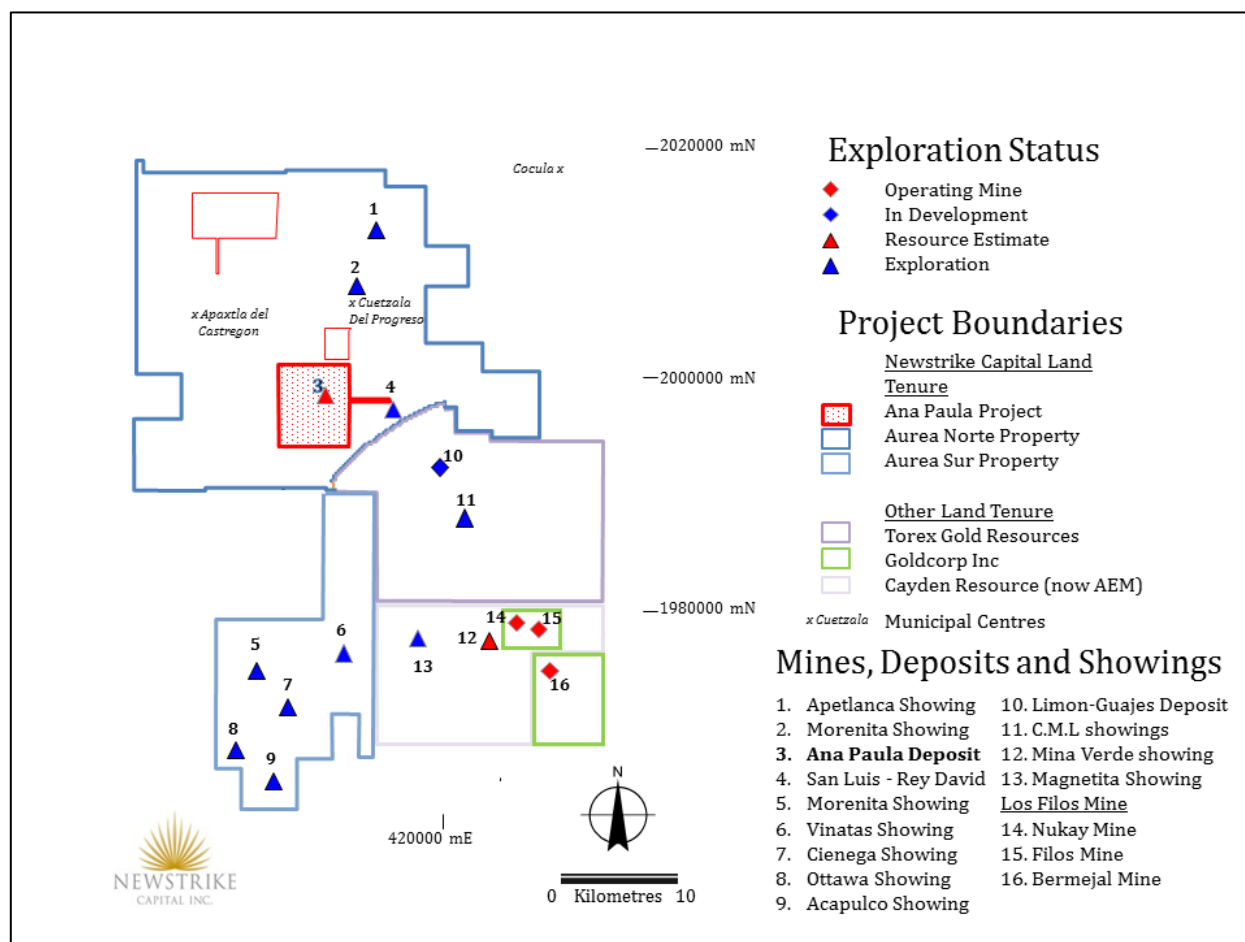
## 23 Adjacent Properties

The Ana Paula concessions are internal to the Aurea Norte Property, also 100% owned by Newstrike, Figure 23.1 (Kearvell, 2013). Exploration conducted on the Aurea Norte Property is summarized in the NI 43-101 Technical Report filed on Sedar (Lunceford, 2009). Newstrike's early stage Aurea Sur Property is contiguous to the Aurea Norte Property to the south and is described in Lunceford, 2009 and Lunceford, 2010. Figure 23-1 provides a Property location map for the GGB and known mines, deposits and showings.

The information presented in this section is from publically available information referenced below. No information is available to the authors to permit verification of this data. The information below is not necessarily indicative of the mineralization on Ana Paula.

The Los Filos mine was acquired by Goldcorp in 2005 through the purchase of Wheaton River Minerals Ltd, completed March 1st, 2005, and through the purchase of the Bermejil deposit from Minera El Bermejil, S. de R.L. de C.V. (Minera Bermejil), a joint venture of Industrias Peñoles S.A. de C.V. ("Peñoles") and Newmont Mining Corporation announced March 22, 2005. The two acquisitions became the Filos Project with a combined inferred resource of 4.92 million ounces that became the Filos Mine when Goldcorp Inc. ("Goldcorp"), put it into production three years later in 2008, (Goldcorp, 2005a and 2005b).

Since then, the Filos Mine has grown to a 16.27 million ounce deposit (all categories, Table 23.1) that continues to provide a significant portion of Goldcorp's cash flow. 2012 Production was 340,400 ounces of gold and 2013 guidance is to produce 340,000 to 350,000 ounces of gold at a grade of 0.78 to 0.84 grams per tonne gold, (Goldcorp, 2012). The mine is located on the trend of the Guerrero Gold Belt about 20 km southeasterly of Ana Paula (Numbers 14 through 16, Figure 23-1).

**Figure 23-1: Adjacent Properties, Projects, and mineral deposits.**


Source: JDS(2014)

**Table 23-1: Los Filos Mine Reserves, Resources and Inferred.**

| MINERAL RESERVES       |                  |          |        |          |        |
|------------------------|------------------|----------|--------|----------|--------|
| Class                  | Tonnes (Million) | Au (g/t) | Au Moz | Ag (g/t) | Ag Moz |
| Proven & Probable      | 310              | 0.8      | 7.95   | 5.46     | 54.52  |
| MINERAL RESOURCES      |                  |          |        |          |        |
| Measured and Indicated | 81.3             | 1.07     | 2.79   | 7.059    | 19.82  |
| Inferred               | 192              | 0.82     | 5.03   | 5.97     | 36.79  |

Source: JDS(2014). Note: Weighted averages (avg.) are calculated. Rounded numbers may not add up.

As of December 31st, 2013. Based on attributable ounces (Goldcorp, 2014)

The Morelos project owned by Torex Gold Resources Inc ("Torex", formerly Gleichen Resources) was acquired in 2009 as a 3.2 million ounce inferred gold resource within the Limon and Los Guajes deposits and

located about eight km southeast of Ana Paula, (Numbers 10 and 11, Figure 23.1, Teck Cominco, 2004). The Morelos project shares the southeastern boundary with Newstrike's Aurea Norte Project, Figure 23-1.

Torex has published a bankable feasibility study and NI 43-101 reserve and resource estimate by M3 Engineering & Technology Corporation for the Limon and Los Guajes deposits located north of the Balsas River (Neff, et al, 2012), reporting proven and probable reserves of 4.09 million ounces gold and 6.81 million ounces silver and measured and indicated resources of 4.81 million ounces gold and 8.35 million ounces Ag as outlined in Table 23-2 (Neff et al, 2012). Hertel et al, (2013) reported an inferred resource for the Morelos Projects Media Luna deposit, located south of the Balsas River, of 39.9 million tonnes of 5.84 gold equivalent ounces as outlined in Table 23-3.

**Table 23-2: Morelos Project, Limon.Los Guajes Reserves, Resources and Inferred**

| MINERAL RESERVES    |                     |             |           |             |           |
|---------------------|---------------------|-------------|-----------|-------------|-----------|
| Class               | Tonnes<br>(Million) | Au<br>(g/t) | Au<br>Moz | Ag<br>(g/t) | Ag<br>Moz |
| Proven              | 10.5                | 2.93        | 0.99      | 3.67        | 1.24      |
| Probable            | 38.2                | 2.52        | 3.10      | 4.53        | 5.57      |
| P&P                 | 48.8                | 2.61        | 4.09      | 4.35        | 6.81      |
| MINERAL RESOURCES   |                     |             |           |             |           |
| Limon<br>Measured   | 6.1                 | 3.29        | 0.64      | 4.08        | 0.79      |
| Guajes<br>Measured  | 4.3                 | 3.11        | 0.43      | 3.86        | 0.53      |
| Limon Indicated     | 26.0                | 2.97        | 2.48      | 6.34        | 5.29      |
| Guajes<br>Indicated | 17.4                | 2.25        | 1.26      | 3.11        | 1.74      |
| M&I                 | 53.7                | 2.78        | 4.81      | 4.84        | 8.35      |
| INFERRED            |                     |             |           |             |           |
| Inferred            | 10.7                | 1.80        | 0.62      | 4.0         | 1.38      |

\*Effective dates 11 June 2012 and 28 August 2012. After Neff et al. (2012) Weighted averages are calculated. Rounded numbers may not add up.

**Table 23-3: Media Luna Deposit Inferred Mineral Resource Estimate at a 2.0 g/t Au Eq. Cut-off Grade.**

| Deposit    | Resource<br>Category | Tonnes<br>(Mt) | Gold Eq.<br>Grade<br>(g/t) | Contained<br>Gold Eq.<br>(Moz) | Gold<br>Grade<br>(g/t) | Contained<br>Gold<br>(Moz) | Silver<br>Grade<br>(g/t) | Contained<br>Silver<br>(Moz) | Copper<br>Grade<br>(%) | Contained<br>Copper<br>(Mlb) |
|------------|----------------------|----------------|----------------------------|--------------------------------|------------------------|----------------------------|--------------------------|------------------------------|------------------------|------------------------------|
| Media Luna | Inferred             | 39.9           | 4.55                       | 5.84                           | 2.63                   | 3.38                       | 24.46                    | 31.39                        | 0.97                   | 852.48                       |

\*Effective date September 13, 2013. After Hertel et al, (2013)

All Mineral Reserves and Mineral Resources have been calculated in accordance with the standards of the Canadian Institute of Mining, Metallurgy and Petroleum and National Instrument 43-101. Mineral Resources are classified in accordance with the 2010 CIM Definition Standards for Mineral Resources and Mineral Reserves and the 2003 CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines. These tables use the terms "Measured", "Indicated" and "Inferred" Resources. United States investors are advised that while such terms are recognized and required by Canadian regulations, the United States Securities and Exchange Commission does not recognize them. "Inferred Mineral Resources" have a great amount of uncertainty as to their existence, and as to their economic and legal feasibility. It cannot be



assumed that all or any part of an Inferred Mineral Resource will ever be upgraded to a higher category. Under Canadian rules, estimates of Inferred Mineral Resources may not form the basis of feasibility or other economic studies. United States investors are cautioned not to assume that all or any part of Measured or Indicated Mineral Resources will ever be converted into Mineral Reserves. United States investors are also cautioned not to assume that all or any part of an Inferred Mineral Resource exists, or is economically or legally mineable.



## **24 Other Relevant Data and Information**

There is no other relevant data available about the Ana Paula Project.

## 25 Interpretation and Conclusions

It is the conclusion of the Qualified Person's preparing this technical report that the information contained within adequately supports the positive economic results obtained for the Ana Paula project. The project contains 17.8 million tonnes of gold-bearing sulphide mineralization that can be mined by open pit methods and recovered using common processing methods consisting of gravity, flotation, and cyanide leaching of flotation concentrates.

As demonstrated by the information contained in this report, the project is economically viable and should proceed to the next level of evaluation; either a pre-feasibility or feasibility study stage.

Newstrike has identified anomalous gold at surface in association with limestone, hornfels, intrusive rocks and breccia beyond the current pit shape that is consistent with existing mineralization at Ana Paula and is also comparable with other known deposits of the GGB. Results from drilling, mapping and surface geochemistry indicate that mineralization within the Ana Paula deposit continues to remain open in several directions including at depth that merits follow up exploration and drilling.

### 25.1 Project Risks

As with any mining project, there are risks that could affect the economic viability of the project. Many of these risks are based on lack of detailed knowledge and can be managed as more sampling, testing, design, and engineering are conducted at the next study stages. Table 25-1 identifies what are currently deemed to be the most significant internal project risks, potential impacts, and possible mitigation approaches.

The most significant potential risks associated with the project are lower gold recoveries than those projected, unanticipated mining dilution, operating and capital cost escalation, permitting and environmental compliance, unforeseen schedule delays, changes in regulatory requirements, ability to raise financing and metal price. These risks are common to most mining projects, many of which can be mitigated with adequate engineering, planning and pro-active management.

External risks are, to a certain extent, beyond the control of the project proponents and are much more difficult to anticipate and mitigate, although, in many instances, some risk reduction can be achieved. External risks are things such as the political situation in the project region, metal prices, exchange rates and government legislation. These external risks are generally applicable to all mining projects. Negative variance to these items from the assumptions made in the economic model would reduce the profitability of the mine and the mineral resource and reserve estimates.

**Table 25-1: Potential Risk Impacts and Mitigation**

| Risk                              | Explanation/Potential Impact                                                                                                                                                                                                                                                                           | Possible Risk Mitigation                                                                                                                                                                                                                                                                   |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water Supply                      | Hydrogeological studies are needed to determine if suitable ground water quantity and quality exists to supply the mine.                                                                                                                                                                               | Water may be obtained from the nearby Balsas reservoir if groundwater supplies are inadequate                                                                                                                                                                                              |
| Mining Dilution                   | Dilution can impact project economics. Standard drilling and blasting practices appear sufficient to minimize dilution, and optimize extraction.                                                                                                                                                       | A well planned and executed grade control plan is necessary immediately upon commencement of mining.                                                                                                                                                                                       |
| Resource Modelling                | All mineral resource estimates carry some risk and are one of the most common issues with project success                                                                                                                                                                                              | Targeted infill drilling may be recommended in order to provide a greater level of confidence in the resource.                                                                                                                                                                             |
| Metallurgical Recoveries          | Changes to metallurgical assumptions could lead to reduced metal recovery, increased processing costs, and/or changes to the processing circuit design. If LOM gold recovery is lower than assumed, the project economics would be negatively impacted.                                                | Additional sampling and test work should be conducted as applicable. whole-rock leaching is a promising recovery method and additional testwork is needed to determine the optimal process method.                                                                                         |
| CAPEX and OPEX                    | The ability to achieve the estimated CAPEX and OPEX costs are important elements of project success.<br><br>If OPEX increases then the mining cut-off grade would increase and, all else being equal, the size of the optimized pit would reduce yielding fewer mineable tonnes.                       | Further cost estimation accuracy with the next level of study, as well as the active investigation of potential cost-reduction measures would assist in the support of reasonable cost estimates.                                                                                          |
| Permit Acquisition                | The ability to secure all of the permits to build and operate the project is of paramount importance. Failure to secure the necessary permits could stop or delay the project.                                                                                                                         | The development of close relationships with the local communities and government along with a thorough Environmental and Social Impact Assessment and a project design that gives appropriate consideration to the environment and local people is required.                               |
| Geochemistry and Water Management | Potentially Acid-Generating (PAG) material is not currently defined in 3D geological block model. Acid-based accounting (ABA) testing needs to be completed to verify that PAG doesn't exist. If PAG material is present it will result in increased handling costs (containment cells for dump, etc.) | Further test work should be conducted to determine how much, if any PAG material exists. Management plans should PAG exists, if implemented early can reduce the associated costs.<br><br>Further hydrology work may also be needed to determine if water will accumulate in the open pit. |

|                                              |                                                                                                                                                                                                                                                                                           |                                                                                                                                      |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Development Schedule                         | <p>The project development could be delayed for a number of reasons and could impact project economics.</p> <p>A change in schedule would alter the project economics.</p>                                                                                                                | <p>If an aggressive schedule is to be followed, PFS field work should begin as soon as possible.</p>                                 |
| Mine Geotech                                 | <p>The geotechnical nature of the open pit wall rock, including the nature and orientation of faults and secondary geological structures could impact pit slopes.</p> <p>Pit slopes could be increased or decreased and thus alter the pit designs, mineable tonnes, and strip ratio.</p> | <p>Improved geotechnical knowledge and modeling.</p>                                                                                 |
| Ability to Attract Experienced Professionals | <p>The ability to attract and retain competent, experienced professionals is a key success factor for the project.</p> <p>High turnover or the lack of appropriate technical and management staff at the project could result in difficulties meeting project goals.</p>                  | <p>The early search for professionals as well as competitive salaries and benefits identify, attract and retain critical people.</p> |

## 25.2 Opportunities

There are also significant opportunities that could improve the economics, timing, and/or permitting potential of the project. The major opportunities that have been identified at this time are summarized in Table 25-2, excluding those typical to all mining projects, such as changes in metal prices, exchange rates, and etcetera. Further information and assessments are needed before these opportunities should be included in the project economics, however.

**Table 25-2: Potential Opportunities**

| Opportunity                                                    | Explanation                                                                                                                                                                                                       | Potential Benefit                                                                                                                                                                                         |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Metallurgical Recovery Increases                               | Further testing may show that an increase in gravity concentration is possible. Investigation of other methods for recovery of gold from the gravity concentrate have potential to improve overall gold recovery. | Potential 4 to 5 percent increase in overall gold recovery.                                                                                                                                               |
| Exploration Potential                                          | Given the large project land holdings within the northwestern extension of the GGB, additional exploration has potential to increase resources.                                                                   | Potential to increase the mineral resource, extending mine life.                                                                                                                                          |
| Operating Cost Reduction                                       | Further mine planning and process design work has potential to reduce operating costs as plans are further refined.                                                                                               | Reduce operating costs and increase revenue.                                                                                                                                                              |
| Pit Slope Steepening                                           | Pit slope angles could potentially be improved which may increase slope angles (conversely it could also make them shallower).                                                                                    | An increase in overall pit slopes for all domains in all pits would reduce the strip ratio and increase the ounces mined.                                                                                 |
| Project Strategy and Optimization                              | With additional detailed planning and a series of strategic option reviews the project may be able to add value.                                                                                                  | With additional detailed planning and a series of strategic option reviews the project may be able to add value.                                                                                          |
| Permit Acquisition                                             | The ability to secure all of the permits to build and operate the project quickly has potential to bring the project on-line early.                                                                               | Holding and owners costs would be reduced as a result.                                                                                                                                                    |
| Attracting an experienced and skilled construction work force. | Construction has potential to begin as other projects in the region are nearing completion.                                                                                                                       | A supply of experienced skilled workers looking for employment as this project begins has potential to reduce construction costs and shorten the construction period. Costs would be reduced accordingly. |
| Underground Mining                                             | The deposit is open at depth suggesting there could be potential for underground mining in the future.                                                                                                            | Underground mining would extend the mill life and could potentially improve overall projects economic                                                                                                     |

## 26 Recommendations

The Ana Paula project should advance to a preliminary feasibility study (PFS) in alignment with Newstrike's desire to develop the resource. It is also recommended that environmental baseline studies and a socio-economic program also be initiated as soon as practical. The proposed environmental characterization studies are included as part of the proposed budget. However, other responsibilities more typically associated with environmental permitting and developing sustainable community relations are not encompassed within the PFS budget as they are normally considered and executed separately.

Estimated costs for a PFS-level study specific to the project total \$5.3M and itemized in Table 26-1.

**Table 26-1: PFS Estimated Costs**

| Item                                                     | Cost in<br>1,000's \$'s | Description                                                                                                       |
|----------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------|
| Open Pit Geotechnical                                    | 200                     | Mine geotechnical study to determine high wall slope angles                                                       |
| Tails Management Facility<br>Geotechnical                | 250                     | Geotechnical Engineering for tailing management facility                                                          |
| Access Road Preliminary<br>Engineering                   | 300                     | Engineering design for North access road                                                                          |
| Metallurgical and Mineral<br>Process Testing             | 720                     | Testing to select optimum process and recovery circuit design                                                     |
| Water Supply Hydrogeology                                | 450                     | Determine well locations and flow rates for mine and process operations                                           |
| Environmental Geochemistry                               | 400                     | ABA static and HCT dynamic tests to determine acid generating potential of all rock types and mitigation planning |
| Project Management and<br>Engineering                    | 950                     | PFS-level mine, infrastructure, process designs. Cost estimation, scheduling, and economic modeling.              |
| Preliminary Electrical Supply<br>and Distribution Design | 200                     | Preliminary design for mine electrical supply and distribution systems.                                           |
| Condemnation Drilling                                    | 1000                    | Drilling to ensure no resources are present under rock management facilities, tailings, infrastructure.           |
| Geotechnical Metallurgical<br>Drilling                   | 1200                    | Drilling to generate additional samples for metallurgical and geotechnical investigations.                        |
| Total                                                    | 5,670                   | Excludes owners costs and permitting activities                                                                   |

Source: JDS(2014)

The environmental permitting and community relations activities that are recommended to advance the project to construction and operations are presented below in Table 26-2. These programs will incorporate data generated during the PFS from the water supply hydrogeologic and environmental geochemistry studies listed in Table 26-1. The preliminary baseline studies for environmental permitting are recommended to include the following activities:

- Installation of a weather station at site,
- Flora and fauna surveys that include multiple seasons to cover wet and dry periods, plus migration times,
- Surface water and groundwater quality sampling,
- An archaeological survey (to be performed by the Mexican agency INAH),
- Sampling of sediments in arroyos.

The area of interest will be based on a preliminary disturbance area polygon plus the surrounding region. Surveys will be focused within the boundaries of the polygon, whereas background information will be based on the region. It is assumed that the preliminary studies would be conducted over a 12-month period.

Following the first year of baseline studies, it is recommended that the second year continue the baseline studies with a more detailed focus based on the more detailed mine layout, plus that the data and mine plan be used to develop the permit documents. Specific tasks would include the following:

- Continuation of the baseline studies for surface water and groundwater.
- Calculate the hydrological parameters (such as the probable maximum precipitation and the storm return periods) using site and regional climatological data.
- Design surface water controls.
- Prepare a site-wide water balance that includes the interaction of surface water and groundwater in the basin
- Calculate the soil loss from surface disturbances
- Prepare the permit documents for agency review

A community relations program will be initiated based on facilitation to develop a sustainable community through empowerment and cooperation between governmental agencies at multiple levels and individuals in the community.

The estimated cost for the permitting and community relations tasks is \$674,000USD, which is in addition to the tasks costed in Table 26-1.

**Table 26-2: Environmental Permitting and Community Relations Estimated Costs**

| Item                                    | Cost in \$1,000's | Description                                                                                                                                                                                                                                                                     |
|-----------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Preliminary Baseline Studies            | 194               | Install weather station, conduct flora and fauna surveys, sample surface water and ground, conduct archaeological survey, and sample sediments. Activities assumed to be carried out in 12-month period.                                                                        |
| Preliminary Socio-economic Facilitation | 120               | Conduct proactive economic facilitation within the community that promotes sustainable development over 12-month period.                                                                                                                                                        |
| Continued Baseline Studies              | 240               | Conduct second year of baseline sampling, calculate hydrological parameters, design surface water controls, prepare site-wide water balance, calculate soil loss. Prepare permit documents using data generated during baseline studies, plus information from PFS-level study. |
| Continued Socio-economic Facilitation   | 120               | Continuation of proactive economic facilitation for another 12 months.                                                                                                                                                                                                          |
| Total                                   | 674               | Excludes costs for activities itemized for PFS                                                                                                                                                                                                                                  |

## 27 Acronyms and Abbreviations

| Distance               |                        |
|------------------------|------------------------|
| µm                     | micron (micrometre)    |
| mm                     | millimetre             |
| cm                     | centimetre             |
| m                      | metre                  |
| km                     | km                     |
| "                      | inch                   |
| in                     | inch                   |
| '                      | foot                   |
| ft                     | foot                   |
| Area                   |                        |
| m <sup>2</sup>         |                        |
| km <sup>2</sup>        | square metre           |
| ac                     | square km              |
| Ha                     | acre                   |
| Volume                 |                        |
| l                      |                        |
| m <sup>3</sup>         | litre                  |
| ft <sup>3</sup>        | cubic metre            |
| usg                    | cubic foot             |
| lcm                    | US gallon              |
| bcm                    | loose cubic metre      |
| Mbcm                   | bank cubic metre       |
| Mass                   |                        |
| kg                     |                        |
| g                      | kilogram               |
| t                      | gram                   |
| Kt                     | metric tonne           |
| lb                     | kilotonne              |
| Mt                     | pound                  |
| oz                     | megatonne              |
| wmt                    | troy ounce             |
| dmt                    | wet metric tonne       |
| Pressure               |                        |
| psi                    |                        |
| Pa                     | pounds per square inch |
| kPa                    | pascal                 |
| MPa                    | kilopascal             |
| Elements and Compounds |                        |
| Au                     |                        |
| Ag                     | gold                   |
| Cu                     | silver                 |
| Fe                     | copper                 |
| S                      | iron                   |
| CN                     | sulphur                |
| NaCN                   | cyanide                |
|                        |                        |

| Other              |                                    |
|--------------------|------------------------------------|
| °C                 | degree Celsius                     |
| °F                 | degree Fahrenheit                  |
| Btu                | British Thermal Unit               |
| cfm                | cubic feet per minute              |
| elev               | elevation above sea level          |
| masl               | m above sea level                  |
| hp                 | horsepower                         |
| hr                 | hour                               |
| kW                 | kilowatt                           |
| kWh                | kilowatt hour                      |
| kV                 | kilovolt                           |
| M                  | Million                            |
| mph                | miles per hour                     |
| ppb                | parts per billion                  |
| ppm                | parts per million                  |
| s                  | second                             |
| s.g.               | specific gravity                   |
| usgpm              | US gallon per minute               |
| V                  | volt                               |
| W                  | watt                               |
| Ω                  | ohm                                |
| A                  | ampere                             |
| tph                | tonnes per hour                    |
| tpd                | tonnes per day                     |
| mtpa               | million tonnes per annum           |
| Ø                  | diameter                           |
| Acronyms           |                                    |
| JDS                | JDS Energy & Mining Inc.           |
| CIM                | Canadian Institute of Mining       |
| NI 43-101          | National Instrument 43-101         |
| ABA                | Acid- base accounting              |
| AP                 | Acid potential                     |
| NP                 | Neutralization potential           |
| NPTIC              | Carbonate neutralization potential |
| ML/ARD             | Metal leaching/ acid rock drainage |
| PAG                | Potentially acid generating        |
| non-PAG            | Non-potentially acid generating    |
| RC                 | reverse circulation                |
| IP                 | induced polarization               |
| COG                | cut-off grade                      |
| NSR                | net smelter return                 |
| NPV                | net present value                  |
| LOM                | life of mine                       |
| Conversion Factors |                                    |
| 1 tonne            | 2,204.62 lb                        |
| 1 oz               | 31.1035 g                          |

**Table 27-1: Glossary of Terms**

| TERM                                                         | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| %                                                            | Percent                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <                                                            | Less than                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| >                                                            | More than                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ±                                                            | More or less                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| #N                                                           | UTM grid measurement in metres north of the equator                                                                                                                                                                                                                                                                                                                                                                                             |
| #E                                                           | UTM grid measurement in metres east of the central Meridian                                                                                                                                                                                                                                                                                                                                                                                     |
| Ag, As, Au, Bi, Co, Cu, Fe, Hg, K, Mo, Pb, Sb, Te, U, and Zn | Chemical symbols from the periodic group of elements. silver (Ag), arsenic (As), gold (Au), bismuth (Bi), cobalt (Co), copper (Cu), iron (Fe), mercury (Hg), potassium (K), molybdenum (Mo), lead (Pb), antimony (Sb), tellurium (Te), uranium (U) and zinc (Zn).                                                                                                                                                                               |
| AuEq                                                         | Equivalent gold. calculated as g/t gold + g/t silver/160, with the silver divisor calculated from the cost, price and recovery data listed                                                                                                                                                                                                                                                                                                      |
| ALS Chemex                                                   | ALS Chemex, a division of ALS Global Ltd through Chemex De Mexico, S.A. De C.V., the primary analytical laboratory for the Ana Paula Project located in Guadalajara, Mexico.                                                                                                                                                                                                                                                                    |
| Alteration                                                   | Physical and chemical changes to the original composition of rocks due to the introduction of hydrothermal fluids, of ore forming solutions, to changes in the confining temperature and pressures or to any combination of these. The original rock composition is considered “altered” by these changes, and the product of change is considered an “alteration”. (From Hacettepe University online dictionary, after AGI)                    |
| Ana Paula Project                                            | The area inside the boundaries of the two contiguous mineral rights concessions known as the Tembo and Apaxtla 3 concessions, accruing 4,238 Ha in total, and includes two of the four claims or “Properties” acquired from Goldcorp in an agreement dated June 24th, 2010. Referred to also as “Ana Paula” and the “Project”.                                                                                                                  |
| Anomalous (anomaly)                                          | a. A departure from the expected or normal. b. The difference between an observed value and the corresponding computed value (background value). c. A geological feature, esp. in the subsurface, distinguished by geological, geophysical, or geochemical means, which is different from the general surroundings and is often of potential economic value; e.g., a magnetic anomaly. (From Hacettepe University online dictionary, after AGI) |
| Aurea                                                        | Minera Aurea, S.A. De C.V., Newstrike's wholly owned Mexican operating subsidiary                                                                                                                                                                                                                                                                                                                                                               |
| Aurea Norte Property                                         | Means the contiguous group of claims totalling 59, 587.52 hectares and including the claims named: El Coyote (T222224), Cosmos (T224813), Don Richard (T224743), Coyopancho (T223694), Cuetzala (T224814), Morenita (T224383) and Don Jesus (T231105).                                                                                                                                                                                          |
| Aurea Sur Property                                           | Means the contiguous group of claims totalling 21,742.42 hectares and including the claims named: Ottawa (T221781), Consorcio (T222399), Durazno (T224953) and Vinatas (225449).                                                                                                                                                                                                                                                                |
| background                                                   | A measured or calculated geochemical, geophysical, petrological or other threshold considered representative of an area. The “Normal” or “not anomalous”.                                                                                                                                                                                                                                                                                       |
| Breccia                                                      | Means fragmental rocks whose components are angular and, therefore, as distinguished from conglomerates as not water worn. May be sedimentary or formed by crushing or grinding along faults or by hydrothermal explosions.                                                                                                                                                                                                                     |
| CAD\$ US\$                                                   | Canadian dollars, United States of America dollars.                                                                                                                                                                                                                                                                                                                                                                                             |
| Calc Hd                                                      | Calculated head grade                                                                                                                                                                                                                                                                                                                                                                                                                           |
| calc-silicate alteration                                     | An alteration consisting mainly of calc-silicate minerals                                                                                                                                                                                                                                                                                                                                                                                       |
| Constancia de Vigencia                                       | An official “statement of good standing” provided by the Mexican Government as a confirmation to holders of mineral concessions that the mineral rights and concessions are active and in good standing according to Mexican Mining Law as published in the Official Mexican public journal (“Diario Oficial”) dated October 12,                                                                                                                |



# Ana Paula Project Preliminary Economic Assessment

|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                   | 2012                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CRM, SGM                                                          | Consejo de Recursos Minerales (also Coremi). The former Mexican Geological Survey now renamed the Servicio Geológico Mexicana or “SGM”                                                                                                                                                                                                                                                                                                           |
| Consp                                                             | Consumption                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| epithermal                                                        | Said of a hydrothermal mineral deposit formed within about 1 km of the Earth’s surface and in the temperature range of 50 to 200 degrees C, occurring mainly as veins. Also, said of that depositional environment.                                                                                                                                                                                                                              |
| FeOx                                                              | Iron oxide                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| G&A                                                               | General and Administrative Operating Costs                                                                                                                                                                                                                                                                                                                                                                                                       |
| GGB                                                               | The Guerrero Gold Belt. A linear array of gold iron skarn and gold skarn developed at the contacts between platform carbonate rocks and early Tertiary intrusions.                                                                                                                                                                                                                                                                               |
| g/t or Gm/Tonne                                                   | Grams per Tonne. Where a gramme (also gram) is a unit of measure equal to 1/1000 <sup>th</sup> of a kilogram. A Tonne is a metric Tonne having a unit weight of 1,000 kilograms.                                                                                                                                                                                                                                                                 |
| GPS                                                               | An electronic device that records the data transmitted by the geographic positioning satellite system.                                                                                                                                                                                                                                                                                                                                           |
| High Grade Breccia Zone                                           | A discrete structurally controlled body of irregular dimensions including a structurally controlled core breccia that trends oblique to the stratigraphic fabric and that is surrounded by a mineralized alteration halo of sediment, intrusions and other breccia, that is delineated in drill core and tends to host a higher grade mineralization with a composite average grade of 5.38 grams per tonne gold and 6.49 grams per tonne silver |
| Higher grade gold/<br>higher grade mineralization                 | Averages greater than or equal to 2.0 grams per tonne gold (“High grade”), unless specifically specified,                                                                                                                                                                                                                                                                                                                                        |
| IMC                                                               | Independent Mining Consultants Inc., of Tucson, Arizona                                                                                                                                                                                                                                                                                                                                                                                          |
| JV                                                                | Joint venture                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ltd, Inc                                                          | Limited, Incorporated                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Lower Grade Breccia                                               | A discrete structurally controlled intrusion hosted breccia body of irregular dimensions delineated in drill core and that tends to host a lower grade gold mineralization with a composite average grade of 0.92 grams per tonne gold and 5.1 grams per tonne silver.                                                                                                                                                                           |
| lower grade gold                                                  | Averages less than or equal to 1.0 grams per tonne gold (“Low grade”), unless specifically specified,                                                                                                                                                                                                                                                                                                                                            |
| M, Ma, MT, Moz                                                    | million, million years, million tonnes, million ounce                                                                                                                                                                                                                                                                                                                                                                                            |
| Mineralization (mineralizing)                                     | The presence of minerals of possible economic value – and also the process by which concentration of economic minerals occurs.                                                                                                                                                                                                                                                                                                                   |
| NI 43-101                                                         | National Instrument 43-101 <i>Standards of Disclosure for Mineral Projects</i> of the Canadian Securities Administrators                                                                                                                                                                                                                                                                                                                         |
| North-South Corridor                                              | A 1.5 by 0.7 kilometre North-South trending corridor of stratigraphic and structurally controlled mineralization that collectively make up a lower grade mineralization with a composite average grade of 1.0 grams per tonne gold and 3.9 grams per tonne silver. Corresponds to the sediment-intrusive domain described in Section 7.3.2.                                                                                                      |
| E14A87, E14C17                                                    | Mapping index system for Mexico                                                                                                                                                                                                                                                                                                                                                                                                                  |
| oz, ppm, ppb, °C, mm, cm, m, m <sup>2</sup> , km, km <sup>2</sup> | Units of measure: ounce, parts per million, parts per billion, degrees Celsius, millimetre, centimetre, metre, square metres, kilometre and square kilometres.                                                                                                                                                                                                                                                                                   |
| N, S, E, W, NW, etc                                               | North, south, east, west, northwest, northeast etc.                                                                                                                                                                                                                                                                                                                                                                                              |
| No.                                                               | Number                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| NQ, HQ Core                                                       | Specifies the diameter of a cylinder of drill core, HQ has a 54mm diameter. NQ has a 45mm diameter.                                                                                                                                                                                                                                                                                                                                              |
| NSR                                                               | The 3% Net Smelter Return Royalty granted to Goldcorp Inc. in connection with the acquisition of the Properties.                                                                                                                                                                                                                                                                                                                                 |

# Ana Paula Project Preliminary Economic Assessment

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nt         | Nano Tesla. The international unit for measuring magnetic flux density.                                                                                                                                                                                                                                                                                                                                                          |
| ProDeMin   | Prospección y Desarrollo Minero del Norte S.A. de C.V.                                                                                                                                                                                                                                                                                                                                                                           |
| Properties | Mineral rights to two contiguous and two discrete mineral concessions including the Tembo, Tembo Dos, Tembo Tres and Apaxtla 3, accruing 7,622.38 Ha in total as acquired from Goldcorp in an agreement dated June 24 <sup>th</sup> , 2010.                                                                                                                                                                                      |
| QAQC       | A quality assurance and quality control program                                                                                                                                                                                                                                                                                                                                                                                  |
| S.A de C.V | Sociedad Anónima de Capital Variable                                                                                                                                                                                                                                                                                                                                                                                             |
| Sedar      | Legally required Canadian System for Electronic Document Analysis and Retrieval (SEDAR)                                                                                                                                                                                                                                                                                                                                          |
| SGS        | SGS SA, the secondary laboratory for the Ana Paula Project through SGS de México located in Durango, Mexico.                                                                                                                                                                                                                                                                                                                     |
| showing    | A location where alteration and/or mineralization occurs at surface.                                                                                                                                                                                                                                                                                                                                                             |
| skarn      | A metamorphic rock rich in calcium bearing silicate minerals (calc-silicates), commonly formed at or near intrusive rock contacts by the introduction of silica rich hydrothermal fluids into a carbonate rich country host rock such as limestone and dolomite. Also, part of an alteration process for the introduction and formation of mineralized material forming mineralization and a common host for mineralization/ore. |
| SEDAR      | System for Electronic Document Analysis and Retrieval; <a href="http://www.sedar.com">www.sedar.com</a>                                                                                                                                                                                                                                                                                                                          |
| SRK        | Steffen, Roberts & Kirsten Consulting of Denver Colorado                                                                                                                                                                                                                                                                                                                                                                         |
| target     | A focus or loci for exploration                                                                                                                                                                                                                                                                                                                                                                                                  |
| threshold  | In geochemical prospecting, the limiting anomalous value below which variations represent only normal background effects and above which they have significance in terms of possible mineral deposits. (From Hacettepe University online dictionary, after Hawkes)                                                                                                                                                               |
| UTM        | Universal Transverse Mercator                                                                                                                                                                                                                                                                                                                                                                                                    |
| WGS84      | An ellipsoid model of the earth                                                                                                                                                                                                                                                                                                                                                                                                  |
| NAG        | Non-Acid Generating                                                                                                                                                                                                                                                                                                                                                                                                              |
| ANFO       | Ammonium Nitrate and Fuel Oil                                                                                                                                                                                                                                                                                                                                                                                                    |
| Nonels     | Non-Electric Blasting Cap                                                                                                                                                                                                                                                                                                                                                                                                        |
| DCF        | Discounted Cash Flow                                                                                                                                                                                                                                                                                                                                                                                                             |
| gpm        | Gallons per minute                                                                                                                                                                                                                                                                                                                                                                                                               |

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## **APPENDIX A - Qualified Persons Certificates**



## CERTIFICATE OF AUTHOR

I, Michel Creek do hereby certify that:

1. I am currently employed as Project Manager with JDS Energy and Mining with an office at #151 - 2015 W. River Rd, Tucson, AZ 85704;
2. This certificate applies to the technical report titled "Preliminary Economic Assessment Technical Report for the Ana Paula Project, Guerrero State, Mexico", with an effective date of August 8, 2014 prepared for Newstrike Capital Inc.;
3. I am a graduate of Montana College of Mineral Science & Technology with a BS in Mining Engineering, 1987, and a MS in Mining Engineering, 1988. I have been involved in Mining since 1980.
4. I am a Registered Member (No. 682200RM) in good standing of The Society for Mining, Metallurgy and Exploration, (SME).
5. I have practiced my profession continuously since 1988 in various roles including engineering, operations, & management for precious metal and industrial minerals producers in North America. This includes multiple open pit mines and processing facilities (heap leach, mills, roaster) for major gold producers on the Carlin Trend in the US state of Nevada, and an open pit gold mine and mill in the US state of Montana I have over 28 years of combined mining, process, and environmental experience.
6. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
7. I visited the Ana Paula project site on March 19 and 20, 2014;
8. I am responsible for and/or shared responsibility for Section number 1, 2, 3, 15, 19, 21, 22, 24, 25, 26, 27, 28;
9. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the National Instrument 43-101;
10. I have not had prior involvement with the property that is the subject of the Preliminary Economic Assessment of the Ana Paula Project;
11. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.
12. As of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;

Effective Date: August 8, 2014

Signing Date: October 29, 2014

{ORIGINAL SIGNED AND SEALED}

"Michel Creek"

---

Michel Creek, MS.



## CONSENT OF QUALIFIED PERSON

I, Michel Creek, consent to the public filing of the technical report entitled "Ana Paula Project Preliminary Economic Assessment, Guerrero State, Mexico" with an Effective Date of August 8, 2014 by Newstrike Capital Inc.

I also consent to extracts from or a summary of the Technical Report in the September 15, 2014 news release of Newstrike Capital Inc.

I certify that I have read the September 15, 2014 news release filed by Newstrike Capital Inc. and that it fairly and accurately represents the information in the sections of the technical report for which I am responsible.

Dated this 29<sup>th</sup> day of October 2014.

***"Signed and Sealed"***

*Michel W. Creek*

---

Michel W. Creek, MS.

## CERTIFICATE OF QUALIFIED PERSON

Herbert E. Welhener

I, Herbert E. Welhener of *Tucson, Arizona*, do hereby certify that as an author of this report called “Ana Paula Project, Preliminary Economic Assessment, Municipalities of Cuetzala Del Progreso and Apaxtla del Castregon, Guerrero State, Mexico”, dated October 29, 2014, I hereby make the following statements:

1. I am currently employed by and carried out this assignment for Independent Mining Consultants, Inc. (IMC) located at 3560 E. Gas Road, Tucson, Arizona, USA, phone number (520) 294-9861.
2. This certificate applies to the Technical Report titled “Ana Paula Project, Preliminary Economic Assessment, Municipalities of Cuetzala Del Progreso and Apaxtla del Castregon, Guerrero State, Mexico”, dated October 29, 2014 (the “Technical Report”).
3. I graduated with the follow degree from the University of Arizona: Bachelors of Science – Geology, 1973.
4. I am a Registered Member of the Society of Mining, Metallurgy, and Exploration, Inc. (# 3434330RM), a recognized professional association as defined by NI 43-101.
5. I have worked as a mining engineer or geologist for 40 years since my graduation from the University of Arizona.
6. I am familiar with NI 43-101 and by reason of my education, experience and affiliation with a professional association (as defined in NI43-101); I fulfill the requirements of a Qualified Person. I am a founding partner, Vice President and Principal Mining Engineer, of Independent Mining Consultants, Inc. since 1983.
7. I am responsible for Sections 12 and 14 of the technical report titled “Ana Paula Project, Preliminary Economic Assessment, Municipalities of Cuetzala Del Progreso and Apaxtla del Castregon, Guerrero State, Mexico”, dated October 29, 2014. I have visited the Property on March 19-20, 2014.
8. I have had prior involvement with the property that is the subject of this Technical Report. The prior involvement was as an independent consultant to Newstrike Capital for the purpose of preliminary evaluation of the Ana Paula deposit and the development of the previous mineral resource estimate.
9. I am independent of the issuers as defined by Section 1.5 of NI 43-101.
10. That, as of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make this Technical Report not misleading.
11. I have read NI 43-101 and I certify that the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Signed and dated 29<sup>th</sup> day of October, 2014 at *Tucson, Arizona*

(signed) “Herbert E. Welhener”

Herbert E. Welhener,

SME Registered Member #3434330RM

**INDEPENDENT**  
MINING CONSULTANTS, INC.

# **INDEPENDENT MINING CONSULTANTS, INC.**

3560 E. Gas Road  
Tucson, Arizona 85714 USA  
Tel: (520) 294-9861 Fax: (520) 294-9865

## **CONSENT OF QUALIFIED PERSON**

I, Herbert E. Welhener, Vice President of Independent Mining Consultants, Inc., consent to the public filing by Newstrike Capital Inc. ("NES") of the technical report titled, "Ana Paula Project Preliminary Economic Assessment", dated effective August 8, 2014 and executed on October 29<sup>th</sup> of 2014(the "Technical Report").

I also consent to any extracts from or a summary of the Technical Report in the Newstrike Capital Inc. Press Release ("PR") dated September 15, 2014.

I confirm that I have read the PR and that they fairly and accurately represent the information in the Technical Report for which I am responsible.

Dated this 29<sup>th</sup> day of October, 2014.

(signed) "*Herbert E. Welhener*"

---

Herbert E. Welhener, SME registered member #3434330RM



## CERTIFICATE OF AUTHOR

I, Robert L. Matter do hereby certify that:

1. I am currently employed as a Mining Engineer with JDS Energy & Mining, Inc. with an office at #151 - 2015 W. River Rd, Tucson, AZ 85704;
2. This certificate applies to the technical report titled "Ana Paula Project Preliminary Economic Assessment, Guerrero State, Mexico", with an effective date of August 8, 2014 prepared for Newstrike Capital Inc.;
3. I am a graduate of The Montana State College of Mineral Science and Technology (Montana Tech) with a Bachelor's Degree in Mining Engineering, 1993, I have practiced my profession continuously since graduation;
4. I am a Professional Engineer (P.E. #37372) registered with the Arizona Board of Technical Registration.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I visited the Ana Paula project site on April 16<sup>th</sup> and 17<sup>th</sup>, 2014;
7. I am responsible for and/or shared responsibility for Section number 18;
8. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the National Instrument 43-101;
9. I have not had prior involvement with the property that is the subject of the Preliminary Economic Assessment of the Ana Paula Project;
10. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.
11. As of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;

Effective Date: August 8, 2014

Signing Date: October 29, 2014

*{ORIGINAL SIGNED AND SEALED}*

*"Robert L. Matter"*

---

Robert L. Matter, P.E.



## CONSENT OF QUALIFIED PERSON

I, Robert L. Matter, PE consent to the public filing of the technical report entitled "Ana Paula Project Preliminary Economic Assessment, Guerrero State, Mexico" with an Effective Date of August 8, 2014 by Newstrike Capital Inc.

I also consent to extracts from or a summary of the Technical Report in the September 15, 2014 news release of Newstrike Capital Inc.

I certify that I have read the September 15, 2014 news release filed by Newstrike Capital Inc. and that it fairly and accurately represents the information in the sections of the technical report for which I am responsible.

Dated this 29<sup>th</sup> day of October 2014.

***"Signed and Sealed"***

*Robert L. Matter*

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Robert L. Matter, P. E.



*Prospección y Desarrollo Minero del Norte S.A. de C.V.*

HACIENDA DEL NOPAL 6506  
COL. HACIENDA DE VALLES, C.P. 31217  
CHIHUAHUA, CHIH.

TEL. Chihuahua (614) 423-4536  
Hermosillo (662) 210-2153  
[www.prodemin.com](http://www.prodemin.com)

#### CERTIFICATE OF AUTHOR

I, P. Craig Gibson do hereby certify that:

This certificate applies to the Technical Report entitled Ana Paula Project Preliminary Economic Assessment with an effective date of August 8, 2014, prepared for Newstrike Capital Inc.;

1. I am co-owner and serve as Technical Director of Prospeccion y Desarrollo Minero del Norte S.A. de C.V., (ProDeMin) of Chihuahua, Mexico;
2. I graduated with a BS degree in Geosciences in 1984 from the University of Arizona and MS. and PhD degrees in Geology in 1986 and 1992 respectively, from the Mackay School of Mines, University of Nevada, Reno. I have been involved in exploration geology since 1984;
3. I am a Registered Professional Geologist #11096 of the American Institute of Professional Geologists since 2007;
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and engineering and mineral processing design, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am not independent of the Issuer and related companies;
5. I have visited the Project site numerous times since 2010, with the last visit being on 18-26 September, 2014;
6. I am responsible for Sections 4 through 11 and 23 (all) and share responsibility for Sections 12 and 14;
7. I have had prior involvement with the property as that is the subject of this Technical Report as a Consultant responsible for field operations for the exploration program;
8. As of the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Effective Date: August 8, 2014  
Signing Date: October 29, 2014

***"Signed and Sealed"***

*Craig Gibson*

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Craig Gibson, P.Geo., Ph.D.



## CERTIFICATE OF AUTHOR

I, Kelly Shea McLeod do hereby certify that:

This certificate applies to the Technical Report entitled Ana Paula Project Preliminary Economic Assessment with an effective date of August 8, 2014, prepared for Newstrike Capital Inc.;

1. I am currently employed as Senior Engineer, Metallurgy, with JDS Energy & Mining Inc. with an office at Suite 860 – 625 Howe Street, Vancouver, B.C.;
2. I am a graduate of McMaster University with a Bachelors of Engineering, Metallurgy, 1984. I have practiced my profession intermittently since 1984;
3. I am a Registered Professional Mining Engineer in British Columbia;
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and engineering and mineral processing design, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
5. I have not visited the Project site;
6. I am responsible for Sections 13 (all) and 17 (all) and share responsibility for Sections 21.1.4 and 21.2.4;
7. I have had no prior involvement with the property that is the subject of this Technical Report;
8. As of the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Effective Date: August 8, 2014  
Signing Date: October 29, 2014

### ***"Signed and Sealed"***

Kelly McLeod

\_\_\_\_\_  
Kelly McLeod, P.Eng.



## CONSENT OF QUALIFIED PERSON

I, Kelly Shea McLeod, Senior Engineer, Metallurgy., consent to the public filing by Newstrike Capital Inc. ("NES") of the technical report titled, "Ana Paula Project Preliminary Economic Assessment", dated effective August 8, 2014 and executed on October 29, 2014 (the "Technical Report").

I also consent to any extracts from or a summary of the Technical Report in the Newstrike Capital Inc. Press Release ("PR") dated September 15, 2014.

I confirm that I have read the PR and that they fairly and accurately represent the information in the Technical Report for which I am responsible.

Dated this 29th day of October, 2014

### ***"Signed and Sealed"***

*Kelly S. McLeod*

\_\_\_\_\_  
Kelly S. McLeod, P. Eng.



## CERTIFICATE OF AUTHOR

I, Antonio (Tony) Loschiavo, P.Eng. do hereby certify that:

1. I am currently employed as an Associate, Senior Mining Engineer with JDS Energy & Mining, Inc. with an office at Suite 860 – 625 Howe Street, Vancouver, British Columbia, V6C 2T6, Canada ;
2. This certificate applies to the technical report titled “Preliminary Economic Assessment For the Ana Paula Project, Guerrero State, Mexico”, with an effective date of August 8, 2014 prepared for Newstrike Capital Inc.;
3. I am a graduate of University of British Columbia with a B.A.Sc in Mining & Mineral Process Engineering, 1998. I have practiced my profession continuously since 1998; My relevant experience includes more than 15 years experience in mining operations, project studies and engineering. I have held senior mine planning and technical mine positions in Canada. I've worked as a consultant for over 6 years and have performed optimization, mine planning, scheduling, cost estimation and economic analysis work for a significant number of projects, throughout Canada, USA, Latin & South America.
4. I am a Professional Engineer (License#: 39436) with the Association of Professional Engineers and Geoscientists of British Columbia;
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101
6. I have not visited the Ana Paula project site;
7. I am responsible for and/or shared responsibility for Sections numbers 15, 16 and 21.4.1;
8. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the National Instrument 43-101;
9. I have not had prior involvement with the property that is the subject of the Preliminary Economic Assessment of the Ana Paula Project;
10. I have read NI 43-101, and the sections of the Technical Report for which I am responsible have been prepared in accordance with NI 43-101 and Form 43-101F1.
11. As of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;

Effective Date: August 8, 2014

Signing Date: October 29, 2014

*{ORIGINAL SIGNED AND SEALED}*

*“Antonio Loschiavo”*

\_\_\_\_\_  
Antonio Loschiavo, P.Eng.



## CONSENT OF QUALIFIED PERSON

I, Antonio (Tony) Loschiavo, consent to the public filing of the technical report entitled "Ana Paula Project Preliminary Economic Assessment, Guerrero State, Mexico" with an Effective Date of August 8, 2014 by Newstrike Capital Inc.

I also consent to extracts from or a summary of the Technical Report in the September 15, 2014 news release of Newstrike Capital Inc.

I certify that I have read the September 15, 2014 news release filed by Newstrike Capital Inc. and that it fairly and accurately represents the information in the sections of the technical report for which I am responsible.

Dated this 29<sup>th</sup> day of October 2014.

***"Signed and Sealed"***

*Antonio Loschiavo*

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Antonio Loschiavo, P. Eng.



## CERTIFICATE OF AUTHOR

I, Dawn H. Garcia, do hereby certify that:

This certificate applies to the Technical Report entitled Ana Paula Project Preliminary Economic Assessment with an effective date of August 8, 2014, prepared for Newstrike Capital Inc.;

1. I am currently employed as Senior Hydrogeologist, with JDS Energy & Mining Inc. with an office at Suite 151 – 2015 W. River Road, Tucson, Arizona, USA;
2. I am a graduate of Bradley University with a Bachelor of Art, Geological Sciences, 1981 and of California State University, Long Beach with a Master of Sciences, Geology, 1995. I have practiced my profession since 1985;
3. I am a Licensed Professional Geologist in Arizona, Alaska and California, USA and a Certified Professional Geologist by the American Institute of Professional Geologists;
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and engineering and mineral processing design, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
5. I visited the Project site on April 16 – 17, 2014;
6. I am responsible for Section 20;
7. I have had no prior involvement with the property that is the subject of this Technical Report;
8. As of the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Effective Date: August 8, 2014  
Signing Date: October 29, 2014

### ***"Signed and Sealed"***

*Dawn Garcia*

\_\_\_\_\_  
Dawn Garcia



## CONSENT OF QUALIFIED PERSON

I, Dawn Garcia, consent to the public filing of the technical report entitled "Ana Paula Project Preliminary Economic Assessment, Guerrero State, Mexico" with an Effective Date of August 8, 2014 by Newstrike Capital Inc.

I also consent to extracts from or a summary of the Technical Report in the September 15, 2014 news release of Newstrike Capital Inc.

I certify that I have read the September 15, 2014 news release filed by Newstrike Capital Inc. and that it fairly and accurately represents the information in the sections of the technical report for which I am responsible.

Dated this 29<sup>th</sup> day of October 2014.

***"Signed and Sealed"***

*Dawn H. Garcia*

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Dawn H. Garcia



## **APPENDIX B - Economic Model**

| Newstrike Capital Inc.          |                   | Unit          | Total LOM       | -3         | -2         | -1          | 1           | 2           | 3           | 4           | 5           | 6           | 7           | 8          | 9     | 10    | 11    | 12    |
|---------------------------------|-------------------|---------------|-----------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------|-------|-------|-------|
| Ana Paula Economic Model - PEA  |                   |               | Discount Period | 0          | 0          | 1           | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9          | 10    | 11    | 12    | 13    |
| Metal Price                     |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Au                              | US \$/oz          | 1,300.00      | 1,300           | 1,300      | 1,300      | 1,300       | 1,300       | 1,300       | 1,300       | 1,300       | 1,300       | 1,300       | 1,300       | 1,300      | 1,300 | 1,300 | 1,300 | 1,300 |
| Ag                              | US \$/oz          | 20.00         | 20.00           | 20.00      | 20.00      | 20.00       | 20.00       | 20.00       | 20.00       | 20.00       | 20.00       | 20.00       | 20.00       | 20.00      | 20.00 | 20.00 | 20.00 | 20.00 |
| Production Schedule             |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Ore Mined                       | tonnes            | 17,752,290    | 0               | 0          | 619,432    | 1,894,698   | 3,205,427   | 3,762,752   | 1,644,480   | 1,208,230   | 2,186,737   | 2,245,176   | 985,358     | 0          | 0     | 0     | 0     | 0     |
| Waste Mined                     | tonnes            | 33,616,850    | 0               | 0          | 0          | 6,000,000   | 6,000,000   | 5,568,990   | 6,000,000   | 6,000,000   | 3,428,854   | 523,305     | 95,701      | 0          | 0     | 0     | 0     | 0     |
| Capitalized Waste               | tonnes            | 12,491,826    | 0               | 0          | 6,649,225  | 1,925,831   | 259,754     | 0           | 1,627,675   | 2,029,342   | 0           | 0           | 0           | 0          | 0     | 0     | 0     | 0     |
| Total Mined                     | tonnes            | 63,860,966    | 0               | 0          | 7,268,657  | 9,820,529   | 9,465,181   | 9,331,742   | 9,272,154   | 9,237,572   | 5,615,591   | 2,768,481   | 1,081,059   | 0          | 0     | 0     | 0     | 0     |
| Mining Rate                     | tpd               | 23,385        | 0               | 0          | 20,191     | 27,279      | 26,292      | 25,922      | 25,756      | 25,660      | 15,599      | 7,690       | 3,003       | 0          | 0     | 0     | 0     | 0     |
| Strip Ratio                     | w:o               | 2.6           | 0.0             | 0.0        | 10.7       | 4.2         | 2.0         | 1.5         | 4.6         | 6.6         | 1.6         | 0.2         | 0.1         | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   |
| Ore Milled                      | tonnes            | 17,752,290    | 0               | 0          | 0          | 2,160,000   | 2,160,000   | 2,160,000   | 2,160,000   | 2,160,000   | 2,160,000   | 2,160,000   | 2,160,000   | 472,290    | 0     | 0     | 0     | 0     |
| Milling Throughput Rate         | tpd               | 6,000         | 0               | 0          | 0          | 6,000       | 6,000       | 6,000       | 6,000       | 6,000       | 6,000       | 6,000       | 6,000       | 6,000      | 6,000 | 6,000 | 6,000 | 6,000 |
| Head Grades                     |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Au                              | g/t               | 2.24          | 0.00            | 0.00       | 0.00       | 2.06        | 2.43        | 3.20        | 2.80        | 2.08        | 1.63        | 2.56        | 1.51        | 0.62       | 0.00  | 0.00  | 0.00  | 0.00  |
| Ag                              | g/t               | 6.89          | 0.00            | 0.00       | 0.00       | 11.48       | 6.40        | 7.18        | 12.29       | 5.71        | 4.08        | 3.36        | 4.88        | 5.51       | 0.00  | 0.00  | 0.00  | 0.00  |
| Au Equivalent Grade             | g/t               | 2.35          | 0.00            | 0.00       | 0.00       | 2.24        | 2.53        | 3.32        | 2.99        | 2.17        | 1.69        | 2.61        | 1.59        | 0.71       | 0.00  | 0.00  | 0.00  | 0.00  |
| Contained Metal                 |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Au                              | oz                | 1,279,183     | 0               | 0          | 0          | 143,239     | 168,897     | 222,559     | 194,733     | 144,262     | 113,278     | 177,625     | 105,131     | 9,460      | 0     | 0     | 0     | 0     |
| Ag                              | oz                | 3,929,958     | 0               | 0          | 0          | 797,389     | 444,591     | 498,727     | 853,244     | 396,713     | 283,450     | 233,331     | 338,911     | 83,602     | 0     | 0     | 0     | 0     |
| Au Equivalent Contained         | oz                | 1,339,644     | 0               | 0          | 0          | 155,506     | 175,736     | 230,232     | 207,860     | 150,365     | 117,639     | 181,214     | 110,345     | 10,746     | 0     | 0     | 0     | 0     |
| Recovered Metal                 |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Au                              | %                 | 75.0%         | 75%             | 75%        | 75%        | 75%         | 75%         | 75%         | 75%         | 75%         | 75%         | 75%         | 75%         | 75%        | 75%   | 75%   | 75%   | 75%   |
|                                 | oz                | 959,388       | 0               | 0          | 0          | 107,429     | 126,672     | 166,920     | 146,050     | 108,196     | 84,958      | 133,218     | 78,848      | 7,095      | 0     | 0     | 0     | 0     |
| Ag                              | %                 | 50.0%         | 50%             | 50%        | 50%        | 50%         | 50%         | 50%         | 50%         | 50%         | 50%         | 50%         | 50%         | 50%        | 50%   | 50%   | 50%   | 50%   |
|                                 | oz                | 1,964,979     | 0               | 0          | 0          | 398,695     | 222,295     | 249,364     | 426,622     | 198,356     | 141,725     | 116,665     | 169,455     | 41,801     | 0     | 0     | 0     | 0     |
| Au Equivalent Recovered         | oz                | 989,618       | 0               | 0          | 0          | 113,563     | 130,092     | 170,756     | 152,613     | 111,248     | 87,139      | 135,013     | 81,455      | 7,738      | 0     | 0     | 0     | 0     |
| Payable Metal                   |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Au                              | %                 | 99.8%         | 99.8%           | 99.8%      | 99.8%      | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%      | 99.8% | 99.8% | 99.8% | 99.8% |
|                                 | oz                | 957,469       | 0               | 0          | 0          | 107,214     | 126,419     | 166,586     | 145,758     | 107,980     | 84,789      | 132,952     | 78,690      | 7,081      | 0     | 0     | 0     | 0     |
|                                 | US \$             | 1,244,709,361 | 0               | 0          | 0          | 139,378,602 | 164,344,773 | 216,561,422 | 189,485,318 | 140,374,064 | 110,225,075 | 172,837,634 | 102,297,606 | 9,204,869  | 0     | 0     | 0     | 0     |
| Ag                              | %                 | 99.8%         | 99.8%           | 99.8%      | 99.8%      | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%       | 99.8%      | 99.8% | 99.8% | 99.8% | 99.8% |
|                                 | oz                | 1,961,049     | 0               | 0          | 0          | 397,897     | 221,851     | 248,865     | 425,769     | 197,960     | 141,442     | 116,432     | 169,117     | 41,717     | 0     | 0     | 0     | 0     |
|                                 | US \$             | 39,220,979    | 0               | 0          | 0          | 7,957,943   | 4,437,016   | 4,977,296   | 8,515,377   | 3,959,191   | 2,828,836   | 2,328,641   | 3,382,331   | 834,348    | 0     | 0     | 0     | 0     |
| Total Payable Value             | US \$             | 1,283,930,340 | 0               | 0          | 0          | 147,336,545 | 168,781,789 | 221,538,717 | 198,000,695 | 144,333,255 | 113,053,910 | 175,166,275 | 105,679,937 | 10,039,218 | 0     | 0     | 0     | 0     |
| Refining Charges                |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Au Freight & Refining Charge    | US \$             | 679,803       | 0               | 0          | 0          | 76,122      | 89,758      | 118,276     | 103,488     | 76,666      | 60,200      | 94,396      | 55,870      | 5,027      | 0     | 0     | 0     | 0     |
| Ag Freight & Refining Charge    | US \$             | 431,431       | 0               | 0          | 0          | 87,537      | 48,807      | 54,750      | 93,669      | 43,551      | 31,117      | 25,615      | 37,206      | 9,178      | 0     | 0     | 0     | 0     |
| NSR Royalty to Goldcorp         | US \$             | 25,656,382    | 0               | 0          | 0          | 2,943,458   | 3,372,864   | 4,427,314   | 3,956,071   | 2,884,261   | 2,259,252   | 3,500,925   | 2,111,737   | 200,500    | 0     | 0     | 0     | 0     |
| Net Payable                     | US \$             | 1,257,162,725 | 0               | 0          | 0          | 144,229,428 | 165,270,360 | 216,938,377 | 193,847,467 | 141,328,777 | 110,703,341 | 171,545,338 | 103,475,124 | 9,824,512  | 0     | 0     | 0     | 0     |
| Operating Costs                 |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Mining                          | US \$/t mined     | 2.30          | 0.00            | 0.00       | 0.00       | 2.30        | 2.30        | 2.30        | 2.30        | 2.30        | 2.30        | 2.30        | 2.30        | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  |
|                                 | US \$             | 116,724,328   | 0               | 0          | 0          | 18,157,805  | 21,172,482  | 21,463,007  | 17,582,304  | 16,578,929  | 12,915,860  | 6,367,506   | 2,486,435   | 0          | 0     | 0     | 0     | 0     |
| Rehandle                        | US \$/t processed | 0.50          | 0.00            | 0.00       | 0.00       | 0.12        | 0.00        | 0.00        | 0.20        | 0.49        | 0.06        | 0.00        | 0.60        | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  |
|                                 | US \$             | 2,109,327     | 0               | 0          | 0          | 236,763     | 0           | 0           | 334,680     | 590,821     | 123,599     | 0           | 587,321     | 236,145    | 0     | 0     | 0     | 0     |
| Processing                      | US \$/t processed | 17.75         | 0.00            | 0.00       | 0.00       | 20.23       | 11.96       | 10.19       | 23.31       | 31.72       | 17.53       | 17.07       | 38.90       | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  |
|                                 | US \$             | 315,027,830   | 0               | 0          | 0          | 38,330,836  | 38,330,836  | 38,330,836  | 38,330,836  | 38,330,836  | 38,330,836  | 38,330,836  | 38,330,836  | 8,381,144  | 0     | 0     | 0     | 0     |
| G&A                             | US \$/t processed | 2.49          | 0.00            | 0.00       | 0.00       | 2.84        | 1.68        | 1.43        | 3.27        | 4.45        | 2.46        | 2.40        | 5.46        | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  |
|                                 | US \$             | 44,203,202    | 0               | 0          | 0          | 5,378,400   | 5,378,400   | 5,378,400   | 5,378,400   | 5,378,400   | 5,378,400   | 5,378,400   | 5,378,400   | 1,176,002  | 0     | 0     | 0     | 0     |
| Total Operating Costs           | US \$/t processed | 26.93         | 0.00            | 0.00       | 0.00       | 32.78       | 20.24       | 17.32       | 37.47       | 50.39       | 25.95       | 22.30       | 47.48       | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  |
|                                 | US \$             | 478,064,687   | 0               | 0          | 0          | 62,103,804  | 64,881,718  | 65,172,242  | 61,626,219  | 60,878,985  | 56,748,694  | 50,076,742  | 46,782,992  | 9,793,291  | 0     | 0     | 0     | 0     |
| Net Operating Income            | US \$             | 779,098,037   | 0               | 0          | 0          | 82,125,624  | 100,388,642 | 151,766,135 | 132,221,248 | 80,449,792  | 53,954,647  | 121,468,597 | 56,692,132  | 31,221     | 0     | 0     | 0     | 0     |
| Au Cash Cost                    | US \$/Au oz       | 527           | 0               | 0          | 0          | 608         | 541         | 419         | 451         | 592         | 697         | 404         | 623         | 1,413      | 0     | 0     | 0     | 0     |
| Au Cash Cost (Net of Ag Credit) | US \$/Au oz       | 486           | 0               | 0          | 0          | 534         | 506         | 389         | 393         | 555         | 664         | 386         | 580         | 1,296      | 0     | 0     | 0     | 0     |
| Capital Costs                   |                   |               |                 |            |            |             |             |             |             |             |             |             |             |            |       |       |       |       |
| Capitalized Stripping           | US \$             | 30,155,894    | 0               | 0          | 16,717,911 | 4,429,411   | 597,433     | 0           | 3,743,652   | 4,667,487   | 0           | 0           | 0           | 0          | 0     | 0     | 0     | 0     |
| Contractor Mob/Demob            | US \$             | 842,000       | 0               | 0          | 421,000    | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 421,000    | 0     | 0     | 0     | 0     |
| Process Plant                   | US \$             | 48,494,123    | 0               | 11,433,531 | 34,300,593 | 0           | 460,000     | 460,000     | 460,000     | 460,000     | 460,000     | 460,000     | 460,000     | 0          | 0     | 0     | 0     | 0     |
| General Site & Utilities        | US \$             | 5,115,300     | 0               | 2,557,650  | 2,557,650  | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0          | 0     | 0     | 0     | 0     |
| Laboratory                      | US \$             | 1,455,300     | 0               | 727,650    | 727,650    | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0          | 0     | 0     | 0     | 0     |
| Construction Camp               | US \$             | 560,000       | 0               | 280,000    | 280,000    | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0          | 0     | 0     | 0     | 0     |
| Camp Site (Operations)          | US \$             | 1,800,000     | 0               | 750,000    | 750,000    | 0           |             |             |             |             |             |             |             |            |       |       |       |       |