MINE DEVELOPMENT ASSOCIATES
MINE ENGINEERING SERVICES

Technical Report
on the
Santa Gertrudis Gold Project,
Sonora, Mexico

Prepared for
Animas Resources Ltd.

May 1, 2009

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1.0 SUMMARY

1.1 Introduction and Property Location

This Technical Report, which includes a first-time NI 43-101-compliant resource estimate for the Santa Gertrudis project area, was prepared by Mine Development Associates ("MDA") at the request of Animas Resources Ltd ("Animas"), formerly Deal Capital Ltd., a publicly traded Canadian corporation listed on the TSX Venture Exchange. The purpose of this report is to provide a technical summary of the Santa Gertrudis project in Sonora State, Mexico. The scope of this work and study included 1) a review and reporting of pertinent technical reports and historic data provided to MDA by Animas, 2) the reconstruction of the drill-hole database, 3) the estimation of a new resource for the Cristina gold deposit within the Santa Gertrudis project, and 4) three site visits by MDA or MDA associates.

The Santa Gertrudis project is situated in the Santa Teresa mining district, Cucurpe, Imuris, and Magdalena Municipalities, in northeastern Sonora State, Mexico. It is located 170km south of Tucson, Arizona, 180km north of Hermosillo, Mexico and 40km east of the town of Magdalena de Kino. As of May 1, 2009, the Santa Gertrudis property consisted of 53 concessions that cover a total of 56,153 hectares. The approximate co-ordinates of the center of the property are UTM system 543800m East and 3388300m North (Zone 12, NAD 27). The latitude is 30^{o} 35' N and the longitude is 110^{o} 32' W. The Santa Gertrudis property consists of claims that cover the area previously held by Sonora Copper LLC (1,420 hectares) and Sonora Gold Corporation (16,547 hectares), plus 17 concessions (1,714 hectares) optioned by Animas that are contiguous with, or internal to, the original Santa Gertrudis claims. An additional 36,472 hectares of concessions were staked by Animas on the northwest, west and southwest boundaries of the original claim block

1.2 Geology and Mineralization

The Santa Teresa mining district contains approximately thirty gold deposits that are hosted in rocks correlative with the Upper Jurassic-Lower Cretaceous Bisbee Group clastic and carbonate units of southeastern Arizona. These gold deposits occur in a northwest-trending belt that is approximately 20km long and up to 8km wide. Although the entire Cretaceous sedimentary section is not exposed within the district, it is believed that the sedimentary package has a minimum thickness of 1,300m. The lowest unit of the Bisbee Group is the Glance Conglomerate which is overlain sequentially by the Morita Formation (sandstone-limestone-siltstone), the Mural Formation (limestone-calcareous siltstone-carbonaceous shale) and the Cintura Formation (sandstone-limestone-siltstone). In general, these units are exposed in a northwest-trending belt that is covered to the northeast by Tertiary volcanic rocks and to the southwest by recent gravels. Andesite, diorite, and rhyolite dikes and sills are common throughout the district and most appear to pre-date gold mineralization. While there is some outcrop in the center of the district, much of the district is covered by a thin veneer of alluvium and colluvium.

The district is structurally complex and locally the rocks are strongly folded and faulted. During the Laramide Orogeny, the area was subjected to northeast-directed compression and the Bisbee Group rocks were folded and thrust faulted along a northwest-trending structural axis. Thrust faulting occurred mainly along bedding planes and locally the units were overturned to the southwest. Extensional, low-angle normal faulting occurred during the Miocene and this resulted in the formation of several southwest-dipping allochthonous plates. This faulting is believed to be at least locally post-mineralization in age, and it appears to displace gold mineralization. Following the low-angle faulting event, north-, northeast-, and east-trending Tertiary normal faulting occurred and subsequently, these faults were cut by Basin and Range-style north-northwest-trending normal faults.

The majority of the gold mineralization in the Santa Teresa mining district, and specifically the higher-grade gold (>3.0g Au/t), occurs within silicified fault and shear zones associated with the pre-mineralization faulting. Silicification generally occurs as quartz veins and fracture-controlled stockwork rather than pervasive jasperoidal replacement of the rocks. The style of sedimentary-rock-hosted gold mineralization observed in the Santa Teresa mining district is generally referred to as "Carlin-like" and is similar to deposits classified as distal-disseminated gold deposits.

The Cristina gold deposit, however, is a unique deposit type in the Santa Teresa mining district. Though hosted within the locally calcareous siltstone-shale Cintura Formation, the deposit is essentially an epithermal quartz stockwork gold system. The quartz veins often have an open-space cockscomb texture and locally, quartz pseudomorphs after calcite are common. As in the other Santa Gertrudis gold deposits, gold mineralization is associated with fine-grained, disseminated pyrite though surficial weathering has resulted in a variable, but generally 100m-deep level of oxidation.

While the focus of past and present activities in the district has been on the sedimentary-rock-hosted gold occurrences, there are several other mineral deposit types. These include gold-copper deposits in skarn (± magnetite), gold-bearing quartz vein deposits, and locally, placer gold deposits. Polymetallic quartz vein systems, with or without gold, and containing some combination of silver, copper, bismuth, lead, and zinc also have been prospected in the past. In both the southeastern (Greta area) and southern (San Enrique area) portions of the district there are indications of intrusive systems with a copper–molybdenum-silver affinity.

1.3 Exploration and Historic Resource Estimates

Modern exploration began in 1984 when Phelps Dodge Mining Company ("Phelps Dodge") identified several sedimentary-rock-hosted gold occurrences in the district. Phelps Dodge developed the Santa Gertrudis mine and produced gold from 1991 to 1994 from multiple open pits. The property was sold in 1994 to Campbell Red Lake Resources Inc. ("Campbell"), who continued to mine and conduct exploration under the name of their Mexican operating company, Oro de Sotula S.A. de C.V ("Oro de Sotula"). The nearby Amelia mine was operated by Minera Roca Roja starting in the late 1980's until it also came under the control of Campbell in 1999.

Campbell declared bankruptcy and ceased operations within the Santa Teresa mining district in 2000 and, through a series of transactions, the property was again divided, with the López-Limón concessions under the control of Sonora Copper LLC and the remainder of the property transferred to Queenstake Resources Ltd ("Queenstake") in January 2002 when Queenstake exercised their option to obtain 100% of the shares in Oro de Sotula. Queenstake then transferred ownership of the Oro de Sotula properties to International Coromandel. Subsequently, International Coromandel changed its name to Sonora Gold and held the original Santa Gertrudis claims under the Mexican corporation First Silver Reserve, S.A. de C.V. and the former Roca Roja Amelia claim block under the Mexican corporation Recursos Escondidos S.A. de C.V. Sonora Gold conducted limited exploration on selected targets within the district but no known exploration activities were conducted by the Lopez-Limon group. The two groups of claims were consolidated again by Animas in 2007 and exploration was reinitiated.

Historic pre-Animas exploration drilling, according to the reconstructed drill-hole database, totals 2,187 drill holes for an aggregate 221,194m. This includes 539 diamond drill ("core") holes totaling 53,925m and 1,648 reverse circulation ("RC") holes totaling 167,269m. The historic exploration also includes over 1,000 shallow percussion holes and at least 23 sampled and recorded surface trenches. In total, over 100 target areas have been tested. Importantly, exploration has been conducted only to generally shallow but variable depths of ~150m around known deposits and ~100m in other target areas.

In 2008, Animas completed 25 drill holes for 5,690.2m. This includes 22 core holes for 5,172.7m and 3 RC holes for 517.5m. The drilling targeted primarily extensions of mineralization beneath and adjacent to historic gold deposits.

Several historic resource estimates have been made for gold deposits within the Santa Gertrudis property, but due to the past divided land package, there has not been an all-inclusive statement that considers the current Animas property. The most recent statement was made in 2005, concerning work completed in 2004 by Sonora Gold, giving a Measured and Indicated resource of 425,000 tonnes at an average grade of 5.19g Au/t, totaling approximately 71,000 ounces of gold, and which represents material only on the Sonora Gold property. Note that this resource statement represents an estimate completed within the constraints of Canadian Institute of Mining ("CIM") and NI 43-101 guidelines, though subsequent to the reporting of this estimate, the authors of the reported resource estimate determined that the estimate was no longer 43-101 compliant when it was discovered that much of the original data had been discarded and was no longer available for review. A more inclusive historic resource estimate covering all of the ground now controlled by Animas except for the former Minera Roca Roja property (Amelia mine) was completed by Campbell in 2000. The 2000 historic estimates reported a Measured and Indicated resource of 1,446,000 tonnes at an average grade of 2.05g Au/t, totaling approximately 95,000 ounces of gold. The 2000 estimate also reported an Inferred Resource of 14,791,000 tonnes at an average grade of 1.28g Au/t, totaling approximately 607,000 ounces of gold. MDA cannot, due to lack of documentation and supporting data, make an assessment of reasonableness of these historic mineral inventories, but it is likely that any future reported resources within the constraints of CIM and NI 43-101 guidelines would be different due to the requirement for the reported material to have "reasonable prospects for economic extraction"; higher cost extraction processes required for the unoxidized material will mandate using higher cutoff grades for reporting and may thereby decrease the reportable resources when following CIM and NI 43-101 guidelines.

1.4 Historic Production

Between 1991 and 2000, approximately 565,000 ounces of gold were mined in the district from what is now part of Animas' Santa Gertrudis property. A total of 8,244,000 tonnes at an average grade of approximately 2.13g Au/t were mined from open pits from 22 sedimentary-rock-hosted, disseminated-gold deposits. This total includes production by Phelps Dodge and Campbell from the Santa Gertrudis mine and production at the Amelia mine. Production at the Amelia mine (98,000 ounces gold) is not well documented and these figures should be considered approximate. Daily production at the Santa Gertrudis mine ranged from 2,000tpd to 3,000tpd with an average stripping ratio of about 5.1. Phelps Dodge, Campbell and Roca Roja employed conventional heap leach extraction techniques with metal recovery by CIC adsorption, stripping, and Merrill Crowe (MC) zinc precipitation. Average gold recovery for the Santa Gertrudis mine was in excess of 70% with excavation and processing mainly confined to the oxide portions of the gold deposits.

1.5 Metallurgy

Phelps Dodge completed a significant amount of metallurgical testing for their 1988 mine feasibility study. This work included numerous bottle-roll tests on various ore types; agitation and column-leach studies, with and without agglomeration, on primarily oxide ore; flotation and roasting tests on carbonaceous sulfide ore; and dye penetration tests. A large amount of the testwork was conducted on the Agua Blanca and Los Becerros deposits while more limited work was performed on samples from the El Corral and Hilario deposits. The flotation and roasting tests were performed on samples from the Amelia and Maribel deposits.

The Phelps Dodge metallurgical testing completed for their feasibility study indicated that the oxide ore at a size of 38mm or finer is amenable to recovery of gold by heap leaching. The average recovery was forecast at 82%. Upon completion of mining, Phelps Dodge determined that overall gold recovery was 80% for the life of the mine. This was calculated from metal production and residue assays of the leach pads from material mined from the Agua Blanca, Becerros Sur, Becerros Norte, and some ore from the El Corral pits.

Bottle-roll and column leach testing on the deep, carbonaceous material indicated poor gold recoveries due at least in part to the preg-robbing character of the material. Initial flotation and cyanide agitation-leach testing resulted in recoveries less than 10% of the gold from the carbonaceous material. Flotation testing that included a roasting circuit before leaching increased recoveries to 60% of the gold. Due to the high cost of gold recovery from this carbonaceous, sulfidic material, the deep mineralization was excluded from Phelps Dodge's mineable reserves.

During 2005 and 2006, Sonora Copper completed additional metallurgical testwork on carbonaceous and refractory sulfide samples from the Dora and El Corral pits. The initial testing indicated that these were transition-type materials containing a combination of oxide, sulfide, and carbonaceous mineralization. The testing focused on using flotation for removing the sulfides and carbon, and cyanide leaching for recovering the gold in the tails. Flotation was tested using different grind sizes, copper sulfate activation, and cleaning of the concentrate. Copper sulfate activation was found to improve the gold recovery. Carbon-in-leach ("CIL") treatment of the tails was also proposed because not all of the carbon was floated and adsorption on active carbon might override any preg-robbing tendencies.

The flotation testing results indicated a gold recovery of between 80% and 90% with between 50% and 60% of the gold recovered in the flotation concentrate. No further testing was performed on the flotation cleaner concentrate. Some method to treat the refractory sulfides, such as roasting, autoclaving, or bio-oxidation will still be needed.

The Cristina gold deposit metallurgical testing is limited to work completed by Phelps Dodge in 1991 and 1992. The Phelps Dodge testwork consisted of 57 bottle-roll cyanide leach tests using reverse circulation drill sample reject material, and a single bulk column leach test on material from two surface trenches. Average gold recovery from all of the bottle-roll tests was 73%, with lime and cyanide consumptions of 1.5kg/t and 0.05kg/t, respectively. Additional testing on a single sample with a gold recovery of 48% indicated that the low gold recovery was probably due to silica encapsulation and/or coarse gold and not from sulfide encapsulation, or preg-robbing by carbonaceous material.

The bulk sample column test consisted of a composited 2,300kg sample leached in a 15in-diameter by 20ft-high column. The size of the material as removed from the excavation was approximately 80% minus 2.5cm and the head grade of the material was 0.82g Au/t. Overall gold recovery was 82% after 84 days of leaching and water washing. This compares with a recovery of 74% by bottle roll leaching of a split of the same sample crushed to 80% minus 1.25cm.

1.6 Database

In preparation for this technical report, and to serve as a foundation for further exploration work, Animas and MDA compiled various historic data and constructed a working project database. MDA started with a database provided by Animas that was composited from approximately 58,700 files restored from various digital archives. Of these files, 892 summary files were used to create the initial database. After removing duplicates and correcting for errors, the composited database contains over 1.7 million distinct assay records. This database is currently being used as the “historic database”.

A second “certificate” database is constructed from two sources: original lab certificates obtained electronically and hand-verified data from scanned images of the original certificates. There is a high degree of data integrity within the certificate database. To create a third “working” database, to be used by Animas for exploration planning and in resource estimation, data missing from the certificate database is pulled in from the historic database. Currently, about 70% of the data in the working database comes from the certificate database. Data continues to be incorporated into the certificate database, prioritized by project area as needed.

The current Santa Gertrudis project working database consists of 2390 collar records, with a total meterage of 231,043.5m. The database includes holes drilled between April of 1984 and October of 2008. The collar records are coded to drill hole types (core, RC, trench, *etc*.) and target areas.

1.7 Cristina Resource Estimation

MDA completed the first independent NI 43-101-compliant estimate for the Cristina gold deposit. The work done by MDA included compiling and auditing the Cristina database, which was treated as a distinct subset of the total Animas database, building a geologic model on section with Animas geologists, performing QA/QC analyses, making a site visit, and evaluating the metallurgical data, culminating in a resource estimate.

There are 58 RC holes and 13 core holes with 7,057 gold assays and 6,581 silver assays in the Cristina database. The gold to silver ratio is about 1:10 but the overall low grades and poor silver metallurgical recovery resulted in not including the silver values within the resource estimate. MDA constructed cross sections, spaced 25m to 50m apart through the entire resource area and surroundings and built a geologic model. Quantile plots of the gold geochemical values were made to help define mineral domains used to constrain estimation.

The gold mineralization occurs predominantly above a low-angle fault zone dipping west-southwest at about 30^{o}. The deposit as it is presently defined is traceable along strike for about 600m and down-dip for about 300m. Three styles of gold mineralization were modeled and they are characterized by a low-grade shell (<~0.4g Au/t) of weak silicification and diffuse silica stockwork enclosing a mid-grade (~0.4 to ~5.0g Au/t) zone of moderate to strong silicification associated with increased silica stockwork and discrete, through-going silica veins. The veins are interpreted to be of the same age as the silica stockwork event though for the veins, the silica has localized within hanging wall faults and/or bedding planes oriented sub-parallel to the underlying low-angle fault zone. Volumetrically small high-grade (<~5g Au/t) zones occur sporadically throughout the deposit associated with the individual veins or as high-grade "pockets" within the areas of strong silica stockwork. Capping high-grade assays was not done as the deposit as defined in these domains has no outlier samples. Due to uncertainty of trench sample quality, trench samples were used only to localize the mineral domains and were not used in the estimation.

The drill-hole assay data was composited to 3m lengths honoring the fault boundary at the base of the deposit and the high-grade (<~5g Au/t) mineral domain. Samples were composited across the low-grade and mid-grade domain breaks since these are "soft" boundaries. MDA has found no density measurements for the Cristina area and has assigned two densities to the model: 2.5g/cm^3 for the hanging wall Cintura Formation and 2.6g/cm^3 for the footwall Mural Formation. These are the same density numbers used in historic Cristina resource estimates.

The metallurgical data indicate that the Cristina deposit is predominantly oxidized and may be amenable to heap leach extraction techniques. A 70% gold extraction rate was used to determine a resource-reporting cutoff. The relatively consistent bottle-roll gold-recovery results within the deposit indicate that there is not significant internal variation in the expected gold extraction.

The block model for Cristina was constructed with blocks measuring 6m by 6m by 3m (high). The estimation used partial blocks based on long section interpretations. Inverse distance squared was used for grade estimation, while estimates were also made using both nearest neighbor and Kriging methods as checks on the inverse distance estimate.

MDA classified the Cristina resource as Inferred. The lack of density data, check sampling and QA/QC, and independent verification resulted in this classification as opposed to anything higher. The supporting geologic interpretations and the apparent predictability of the deposit suggest that, with a few infill drill holes and some density measurements, a good portion of the deposit resource could be upgraded to at least an Indicated classification.

MDA is reporting the resource at cutoffs that are reasonable for deposits of this nature and mining conditions of this type and further considering economic conditions because of the regulatory requirement that the resource exists "in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction". Presently, MDA believes that all exploitation at Cristina would be by open pit methods. Considering cyanide-extraction recoveries, MDA believes that the resource reporting cutoff for heap leachable open pit material would be approximately 0.3g Au/t. The reported resource at the 0.3g Au/t cut-off grade is 7,139,000 tonnes at an average grade of 0.66g Au/t for a total of 152,000 ounces gold. This NI 43-101-compliant resource compares with the most recent historic estimate, completed by Campbell in 2000, of 126,000 ounces gold. Campbell also classified the resource as Inferred but the 2000 reported resource was based on a 0.5 g Au/t cut-off grade in contrast to the 0.3g Au/t cut-off grade in use by MDA.

1.8 Conclusions and Recommendations

MDA believes that the Santa Gertrudis project is a property of merit whose principal asset is a large land position controlling a major gold district with significant past production, and existing resources with historic estimates. Bringing the historic estimates up to NI 43-101 standards will require varying levels of site-specific work which could include, but is not limited to, metallurgy, sample integrity work, confirmation drilling, more detailed geology, *etc.*

The size and exploration potential of the Santa Gertrudis property is demonstrated by the occurrence of approximately 30 gold deposits within in a northwest-trending belt that is approximately 20km long and up to 8km wide. The emphasis of further work at the Santa Gertrudis project should be the exploration for larger tonnage, undiscovered mineralization beneath the known deposits or peripheral to them under post-mineralization cover. Of secondary focus should be the expansion of mineralization immediately adjacent to the known gold deposits. The exploration history of the district suggests that any mineralization discovered at depth will likely be sulfide-bearing so the precious metal grades will need to be higher than historically mined grades.

Animas' exploration work has resulted in the identification of specific features within the Santa Teresa mining district which guide further exploration efforts and aid in the development of drill targets. Some of the more significant features are: 1) the size and extent of mineralization indicates more than one mineralizing source or event, 2) mineral zoning suggests that the known gold mineralization occurs distal to a large hydrothermal system, or systems, 3) the identification of four possible intrusive centers, and 4) the potential for further discoveries extends under post-mineralization alluvial cover.

Surface mapping and geochemical sampling, complemented by geophysics, have identified several large targets peripheral to known deposits which have the potential to contain large-tonnage gold deposits. The large-tonnage targets at Santa Gertrudis are situated within a northwest-trending corridor extending from the Greta area in the southeast to the Amelia area in the northwest. The highest-priority targets are associated with a string of deposits over a 3.5km length in the center of the district, from El Toro Norte in the northwest to Mirador in the southeast. These targets are all characterized by favorable lithology and structural setting, strong surface alteration and geochemistry, and anomalous geophysical signatures. The majority of drilling within these targets has tested only the upper 100m vertically beneath the surface. The priority targets are:

- **El Toro – Camello**: The target, covering a 500m by 400m area, is over a favorable structural setting occurring at depth beneath four small oxide deposits that produced over 40,000 ounces of gold in past production and still have a reported 50,000 ounces of un-mined historic gold resource. Geophysical data suggest a large sulfide body at ~150m depth.

- **Camello – Gregorio**: The target covers a 1,200m by 500m area and is similar in geology and alteration to the El Toro – Camello target. The past production and existing resource is small (about 20,000 ounces gold in total) but the geophysical signature indicating a large sulfide body at depth is more pronounced.

- **Mirador Gold Skarn**: Minor past gold production (<20,000 ounces) and a reported 45,000 ounce historic gold resource are associated with a 1,200m by 600m area of contact metamorphic hornfels alteration. Drill-intersected retrograde alteration and well-defined geophysical anomalies indicate a possible sulfide-rich skarn environment at depth associated with an undiscovered intrusive.

Other large-tonnage targets include the Dora – Cristina trend, and the Amelia and Greta hornfels areas. The Greta area has elevated copper, molybdenum and silver in surface geochemistry indicating a potential mineralized intrusive body at depth.

Several resource expansion targets are proposed for further exploration. The most prominent at this time is at Cristina where the recent evaluation of both the historic drilling and the geophysical data indicates that the Cristina mineralization is open and could extend to the south and west from the current resource area. Other similar targets under evaluation include: Dora Extension, Maribel Northwest, Berta West, Lixivian, El Toro Northwest, and El Corral Northwest. All of these areas have moderate to strong hematite-goethite staining, variable argillization and quartz veining in outcrop, and anomalous gold in rock-chip samples. Only limited previous drilling has tested these targets.

Overall, MDA feels that this project of merit warrants US$300,000 of geologic exploration work in preparation for an approximately US$3,000,000 exploration program dominated by drilling.

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 General

This Technical Report, which includes a first-time NI 43-101-compliant resource estimate, was prepared by Mine Development Associates ("MDA") at the request of Animas Resources Ltd ("Animas"), formerly Deal Capital Ltd., a publicly traded Canadian corporation listed on the TSX Venture Exchange. The purpose of this report is to provide a technical summary of the Santa Gertrudis project and report the first-time NI 43-101-compliant resource estimate for Animas. The scope of this study includes a review and reporting of pertinent technical reports and data, provided to MDA by Animas, relative to the general setting, geology, project history, exploration activities and results, methodology, quality assurance, interpretations, resources, and metallurgy. MDA was also tasked with reconstructing the drill-hole database and the estimation of a new resource for the Cristina gold deposit within the Santa Gertrudis project.

Animas reports the following work related to and since their acquisition of the Santa Gertrudis project:

- Signed final purchase agreements with Sonora Gold Corporation and with Sonora Copper LLC.
- Exercised its option and acquired the Greta and San Enrique properties (Animas press release March 6, 2008).
- Re-negotiated the terms of the property option agreement with López and Limón on June 6, 2007.
- Completed the formal closing of the acquisitions of three Mexican companies - Compañia Minera Chuqui S.A. de C.V., First Silver Reserve S.A. de C.V., and Recursos Escondidos S.A. de C.V. (Animas press release dated July 10, 2007).
- Entered into an option agreement August 25, 2007 with Victor M. Juvera for three concessions in the Santa Gertrudis property – La Peque T-191734, La Peque 1 T-181078 and El Tascalito T-216066 (Animas press release Nov 28, 2007) and subsequently amended the option agreement (Animas press release January 16, 2009).
- Entered into an option agreement with Agustin Albelais Varela for two concessions – La Vibora T191263 and El Aguaje T-191900 (Animas press release Nov 28, 2007).
- Staked a total of 36,472 hectares of mineral concessions on the northwest, west and southwest boundaries of the original claim block from July 2007 to May 2008.
- Signed a letter of intent for the purchase of two concessions from Minera Lixivian, S.A. de C.V. (Animas press release July 21, 2008). These claims are adjacent to the Amelia historic mining operations. This transaction was formally completed on October 17, 2008 (Animas press release October 17, 2008)).
- Completed 22 diamond drill holes and 3 reverse circulation drill holes (5,691m total) at nine target areas. These holes have been logged, the core has been cut and submitted for assay and subsequent quality control quality assurance ("QA/QC") conducted by Animas' Qualified Professional, Dr. Roger Steininger.
- Completed 135.2 line-km of IP / resistivity surveys (Animas press release dated October 28, 2008) and reprocessed historic geophysics.
- Consolidated the database.

- Updated topographic maps and control.
- Acquired new high resolution aerial photography over main zones of interest.
- Acquired all historic royalties.

This report was written to be in compliance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1, collectively called 43-101. The purpose of this document is to report on both the new resource estimate and to report on the compilation, re-construction and audit of the drill-hole database and other exploration work conducted at Santa Gertrudis. Steven Ristorcelli, P. G. and Paul Tietz, C. P. Geo., both of MDA and Peter Ronning, P. Eng, associate of MDA, are qualified persons under Canadian Securities Administrators' National Instrument 43-101. MDA has made such independent investigations as has been deemed necessary in the professional judgment of the authors to be able to reasonably present the conclusions given herein. Information and data provided in portions of Section 16.0 regarding metallurgy were interpreted and described by independent qualified persons Jerry T. Hanks, P. Eng (co-author) and James Bradbury, P. Eng. Roger Steininger, an independent qualified person, contributed to Section 7.0, 12.0, 13.0, and 14.0 while Odin Christensen, an independent qualified person, contributed to Section 8.0. Messieurs John Wilson (co-author), project manager, and John Reynolds, geophysical consultant and database manager, provided the bulk of the geological information and have been instrumental in this report being more than just a compilation of data. By providing good solid information, Wilson and Reynolds' work has given the reader a good description of the present understanding of the geology and potential of the project. G. E. McKelvey's (Animas President and CEO) support was also instrumental facilitating the process.

Historical aspects and information on the Santa Gertrudis project including historic resource and reserve estimates and past production are presented in this report. All but one of the resources reported in Section 6.0 pre-date NI43-101 and therefore do not comply from a reporting standpoint with those regulations. The 2005 resource estimate was considered NI 43-101 compliant when completed though the authors of the 2005 resource estimate (Kern and Sibthorpe, 2007) rescinded this designation and reported in 2007 that this estimate is no longer NI 43-101compliant. Therefore, MDA considers all resources and reserves reported in Section 6.0 as historic by NI 43-101 regulations. Some NI 43-101 resources have been reported by previous issuers of Technical Reports, but MDA makes no comment as to whether they are NI 43-101-compliant or not. Because MDA has begun the process of making new resource estimates, MDA considers the previous estimates historic for the purposes of this report.

The Santa Gertrudis project consists of approximately thirty sedimentary-rock-hosted disseminated gold deposits. Reported production is approximately 565,000 ounces of gold since 1991 (Anderson and Hamilton, 2000) from numerous open pits. Mining has been by open pit with heap leach gold recovery.

In compiling the text for this report, MDA relied extensively, on the information presented in the technical report for International Coromandel Resources Ltd., by William Hamilton (2003); the 43-101 report for Sonora Gold Corporation, by Kern And Sibthorpe (2005); the technical report for Compañia Minera Chuqui S.A. de C.V., by Wallis (2006); the 43-101 report for Deal Capital Ltd, by Wallis (2007); and the 43-101 report for Deal Capital, Ltd., by Kern and Sibthorpe (2007). Additionally information was taken from other historic reports and from press releases posted on Animas' website (http://www.animasresources.com) and through personal communications with Animas. All historic work was superseded by recent work and information gathered by Animas if and when it existed.

A site inspection by Peter Ronning was conducted on March 16, 2008 through March 20, 2008. This inspection included a review of available data in Animas field offices at the project site, discussions with Animas' project geologists and consultants, visits to all of the historic pits and a number of prospect areas, and the collection of 27 independent rock chip samples. Ronning's visit took place prior to the commencement of drilling by Animas. Don Avery of MDA visited the site during the same period as Ronning. Avery's work concentrated on reviewing the available digital archives left by prior operators, a step in the process of compiling Animas' new comprehensive digital database for the project.

Paul Tietz, C. P. Geo., MDA geologist, made a site visit from February 7, 2009 to February 12, 2009 and a second visit from March 13, 2009 to March 17, 2009. His work concentrated on checking data, reviewing site geology, verifying in-field data, and geologic modeling on cross section, all in preparation for the estimation of the Cristina and Trinidad resources. The Trinidad resource has, as of the date of this report, not been completed.

2.2 Definitions

Currency Unless otherwise indicated, all references to dollars ($) in this report refer to currency of the United States.

<u>Frequently used acronyms and abbreviations</u>

AA	atomic absorption spectrometry
Ag	silver
Au	gold
cm	centimeter
core	diamond drilling method
^{o}C	degrees Centigrade
FA-AA	fire assay with an atomic absorption finish
g	grams
g Ag/t	grams of silver per metric tonne
g Au/t	grams of gold per metric tonne
gpt	grams per tonne
ha	hectares
kg	kilograms
km	kilometers
lbs	pounds
m	meters
mm	millimeter
NSR	net smelter return
oz	ounces
ppb	parts per billion
ppm	parts per million
RC	reverse circulation drilling method

t	tonnes (1,000 kilograms)
tpd	tonnes per day
t/m^3	tonnes per cubic meter
ton	short ton (2,000 pounds)

The following is a list of the companies who controlled claims now held by Animas:

Campbell Resources Inc ("Campbell") – acquired the Santa Gertrudis mine from Phelps Dodge and later acquired the Roca Roja claims (Amelia mine); original acquisition under the name "Campbell Red Lake Resources".

Compañia Minera Chuqui S.A. de C.V. ("Chuqui") – Mexican subsidiary of Sonora Copper.

Compañia Minera Zapata S. de R.L. de C.V ("Zapata") – Mexican subsidiary of Phelps Dodge.

Deal Capital Ltd ("Deal") – predecessor of Animas, acquired claims controlled by Sonora Copper and Sonora Gold, including the San Enrique and Greta properties, thereby consolidating the property.

First Silver Reserve S.A. de C.V. ("First Silver") – registered holder of Santa Gertrudis claims (Santa Gertrudis mine).

International Coromandel Ltd. ("International Coromandel") – predecessor of Sonora Gold, acquired the claims held by Queenstake.

Minera Roca Roja, S.A. de C.V ("Minera Roca Roja") – operator of the Amelia mine before acquisition of the Roca Roja claims by Campbell, reportedly a subsidiary of Walhalla Mining Company NL of Australia.

Minera Teck Cominco S. A. de C. V. ("Teck") – optioned the San Enrique and Greta properties from Sonora Gold.

Oro de Sotula, S. A. de C. V. ("Oro de Sotula") – Mexican subsidiary of Campbell.

Phelps Dodge Mining Company ("Phelps Dodge") – staked the original Santa Gertrudis claims through their Mexican subsidiary Minera Zapata, produced gold from the Santa Gertrudis mine from 1991 to 1994.

Queenstake Resources Ltd ("Queenstake") – acquired the property held by Campbell, including the Amelia mine and the Santa Gertrudis mine, but not the López-Limón claims

Rescursos Escondidos S.A. de C.V. ("Rescursos Escondidos") – registered holder of Roca Rojas claims (Amelia mine).

Sonora Copper LLC ("Sonora Copper") – acquired the López-Limón claims from Campbell and held them prior to acquisition by Deal.

Sonora Gold Corporation ("Sonora Gold") – originally International Coromandel and now MetalQuest Minerals Inc.

Names of areas, mines and projects within the Santa Gertrudis project area can be ambiguous or unclear. Explanations and descriptions are provided below:

Santa Gertrudis – Many historic documents refer to the property as being in the Santa Gertrudis mining district. Recent information shows that the district is correctly named the Santa Teresa mining district. All references in this report reflect this correction, unless the reference is in directly quoted material. The term Santa Gertrudis has also been used for the mine and this report will explicitly modify Santa Gertrudis with "mine". The "mine" itself is a composite of several separate mines and/or deposits, including the Dora, El Corral, Amelia, Becerros Norte, Becerros Sur, Maribel, Agua Blanca, Trinidad, El Toro, Katman, Camello, Cristina and Carmen.

Unless specifically referenced as Santa Gertrudis mine, all usage of the term Santa Gertrudis refers to the project and property as controlled by Animas.

Santa Teresa mining district– Animas' Santa Gertrudis project is in the Santa Teresa mining district. Many historic documents incorrectly identify this district as the Santa Gertrudis mining district.

Amelia mine -- this name refers to both a specific deposit, but also to the composite operation, which exploited mineralization from the Amelia, Pirinola, Viviana, and Santa Teresa deposits.

3.0 RELIANCE ON OTHER EXPERTS

Animas Resources Ltd provided the text and information regarding the status of mining rights of the Santa Gertrudis project to MDA. The information provided to MDA was compiled by, researched by, and approved by Animas and their legal counsel, Sanchez–Mejorada, Velasco y Ribe. The authors are not "Qualified Persons" for assessing the validity of mining rights in Mexico, and therefore MDA has incorporated the work of Animas and their legal counsel as presented, except where minor grammatical edits and formatting were warranted. The documentation provided by Animas is referenced or included in this report. All of the information in Sections 4.2 4.3 and 4.4 has been provided to MDA by David Gunasekera, Winnie Wong, Alberto Navaro, and Rodrigo Sánchez-Mejorada on behalf of Animas. MDA and the authors are not qualified to assess the validity of the information in just-listed sections and therefore the authors present the information with no opinion.

In parts of this report, notably Section 4.0, references are made to matters of Mexican mining and/or environmental law. Because the authors are not qualified persons with respect to such law, readers requiring assurance on matters of law should consult qualified experts.

Roger Steininger, an independent qualified person, contributed to Section 7.0, 12.0, 13.0, and 14.0 while Odin Christensen, an independent qualified person, contributed to Section 8.0.

MDA has relied almost entirely on data and information derived from work done by previous owners of the Santa Gertrudis property and on more recent work by Animas Resources Ltd. MDA has reviewed much of the available data, has made site visits and made judgments about the general reliability of the underlying data.

4.0 PROPERTY DESCRIPTION AND LOCATION

MDA has not done an independent investigation of Animas' rights and obligations respecting mineral and surface rights on the Santa Gertrudis property, nor is MDA qualified to undertake such investigations. The information contained in this section concerning legal, land, environmental or permitting matters in Mexico has been provided by Animas and their Mexican legal counsel and environmental consultants. Animas' Mexican Legal Counsel, Sanchez–Mejorada, Velasco y Ribe has provided Animas with a mining rights title report and surface rights report on the Santa Gertrudis property.

4.1 Location

The Santa Gertrudis project is situated in the Santa Teresa mining district, Arizpe, Cucurpe, and Imuris Municipalities, in northeastern Sonora State, Mexico. It is located 170km south of Tucson, Arizona, 180km north of Hermosillo, Mexico and 40km east of the town of Magdalena de Kino. The approximate co-ordinates of the center of the property are UTM system 543800mE and 3388300mN (Zone 12, NAD 27). The latitude is 30^{o} 35' N and the longitude is 110^{o} 32' W. Figure 4.1 is a map showing the location of the Santa Gertrudis property.

4.2 Description of the Concessions

As of December 31, 2008, the Santa Gertrudis property consisted of 53 concessions that cover a total of 56,153 hectares. The list of concessions together with their title numbers and individual number of hectares is attached hereto as Appendix A. The property is an amalgamation of several claim blocks that have been controlled by various companies in recent times. The Santa Gertrudis property consists of claims that cover the area previously held by Sonora Copper (1,420 hectares) and Sonora Gold (16,547 hectares), plus 17 concessions (1,714 hectares) optioned by Animas that are contiguous with or internal to the original Santa Gertrudis claims. An additional 36,472 hectares of concessions were staked by Animas on the northwest, west and southwest boundaries of the original claim block. These claims are all contiguous though there are small inliers within the claim block in which the mineral rights are not controlled by Animas. Figure 4.2 is a map showing the location of Animas' concessions.

Prior to 2005, exploration concessions were valid for six years and could not be extended but could be converted into one or more exploitation concessions after the six year period concluded, provided the bi-annual fee and work requirements were in good standing.

As a result of the Mexican Mining Law being amended in 2005, all concessions granted by the Dirección General de Minas (DGM) became mining concessions and there are no longer separate specifications for mineral exploration or exploitation concessions. This change resulted in all mining concessions being granted for 50 years provided the concessions remained in good standing. As part of the change, all former exploration concessions which were in force when the amendment became effective, previously granted for 6 years, were automatically extended to 50 years.

Figure 4.1 Santa Gertrudis Location Map

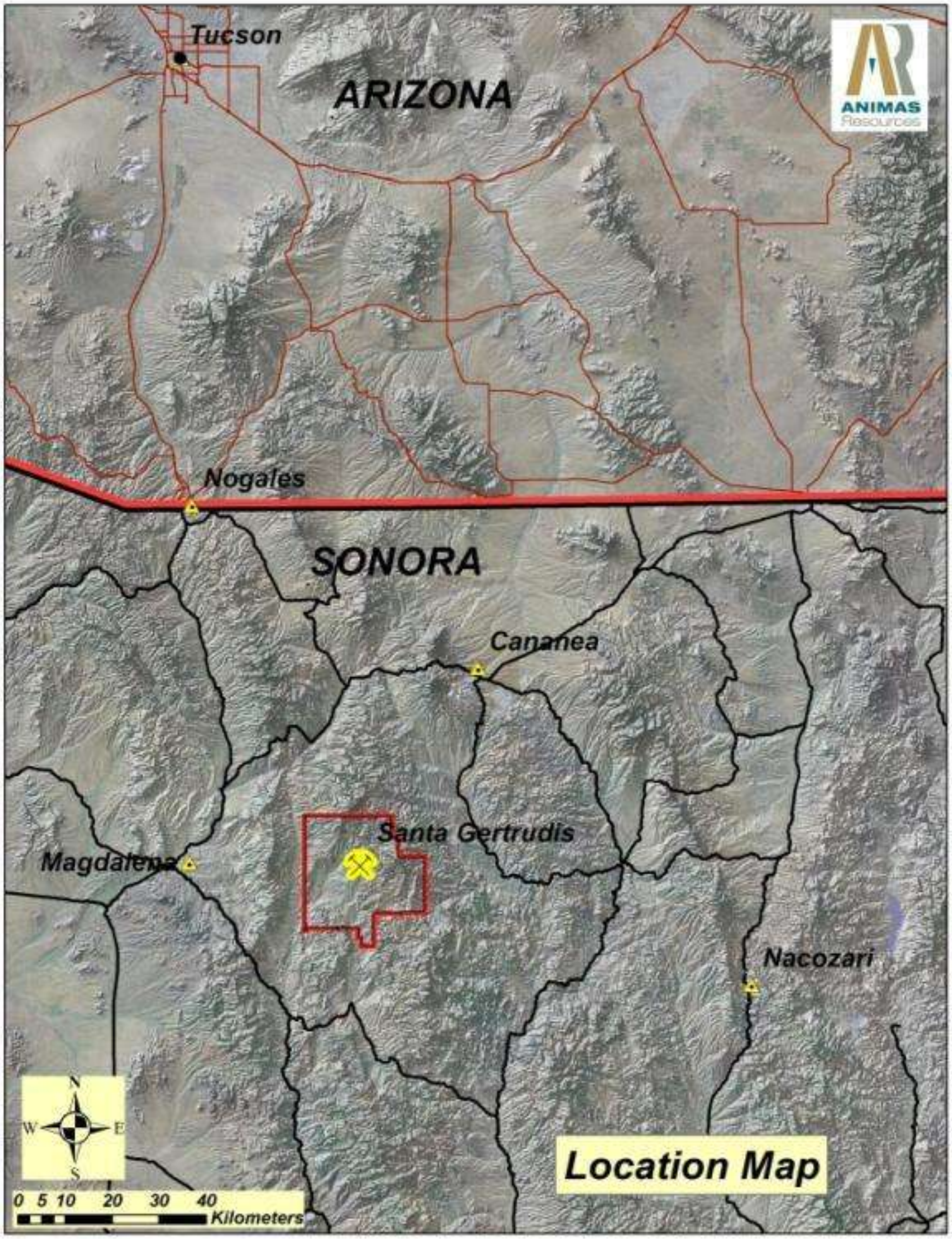
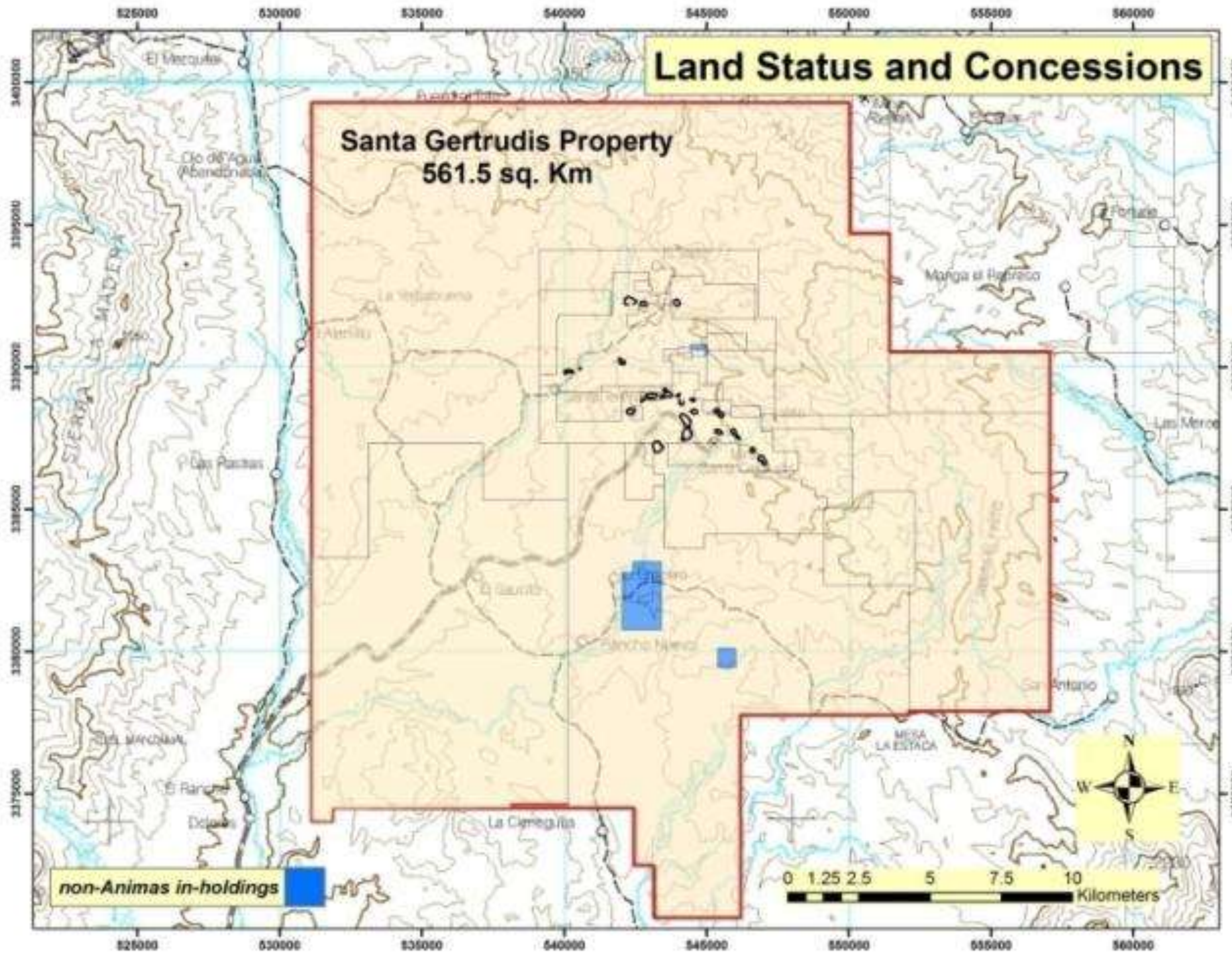


Figure 4.2 Land Status and Concessions
(from Animas)



Note to above figure: irregular outlined areas are known gold deposits

For any concessions to remain valid the semi-annual fees must be paid and a report has to be filed by May of each year which covers the work conducted during the preceding year. Concessions are extendable provided that the application is made within the five year period prior to the expiry of the concession and the bi-annual fee and work requirements are in good standing.

The semi-annual fees are based on a number of factors. Prior to January 2006, exploration and exploitation mineral concessions had two different fees based on the type of mineral concession and the amount of time since they were issued. After January 2006, in accordance with the 2005 changes in the mining laws, a single fee per hectare was implemented, at a rate which escalates based on the age of the title.

Animas anticipates having to pay approximately a total of 1,953,432 Mexican pesos in 2009 to keep the properties in good standing (that represents US$142,810 as of April 28, 2009).

All mineral concessions must have their boundaries orientated astronomically north-south and east-west and the lengths of the sides must be one hundred meters or multiples thereof, except where these conditions cannot be satisfied because they border on other mineral concessions. The locations of the concessions are determined on the basis of a fixed point on the land, called the starting point, which is either linked to the perimeter of the concession or located thereupon. Prior to being granted the concession by the DGM, the company must present a topographic survey to the DGM within 60 days of staking. Once this is completed the DGM will usually grant the concession.

4.3 Nature of Animas' Interest

Of the 53 concessions that comprise the Santa Gertrudis property, Animas has a 100% interest in 36 concessions. These concessions are controlled by Animas through its wholly owned subsidiaries, Chuqui, First Silver and Recursos Escondidos. The remaining 17 concessions are subject to four separate option agreements pursuant to which Animas may earn a 100% interest in the concessions that are the subject of the applicable option agreements.

The authors of this report have been advised that the Santa Gertrudis property is not subject to any third-party royalty payments. All historic royalties have been acquired by Animas. Further, the authors of this report have been advised that there are no back-in rights, payments or other agreements (other than as previously described) and encumbrances to which the property is subject.

4.3.1 Option agreements

The following is a summary of the four option agreements and the remaining option payments that must be made to the individual optionors in order for Animas to earn its 100% interest in the remaining concessions:

Lopez-Limon Option Agreement

Animas signed an option agreement on June 1, 2007 to purchase 10 mineral claims (185883, 219219, 195368, 218137, 218138, 219096, 219095, 221737, 222689, and 222690) in the Santa Gertrudis property at any time on or before June 1, 2011. In April 2009, Animas amended the option agreement as follows:

	Amount (US$)	
June 1, 2007	$ 50,000	Paid
December 1, 2007	75,000	Paid
June 1, 2008	75,000	Paid
December 1, 2008	150,000	Paid
June 1, 2009	30,000	
December 1, 2009	30,000	
June 1, 2010	190,000	
December 1, 2010	250,000	
June 1, 2011	600,000	
December 1, 2011	700,000	
Total	$ 2,150,000	

Victor Juvera Option Agreement

On December 26, 2008, Animas and Victor Juvera amended its original agreement signed on July 24, 2007 to purchase three mineral claims (216066, 191734, and 195805) in the Santa Gertrudis property by making the following cash and share payments:

Amount in cash or common shares at the discretion of the Company

	Amount in cash (US$)		Amount in Animas common shares (US$)	
At signing	$ 25,000	Cash Paid	$ 20,000	Issued
July 24, 2008	25,000	Cash paid	25,000	Issued
January 24, 2009	65,000	Shares issued	-	
July 24, 2009	77,500		-	
January 24, 2010	90,000		-	
July 24, 2010	100,000		-	
January 24, 2011	110,000		-	
July 24, 2011	127,500		-	
January 24, 2012	135,000		-	
July 24, 2012	150,000		-	
Total	$ 905,000		$ 45,000	

Albelais Varela Option Agreement

On August 13, 2007, Animas signed an option agreement with Agustin Albelais to purchase two mineral claims (191263, 191900) in the Santa Gertrudis property by making the following cash payments:

	Amount in cash (US$)	
August 13,2007	$ 20,000	Paid
August 13, 2008	20,000	Paid
February 13, 2009	20,000	Paid
August 13, 2009	20,000	
February 13, 2010	20,000	
August 13, 2010	20,000	
February 13, 2011	20,000	
August 13, 2011	20,000	
February 13, 2012	20,000	
August 13, 2012	20,000	
Final option payment	20,000	
Total	$ 220,000	

Minera Lixivian Option Agreement

On October 15, 2008, Animas signed an option agreement with Minera Lixivian, S.A. de C.V. to purchase two internal concessions (182549 and 190480) within the Santa Gertrudis property by making the following cash and share payments:

	Amount in cash (US$)		Amount in Animas common shares (US$)	
October 15, 2008	$ 165,000	Paid	$ 228,000	Issued
April 15, 2009	165,000	Paid		
October 15, 2009	62,000			
April 15, 2010	30,000			
Total	$ 422,000		$ 228,000	

4.3.2 Surface Agreements

Animas and its Mexican subsidiaries have entered into a series of land access agreements with the local *ejido* and the various land owners who have the surface rights to the land that comprises the Santa Gertrudis property. Animas' Mexican legal counsel reviewed all of these land access agreements; however, they have not provided any opinions with respect to the validity or enforceability of such agreements. Animas advised the authors of this report that they believe they have all necessary access agreements in place to conduct the required work on the property.

4.4 Environmental Issues

The information in Section 4.4 has been provided to the authors of this report by Animas, and personnel working on behalf of Animas, and is included herein to fulfill reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101. MDA and the authors are not qualified to assess the validity of the information in this section and therefore the authors present the information with no opinion.

An environmental report has been prepared by Consultores Asociados (2009) from Hermosillo, Mexico which addresses the current permitting and environmental status of the Santa Gertrudis property. This report is attached as Appendix B. The environmental report is the basis for the information presented in Section 4.4.1, 4.4.2, and 4.4.3. Animas provided the authors of this report with their judgment on the environmental status of the property.

4.4.1 Permitting

The Consultores Asociados (2009) report indicates that Animas has an environmental permit to drill 25 holes with a total length of 4,250m. This permit expires on July 8, 2009. A water concession permit is in place until January 12, 2012. Prior to a mine being put into production, Animas will need to file an Environmental Impact Statement or an Environmental Risk Study and a Technical Study to justify Land Use Change.

4.4.2 Environmental Liabilities

Animas has advised the authors of this report that there are no known current environmental liabilities associated with the Santa Gertrudis property.

First Silver and Recursos Escondidos, the registered holders of the Santa Gertrudis and Roca Roja claims, respectively, each received certifications from the environmental authorities dated March 27, 2009 to the effect that they have no environmental liabilities derived from inspection procedures against both companies started in 2002 and 2003 and which were closed in 2006. Chuqui has not received a similar certificate; however, Animas is not aware of any environmental liabilities either historic or current that relate to the concessions held by Chuqui.

4.4.3 Reclamation Obligations

Animas states that a reclamation obligation will arise upon the abandonment of the project or transfer of the concessions. The reader is referred to the Consultores Asociados (2009) report (Appendix B; pages 2 and 3) for additional information on this reclamation obligation. MDA does not have an opinion nor will make any judgment as to the full details or current status of this reclamation obligation.

In reference to future mining, Animas states that while specific reclamation obligations will be set by the environmental authorities upon permitting, they typically include removal of all structures, neutralizing the leach pads, stabilizing and re-planting the leach pad slopes, stabilizing the pit benches and slopes and revegetating roads and other areas that will have no future use.

4.5 Water Rights

The waters rights, held in the name of First Silver Reserve, S.A de C.V., cover three capped wells located approximately 3km west-southwest from the Santa Gertrudis project field office (see Figure 5.1) in the quebrada of the Ejido 6 de Enero. These rights are for mining and exploration needs. Environmental testing of the water quality by A.L.S. Indequim S.A. de C. V. (part of ALS Laboraory Group) in Monterrey, Mexico confirms that the water is of acceptable quality.

4.6 Socio Economic Impacts

There are no known socio-economic issues in the area (McKelvey, written comm., 2009). The area is largely made up of private cattle ranching with limited access and no through-going roads past the historic mined areas and ranches.

The Santa Gertrudis property historic mines and current prospects are located 40km from Magdalena del Kino, Sonora State, Mexico; a stable source of skilled workers and supplies. Previous mining in the district by Phelps Dodge, Campbell, and Roca Roja, used available local labor.

There are no operating mining operations within or adjacent to the current Animas-controlled concessions. The local economy is dominated by cattle ranching by private ranch owners and the Ejido 6 de Enero.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The following information is based on Hamilton (2003), Wallis (2006) and Kern and Sibthorpe (2007).

Access to the Santa Gertrudis project is via a 39km gravel road which branches off the paved Magdalena-Cucurpe Highway, about 23km southeast of Magdalena de Kino. Ranch, exploration and ore-haulage roads provide excellent access throughout the property.

The property is located in the Basin and Range physiographic province, in an area characterized by wide, alluvium-filled basins and north-trending ranges. Elevations on the property vary from 1200 to 1700m, with gently rolling topography in the south and more deeply incised topography in the north.

Summers are hot and winters are cool; the nearest weather station at Cananea reports an average yearly temperature of 18^{o}C, with an average high of 34^{o}C in July and an average low of 1^{o}C in December and January. The rainy season is in July and August, and often there are flash floods in the *arroyos*. Average precipitation amounts to 55cm per year. Snow may accumulate during the winter months, but usually melts in a few hours. The project can be operated year around.

The climate is semi-arid desert and the local vegetation is predominantly grassland, various types of cacti, and scattered black oak, mesquite and other shrubs and bushes. Pine trees locally grow at the higher elevations. The land is used primarily for grazing cattle.

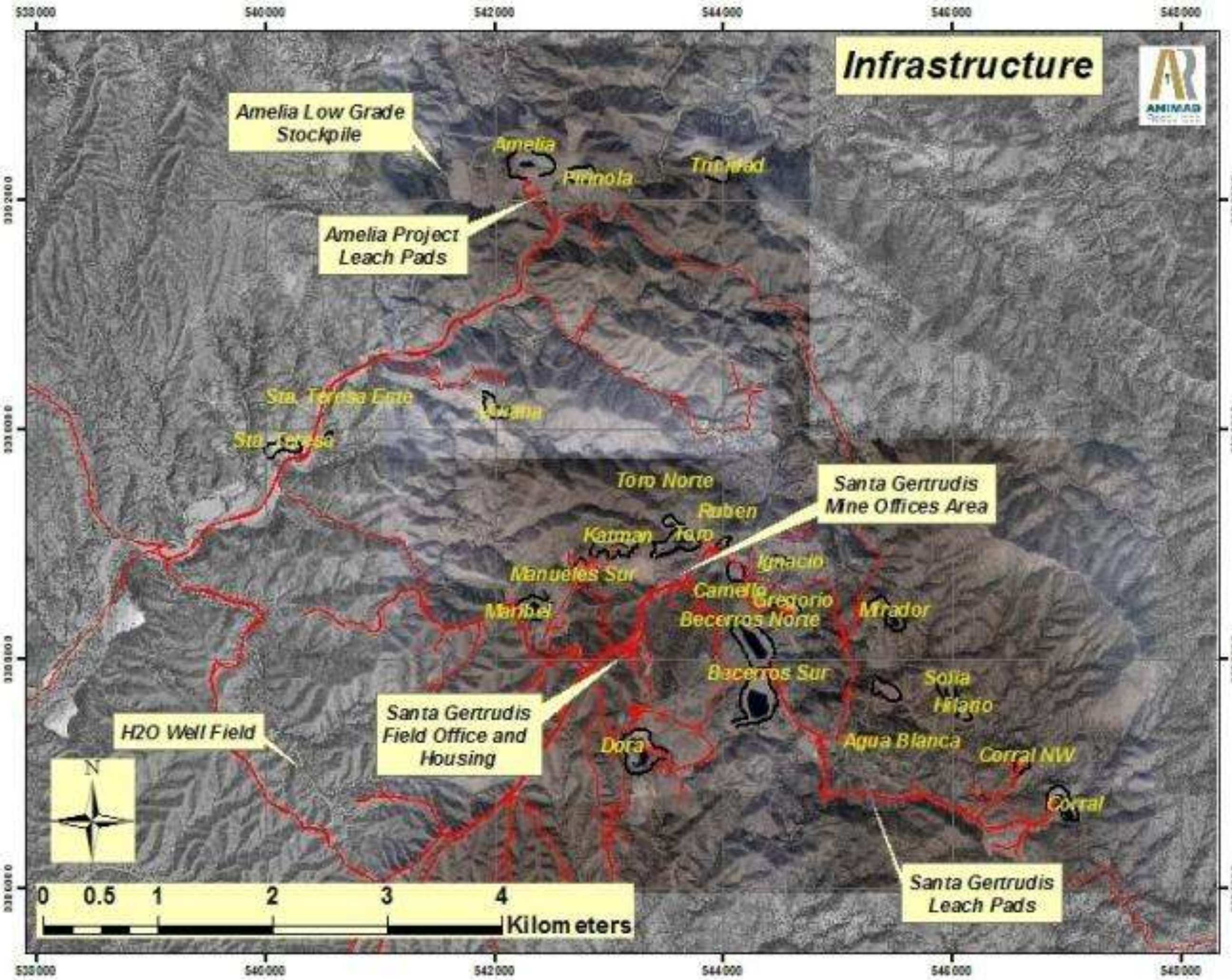
Past open-pit mining, conducted by previous operators between 1991 and 2000, had been from numerous deposits located primarily in the north-central portion of the project area. At the present time, the surface has water-filled historic-mined pits, waste piles (most have been recontoured) and a lined, zero-discharge historic leach pad at Santa Gertrudis and two lined pads near Amelia (G. E. McKelvey, written comm., Jan 2009).

The service and accommodation buildings that had been used by previous operators had fallen into disrepair by the time that Animas acquired the property. According to Kern and Sibthorpe (2007) these have been weather-proofed and basic services and furnishings restored. The camp water tank has been filled, drill sample handling facilities built and standard office machinery acquired. Trash has been removed. The old residence area is now serviceable to be used as an exploration camp, with residences, an office and a dining hall (G. E. McKelvey, written comm., Jan 2009).

The closest town for supplies is Magdalena, where fuel and general supplies are available. The town would also be the source of employees for an operation, but skilled labor is available at the nearby major mining town of Cananea.

According to G. E. McKelvey (written comm., Jan 2009), there is sufficient land to conduct a mining operation, including waste disposal, processing facilities, and pads for heap leaching. The source of power would be either a local generator or extending a power line 20km to the camp. Water could be obtained from the permitted water wells owned by First Silver Reserves and shown on Figure 5.1.

Figure 5.1 Historic Mine Locations and Infrastructure



6.0 HISTORY

There is no specific information available concerning pre-1980's exploration or production in the Santa Teresa mining district before Phelps Dodge Mining Company ("Phelps Dodge") became involved in the property. Phelps Dodge (1988) reports that small-scale lode and placer mining sporadically occurred in the district for many years previous to their involvement in the property. Limited amounts of copper-silver ore were mined from scattered workings and minor lode gold was mined from the old Santa Gertrudis and El Espiritu mines. Placer gold workings occur in the southern portion of the district.

Phelps Dodge exploration personnel first visited the Amelia mine in May 1984. They were alerted to the property when a local prospector began making periodic shipments of silica flux, grading 13.4g Au/t, to the Phelps Dodge smelter in Douglas, Arizona. At the time of the property examination, local miners were operating small mines at Amelia, Carmen, and Maribel. Ore was shipped to smelters in Mexico (Cananea and Sonora) and the United States (Douglas, Arizona) as gold-bearing silica flux. Approximately 23,000 tonnes averaging 13.4g Au/t were shipped from the Amelia mine to the Douglas smelter and about 5,000 tonnes averaging 8g Au/t were shipped from the Maribel mine. Phelps Dodge (1988) reported that both mining operations later switched to heap leaching and on-site recovery of gold.

Exploration began in 1984 and Phelps Dodge identified several sedimentary-rock-hosted gold occurrences throughout the district. Phelps Dodge developed the Santa Gertrudis mine and produced gold from 1991 to 1994. The operation was initially a 2,000tpd heap leach with metal recovery by CIC adsorption, stripping, and Merrill Crowe zinc precipitation of precious metals from the strip liquor. Precipitates were shipped to the Phelps Dodge refinery at El Paso, TX (pers. comm., J. Hanks, 2009). The property was sold to Campbell Red Lake Resources Inc ("Campbell"), who continued to mine until 2000. The nearby Amelia mine was operated by Minera Roca Roja, S.A. de C.V. ("Minera Roca Roja"), reported to be a subsidiary of Walhalla Mining Company NL of Australia, until it also came under the control of Campbell in 1999.

According to Anderson and Hamilton (2000) "*In the Santa Teresa mining district, between 1991 and 2000, in excess of 564,000 ounces were mined from 8.244 million tonnes of ore grading 2.13g Au/t in 22 sedimentary-rock hosted, disseminated-gold deposits.*" Anderson and Hamilton (2000) includes estimated production from the Amelia mine and because of this, the above statement implies more accuracy than exists.

Campbell declared bankruptcy and ceased operations at Santa Gertrudis in 2000 and through a series of transactions the property was again divided, with the López-Limón concessions under the control of Sonora Copper LLC and the remainder of the property under the control of Sonora Gold Corporation. The two groups of claims were consolidated again by Animas in 2007.

Figure 5.1 shows the locations of mines and different prospect areas within the current Animas property (see Section 2.2 for compilation list of various prospects, mines, etc). Section 6.0 is a compilation of available historic information and MDA has no way to verify the reported information nor does MDA warrant that all these data can be relied upon. The information presented here is a summary to give the reader a sense of the history of the project. Different owners have reported on the portion of the property they controlled at the time, but these subsets of data do not necessarily make a complete description of the entire project as it now exists. Details from the reports were minimized here to alleviate confusion as contradictory information exists in some reports.

6.1 Property History

6.1.1 Phelps Dodge Mining Company History

Phelps Dodge Mining Company ("Phelps Dodge") was the first major exploration company to recognize the importance of the Santa Teresa mining district. In 1984, Phelps Dodge, through their Mexican subsidiary Compañia Minera Zapata S. de R.L. de C.V. ("Zapata"), staked claims encompassing 2010.85ha. Using a Carlin-type, sedimentary-rock-hosted, disseminated-gold model as a guide, Zapata completed soil and *arroyo* sediment sampling, induced polarization surveys and both reverse circulation and diamond drilling. An initial discovery was made in 1986 and an open pit mine feasibility study was completed in 1988. Phelps Dodge staked additional concessions in the district and these were held by two other Mexican subsidiary companies: Minera Tubac S.A. de C.V. ("Tubac") and Minera Palo Verde S.A. de C.V. ("Palo Verde").

The Zapata concessions covering the mining area were transferred by Phelps Dodge to an operating company, Minera Santa Gertrudis, and mining commenced at the Santa Gertrudis mine in 1991. Minera Santa Gertrudis was a 49/51joint venture between Phelps Dodge and Grupo Aristegui. Under Mexican law at the time, foreign companies could not have majority ownership so Grupo Aristegui, a consortium of Mexican investors, was formed to serve as majority owner of Minera Santa Gertrudis. Initially, production was 2,000tpd and was increased to 2,750tpd in an open pit, heap-leach operation exploiting oxide ore. Production was from seven deposits: Agua Blanca, Becerros Norte, Becerros Sur, El Corral, Gregorio, Hilario and El Toro (Phelps Dodge, 1988).

According to Strathcona Mineral Services Limited ("Strathcona"), three million tonnes of ore were mined with an average grade of 2.0g Au/t. From this 4300kg of gold was recovered by heap leaching for a cumulative recovery of approximately 70% (Thalenhorst, 1994). This would result in total recovered gold for Phelps Dodge at the Santa Gertrudis mine of approximately 138,000oz.

6.1.2 Amelia Mine History

During this same period, and until 1998, various operators, including Minera Roca Roja, mined on a small-scale at the Amelia mine, approximately 4.5km north-northwest of the Santa Gertrudis mine. Gold production was from four pits (Amelia, Pirinola, Viviana, Santa Teresa), using an on-off leach pad system. Minor underground mining occurred at Amelia and Pirinola (G. E. McKelvey, written comm., 2009). Anderson (2000) reports the production from 1991 through July 2000 from these four deposits as 1.06 million tonnes grading 2.88g Au/t for a total of 98,483 ounces of gold mined, but his source of information is not referenced (Note that this is mined ounces, not recovered ounces, and only since 1991. Production dates to at least 1984). Hamilton (2003) reports "Production figures from the Roca Roja property are not well documented, but past production is estimated to approximate 100,000 ounces of gold, before suspension of mining by Minera Roca Roja in 1998."

6.1.3 Campbell Resources Inc History

In 1994, Campbell Resources Inc, through its Mexican subsidiary Oro de Sotula, S. A. de C. V. ("Oro de Sotula"), purchased all of Phelps Dodge's assets within the Santa Teresa mining district, including the Santa Gertrudis mine and the Minera Tubac and Minera Palo Verde land holdings. A second Mexican subsidiary, First Silver Reserve S. A. de C. V. ("First Silver"), was formed by Campbell to handle the exploration properties while Oro de Sotula remained the operating company.

Campbell continued to mine oxide ore at the Santa Gertrudis mine at a rate of 3000tpd from 1994 until late 1997 and then on a smaller scale from late 1999 until October 2000. Hamilton (2003) states that "the Santa Gertrudis mine-site has produced 332,000 ounces of gold since 1991." This would include production by Phelps Dodge and Campbell.

In May 1999, Campbell bought the adjacent Roca Roja property, including the past-producing Amelia mine (Hamilton, 2003). Campbell formed another Mexican subsidiary, Recursos Escondidos, S. A. de C. V. ("Recursos Escondidos"), to hold the Roca Roja properties. By 2000, Campbell held 62 claims covering 27,030.3ha (Hamilton, 2003).

As reported by Hamilton (2003), Campbell carried out a systematic exploration program from 1994 to November 2000, spending a total of ~$11,000,000 (see Section 6.2). Details of Campbell's drill program can be found in Section 11.3.

In December 2000, Campbell transferred three claims, the Los Manueles, the Maribel and the Fraction 4-Agua Blanca to two former employees of the company, Ignacio Limón and Francisco López. These claims, which are often referred to as the Limón-López concessions, cover the Maribel and Katman pits as well as the Cristina deposit. In 2001 and 2002 Campbell dropped or cancelled option agreements on a series of claims, and by January 2002 the +27,000ha property was reduced to 24 claims covering 6461.24ha (Hamilton, 2003). This remaining group of claims included the original Santa Gertrudis mine property, the Greta property and the San Enrique property, all held by First Silver, and the Roca Roja claims (Amelia mine) held by Recursos Escondidos.

6.1.4 Queenstake Resources Ltd History

Campbell stopped both production and exploration on the Santa Gertrudis mine in October 2000 and in January 2002 Queenstake Resources Ltd ("Queenstake") exercised its option to acquire all of the shares of Oro De Sotula, which included First Silver, from Campbell. Queenstake carried out remedial work on the site, but did not undertake any exploration (Hamilton, 2003). Queenstake re-sold the property in November 2002 to International Coromandel Ltd., the predecessor company to Sonora Gold Corporation (Kern and Sibthorpe, 2007).

6.1.5 Sonora Gold Corporation History

In 2002, Sonora Gold Corporation ("Sonora Gold") (originally International Coromandel Ltd.) acquired many of the claims originally controlled by Campbell. This included the First Silver holdings covering the Santa Gertrudis mine property (7 claims over the Santa Gertrudis mine), the Greta property (two claims) and the San Enrique property (four claims), and the Recursos Escondidos holdings covering the

Roca Roja property (Amelia mine). The Santa Gertrudis property and the Roca Roja ground formed a block of 18 contiguous claims while the Greta and San Enrique claims, located to the southeast and south, respectively, were not contiguous with the first group or each other. Sonora Gold did not control the Limón-López concessions.

After acquisition in 2002, Sonora Gold completed an exploration program of drilling, surface sampling, and data review as detailed in Sections 6.2, 6.3, and 11.5.

6.1.6 Minera Teck Cominco, S.A. de C.V. History

In June 2005 the San Enrique property and the Greta property were optioned by Sonora Gold to Minera Teck Cominco ("Teck") (Kern and Sibthorpe, 2005; Hernández, 2007; Barboza, 2007; Smith, 2006). Teck held the property through 2007, and completed several exploration campaigns that included geologic mapping, surface rock chip and soil sampling, IP surveys and drilling. Teck drilled nine holes on San Enrique to test a molybdenum-copper target. Teck discontinued their option in mid-2007.

6.1.7 Sonora Copper LLC History

In 2006, the López-Limón concessions, now totaling 10 claims, were optioned to Sonora Copper LLC ("Sonora Copper") through their subsidiary Compañia Minera Chuqui S.A. de C.V. ("Chuqui"). Later, Chuqui staked four additional claims, for a total of 28,489ha (Wallis, 2007).

Sonora Copper, through Chuqui, conducted no exploration on their claims, other than taking five grab samples for analysis in 2005 (Wallis, 2007). An additional ten samples were collected for the purpose of metallurgical testing; four dump samples of approximately 30lbs each in early 2006 and then in April 2006, an additional six samples (Wallis, 2007). This work is discussed in Section 16.0 Mineral Processing and Metallurgical Testing.

Additionally, in conjunction with Sonora Gold, Chuqui did some data recovery and mapping, reporting, camp restoration and general data compilation (Kern and Sibthorpe, 2005).

6.1.8 Deal Capital Ltd History

Deal Capital Ltd ("Deal") signed a Letter of Intent dated February 13, 2007, to acquire from Sonora Copper all the issued shares of Chuqui in the Santa Teresa mining district (Wallis, 2007) and a letter of intent with Sonora Gold for their properties in the Santa Teresa district. Deal acquired private data sets, and began on-site data processing (Kern and Sibthorpe, 2005). Deal Capital Ltd, in July 2007, changed its name to Animas Resources Ltd. Animas's work since that time is the subject of this report.

6.2 Historic Exploration

6.2.1 Phelps Dodge Exploration (1984-1994)

Phelps Dodge began exploration in 1984 though only limited internal documentation, besides the original drill logs and cross-sections, exists describing their work. Several post-Phelps Dodge reports discuss Phelps Dodge exploration, mainly pertaining to the López-Limón concessions, but none of them present a comprehensive history. The information that follows is admittedly an incomplete account of Phelps Dodge's work.

The Phelps Dodge (1988) mine feasibility study reported that over 16,500m of diamond drilling was completed through June 1988. The drilling was concentrated in those deposits that were open-pit mined in the early 1990's while a number of other targets were also tested. There is no mention within the feasibility study of any reverse circulation drilling completed by Phelps Dodge up through June 1988. [The current Animas database indicates that just 15 reverse circulation holes for 2,181m were completed by Phelps Dodge through June 1988.]

There are no known comprehensive Phelps Dodge reports concerning the post-1988 exploration programs. Rodriguez and Lopez (1992a, 1992b) reported on the exploration and drilling results for the Cristina and Dora deposits, respectively, while a Zapata annual report by Rodriguez-Barraza, et. al., (1994) reported on district-wide exploration completed in 1993. The latter report stated that year 2003 drilling totaled 274 RC holes for 25,122m and two core holes for 704m.

Wallis (2006) reporting on the López-Limón property describes the following work:

> *Work on the Dora area by Phelps Dodge included soil geochemistry, one line of dipole-dipole induced polarization, 85 reverse circulation holes totaling 11,781m, and two diamond drill holes totaling 290m. Work on the Cristina area by Phelps Dodge included seven lines of induced polarization, soil geochemistry, 56 reverse circulation holes totaling 6,173m, and nine diamond drill holes totaling 904m. Drill hole samples taken by Phelps Dodge were on one-metre intervals. Trench samples were usually taken on two-metre to three-metre intervals. The core was stored on site.*

Reynolds (written communication, 2009) reports that the Phelps Dodge geophysical work at Dora consisted of three lines of induced polarization ("IP"), one with 300m-spaced dipoles oriented northwest/southeast and two orthogonal line with 100m-spaced dipoles oriented northwest/southeast and northeast/southwest. Phelps Dodge's work at Cristina consisted of two lines of 300m-spaced dipoles oriented northwest/southeast and north/south.

Phelps Dodge carried out reconnaissance soil sampling and arroyo sediment sampling over several parts of their property. The soil survey was conducted by collecting samples at 100m intervals along 200m-spaced lines. The precise methodology of the arroyo sediment sampling survey is not known (Hamilton, 2003).

Durango Geophysical Operations ("Durango") (2009a) describes the Phelps Dodge geophysical exploration program as follows: "The IP and orientation surveys (ground Total Field magnetics and VLF-EM programs) were run under the direction of Anthony M. Hauck, III, Chief Geophysicist for Phelps Dodge Mining Company (PD) and their Mexican subsidiaries, Compania Minera Zapata and Compania Minera Santa Gertrudis." The Phelps Dodge IP surveys began in late 1988 and 1990 and these early programs, run by Sr. Luis Ortiz Herrera, Hermosillo, Sonora, consisted of 50m detail investigations of the Maribel and Manueles Sur areas in 1988 and 300m reconnaissance dipole-dipole survey lines run along the main Santa Gertrudis trend in 1990. The 300m and 100m dipole-dipole IP surveys were run by BAR GEOphysics, Englewood, Colorado, during 1992. A combined BAR

GEOphysics and Phelps Dodge crew continued the 300m reconnaissance and 100m detail program in the fall of 1993. Detailed descriptions and evaluations of this exploration program can be found in the complete text of the Durango (2009a) reference which has been included in Appendix C.

The data compilation work completed by Animas indicates a total of 814 holes for 90,131m had been drilled by Phelps Dodge from 1986 through 1994. This includes 538 reverse circulation ("RC") holes for 62,219m and 276 diamond core ("core") holes for 27,912m. The database also includes 107 holes (36 RC and 71 core) totaling over 11,000m that cannot be attributed at this time to a specific company but it is believed that most of these holes were likely drilled by Phelps Dodge. The Phelps Dodge drilling was concentrated in those areas that were open-pit mined but additional exploration areas were also targeted. Target information within the database indicates 27 specific areas drilled by Phelps Dodge.

6.2.2 Minera Roca Roja (Amelia mine) Exploration (1989-1998)

According to McKelvey (written comm., 2009), Minera Roca Roja completed extensive geologic mapping, surface sampling and drilling at the Amelia mine between 1989 and 1998.

Campbell examined the property as part of an evaluation when a purchase was being considered (Kachmar, 1998). Six prospects were assessed and evidence of trench sampling and about 30 drill holes on those prospects were noted. He also noted poor record-keeping on the part of Minera Roca Roja. Hamilton (1998) states that there is evidence that close to 200 holes were drilled by Minera Roca Roja.

Animas has digital data, including collar, down-hole survey and assay data, for 40 Roca Roja ("RR") holes. The data indicate a very tight spacing (5m-10m) between holes that are 50m to 120m in depth. The collar coordinates are in a local grid that is not correlative with the historic local grids on the adjacent Santa Gertrudis property nor is any information (drill logs, plan maps or reports) available to MDA or Animas which allows these holes to be correctly located. None of the Roca Roja holes have been added to the current Animas database. Animas is continuing to locate and compile additional data pertaining to the Minera Roca Roja ground with the goal of adding this information into the project database.

6.2.3 Campbell Resources Exploration (1994-2000)

According to Hamilton (2003), between 1994 and November 2000, Campbell's exploration program expenditures totaled $13,180,000. As detailed by Hamilton (2003), Campbell completed the following exploration work:

- The geology was mapped on a regional-scale (1:5,000 or 1:10,000).

- Soil geochemical surveying was done on a reconnaissance-scale followed by more detailed infill sampling. There were over 21,000 samples collected and analyzed for gold, mercury and numerous trace elements. Samples were collected at 100m spacing, and in-fill samples were taken at 50m and 25m spacing to follow-up anomalous areas.

- Airborne magnetic, electromagnetic, and radiometric geophysical surveys were conducted. The magnetic survey (1,950 line-kilometers) was completed by High Sense Geophysics in 1995, and further magnetic, electromagnetic and radiometric surveys (3,474 line-kilometers) were flown over the entire property by Aerodat in 1996 and 1997 (Johnston, 1996; Durango, 2009a). Detailed descriptions and evaluations of these exploration programs can be found in the complete text of Durango (2009a) which has been included in Appendix C.

- Detailed mapping, sampling and drilling was concentrated on specific targets. There were over 34,000 rock samples; 98,620m of reverse-circulation drilling in 1,017 holes; and 21,122m of diamond drilling in 225 holes. (The current Animas database has totals for the Campbell drilling that closely approximate, but are not exactly the same as the numbers reported by Hamilton (2003). See Sections 6.3.3 and 11.0 for more details).

- Trench mapping and sampling was done on several targets. A rigorous channel sampling protocol controlling sample width, length and depth was followed to minimize sampling variance.

As stated in Hamilton (2003), approximately $2 million of Campbell's total expenditures was for reserve-definition and condemnation drilling, mine planning, and metallurgical testing. The reserve-definition and condemnation drilling totaled approximately 23,500m of reverse-circulation drilling and 6,000m of diamond drilling. (This drilling is included in the total reverse-circulation and diamond drilling figures stated in item 4 above).

Along with the work noted in the Hamilton (2003) report, a petrographic report on the Cristina mineralization was completed for Oro de Sotula by an outside consultant (Segura, 1995).

Hamilton (2003) discussed the results of Campbell's exploration work and the subsequent development of targets categorized by whether they have near-surface, oxide or deep, sulfide, high-grade gold potential. A summary of these two target types follows:

Near-Surface, Oxide Gold Mineralization Targets: The principal targets for near-surface, oxide gold mineralization were La Eme, Samuel, Viviana NE and San Enrique. The first three are located 1 to 2kms west and south of the Amelia mine, and were believed to be extensions or structural off-sets of the main Amelia mineralized zone or had similar alteration/structural characteristics. The targets had anomalous surface geochemistry (Au, As, Sb, and Hg) with rock and trench samples that ranged up to 19g Au/t. Campbell drilled two reverse circulation holes in both the Samuel and Viviana NE targets in 2000; only weakly anomalous gold mineralization was encountered.

The San Enrique target is within the southern portion of the concessions about 6.5kms south of the Santa Gertrudis mine. The target is delineated by an approximately 4km diameter soil geochemical anomaly, defined by highly elevated Au, Ag, Cu, Mo, and Zn, situated over a broad, domal structure cored by shallowly dipping limestone, calcareous siltstone, and sandstone. These rocks contain pervasive ductile deformation structures, regional hornfels alteration, and have been intruded by various intrusive phases including a granitic pluton, dikes and sills ranging from diorite through granite, and abundant lamprophyre (Hamilton, 2003). Campbell drilled two reverse circulation holes in the northeast margin of the San Enrique target in 1998. Both encountered anomalous Au, Cu and Zn, but the only significant gold value was 2.108g Au/t over 1.5m from 88.5m to 90.0m (down hole depth). No additional holes were completed, due to a dispute with the local surface-rights owner (Hamilton, 2003).

Deep, High-Grade Gold Mineralization Targets: Based on Campbell's work, Hamilton (2003) believed that several targets for deep, sulfide ± oxide, high-grade gold mineralization existed on the Santa Gertrudis property. Seven deep drill holes (>300m) had been drilled on the property by Phelps Dodge, Minera Roca Roja, and Campbell. Although they were all essentially negative from the standpoint of significant gold mineralization, one hole drilled near the Manueles Sur deposit intersected a 53.04m interval with moderate silicification and pervasive disseminated pyrite. Hamilton (2003) described this alteration as similar to what is seen in the lower portion of the Dora pit, and also similar to that described in deep, high-grade gold deposits along the Carlin trend (e.g., Teal and Jackson, 1997).

Based on this potential for high-angle feeder structures, Hamilton (2003) proposed targets for exploration based on a combination of favorable geology, geophysics and geochemistry. In particular, the Greta and Amelia areas were selected based on the "*down-plunge projection of favorable structural intersections between high-angle feeder structures, favorable stratigraphic units, and the peripheries of shallow buried intrusions*".

Later reports by Kern and Sibthorpe (2005 and 2007) also noted the association of intrusives and Carlin-like gold deposits at Santa Gertrudis, and made an argument that exploration was warranted for deep, high-grade gold mineralization.

6.2.4 Sonora Gold Exploration (2002-2007)

Sonora Gold acquired the Santa Gertrudis property in 2002 and began an extensive program which included preliminary studies in preparation for future mining. Their exploration was concentrated on the near-surface, oxidized gold mineralization. The list below was compiled from Hamilton (2003), Kern and Sibthorpe (2005), and Kern and Sibthorpe, (2007) and summarizes Sonora Gold's exploration work:

- Drilled a total of 16 reverse-circulation drill holes on the La Eme, Amelia #5, and El Tascalito targets.
- Negotiated and received surface access rights to the San Enrique claims, a block of four claims covering 1,800ha located 5km southwest of the main Santa Gertrudis property.
- Completed 5.5km of road building and 3,420m of trenching at San Enrique with back-hoe and bulldozers, took 583 samples from surface exposures and trenches, and submitted these for gold, silver and ICP analyses.
- Completed the 100m-spaced soil sample survey over the entire San Enrique claim block, for 321 additional samples.

- Drilled 1,995.6m of NQ core in 16 holes (1,434 core samples) at the San Enrique copper-molybdenite prospect; holes located based on geological mapping and prospecting, soil and rock geochemistry, and airborne geophysical data interpretation.

- Completed a percussion drill program at the Ontario Zone; 105 holes drilled totaling 1,050m with 1,050 samples submitted for assay; metallurgical testing on ore-grade material.

- Retrieved, compiled and inventoried all mine and exploration data.

- Completed an environmental program to ensure compliance with governmental requirements regarding past mining activities.

- Conducted a preliminary review of the historic resource inventory at Santa Gertrudis for possible resumption of mining operations.

- Engaged a general contractor for operations including an ore reserve study (using GEMCOM mining software) and cost estimates.

- Conducted studies regarding processing equipment acquisition and costs and conducted specific metallurgical work.

- Made repairs to the main camp buildings and key operational structures.

- Initiated and completed an Environmental Impact Study in 2004 by Ing. Carlos Becerra.

- Opened a corporate office in Hermosillo, Mexico and retained new legal, accounting and land management services, discharged all land fees and taxes pertaining to the property.

- Established survey points and carried out trenching and sampling in pit bottoms to provide input for GEMCOM study.

Kern and Sibthrope (2005) discuss the general exploration potential in the district and also Sonora Gold's specific exploration work. They point out that in addition to sedimentary-rock-hosted gold deposits, gold occurs in the Santa Teresa mining district in porphyry, skarn, vein, distal-disseminated, low-sulfidation epithermal, and placer deposits (Bennett, 1993; Alaya and Clark, 1998). The Sonora Gold exploration focused on some of the near-surface, oxidized gold targets developed by Campbell (as discussed in Section 6.2.3). It is not know if Sonora Gold completed any work on the deep, high-grade targets.

The Sonora Gold exploration at San Enrique consisted of a program of trenching over the prominent Au, Ag, Cu, Mo, and Zn soil anomalies delineated by Campbell followed with drilling directed at the metal-bearing structures exposed in the trenches. Kern and Sibthorpe (2005) state that "*the sampling from the trenches and roadcuts reflected the metal values obtained from the 100m-spaced soil sampling program. Trench values were very geochemically anomalous and typically higher than corresponding soil sample values, but relatively few high individual values were obtained. The trenching program did provide rock* *exposures permitting determination of locations and attitudes of through-going mineralized structures."* Kern and Sibthorpe (2005) does not provide actual metal values so it is not known what is meant by "very geochemically anomalous" or "high individual values". The results of the 16 core holes indicated that compared with the Carlin-like deposits found to the north, San Enrique displays more silicification and higher grade metamorphism. The mineralization is characterized by widespread base metals and sulfides, as disseminations and veinlets in hornfels and diorite host rock (Sonora Gold press release, 2005 and Kern and Sibthorpe, 2005).

In 2005, Sonora Gold optioned the San Enrique area to Minera Teck Cominco

6.2.5 Sonora Copper LLC Exploration (2005-2007)

Sonora Copper, through Chuqui, conducted no exploration on their claims, other than taking five grab samples for analysis in 2005 while evaluating the property for acquisition (Wallis, 2007). Ten samples were collected for metallurgical testing; four dump samples of approximately 30lbs each in early 2006 and then in April 2006, an additional six samples (Wallis, 2007).

In conjunction with Sonora Gold, Chuqui completed some data recovery and mapping, reporting, camp restoration and general data compilation (Kern and Sibthorpe, 2005).

6.2.6 Minera Teck Cominco Exploration (2005-2007)

Teck optioned the San Enrique and Greta properties from Sonora Gold from 2005 through 2007 (Kern and Sibthorpe, 2005; Hernández, 2007; Barboza, 2007; Durango, 2008b, 2009a). They considered the San Enrique area a copper-molybdenum target and analyzed their samples for Cu, Mo, Au, and Zn (Sonora Gold Corp, 2006).

Teck completed the following exploration programs:

- geologic mapping of the entire property at 1:2500,
- detailed geological/structural/alteration study (Smith, 2006),
- collecting and analyzing on the order of 700 rock chip samples,
- soil sampling,
- an IP survey using 100m pole-dipole (23.3 line-km) over the San Enrique prospect,
- four reverse circulation drill holes at San Enrique (RCSE-001 to RCSE-004) for a total of 1,198m, and
- five diamond drill holes at San Enrique (DSE-001 to DSE-005) for a total of 1,217m.

Detailed descriptions and an evaluation of the Teck geophysics exploration program can be found in Durango (2008b, 2009a). The Durango (2009a) summary report has been included in Appendix C.

According to Hernández (2007), Teck discontinued their option because they concluded that the gold mineralization was restricted to narrow high grade zones, that surface sampling failed to detect gold in the magnetite-sulfide skarns, and that the deep molybdenum target was not supported by drill results.

6.3 Historic Drilling Summary

There is no one source that provides a complete record of the drilling history on the ground now controlled by Animas within the Santa Teresa mining district nor can the full drill history be reconstructed by combining information provided in the historical reports. The previous historic reports discuss work completed by individual companies or in specific areas but these are often incomplete and provide just glimpses into the full drill history.

The current Animas database (see Section 11.0 for additional details), which is still under construction but considered to be over 95% complete, indicates that 2,187 holes totaling 221,194m have been drilled on the property now held by Animas between 1984 and 2006.

6.3.1 Phelps Dodge Drilling

Phelps Dodge controlled claims covering most of the current Animas project area (except for the Amelia mine) between 1984 and 1994. Various drilling campaigns were completed between 1986 and 1994 but only limited information is available that describes the drilling programs. The Phelps Dodge (1988) mine feasibility study reported that over 16,500m of diamond drilling was completed through June 1988. Of that total, over 10,500m of NC and NX core was drilled in the seven deposits (Agua Blanca, Becerros Norte, Becerros Sur, El Corral, Gregorio, Hilario and El Camello) that were put into production in 1991. This drilling was generally on 40m centers with local in-fill on 20m centers. Structural, geologic and assay data were obtained on the core. There is no mention within the 1988 feasibility study of any reverse circulation drilling completed by Phelps Dodge up through June 1988. (The current Animas database indicates that just 15 reverse circulation holes for 2,181m, all within the El Toro deposit, were completed by Phelps Dodge through June 1988.)

There are no other known comprehensive Phelps Dodge reports concerning the post-1988 drilling. Rodriguez and Lopez,(1992a, 1992b) reported on the exploration and drilling results for the Cristina and Dora deposits, respectively, while a 2003 annual report by Rodriguez-Barraza, et. al., (1994) reported on the district-wide exploration program completed that year. The latter report stated that Phelps Dodge drilled 274 RC holes for 25,122m and two core holes for 704m in 2003.

Hamilton (2003) noted that Rodriguez-Barraza, et. al., (1994) report on four deep (>300m) holes (GD-01 through GD-04) between the Dora, Gregorio, and Corral deposits that were drilled to test deeper targets on the property.

Wallis (2006) reporting on the López-Limón property describes the following drilling:

> *Work on the Dora area by Phelps Dodge included…85 reverse circulation holes totaling 11,781m, and two diamond drill holes totaling 290m. Work on the Cristina area by Phelps Dodge included…56 reverse circulation holes totaling 6,173m, and nine diamond drill holes totaling 904m. Drill hole samples taken by Phelps Dodge were on one-metre intervals. Trench samples were usually taken on two-metre to three-metre intervals. The core was stored on site.*

Kern and Sibthorpe (2007) noted that Phelps Dodge's core was lost due to the collapse of a core shack but that the reverse circulation chips were stored on site. These chips are no longer available.

The current Animas database indicates a total of 814 holes for 90,131m had been drilled by Phelps Dodge from 1986 through 1994. This includes 538 reverse circulation ("RC") holes for 62,219m and 276 diamond core ("core") holes for 27,912m. The database also includes 108 holes (72 RC and 36 core) totaling over 11,000m that cannot be attributed at this time to a specific company, but it is believed that most of these holes were likely drilled by Phelps Dodge. The Phelps Dodge drilling was initially focused on those deposits to be mined in the early 1990's. Some early drilling and the later drilling targeted many of the other prospective area within the Santa Gertrudis mine area. The database lists 27 specific targets for the Phelps Dodge drilling.

6.3.2 Minera Roca Roja (Amelia mine)

Prior to 1998, Minera Roca Roja held the concessions covering the Amelia mine. Hamilton (1998) states that there is evidence that approximately 200 holes were drilled by Minera Roca Roja. MDA has digital data, including collar, down-hole survey and assay data, for 40 Minera Roca Roja ("RR") holes. The data indicate a very tight spacing (5m-10m) between holes and the holes are 50m to 120m in depth. The collar coordinates are in a local grid that is not correlative with the historic local grids on the adjacent Santa Gertrudis property. None of the Minera Roca Roja holes have been added to the current Animas database though Animas is continuing to locate and compile additional data pertaining to the Minera Roca Roja drilling with the goal of adding this information into the project database.

6.3.3 Campbell Resources Drilling

Campbell Resource held the Santa Gertrudis mine property from 1994 to 2000 and controlled the Amelia mine from 1999 to 2000. Hamilton (2003) reports that Campbell completed 98,620m of RC drilling in 1,017 holes and 21,122m of diamond core drilling in 225 holes. This drilling included pit definition and condemnation drilling of which approximately 23,500m was RC drilling and 6000m was diamond drilling (Hamilton, 2003).

The drilling attributed to Campbell in the Animas database totals 1,238 drill holes for 115,542m. This includes 1,032 RC holes for 96,539m and 206 diamond core holes for 19,003m. The number and meterage differences with those reported by Hamilton (2003) cannot be explained by MDA, since Hamilton (2003) does not include a list of individual holes to compare with the Animas data. Further data compilation and research might indicate that some of the core holes with the company designation of "unknown" within the database are actually Campbell holes.

The Campbell drilling targeted many of the same areas as the Phelps Dodge drilling but also explored a significant number of other targets. The new target areas were within the Santa Gertrudis mine property previously held by Phelps Dodge, Sebastian and Tigre for example, while a number of others were within the Amelia mine area acquired in 1999, Viviana and Samuel for example. The database has a total of 107 different target areas drilled by Campbell; some of these have just a few holes while others can be considered "sub-targets", i.e., Escondido Centro, Escondido Este, Escondido NW, etc.

6.3.4 Sonora Gold Drilling

All of the information available on Sonora Gold's drilling is found in Kern and Sibthorpe (2005) and Kern and Sibthorpe (2007). In 2003 through early 2005, Sonora Gold drilled a total of 137 holes at five prospects on their property: La Eme, Amelia #5, El Tascalito, San Enrique and Ontario. This included 16 RC holes for >867m, 16 diamond core holes for 1994m, and 105 percussion holes totaled 1,050m. The total RC meterage is not stated or able to be calculated because the drill lengths for seven RC holes were not reported by Kern and Sibthorpe (2005, 2007). Additional drilling may have been done elsewhere on the property, but the records are incomplete.

Kern and Sibthorpe (2005) indicate that a total of seven RC holes were drilled by Sonora Gold at the La Eme, Amelia #5, and El Tascalito areas in 2003. No further information as to total meterage or number of holes within each specific target is reported.

La Eme Prospect: Nine RC holes (LEME-02 through LEME-10) for 867m were drilled by Sonora Gold at the La Eme property in early 2004. This program was designed to further investigate the gold intercepts encountered in hole LEME-01 drilled in 2003. LEME-01 reported separate intervals of 6m assaying 5.8g Au/t, 6m assaying 4.6g Au/t and 4.5m assaying 4.8g Au/t; all interpreted to be hosted within an extension of the Amelia fault (Kern and Sibthorpe, 2005). Eight of the nine 2004 RC drill holes tested along strike from the LEME-01 mineralization while the ninth (LEME-08) was drilled to test the down-dip extension of the LEME-01 intercepts. Only LEME-08 reported significant gold values (4.5m assaying 1.8g Au/t and 7.5m assaying 4.2g Au/t). The LEME-01 and LEME-08 gold intercepts were interpreted to be within a “shoot” along the Amelia fault (Kern and Sibthorpe, 2005).

San Enrique Prospect: Sixteen diamond drill holes (NQ-size) were completed at San Enrique totaling 1994m of drilling. Four areas were tested and the drilling specifically targeted gold-bearing (up to 15g Au/t) jasperoid in limestone, soil and rock gold anomalies associated with northeast- and northwest-trending structures, and high base-metal surface geochemistry dominantly in hornfels and diorite. Compared to the Santa Gertrudis mine area to the north, the alteration at San Enrique was more silicic, the rocks were metamorphosed to a higher grade, and sulfides were more prevalent.

The drilling results indicated just weakly anomalous gold (50 to 500 ppb Au range) associated with the surface jasperoids and soil and rock gold anomalies. Drilling in the base-metal targets returned anomalous values in copper and molybdenum, with one hole containing an interval of 27m grading 0.308% copper and 0.24% molybdenum. Gold and silver values were generally less than 100ppb Au and 2g Ag/t. The mineralization, which is found mainly in hornfels and diorite, appears to be associated with a wide structural feature dipping at a low angle to the north.

Ontario Zone Percussion Drilling: The Ontario Zone in the Greta area was tested with 105 close-spaced percussion (air hammer) drill holes, each 10m deep, for a total of 1050m of drilling. The program was designed to define a shallow-dipping high-grade gold zone that had been located by previous operators. Kern and Sibthorpe (2005) state that *“the program outlined an area of mineralization of some 2,000 square meters averaging 4 meters in thickness grading 8.5 gpt gold, drilled off on 5 meter centers with mineralization open to the north and the west. Metallurgical tests were carried out on representative Ontario Zone ore and recoveries exceeding 90% were achieved.*

The Animas database has no information on any of the La Eme area RC drill holes. The database does have collar information, but no assay data, for the sixteen core holes at San Enrique and the 105 percussion holes at the Ontario zone.

6.3.5 Minera Teck Cominco Drilling

Teck explored the San Enrique prospect area from June 2005 until mid-2007. They drilled four reverse circulation drill holes (RCSE-001 to RCSE-004) for a total of 1198m and five diamond drill holes (DSE-001 to DSE-005) for a total of 1217m (Kern and Sibthorpe, 2005).

The Animas database contains data for all nine Teck holes with no discrepancies with the previously reported information.

6.4 Historic Resource Estimates

6.4.1 Historic Resource Estimates Discussion

This section of the report, like the previous sections, is a restatement of other workers' and operators' reports. For completeness, MDA is reporting these as they are stated in the referenced reports. It should be noted that none of these reports present a complete record of resources and reserves, and while contradictions were noted, these could not be resolved and are therefore reported here as they were in the original reports. The resources reported in Section 6.4.3 through 6.4.5 all pre-date NI 43-101 and do not comply, at least from a reporting standpoint, with those regulations. Therefore, all resources and reserves reported in Section 6.4.3 through 6.4.5 are historic by NI 43-101 regulations. The resources reported in Section 6.4.6 were included within a 2005 Technical Report whose authors state that the reported resources are NI 43-101 compliant (Kern and Sibthorpe, 2005). Due to a subsequent loss of data, the same authors state that the 2005 reported resources are no longer to be considered NI 43-101 compliant (Kern and Sibthorpe, 2007). MDA is therefore including the 2005 resource estimate into Section 6.0 and is considering it as a historic resource estimate.

The area now controlled by Animas is a consolidation of several claim groups; therefore any property-wide resource compilations would also be a compilation from several sources. The most recent Measured and Indicated resources on the claims formerly held by Sonora Gold are those reported by Kern and Sibthorpe (2005, 2007) and discussed in Section 6.4.6. The most recent Measured and Indicated resources on the claims formerly held by Sonora Copper are those calculated for Campbell by Barrera (2000) and discussed in Section 6.4.5. The most recent Inferred resource available for the claims formerly held by Sonora Gold and Sonora Copper are those calculated for Campbell by Barrera (2000) and discussed in Section 6.4.5. The Barrera (2000) Inferred resource estimate was the basis for the later reporting by Hamilton (2003) and Wallis (2006) in their discussion of the Sonora Gold and Sonora Copper properties, respectively.

There are no known resource/reserve estimates for the former Minera Roca Roja property (Amelia mine).

6.4.2 Phelps Dodge 1988 Historic Resource/Reserve Estimates

Historic resource/reserve estimates were completed by Phelps Dodge in 1988 as part of a mine feasibility study on the seven deposits (Agua Blanca, Becerros Norte, Becerros Sur, El Corral, Gregorio, Hilario and El Camello) that were put into production in 1991 (Phelps Dodge, 1988). The geologic resource estimate (stated as a geologic reserve by Phelps Dodge) used standard cross-sectional techniques with grade contours at a 0.5g Au/t cut-off plotted on the cross-sections. Average grades were determined from duplicate fire assays of the drill core samples. The geologic resource based on drilling through June 1988 totaled 3,805,000 tonnes at an average grade of 2.4g Au/t for a total of 9,132,000g gold (294,000 oz gold).

The mineable reserves calculated by Phelps Dodge in 1988 were based on a 0.5g Au/t cut-off grade and 10% mining dilution for all deposits except Becerros Norte and Becerros Sur where a 15% dilution was coupled with a 5% ore loss. The pit design parameters included variable pit slopes as steep as 59° and 5m bench heights. The mineable reserve totaled 3,059,000 tonnes at an average grade of 2.45g Au/t. Stripping averaged 6.9:1 though this number ranged from 0.9:1 at Agua Blanca to 11.7:1 at El Toro.

6.4.3 Phelps Dodge 1992 Historic Resource Estimates

Historic resource estimates for the Cristina and Dora deposits (Table 6.1) were completed by Phelps Dodge in 1992 (Swanson and Waegli, 1992a and 1992b). The Phelps Dodge estimates employed a 0.5g Au/t cut-off and a specific gravity of 2.5 g/cm^3 for all material. The estimates were a) prepared using inverse distance algorithms, b) are unclassified, and c) would, according to Wallis (2006, 2007), correspond to inferred resources under then-current CIM definitions. The Cristina historical resource does not contain carbonaceous material and is reported to comprise mainly oxidized material. The Dora deposit is a mix of oxide, mixed and unoxidized material. Dora was mined by Campbell in the 1990's but Wallis (2006, 2007) notes that approximately 370,000 tonnes of oxide mineralization in the Dora resource may remain un-mined. There may have been other resources estimated by Phelps Dodge in 1992 for other deposits that are now part of the Animas claims, but only those from what became the López-Limón concessions (Dora and Cristina deposits) had been found at the time of this writing.

Table 6.1 Phelps Dodge Historic Resources 1992
(from Swanson and Waegli, 1992a and 1992b)

Pit	Oxide		Mixed		Carbonaceous		Total		
	Tons ('000)	g/t Au	Tons ('000)	g/t Au	Tons (000)	g/t Au	Tons (000)	g/t Au	Oz. Au (000)
Dora	1,388	2.04	121	1.69	1096	1.73	2,605	1.89	158.6
Cristina	4,965	0.83					4,965	0.83	132.5

6.4.4 Phelps Dodge/Campbell 1994 Historic Resource/Reserve Estimates

In June 1994, Strathcona (Thalenhorst, 1994) reported reserves and resources at Santa Gertrudis for Campbell. At that time Campbell did not control the Amelia mine, but did control the Lopez-Limon concessions. The Strathcona work was done when Campbell took over the operation from Phelps Dodge and was an audit of a reserve estimate that had been done by Phelps Dodge in January 1994. Selective descriptions follow:

- density of 2.5 t/m^3, but based on no actual density measurements,
- reporting cutoff of 0.5g Au/t,
- GEOMIN Datamine software was used by Phelps Dodge,

- compositing sample data to 6m benches estimating into blocks 6m high by 10m across strike by 15m along strike,
- the grade of each block was estimated using a variety of interpolation methods and search distances as each deposit has different characteristics, and
- Lerchs-Grossmann pit optimization algorithms were run with various economic parameters: gold price of $350, metallurgical gold recovery of 77.5% to 82.5%, pit slopes of 40^o to 55^o, and operating costs (mining and processing) of $6.04 to $6.41 per tonne.

Strathcona audited the reserves by reconciling the mine production with the reserve estimate. This reconciliation indicated that the global mineable reserve, as a compilation of all deposits, was within 20% of total gold and 5% of total tonnage. This degree of reconciliation would warrant assignment to the category of Proven (historic only). However, the reconciliation showed high variance of individual deposits (+60% to -30% of gold content); therefore all mineable reserves at Santa Gertrudis were assigned to the Probable category (historic only). As of June 30, 1994, the reported Probable reserves were 1.4 million tonnes grading 1.7g Au/t with 7.9 million tonnes of waste and a strip ratio of 5.5. The resource (not including reserves above) was not categorized and was given as 2.06 million tonnes grading 1.5g Au/t (Thalenhorst, 1994).

6.4.5 Campbell Resources, Inc 2000 Historic Reserve/Resource Estimates

According to Hamilton (2003), when Campbell Resources ceased mining in October 2000, they prepared an in-house "ore reserve statement", dated November 30, 2000 (Barrera, 2000). Campbell's reserve estimate was calculated using $280/oz Au, a 0.5g Au/t cut-off grade for reporting, and a density of 2.5 t/m^3. Pit optimization parameters included a 56° pit slope, 6m bench height, and 10m wide ramps at 12° incline. The reserves were listed in both Probable and Possible categories. In addition, Barrera (2000) also listed an Indicated resources category. Barrera (2000) defined the various categories as:

Probable reserves: "*Deposit has been drilled but may require infill drilling in some area to finalize details for mine planning. Also economic viability has been demonstrated but detailed mine planning may not be completed. There are included those ore blocks defined by close drilling but its low grade, high strip ratio or low gold price make them low or none profitable if mined.*".

Possible reserves: "*Deposit has been outlined by drilling but spacing may be insufficient for detailed mine planning. Preliminary pit designs and economic studies have been completed indicating a marginal profit or loss. Production may become feasible given a reasonable change in strip ratio, operating cost, grade, recovery and /or gold price.*"

Indicated resources: "*Tonnage and grade has been calculated based on drill holes at various spacing. Calculation may have been undertaken by computer block model or manually on sections. The deposits are either uneconomic under present conditions or economic studies have not been undertaken. Geologic resources include material below or in the walls of past, current, or future pits whose designs have been economically optimized. As such, by definition this material is sub-economic and would require an inordinate change in the relevant economic parameters to alter profitability. It is reasonable* *however that a moderate change in economic parameters could upgrade a portion of the geologic resources. This classification includes late stage exploration projects with widely spaced drilling. Thus, Indicated resources should not be considered as current or near future ore but rather as targets for definition drilling programs*."

These categories were later downgraded due to continued low gold prices (Annual Report on Form10K for the fiscal year ended December 31, 2000, filed by Campbell with the U.S. Securities and Exchange Commission). Hamilton (2003) restated the reserves and resources as downgraded by Campbell. For the reserves originally categorized as Probable, Hamilton (2003) "*believes that in conjunction with infrastructure supported by other nearby deposits these mineral resources have a reasonable expectation of becoming economically exploitable, and, in addition, the geological, engineering and metallurgical levels of confidence are sufficient that these resources can be considered as equivalent to a Measured Mineral Resource as defined by the Resource and Reserve Definitions (CIM 2000)."* The Measured resources, as shown in Table 6.2, total 320,000 tonnes with an average grade of 2.70g Au/t.

Table 6.2 Campbell Resources, Inc- 2000 Historic Measured Resources

[estimated by Barrera (2000); re-categorized by Hamilton (2003)]

Deposit	Tonnes	Grade (g Au/t)	Contained Au (g)*	Contained Au (oz)**
Mirador	94,345	3.28	309,452	9,949
Escondida Norte	99,917	2.30	229,809	7,389
Trinidad	70,085	2.92	204,648	6,580
Escondido Centro	55,428	2.17	120,002	3,858
Total	**319,775**	**2.70**	**863,911**	**27,776**

* reported numbers have some rounding differences

** MDA calculated numbers

For the reserves originally categorized by Campbell as Possible, Hamilton (2003) states "*there is thus a sufficient level of certainty in the geological characteristics of these zones to allow confident interpretation of the geological framework and to reasonably assume the continuity of the mineralization. This material can be considered as equivalent to an Indicated Mineral Resource as defined by the Resource and Reserve Definitions (CIM 2000*)". The Indicated resources, as shown in Table 6.3, total 1,126,000 tonnes with an average grade of 1.87g Au/t.

For the resources originally categorized by Campbell as Indicated, Hamilton (2003) states that there is *a lower level of confidence in the geological information and consequently these mineral resources should be considered as equivalent to Inferred Mineral Resources as defined by the Resource and Reserve Definitions (CIM 2000).* The Inferred resources, as shown in Table 6.4, total 14,791,000 tonnes with an average grade of 1.28g Au/t.

The authors of the current report must indicate that under current NI 43-101 standards, portions of the Historic Inferred Resources stated in Table 6-4 would not be currently classified as such due the reported sub-economic nature of the mineralization.

Table 6.3 Campbell Resources, Inc- 2000 Historic Indicated Resources

[estimated by Barrera (2000); re-categorized by Hamilton (2003)]

Deposit	Tonnes	Grade (g Au/t)	Contained Au (g)*	Contained Au (oz)**
Mirador	166,070	2.21	366,184	11,773
Toro Norte	29,132	1.31	38,163	1,227
Escondida Norte	40,083	5.85	226,549	7,284
Trinidad	856,050	1.67	1,429,604	45,964
Escondida Centro	35,077	1.17	41,097	1,321
Total	**1,126,412**	**1.87**	**2,101,597**	**67,569**

* reported numbers have some rounding differences

** MDA calculated numbers

Table 6.4 Campbell Resources, Inc- 2000 Historic Inferred Resources

[estimated by Barrera (2000); re-categorized by Hamilton (2003)]

Deposit	Tonnes	Grade (g Au/t)	Contained Au (g)*	Contained Au (oz)**
Mirador	612,744	1.02	626,224	20,134
Trinidad	118,000	2.10	247,800	7,967
Escondida Centro	469,283	1.13	530,252	17,048
Escondida Oeste	480,000	0.94	451,200	14,506
Escondida Este	56,800	0.90	51,120	1,644
Escondida NW	187,500	1.39	260,625	8,379
Greta/Ontario	894,856	1.97	1,762,866	56,677
Greta NE	186,550	1.26	235,053	7,557
Tracy	245,064	3.58	877,329	28,207
Tracy N	94,575	1.62	153,212	4,926
Melissa NW	163,750	0.74	121,175	3,896
El Tigre	230,889	1.60	369,422	11,877
Becerros Sur	247,000	2.60	642,200	20,647
La Gloria	442,196	2.80	1,237,707	39,793
El Toro Extension	725,000	1.56	1,127,375	36,246
Ruben	205,000	2.06	422,915	13,597
El Corral	628,000	1.66	1,039,968	33,436
El Corral NW	46,000	2.70	124,200	3,993
Melissa	128,000	1.88	240,384	7,729
San Ignacio	14,000	2.30	32,200	1,035
Cristina	6,030,000	0.65	3,919,500	126,015
Dora	1,530,000	1.80	2,754,000	88,543
Becerros Norte	269,000	1.15	309,350	9,946
Maribel	196,000	1.60	313,600	10,082
Emma	137,000	1.70	232,900	7,488
Mariana	100,000	2.00	200,000	6,430
Berta	95,000	1.10	104,500	3,360
Sofia	95,000	1.60	152,000	4,887
Sebastian	90,000	2.70	243,000	7,813
Hilario	74,000	1.40	103,600	3,331
Total	**14,791,207**	**1.28**	**18,885,677**	**607,189**

* reported numbers have some rounding differences

** MDA calculated numbers

Hamilton (2003), reporting on International Coromandel holdings, Kern and Sibthorpe (2005, 2007), reporting on Sonora Gold and Deal Capital holdings, and Wallis (2006, 2007), reporting on Chuqui (Sonora Copper) holdings, each present a portion of the Campbell resources or reserves as they pertain to the claims held by the respective company that controlled those portions of the property. The one difference with the Campbell estimate noted in these later reports is the addition by Wallis (2006, 2007) of the Manueles deposit to the Campbell list of Inferred Resources. Wallis (2006, 2007) indicates a Manueles Inferred resource of 207,000 tonnes at an average grade of 2.0g Au/t. It is clearly stated in Wallis (2006, 2007) that the Chuqui Inferred resources are historic as reported by Campbell (Barrera, 2000). No additional work on Chuqui ground had been completed post-Campbell which would require a revision of the Campbell estimate. The authors of the current report do not know the origin or circumstances of the Manueles Inferred resource as reported by Wallis (2006, 2007).

6.4.6 Sonora Gold 2004 Resource Estimates

According to Kern and Sibthorpe (2005, 2007), in June 2004 Sonora Gold hired Construccion de Obras Mineras y Civiles (COMYCSA S.A. de C.V.) of Hermosillo, Sonora, Mexico to provide input information for an economic scoping study. This included a revised mineral resource estimate provided by a GEMCON-trained mining engineer. COMYCSA also provided cost estimates for ore mining, waste mining, haulage, and crushing for the area. While economic parameters were applied to the analysis of the resource base, no preliminary feasibility study was completed and all mineralization evaluated at Santa Gertrudis as part of the Sonora Gold study was considered resources rather than reserves to conform to NI 43-101 definitions (Kern and Sibthorpe, 2005, 2007).

Based on 2003 to 2005 drilling activity and the GEMCOM study with economic inputs, new estimates of historic mineral resources in each category were made. Reserves and resources were re-classified from the Campbell study and reported in Kern and Sibthorpe (2005) and in Table 6.5.

Measured Mineral Resources: The resources in this category may be considered for inclusion in a pre-feasibility study. The Measured Mineral Resource within the Sonora Gold property at Santa Gertrudis was estimated to be 270,686 tonnes grading 3.25g Au/t (28,326 oz of gold).

Indicated Mineral Resources: The resources in the Indicated Mineral Resource category may be considered for inclusion in a pre-feasibility study. The Indicated Mineral Resource within the Sonora Gold property at Santa Gertrudis is estimated to be 154,162 tonnes grading 8.58g Au/t (42,520 oz gold).

Inferred Mineral Resources: In the Hamilton (2003) Qualifying Report, the Inferred Mineral Resource within the International Coromandel property (predecessor to Sonora Gold) at Santa Gertrudis was estimated at 6,898,207 tonnes grading 1.69g Au/t. The re-estimation by Sonora Gold did not materially impact on this figure. [It should be noted that in Hamilton (2003) the grade is stated in the text and shown in the table as 1.69g Au/t, whereas Kern and Sibthorpe (2005) state the grade in the text as 1.69g Au/t, but show it in their Table 6.5 (reproduced in this text as Table 6-5) as 1.58g Au/t. The total Inferred tonnes remained unchanged.]

Table 6.5 Sonora Gold Resources 2004
[from Kern and Sibthorpe (2005); inclusive of Sonora Gold property only]
"Gold Resources" at Santa Gertrudis Property

PIT	LOCATION	CLASSIFICATION	ORE Tonnes	Grade g Au/t	Ounces Au	Waste Tonnes	Waste/ Ore
Mirador	Central	Measured Mineral	45,747	4.76	7,001	160182	3.51
Corral NW	Central	Measured Mineral	5,400	4.70	816	3010	0.56
Melissa	Central	Measured Mineral	11,359	2.88	1,051	34804	3.06
Escondida Splay	Central	Measured Mineral	26,258	3.27	2,756	65608	2.50
		Measured Mineral	44,572	2.34	3,347	253428	5.69
Escondida Centro	Central	Measured Mineral	74,069	1.92	4,572	487109	6.58
Trinidad	Central	Measured Mineral	42,831	2.32	3,195	199264	4.65
Ontario	South	Measured Mineral	20,450	8.50	5,588	14045	0.69
Total		Measured Mineral	270,686	3.25	28,326	1217450	4.50
El Tigre	South	Indicated Mineral	6,683	12.68	2,724	86314	12.92
Tracy	South	Indicated Mineral	66,254	4.36	9,287	408324	6.16
Ontario Deep	South	Indicated Mineral	65,625	11.75	24,791	UG	
Trinidad Deep	Central	Indicated Mineral	15,600	11.40	5,718	UG	
Total		Indicated Mineral	154,162	8.58	42,520		
Total		Measured & Indicated Resources	424,848	5.19	70,846	1,712,088	
Total		**Inferred Mineral Resources**	**6,898,207**	**1.58**	**332,509**		

As classified by COMYCSA, the mineral resources at Santa Gertrudis were segregated into two areas. All of the mineral resources classified as Measured or Indicated were located in the past producing or Central Area. These resources are located near leach pad facilities and are connected by haul roads. The resources located some seven kilometers by road from the past producing area in the Greta, or Southern Area, though typically having to the same level of exploration work as those in the Central Area, were classified as Inferred by both the earlier Campbell study and also the Sonora Gold estimate (Kern and Sibthorpe, 2005, 2007).

Complete documentation for the COMYCSA estimates (COMYSCA and Sibthorpe, 2004a) is unavailable as the company has gone out of business thus rendering the resources listed above to be considered not NI 43-101 compliant (Kern and Sibthorpe, 2007). The summary report (COMYSCA and Sibthorpe, 2004b) provides a review of the resource estimation process.

6.5 Historic Production Discussion

Any quantitative reporting on total production would need to compare the reports of ounces of gold mined to the reports of ounces of gold produced. There is no production information prior to 1991, but shipments of ore were made to smelters in Mexico and the United States. . Because the properties — Santa Gertrudis mine, Amelia mine, Lopez-Limon concessions — were controlled by different owners at different times, it is difficult to make a comprehensive inventory. Table 6.6 is the most recent and complete listing of ounces mined; its source of information for the Amelia mine is undocumented, but otherwise it is the most accurate information available.

Between 1991 and 2000, approximately 565,000 ounces of gold were mined in the district, in what is now part of Animas' Santa Gertrudis property. This includes production by Phelps Dodge, production at the Amelia mine, and production by Campbell. A total of 8.244 million tonnes were mined via open-pit, with an average grade of approximately 2.13g Au/t, from 22 sedimentary-rock-hosted, disseminated-gold deposits (Hamilton, 2003). As noted previously, since the production at the Amelia mine is not well documented, these figures are probably more approximate than they appear. Hamilton (2003) states that the average gold recovery for the Santa Gertrudis mines was in excess of 70%. Recent communications with Phelps Dodge personnel indicate that the gold recovery calculated from metal production and residue assays was slightly over 80% (private communication with Mr. Ted Mackey, Santa Gertrudis Plant Manager, personal knowledge, J. T. Hanks).

6.5.1 Phelps Dodge

Phelps Dodge (through the Mexican subsidiary Zapata) began production from the Santa Gertrudis mine in May 1991. Production was from an oxide-ore, open pit, heap leach mine that was initially operated at 2,000tpd, but was increased to 2,750tpd in 1992. The gold occurred as fine disseminations in silicified lime-rich shale and siltstone of Cretaceous age and was found in a number of deposits along a northwest-striking belt approximately 5km long and 3km wide. From May 1991 until May 31, 1994, Phelps Dodge mined 3,140,881 tonnes of ore grading 2.0g Au/t from seven pits: Agua Blanca, Becerros Norte, Becerros Sur, El Corral, Gregorio, Hilario and El Camello. Metal recovery was by CIC adsorption, stripping, and Merrill Crowe zinc precipitation of precious metals from the strip liquor. Precipitates were shipped to the Phelps Dodge refinery at El Paso, TX (pers. comm., J. Hanks, 2009). The total mined production was approximately 204,000oz gold. The average strip ratio was 6.0 but varied from 1.1 to 11.5, and the recovery was 70% for a total production of 4,409kg (141,752oz) gold sold (Thalenhorst, 1994). [Note that elsewhere in Thalenhorst (1994) the total gold production is listed as 4300kg. Also note that production from June 1994 is not included in the table but may be available by implication elsewhere in the report.]

6.5.2 Amelia Mine

The Amelia mine, located approximately 4km north-northwest of Santa Gertrudis, was operated by several small companies from before the time of Phelps Dodge's operation in the district until 1998. The earliest reports of production cite approximately 23,000 tonnes of silica flux averaging 13.4g Au/t having been shipped to the Phelps Dodge smelter in Douglas, Arizona (Anderson and Hamilton, 2000). Minera Roca Roja eventually took control of the Amelia mine properties in the 1980's and produced from four pits (Amelia, Pirinola, Viviana and Santa Teresa), using an on-off leach pad system, until 1998 (Hamilton, 2003). Anderson and Hamilton (2000) reports 1,063,481 tonnes of ore mined, grading 2.88g Au/t for an approximate mined production of 98,483 ounces of gold. Hamilton (2003) states that the recoveries from the Minera Roca Roja deposits are not well documented, but past production is estimated to be approximately 100,000 ounces of gold.

6.5.3 Campbell Resources

In July 1994 Campbell Resources purchased the property from Phelps Dodge. Campbell operated the Santa Gertrudis mine (through its Mexican subsidiary Oro de Sotula) at a rate of 3,000 tonnes per day of processed ore until December 1997. Behre Dolbear (1997) states that as of October 1997, "*Campbell has produced approximately 144,000 ounces of gold at a grade of 2 grams per tonne"*. Limited operations were reinitiated in November 1999 and ceased in October 2000, with leaching continuing until January 2001. Anderson and Hamilton (2000) report detailed production from the various deposits at Santa Gertrudis, but the data are inclusive of production by Phelps Dodge and at the Amelia mine. Subtracting the production by Phelps Dodge and at the Amelia mine from the Anderson and Hamilton (2000) data, it is estimated that Campbell produced on the order of 260,000 ounces of gold.

Table 6.6 Total Production May 1991 to October 2000, Santa Gertrudis District
(Anderson and Hamilton, 2000)

Deposit	Host Formation	Ore mined (tonnes)	Grade (g Au/t)	Au mined (ounces)	Strip ratio (waste:ore)
Becerros Norte	Cintura	1,596,189	2.07	106,242	5.0
Amelia*	lower Mural	1,063,481	2.88	98,483	6.6
Dora	middle Mural	1,019,540	2.35	77,039	10.5
Becerros Sur	Cintura	790,016	2.16	54,869	14.2
Corral	middle Mural	487,200	2.50	39,164	6.6
Agua Blanca	upper Mural	631,354	2.12	43,038	1.3
Maribel	Morita	346,590	2.19	24,406	11.3
Toro	m & u Mural	471,040	1.51	22,870	6.1
Katman	Cintura	373,115	1.48	17,756	8.1
Trinidad	Glance/Morita	225,625	2.12	15,380	5.5
Gregorio	middle Mural	252,961	1.45	11,794	5.6
Manueles Sur	Cintura	127,485	2.69	11,027	3.4
Mirador	middle Mural	221,865	1.43	10,202	8.8
Sofia	middle Mural	177,830	1.26	7,205	6.0
Camello	middle Mural	198,365	1.08	6,889	3.3
Ruben	lower Mural	51,840	3.85	6,418	4.3
Toro Norte	lower Mural	60,310	2.80	5,430	3.8
Corral NW	middle Mural	44,115	2.40	3,404	9.4
Hilario	middle Mural	105,465	0.95	3,222	2.9
Total		**8,244,386**	**2.13**	**564,838**	**6.5**

* Rough estimate; includes Amelia, Pirinola, Viviana, and Santa Teresa deposits

7.0 GEOLOGIC SETTING

7.1 Regional Geology

Three north-south-trending physiographic provinces transect the State of Sonora, Mexico. From west to east these are the Basin and Range, the Transition Zone, and the High Plateau (Sierra Madre Occidental). The Santa Teresa mining district is within the extreme eastern margin of the Basin and Range, at the western edge of the Transition Zone. The physiography of the district consists of closely spaced ranges that form topographical highs with relatively narrow intervening shallow valleys. This region contains a wide variety of rock types and ages, with Tertiary volcanic rocks predominating (Figure 7.1). The principal regional structural elements are the north-trending Basin and Range normal faults. The Sierra Madera core complex is located west of the Santa Teresa district, and it may be responsible for some of the observed structural features seen in the region. The bulk of Mexico's copper production occurs in the Basin and Range province, principally at Cananea and La Caridad. Regionally, gold occurrences are commonly associated with Tertiary dilational faults, many of which occur in calcareous sedimentary rocks, and locally, some replacement-type mineralization is reported. There also are a number of stockwork epithermal vein gold occurrences within the region, and the Animas' Cristina deposit in the Santa Teresa mining district is an excellent example of this style of gold mineralization.

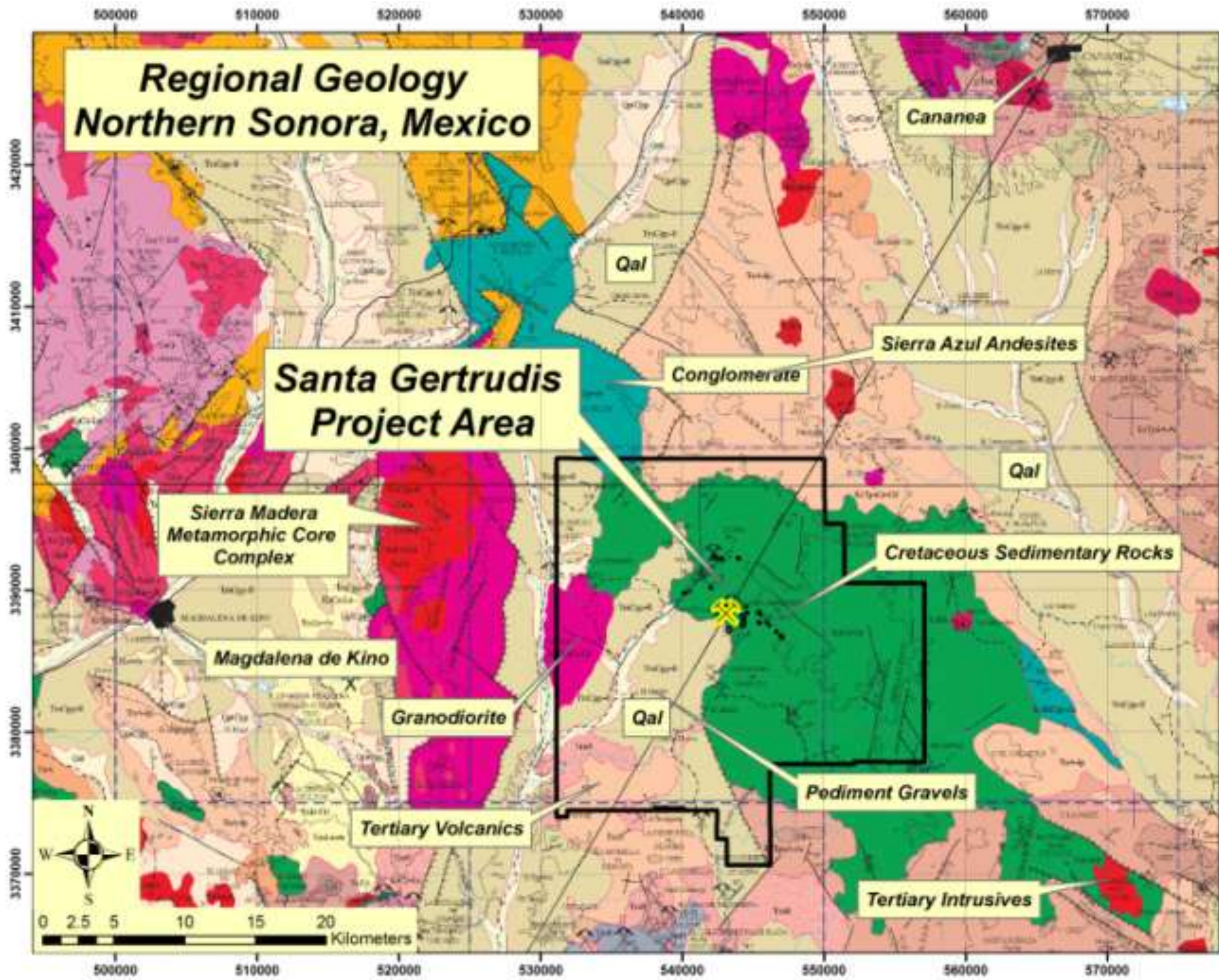
The Lower to Middle Cretaceous, Bisbee Group-equivalent, sedimentary rocks host the majority of the gold mineralization in the Santa Teresa mining district. The Bisbee-equivalent sedimentary section in the district filled the late Jurassic-early Cretaceous San Antonio Basin, one of a number of similar-age basins that formed along the southwestern margin of North American craton. These basins appear to have formed as pull-apart basins at releasing bends of the sinistral late Jurassic Mojave-Sonora fault system (Anderson, T.A., et al, 2005). These extensional, fault-controlled basins contain thick deposits of locally derived conglomerate, clastic, and carbonate sedimentary rocks. Fault orientations suggest that the sedimentary-filled basins formed in response to transtensional strain associated with sinistral movement along the inferred Mojave-Sonora fault system (located to the south of the Santa Teresa mining district). Northwest-striking, left-lateral faults that terminate at east-striking normal faults define releasing left fault steps at which crustal pull-apart structures formed.

Late Jurassic faults of this transtensional fault system appears to have controlled the regional distribution of pull-apart basins and influenced the orientation and style of many of the younger structures, intrusions, and perhaps even gold mineralization. Most Jurassic-Cretaceous faults were reactivated during subsequent episodes of tectonism. Northeast-directed compression during the late Cretaceous Laramide Orogeny reactivated northwest-oriented sinistral faults as reverse thrust faults. Later, these same northwest-oriented faults may have influenced the position of breakaway zones for Miocene detachment zones.

A major plutonic/volcanic event began during the late Cretaceous (Laramide), and continued into the Eocene. Miocene, high-angle normal faults appear to have served as conduits for the gold-bearing hydrothermal fluids, and in almost all cases, gold mineralization appears to be closely associated with these features.

The Santa Teresa mining district is centered on a 25km by 10km belt of sedimentary rocks that are surrounded and partly covered by Oligocene ignimbritic volcanic rocks (Sierra Madre volcanics) and alluvial gravels. The Bisbee Group correlative rocks in the district are a minimum 1,300m thick and are equivalent, in ascending order, to the Glance Conglomerate, Morita Formation, Mural Limestone, and Cintura Formation. Dioritic, andesitic, and felsic dikes and sills are common throughout the district, and one potassium/argon date from a biotite diorite dike (lamprophyre) in the eastern part of the district yielded an age of 26.1 ± 0.7 Ma (Bennett, 1993).

Figure 7.1 Regional Geology, Northern Sonora, Mexico



7.2 District Geology

7.2.1 Introduction

The Santa Teresa mining district contains approximately thirty gold deposits that are hosted in rocks correlative with the Upper Jurassic-Lower Cretaceous Bisbee Group clastic and carbonate lithologies of southeastern Arizona (Figure 7.2). These gold deposits occur in a northwest-trending belt that is approximately 20km long and up to 8km wide. Although the entire Cretaceous section is not exposed within the district, it is believed that the sedimentary package has a minimum thickness of 1,300m. Dikes and sills of varying composition ranging from andesite to rhyolite are common throughout the district and most appear to pre-date gold mineralization. The lowest unit of the Bisbee Group is the Glance Conglomerate which is overlain sequentially by the Morita Formation (sandstone-limestone-siltstone), the Mural Formation (limestone-calcareous siltstone-carbonaceous shale) and the Cintura Formation (sandstone-limestone-siltstone). In general, these units are exposed in a northwest-trending belt that is covered by Tertiary volcanic and recent gravels to the northeast and southwest. While outcrop in the central part of the district is reasonably good much of the district is covered by a thin veneer of alluvium and colluvium.

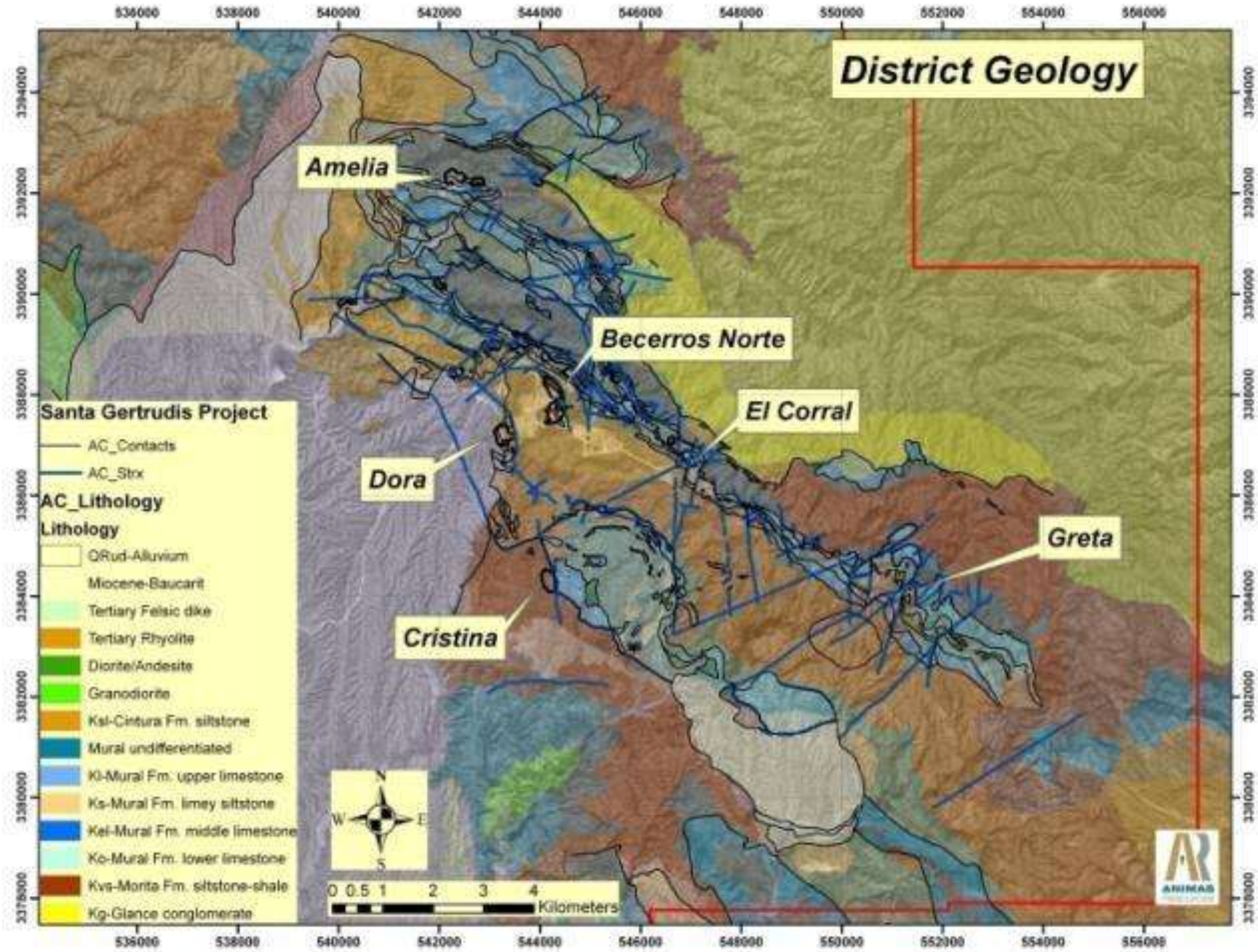
The district is structurally complex and locally the rocks are strongly folded and faulted. During the Laramide, the area was subjected to northeast-southwest-directed compression, and the Bisbee Group rocks were folded and thrust faulted along a northwest-trending structural axis. Thrust faulting occurred mainly along bedding planes and locally the units are overturned to the southwest. Extensional, tectonism occurred during the Miocene and this resulted in the formation of several southwest-dipping low-angle normal fault sheets. Following the extensional event, north, northeast, and east-west-trending Tertiary normal faulting occurred and subsequently, these faults were cut by Basin and Range-style north-northwest-trending normal faults.

7.2.2 Sedimentary Rocks

Upper Jurassic (?) to Lower Cretaceous Glance Formation equivalent rocks are more than 300m thick and consist of a green, mottled, massive, pebble to boulder conglomerate interbedded with coarse sandstone and minor siltstone. A majority of the clasts are felsic- to intermediate-composition volcanic rocks set in a sandy matrix. The depositional environment is interpreted as having been in alluvial fans during the initial stages of sedimentation along the margins of the Chihuahua trough (Hamilton, 2003). The Glance Conglomerate does not typically host gold mineralization within the district; however, one gold deposit (Trinidad) does appear to be locally hosted within this unit.

The Lower Cretaceous Morita Formation is at least 400m thick and is comprised of massive, weakly calcareous, purple siltstone interlayered with thin gray to purple arkosic sandstone and pebble conglomerate. Most of the pebbles are comprised of volcanic detritus and are most common at the base of the conglomerate, becoming upwardly more fine-grained. Conglomerate is more common in the upper portions of the formation. Only minor amounts of gold mineralization are hosted in the Morita Formation, though in the Trinidad area, gold is hosted within the lower Morita Formation in a more calcareous unit that is locally named the Cerro de Oro "formation".

Figure 7.2 Santa Teresa Mining District Geology (after Hamilton, 2003)

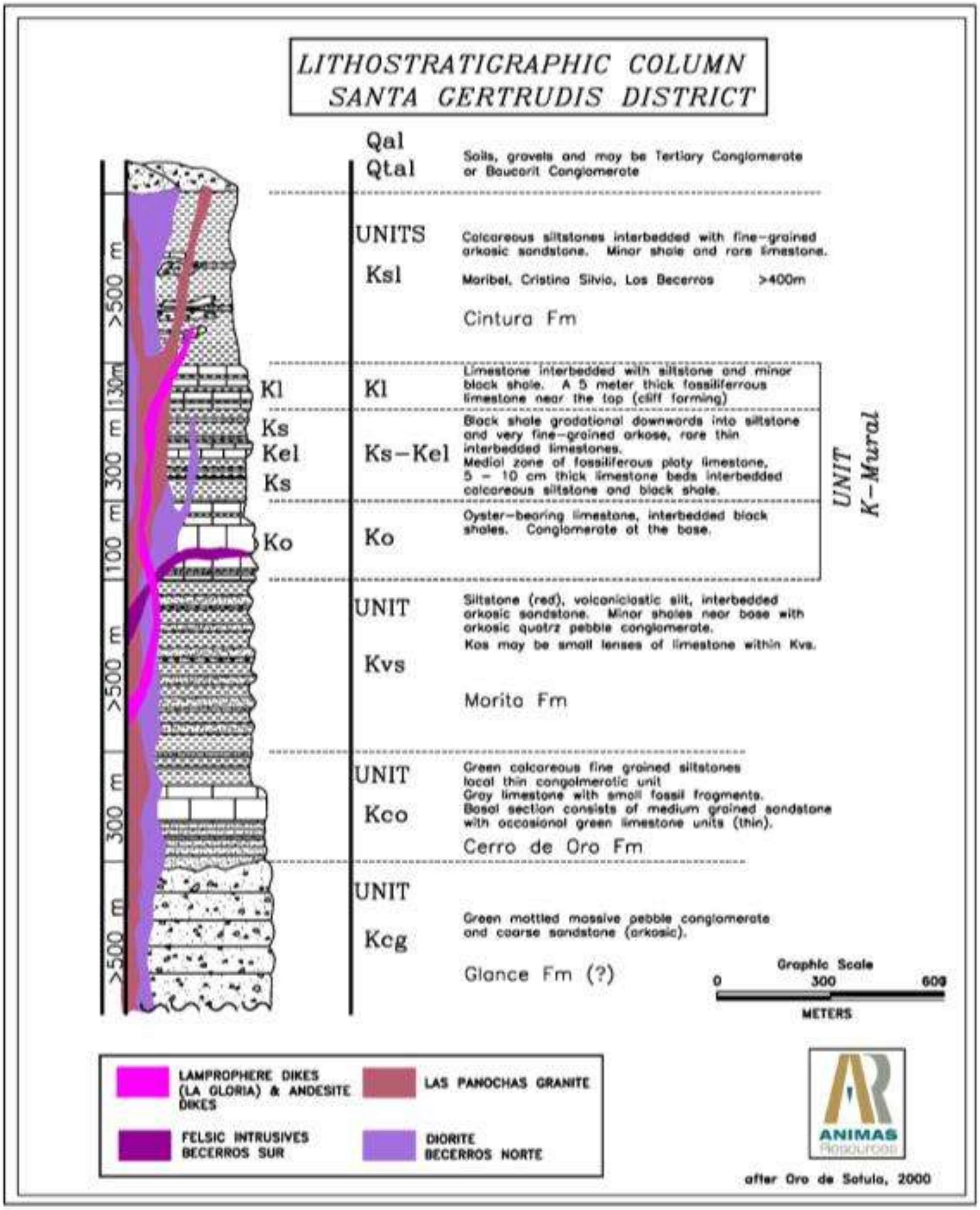


The Lower Cretaceous Mural Formation is about 380m thick and is subdivided into several members that serve as marker horizons which are used for district-wide stratigraphic correlations and structural analyses. The lowest member is a 100m to 125m thick fossiliferous limestone interbedded with gray to black, calcareous siltstone, fine- to coarse-grained sandstone and minor conglomerate. The upper part of this member is a 40m to 50m thick, thick-bedded, dark-gray-weathering oyster-bearing limestone (Ko). The middle member is 195m to 205m thick, consisting of thin-bedded gray-black, calcareous siltstone, intercalated locally with thin beds of limestone or calcareous fine-grained sandstone. A marker unit is located in the central part of this member. The marker consists of a 15m thick, light-gray, thinly bedded, and weakly fossiliferous limestone (Kel). The upper member (Kl) is 15m to 80m thick, consisting of about 1.5m thick beds of massive, fossiliferous limestone intercalated with greenish-black, calcareous siltstone and minor fine-grained sandstone. Many of the gold deposits in the district are hosted within the Mural Formation.

The Lower Cretaceous Cintura Formation is located stratigraphically above the Mural Formation and is estimated to be greater than 800m thick. Cintura is comprised of reddish-brown to green, calcareous siltstone, interbedded with massive- to thin-bedded weakly calcareous sandstone and minor lenses of pebble conglomerate. In general, the lower portion of the Cintura is more calcareous, and it clearly becomes less calcareous up-section. The Cintura Formation is a known favorable host for gold mineralization and several significant gold deposits are hosted within this unit.

A graphic representation of the Santa Teresa stratigraphic section is shown in Figure 7.3.

Figure 7.3 Stratigraphic Section – Santa Teresa Mining District



7.2.3 Igneous Rocks

Intrusives are common throughout the district and seem to be grouped by age and composition. Diorite stocks, sills, and dikes appear to be the oldest. The next youngest intrusive is a two mica S-type granite in the southwestern part of the district (Las Panochas granite). Mineralization associated with this intrusive has been dated by Geospec (2006) at 42.3 ± 0.3 Ma (Re-Os date from molybdenite) while a later alteration event has been dated by Bennett (1993) at 36.1 ± 0.9 Ma (K-Ar date from muscovite). The two-mica granite intrusive is considered to be late Laramide in age. A biotite diorite dike (lamprophyre?) in the eastern part of the district has been dated by Bennett (1993) at 26.1 ± 0.7 Ma (K-Ar date from biotite) and numerous, lamprophrye dikes/sills are seen throughout the district. Where exposed in mine pits, the dikes range from 1-3m in width, are relatively unaltered though appear to be spatially associated with gold mineralization. Locally, lamprophyre dikes also have been emplaced along low-angle normal faults of presumed Miocene age. There also are undated felsic (rhyolite?) sills/dikes in the Greta, Maribel, and Becerros areas and based on field observations, these intrusives appear to be older than the lamprophyres. The felsic dikes generally are discontinuous and rarely exceed 2m in thickness, and they are frequently pyritized (now goethite after pyrite), pervasively altered to sericite, and locally quartz veined.

Large areas of hornfels are exposed at San Enrique, Amelia, Mirador, and Greta. Hornfels are fine-grained, metamorphosed rocks which were produced by contact metamorphic alteration of the sedimentary units, and it is inferred that large, unexposed intrusives exist at depth in these areas. Although the age of these inferred intrusive is unknown, based on field relations, they are believed to be older than the extensional faulting event, and they are inferred to be late Laramide in age (similar to the Panochas granite?).

7.2.4 Structure

The district is characterized by several periods of complex deformation. Simplistically, much of the district lies within a major northwest-trending, northwest-plunging, anticlinal fold belt. The Glance Conglomerate may have served as a buttress to this folding event and most of the deformation appears to have occurred within the more easily deformed Morita, Mural, and Cintura Formations. Parasitic folds and drag folds locally are well developed. Although the fold axes generally trend northwesterly and the axial planes dip to the southwest, in the northwestern portion of the district between the Camello and Amelia deposits, the beds are overturned to the southwest.

The Laramide thrust faulting appears to be primarily bedding-parallel (northwest-striking, south dipping), and the actual amount of displacement is difficult to determine. More localized compressional-style folding and deformation appears to have accompanied this event, and individual beds are often highly deformed. Following the Laramide compressional event, the region underwent uplift (doming?), general extension, and southwest-directed, low-angle normal faulting occurred. These faults generally trend northwesterly and dip to the southwest at between 20º and 40º, and they clearly cut the previously described late Laramide contact metamorphic thermal event and the felsic dike event. This low angle faulting event has been described as listric faulting, and it probably is related to a well-documented period of Miocene regional extension. Although the displacement on these faults is not well documented, it is believed that the individual plates have not moved more than a few kilometers, at most. In the La Gloria/Jabali and Mirador areas, the low-angle faults place large blocks of Mural

Limestone on top of a "normal" section of northwest-trending Mural, Cintura, and Morita Formations. The displaced plates generally are comprised of unaltered siltstones/limestone that, in some locations, lie discordantly on a package of thermally altered hornfels.

The low-angle normal faults appear to be both intra- and post-mineralization in age, and in some locations, they clearly cut and displace gold mineralization.

Subsequent to the folding, thrust faulting and low-angle normal faulting, extensional northeast and north-northwest-trending faulting occurred. Following the extensional faulting, Basin and Range faulting occurred and resulted in the formation of high-angle north-northwest-striking normal faults. The north-northwest-trending faults appear to post-date the low-angle normal faults, and they also may have reactivated the older, northwest-trending thrust faults. In the southeastern portion of the district, the northeast-trending faults cross-cut the felsic and lamprophyre dikes and the low-angle normal faults, and it is clear that this faulting is at least younger than 26.1 Ma (lamprophyre age date). In this area, the lamprophyres locally appear to be controlled by the low-angle normal faults, but they also generally exhibit a fault-parallel cleavage. The northeast and north-northwest faults show both right-lateral and left-lateral, oblique strike slip movement based on stratigraphic offset and slicken lines measurements.

8.0 DEPOSIT TYPES

Historic production for the Santa Teresa mining district was principally from sedimentary-rock-hosted gold deposits that have been characterized by some authorities as "Carlin-type" in character. As noted in Section 9.0, although there are several features similar to Carlin-type gold systems, there are also many differences.

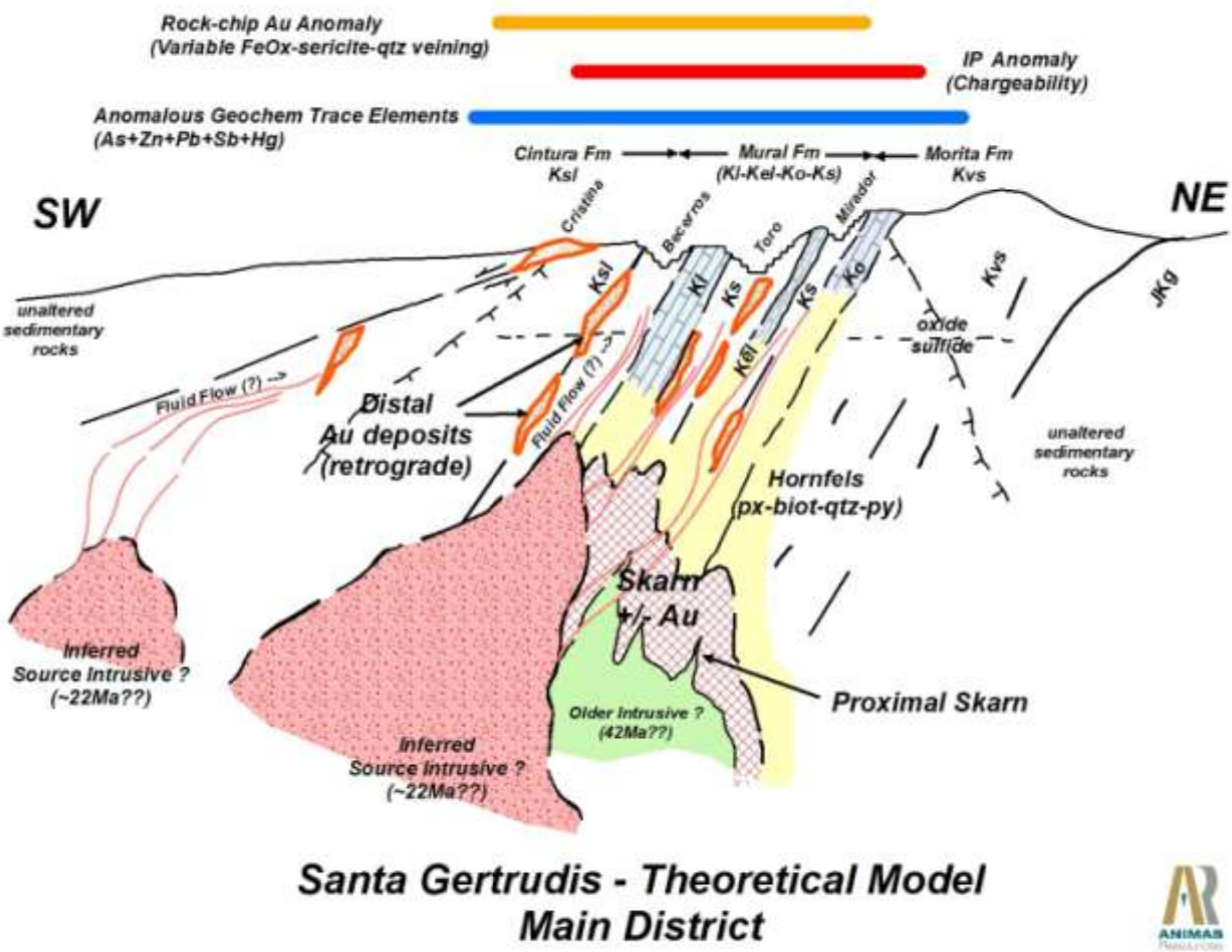
The majority of the gold mineralization in the Santa Teresa mining district, and specifically the higher-gold grades (>~3g Au/t), occurs within fault and shear zones, in contrast to the greater dissemination typical of Carlin-type systems. The district contains abundant carbonate rocks, yet decalcification is not a prominent alteration feature associated with the gold mineralization. Silicification is also not as pervasive as in the Nevada Carlin-type gold systems, with the silicification generally occurring as quartz veins rather than wholesale jasperoidal replacement of the rocks. The style of sedimentary-rock-hosted gold mineralization observed in the Santa Teresa district is generally referred to as "Carlin-like" and is more similar to deposits classified as distal-disseminated gold deposits. Recognition of similarities with these deposits provides useful exploration guides for further exploration within the district. For example, sedimentary-rock-hosted gold deposits might be targeted for exploration within the entire periphery of intrusion-centered hydrothermal systems for distances up to ~10km away from the intrusive center.

Although the majority of the known gold deposits within the Santa Teresa mining district can be characterized as structurally controlled deposits within sedimentary rocks, the Cristina deposit represents a significantly different deposit type. Although Cristina is hosted within the Cintura Formation (locally calcareous siltstone-shale), the deposit is essentially an epithermal quartz stockwork vein-type gold system.

While the focus of past and present exploration activities in the district has been on the sedimentary-rock-hosted gold occurrences there are several other mineral deposit types. These include gold-copper deposits in skarn (± magnetite), quartz vein deposits, and locally, placer gold deposits. Polymetallic quartz vein systems, with or without gold, and containing some combination of silver, copper, bismuth, lead, and zinc also have been prospected in the past.

In the southeastern portion of the district (Greta area) and in the San Enrique area there are indications of intrusive systems with a copper-molybdenum-silver affinity. Although no intrusive rock is exposed in the Greta area, the geochemistry of both areas is reminiscent of other "failed" porphyry systems elsewhere in Sonora and southern Arizona. Although these two systems are clearly base-metal biased on the surface, there is some evidence that there was also an associated weak gold event. This is indicated in the geochemical sample results (weak gold in magnetite-garnet skarn and hornfels), and it is permissive that there may be unexposed, base-metal and gold type, skarn systems associated with these intrusive rocks. A permissive conceptual model for this style of gold mineralization is shown below in Figure 8.1.

Figure 8.1 Deposit Model



9.0 MINERALIZATION

This section not only outlines the general characteristics of mineralization throughout the Santa Teresa mining district, including associated alteration and geochemistry, but it also includes detailed discussions of some of the more important gold deposits. While there are approximately thirty gold deposits known in the district, it is beyond the scope of this document to include discussions of each. As such, a few of the larger and more characteristic deposits will be discussed in more detail below.

9.1 Mineralization

Field mapping and rock-chip geochemical sampling by Animas personnel within the Santa Teresa mining district confirms the presence of gold mineralization along northeast-striking (~045º), steeply west-dipping, normal and oblique slip faults. Gold mineralization appears to occur primarily within the hanging wall portions of the fault zones and these faults are believed to be the primary "feeder" structures for the known gold mineralization. Where the northeast-trending faults intersect northwest-trending, reactivated, bedding-parallel thrust faults (~345º) and deformation zones, gold mineralization tends to bleed out along these more permeable zones. Tensional, conjugate sets of north-south and east-west-trending faults also control the localization of gold mineralization, but these zones generally are less well mineralized than the northeast- and northwest-trending set of faults. It should be noted that the relationship of the northeast and northwest fault intersections acting as a control for gold mineralization has been noted since Phelps Dodge worked in the area in the late 1980's.

In the southeastern portion of the district in the general Greta area (Figure 7.2), gold mineralization is also locally noted to occur along some of the low-angle normal faults. When mineralization is seen in this structural environment it is almost always located in close proximity to a northeast-trending "feeder" structure, and it is inferred that the low-angle faults serve as favorable, permeable channels for the gold mineralization. It should be noted however, that if gold mineralization is controlled by the Miocene low-angle fault structures, the implication is clear that gold mineralization at least locally post-dates this faulting event. These low-angle faults also locally contain mineralized lamprophyre dikes (Bennett, 1993, 26.1 ± 0.7 Ma), and this, by necessity, would make the gold mineralizing event younger than 26± Ma. The previously described northeast- and northwest- to north-northwest-trending, steeply west-dipping faults often have gold-bearing silicified breccia along the fault planes and locally, weakly gold-bearing, locally pyritic (now goethite-hematite) stratiform silicification (*i.e.*, jasperoid) occurs within the Ko and Kos members of the Mural Limestone. Although the silicification and jasperoids are most common east of the El Corral deposit, they also have been noted in Ruben, El Toro, and Toro Norte areas.

Sigmoidal tension gashes in close proximity to the northeast faults are locally filled with quartz breccia and jasperoid replacement clearly occurs in the hanging walls of these faults, and this indicates that hydrothermal fluids were utilizing these faults as fluid conduits. Structural preparation played a key role in the distribution of mineralization and structural intersections may have provided the traps needed to concentrate the gold.

Helmstaedt (1996) illustrated the potential importance of structural intersections in a report prepared for Campbell Resources. In that report Helmstaedt documented northeast-trending faults crosscutting and mineralizing the older northwest-trending faults (reactivated thrust faults(?)) in the Ruben area.

Although the northeast and northwest-trending (reactivated thrusts(?)) faults appear to be important in controlling gold deposition, it is obvious that east-west-trending faults also are important for gold localization. The best evidence for this is seen in the Escondida, the Trinidad-Pirinola-Amelia, and possibly the Berta areas. In these areas east-west faults and fracture zones appear to control gold mineralization.

Although northwest-trending reactivated thrust faults appear to be important in the localization of gold mineralization, it is clear that there is a more profound and fundamental northwest control for gold mineralization. In general, the Santa Teresa mining district trends northwesterly, and although this is also the trend of the more favorable host rocks (*i.e.*, Mural Formation), it is believed that a deep-seated structural suture may well exist below the district. This direction is the trend of the Bisbee rift basin and earlier continental accretion sutures, and it is permissive that the gold mineralization at Santa Gertrudis is controlled by deep-seated Precambrian structures.

Additional evidence for the existence of an old and deep-seated structure(s) is seen in the occurrence and distribution of the numerous lamprophyre dikes seen throughout the district. These dikes almost universally strike northwesterly and are near vertical, and based on their whole rock chemistry, most authorities believe that they originated within the upper portions of the mantle and were rapidly emplaced into higher levels of the crust. If these intrusive rocks really are deep-seated in origin, they almost certainly had to have been intruded upwards along older, extremely deep penetrating zones of structural weakness.

Mineralization appears to occur preferentially in rocks that were both structurally prepared and had chemical properties that allowed for gold deposition. Calcareous siltstone and limestone in La Gloria, Greta, and Santiago show strong local dissolution and jasperoid replacement is present throughout the district on a small and large scale. This pattern of intersection of faults in preferred host rocks is repeated throughout the district and has been the model used to explore the district since the early Phelps Dodge days. Based on this apparent fact, any larger deposits to be found at depth or under alluvial cover probably will likewise be associated with favorable structural intersections and chemically reactive calcareous host rocks.

Gold mineralization within the Santa Teresa mining district is most common in areas of structural ground preparation and less so as replacement deposits in calcareous units. Favorable ground preparation produced by a combination of high-angle, bedding-plane, and near bedding-plane faults and fractures resulted in the formation of zones that can have considerable lateral and presumed down-dip extent. This type of mineralization is most characteristic at El Toro, El Corral, Mirador, Escondida, Becerros Norte, Manueles Sur, Maribel, and Camello. Mineralized zones are generally 10-30m thick, and locally extend outward to a limited extent as replacement of the calcareous units. The most favorable structural settings for gold mineralization clearly are where northeast- and northwest-trending fault zones intersect.

Similar structurally controlled mineralization is exposed in outcrop away from the main deposits though many of these occurrences appear to be relatively narrow, and lack vertical and lateral continuity. Commonly, mineralization can be traced for only several tens of meters to a few hundred meters along strike and down-dip.

In the southern portion of the district, particularly in the La Gloria and Greta areas, replacement-style gold mineralization is more common. Gold is associated with jasperoid-like silicification of calcareous lithologies that is more typical of Carlin-type gold deposits. Within these deposits there is less evidence of structural ground preparation than found in the deposits in the northwestern part of the district (as at Maribel-Katman, El Toro-Toro Extension, Amelia, and Camello).

A third style of mineralization is displayed only at Cristina where gold is closely associated with a stockwork of quartz ± calcite veining. The style of quartz veining in this deposit is reminiscent of more classical epithermal type vein deposits (multiphase, open space quartz veins with 1% pyrite and local quartz pseudomorphs after calcite). The gold occurs in the hanging wall of a north-northwest-trending (330º±) fault that dips southwest at about 30º. The main fault zone also contains a massive silica breccia with angular fragments of silica and silica vein material set in a siliceous matrix. The siliceous breccia generally does not contain significant gold, and it may post-date the main mineralizing event.

All of the gold deposit types within the Santa Teresa mining district are obviously associated with faults and fracture zones, and there is a clear indication that the faults served as the primary conduits for ascending hydrothermal fluids.

Although the Mural Formation is the most favorable host lithology for gold mineralization, all of the sedimentary units contain some concentrations of gold. Furthermore, historic records (Hamilton, 2003) indicate that approximately 41% of all gold production came from non-Mural units. Historic average deposit grades vary widely from about 0.95g Au/t to about 3.85g Au/t, further suggesting that gold mineralization in the district is highly variable, and geologically diverse. Past production, grade, and host formations are shown in Table 9.1.

Throughout the district there are numerous andesite and diorite sills and dikes that contain low levels of gold, but potentially economic gold grades are not known to occur in the igneous units. It is likely that the intrusive rocks did not fracture as readily as the sedimentary host rocks and therefore are a less favorable host due to their lack of permeability.

Based on the work completed to date, it appears that gold occurs primarily as disseminated, submicron particles of native gold, commonly in quartz veins or silicified zones. Sulfide minerals locally are spatially associated with the gold mineralization and these include pyrite and minor amounts of arsenopyrite, stibnite, chalcopyrite, sphalerite, and galena in the unoxidized mineralization. Although these minerals (elements) will be discussed in more detail below, in general they are more widely distributed than the gold mineralization and they appear to serve as pathfinder elements.

Table 9.1 Production by Host Lithology

(From Hamilton, 2003)

Deposit Name	Production Au in oz	Grade g Au/t	Formation	Percent by Deposit	Percent by Formation
Becerros Norte	106,242	2.07	Cintura	18.8	
Becerros Sur	54,869	2.16	Cintura	9.7	
Katman	17,756	1.48	Cintura	3.1	
Manueles Sur	11,027	2.69	Cintura	**2.0**	**33.6**
Maribel	24,406	2.19	Morita	4.3	
Trinidad	15,380	2.12	Glance/Morita	**2.7**	**7.0**
Amelia	98,483	2.88	lower Mural	17.4	
Ruben	6,418	3.85	lower Mural	1.1	
Toro Norte	5,430	2.80	lower Mural	**1.0**	**19.5**
Dora	77,039	2.35	middle Mural	13.7	
El Corral	39,164	2.50	middle Mural	6.9	
Gregorio	11,794	1.45	middle Mural	2.1	
Mirador	10,202	1.43	middle Mural	1.8	
Sofia	7,205	1.26	middle Mural	1.3	
Camello	6,889	1.08	middle Mural	1.2	
Corral NW	3,404	2.40	middle Mural	0.60	
Hilario	3,222	0.95	middle Mural	**0.6**	**28.2**
Agua Blanca	43,038	2.12	upper Mural	7.6	
Toro	22,870	1.51	upper Mural	**4.1**	**11.7**
Total	**564,838**	**2.13**		**100.00**	**100.00**

9.2 Alteration

9.2.1 Silicification

Silicification is an important style of alteration, with respect to gold mineralization, within the Santa Teresa mining district, and it occurs primarily as quartz veins and more locally as jasperoidal replacement bodies.

Four types of quartz "veins" have been observed on the property: massive white quartz, open-space quartz, milky quartz, and siliceous breccias. Based on field relationships, the oldest quartz vein event is represented by the relatively massive white quartz veins. These veins range from less than one centimeter to greater than one meter in thickness, and generally are discontinuous and erratic along strike (and probably down dip). These veins usually have replacement silica halos of varying width, and they generally are barren of gold mineralization. The next youngest vein event is represented by banded quartz veins with a cockscomb quartz texture. These veins generally are less than a few centimeters in width, have ≤ 1cm replacement silica halos, and usually contain ≤ 1% pyrite (or limonite after pyrite), calcite and/or siderite. These veins generally occur within siltstone and shale, and they almost always contain variable quantities of gold. The milky quartz veins are less then 1m in width, have replacement silica halos, and are generally barren of gold mineralization. The siliceous breccias are usually less than a few meters in width and generally occur along recognizable fault zones. Although the breccias are somewhat variable, they usually contain abundant pyrite (or limonite after pyrite), are comprised of variably-sized angular siliceous fragments set in a siliceous matrix, and can be quite high grade (>10g Au/t).

In the southeastern portion of the Santa Teresa mining district, more massive, gray, siliceous replacement bodies (jasperoids) are found in close association with feeder faults/structures. The jasperoids primarily occur within the hanging wall of the northeast-trending feeder structures, and they generally tend to develop along the contact between the thicker limestone units and the adjacent calcareous siltstone/shale. In some locations fairly large bodies of jasperoid can be found and in the Centinela area (±1km southwest of El Corral) the jasperoid is in excess of several hundred of meters in length and more than 100m wide. Gold content within the jasperoids is variable, ranging from barren silica to in excess of 1 g/t Au.

It should be noted that one additional but very local style of silicification is present in the Cristina area. As previously described in Section 9.1, a massive siliceous breccia occurs at the base of the Cristina gold deposit. This unit occurs within a northwest-striking, southwest-dipping fault zone, and it is up to 5m thick and crops out for more than 200m along strike. This unit is comprised of angular siliceous fragments (containing local quartz veins) set in a massive silica matrix. Based on sampling results, this unit is generally barren of gold, and it may post-date the main-stage gold mineralization at Cristina.

9.2.2 Decalcification

Although decalcification is not an important or widespread style of alteration within the Santa Teresa mining district, there usually is some degree of decalcification in the calcareous clastic units. Decalcification generally is associated with silicification and it may correlate directly with the overall intensity of hydrothermal alteration/mineralization. Argillization is often directly associated with decalcification, and some portion of the clay may be residual from the original host rock.

9.2.3 Argillization-Limonite

Geological mapping within Santa Teresa mining district has delineated large areas of weak to moderate pervasive clay alteration and variable hematite-goethite-(jarosite) staining. Some of these zones of alteration-mineralization are in excess of several kilometers long and up to 500m wide, and they generally occur along major, inferred northwest- and east-west-trending structural zones (El Toro-Mirador, Trinidad, and Escondida zones).

Although these alteration zones clearly contained 1-2% disseminated and fracture-controlled pyrite of hydrothermal origin, the origin of the clay alteration is somewhat more problematic. It is permissive that the clay alteration is simply of supergene origin and that it formed as a result of the oxidation of the pyrite and associated acid generation. However, it likewise is permissive that the clay may be of hypogene origin resulting from the hydrothermal alteration of detrital feldspar, or some combination of hypogene detrital clay with a supergene overprint.

Many of the major historic mines are contained within these large zones of alteration and mineralization, and it is believed that these alteration zones formed during the primary gold mineralizing event. Although these zones obviously are much larger than the individual gold deposits contained within them, they are thought to represent significant, major centers of hydrothermal activity.

9.2.4 Contact Metamorphism

Four large areas of hornfels development, ranging in size from 2-9km^2, have been identified within the district: immediately south of Amelia, Mirador, Greta, and San Enrique zones (Figure 9.1). Each area is comprised of black to dark brown biotite and pyroxene hornfels with variable quartz-pyrite-calcite veinlets, 2-3% disseminated pyrite, anomalous gold, and locally, retrograde chloritic alteration. Although the hornfels is very hard and dense, remnant bedding can be preserved locally, and usually the more pure limestone units are only slightly recrystallized. The hornfels development within the Amelia zone is located immediately south of the Amelia mine and the gold mineralization at the mine does not appear to be directly associated with the hornfels alteration.

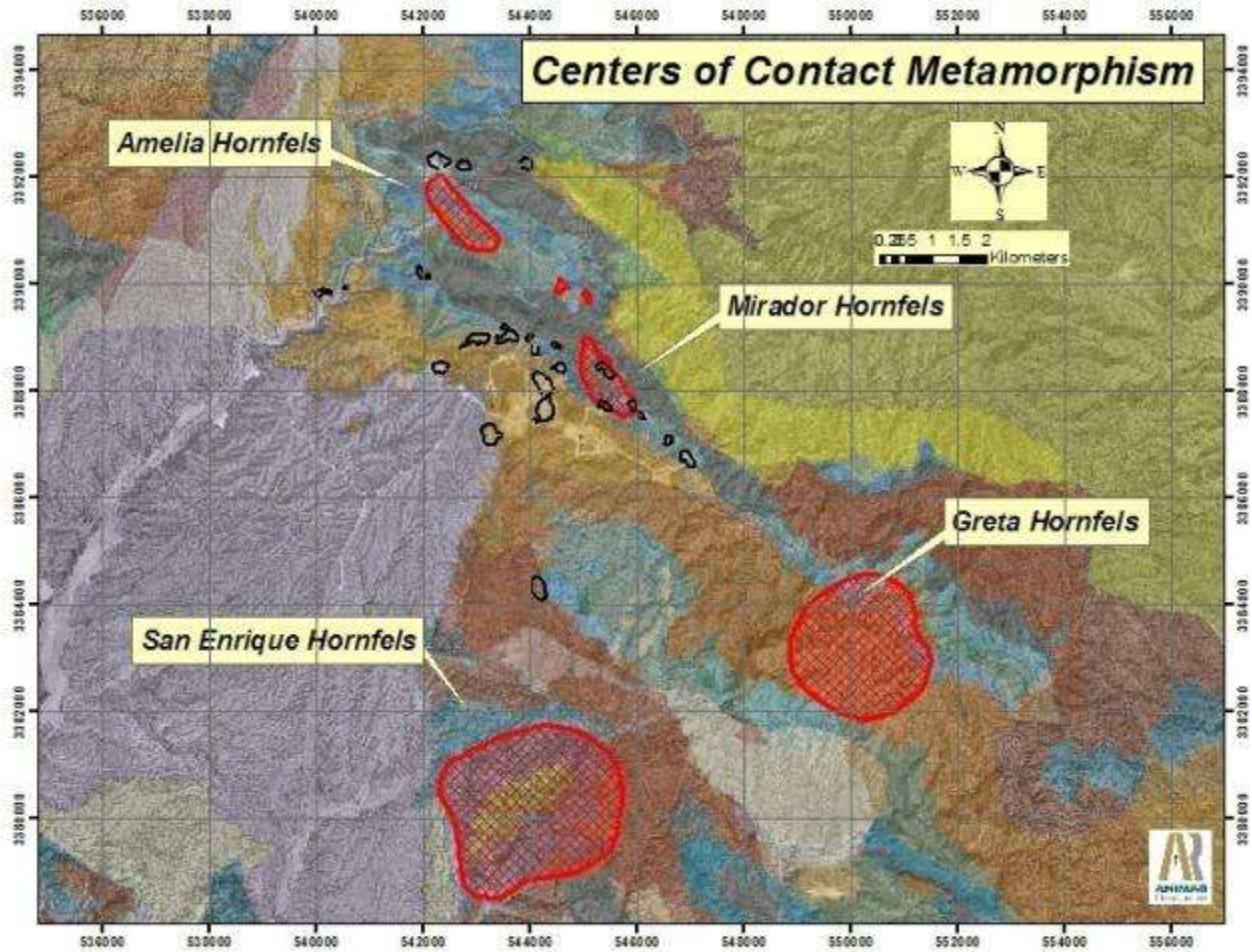
The primary contact metamorphic event was almost certainly isochemical in nature, and it resulted in the formation of diopsidic pyroxene (diopside hornfels), secondary biotite (biotite hornfels), local garnet, and disseminated pyrite-(±pyrrhotite). Subsequent to the main thermal recrystallization event, it appears that a more truly hydrothermal event occurred. This event is represented by the quartz-calcite-pyrite-(± arsenopyrite-sphalerite) veining (locally approaching a stockwork) and subsequent retrograde chloritization.

Although a two mica, peralkaline, S-type granite (Las Panochas Granite) is clearly responsible for the hornfels alteration in the San Enrique area, no intrusives are exposed in the Amelia, Mirador, and Greta areas. However, intrusives are inferred to underlie these areas.

In addition to the large areas of hornfels described above, the sedimentary rocks adjacent to the diorite sills (Los Becerros area) also are thermally altered. Generally, the metamorphic aureole is relatively thin (≤10m), and it appears to be comprised of fine-grained, green diopside(?). The diorite and associated hornfels appears to be pre-mineralization in age, and locally, they are weakly quartz veined.

Based on field mapping it is clear that the hornfels-style alteration is cut and displaced by Miocene low-angle normal faulting. This fact, coupled with the published age dates (Geospec, 2006 and Bennett, 1993) and similar style of alteration seen at San Enrique, implies that this intrusive event probably occurred at the end of the Laramide Orogeny (40-45Ma).

Figure 9.1 District Contact Metamorphic Centers



9.2.5 Oxidation and Possible Supergene Enrichment

All of the known gold deposits are oxidized, and this oxidation extends to depths of up to 150m below the current surface. Within the oxidized zone, iron oxides consist of a fine-grained assemblage of goethite, hematite, and locally, jarosite. Liesegang banding also is locally quite common. At depth, below the zone of surface oxidation, the Mural Formation commonly is very dark black (carbon rich?) and oftentimes contains up to 5% disseminated pyrite. Locally, as in the case of the Dora deposit, the unoxidized Mural Formation also contains anomalous to in excess of 1g Au/t gold mineralization. Generally there is a relatively sharp contact between oxidized and unoxidized rock, but in places oxidized rock is seen to extend hundreds of meters below the surface along fault and fracture zones.

Although there is not a great deal of supporting quantitative data, it appears that supergene gold enrichment may have occurred locally at Santa Gertrudis. This is based on some of the results from

Animas' drilling program as well as a detailed review of pre-Animas cross sectional information. In general, it appears that gold grades decrease immediately below the existing pits, and the near-surface, high-grade gold values (>2g Au/t) generally do not project to depth. The apparent supergene enrichment may be a consequence both of gold immobility during rock-mass loss with weathering and/or increased gold mobility in oxidizing chloride-rich groundwater.

9.3 Geochemistry

A massive amount of soil and rock-chip geochemical sampling has been completed within the Santa Teresa mining district. Phelps Dodge and Campbell Resources collected more than 20,000 soil samples and more than 29,900 rock-chip samples, and to date, Animas Resources has collected approximately 1880 rock-chip geochemical samples. Although most of the Campbell and Phelps Dodge rock-chip samples were only analyzed for gold and select trace elements, most of the soil samples and all of the Animas samples were analyzed for multiple elements. Unfortunately, most of the available soil sampling was done subsequent to the mining of some of the deposits, and in these mined areas, no "pre-mining" soil geochemistry exists.

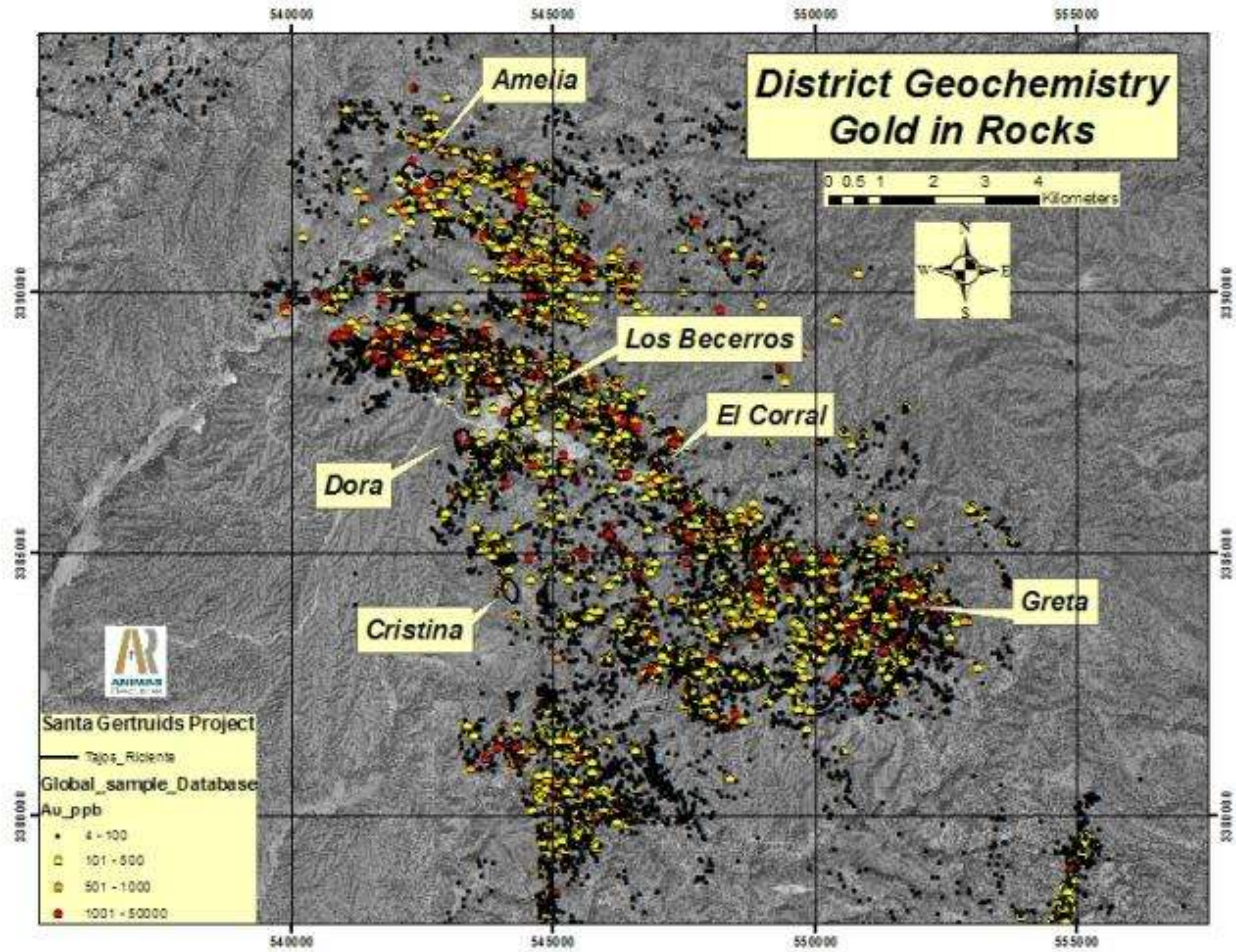
A much more in depth evaluation of the geochemical data currently is in progress by consulting geochemist Dr. J. Jaacks of Denver, Colorado, and it is probable that his work will add greatly to our overall understanding of the geochemistry of the Santa Teresa mining district.

9.3.1 Surface Rock-Chip Geochemistry

The Santa Teresa mining district can characterized as having a gold geochemical anomaly of profound size and tenor. Based on existing results from rock-chip samples collected by Phelps Dodge, Campbell Resources, and Animas Resources, the zone of anomalous gold (>100 ppb) is approximately 20km long (northwest to southeast) and up to 8km wide, and locally, numerous samples exceed 1ppm gold (Figure 9.2).

Multi-element analyses of rock-chip samples completed by Animas personnel indicates that the gold mineralization is closely associated with anomalous silver (>1.0ppm), arsenic (>100ppm), and zinc (>100ppm). The silver, arsenic and zinc anomalies all have a northwest trend similar to the gold anomaly. Although the sample data are more limited, the Animas rock-chip sampling in Greta, Mirador, and Amelia hornfels areas (no Animas sampling in the San Enrique area) also show recognizable copper (>100ppm), molybdenum (>10ppm), and lead (>100ppm) anomalies, and it is clear that these three areas have a distinctly different elemental assemblage, possibly associated with a different, probably older, intrusive-related system.

Figure 9.2 District Geochemistry – Gold in Rocks (ppb)



9.3.2 Soil Geochemistry

Based on the soil sampling work completed to date, it is clear that gold mineralization is closely associated with anomalous arsenic (>100ppm), but that arsenic is much more widely dispersed than gold (Figure 9.3 and Figure 9.4). Weakly anomalous antimony (+10ppm) and mercury (+100ppb) both appear to be widespread within the district, and they are not particularly useful in delineating mineralizing centers.

Unfortunately, the soil data are more limited over the majority of the deposits due to historic mining disturbances, and so the relationship between the soil geochemistry and the known gold deposits cannot be determined. It should be noted that the soil sampling data also may be somewhat suspect because of surface down-slope redistribution/enrichment and the lack of residual soils.

A great deal of pre-Animas and pre-mining soil sampling was done over the Amelia, Mirador, Greta, and San Enrique hornfels areas. These areas all have pronounced Cu (>100ppm) and Mo (>25ppm) anomalies, and at Greta, there is a molybdenum anomaly which is surrounded by a peripheral copper anomaly. At Amelia and to some extent at Mirador, the copper anomalies are more pronounced and the molybdenum anomalies are more subdued, and it is permissive that the inferred intrusive source in these two areas may be deeper than at Greta.

Figure 9.3 District Geochemistry – Gold in Soils (ppm)

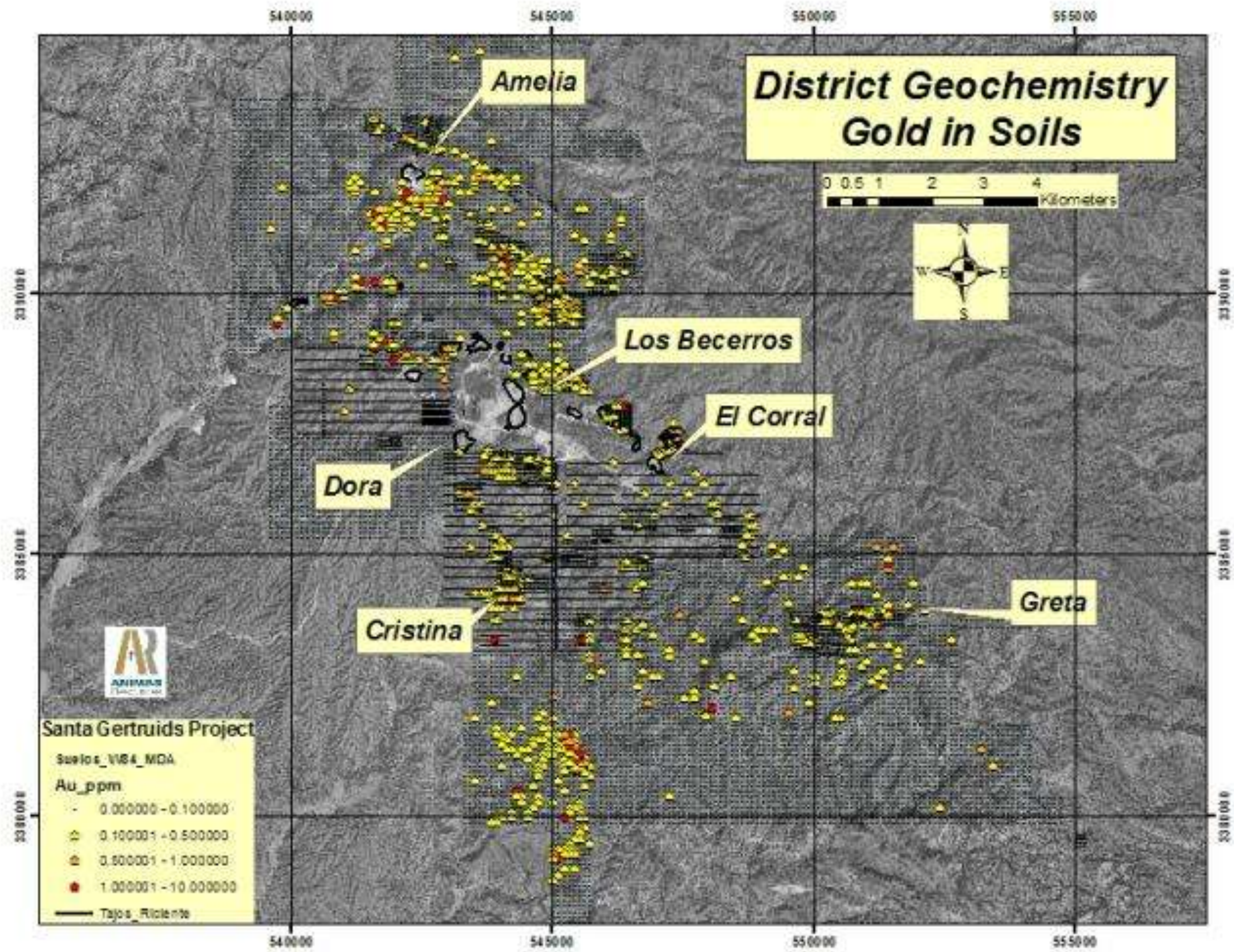
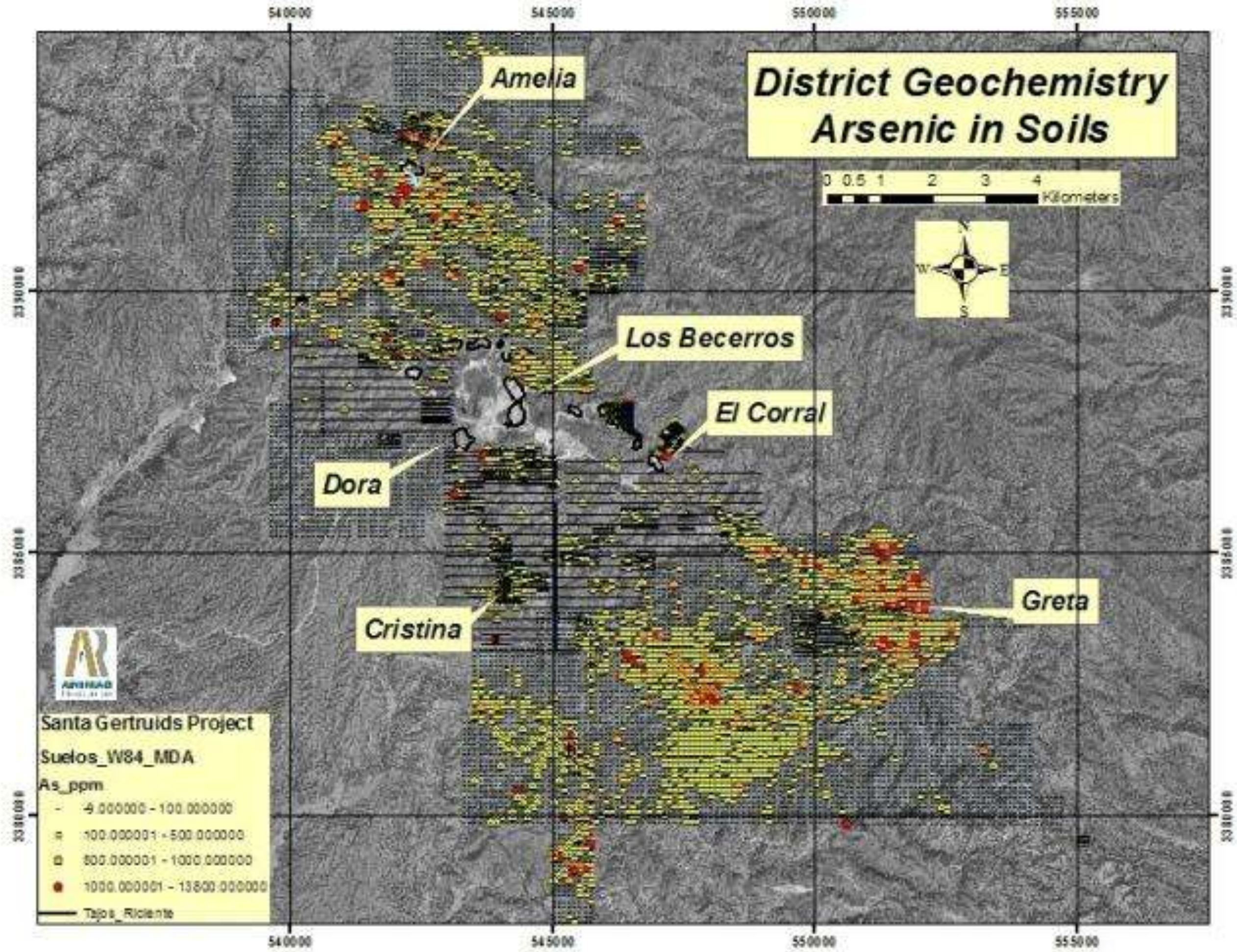


Figure 9.4 District Geochemistry – Arsenic in Soils (ppm)



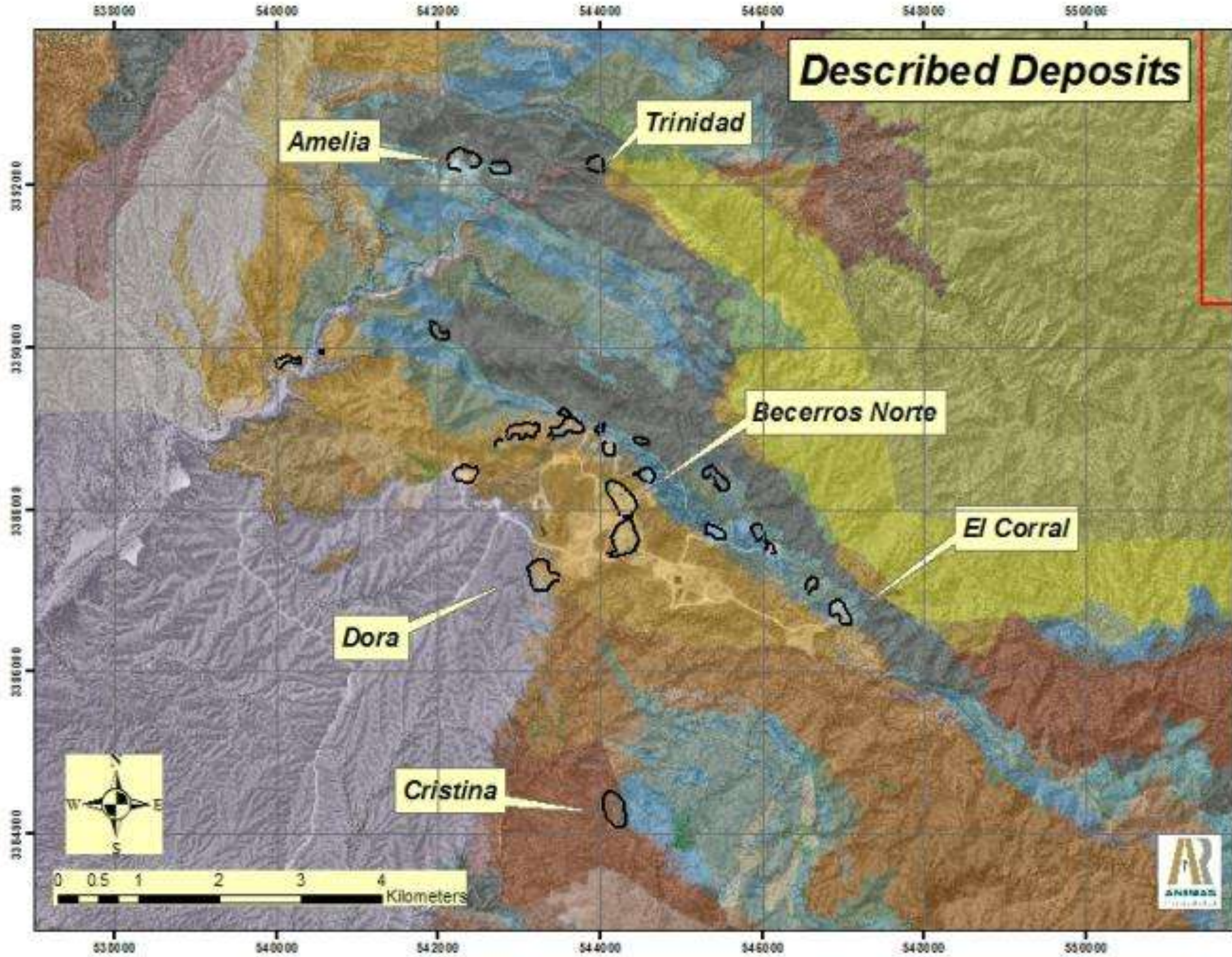
9.3.3 Deposit Geochemistry

Based on previous drilling and actual mining data, it appears that the gold to silver ratio within the Santa Gertrudis deposits is approximately 1:1. However, sampling work at the more typically "epithermal" Cristina deposit indicates that silver is much more abundant in this system, and here the gold to silver ratio is closer to 1:10. This further strengthens the idea that this deposit is somewhat different than the known deposits within the main district.

9.4 Deposit Descriptions

Since there is such a diversity of styles of mineralization in the district some details of several gold deposits are presented here to support the more general statements about geology, alteration, and mineralization presented above. The deposits described in this section are shown on Figure 9.5.

Figure 9.5 Described Deposits



9.4.1 Dora Deposit

The Dora gold deposit was partially mined by Phelps Dodge and Campbell in the 1990's as part of the Santa Gertrudis mine; total production was approximately 1,020,000 tonnes at an average grade of 2.35g Au/t. The deposit is hosted in a tectonically dislocated portion of the Mural Formation. The rocks within the pit dip west to northwest and are comprised of calcareous siltstone, carbonaceous siltstone-shale that contains ±5% fine-grained disseminated pyrite, sandstone, and limestone. Felsic dikes with localized quartz phenocrysts and sparse biotite phenocrysts cut the sedimentary rocks in the ramp on the east side of the pit.

Animas drilling in the Dora area, along with previous Campbell geological mapping and Phelps Dodge pit blast hole maps, indicate that a major post-mineralization (?) low-angle normal fault underlies and terminates the Dora mineralization. This fault strikes north-northwest and dips at approximately 30º to the southwest, and the Cintura and Mural Formations are tectonically emplaced over underlying Cintura Formation.

The Dora blast hole maps suggest that gold mineralization occurs at the intersections of a main northwest-trending, steeply west-dipping fault and at least two, high-angle northeast-trending fault/fracture zones. A majority of local deformation (folding, shearing, and fracturing) has occurred along these faults, and where the deformation is intense, the rocks are oxidized producing intense goethite and hematite.

In addition to the structurally-controlled gold mineralization, precious metals also appear to occur in selected calcareous beds within the sedimentary units (replacement bodies?). Gold is associated with variable argillization and local silicification. Secondary silica occurs primarily as locally open-space, quartz veinlets consisting of quartz-iron carbonate-iron oxide (and/or pyrite). The mined portions of the deposit appear to have been totally oxidized, and although some of the remaining gold resource probably is oxidized, significant sulfide-bearing mineralization also remains.

Past drilling has not completely defined mineralization down-dip and some potential for additional mineralization still exists southwest of the main pit. In this area, a post-mineralization fault has been mapped, and it is permissive that a portion of the deposit has been down dropped to the southwest approximately 100-150m.

9.4.2 El Corral Deposit

The El Corral gold deposit was mined by Phelps Dodge in the early 1990’s as part of the Santa Gertrudis mine; total production was approximately 487,000 tonnes at an average grade of 2.5g Au/t (shown in Table 6.6 as for the Corral deposit). Gold mineralization is hosted in the lower portion of the Mural Formation, which generally strikes to the northwest and dips 40º to 60º to the southwest. A thin diorite (?) sill is present along the southeast side of the pit. A thin limestone unit (Kel) immediately above the mineralized horizon may have served to impede the upward flow of the mineralizing solutions, thereby assisting in the concentration of the gold mineralization.

The distribution of gold seems to be controlled principally by a north-northwest-trending, south-dipping (50º) “feeder” fault and northwest-striking, southwest-dipping reactivated Laramide thrust faults that parallel bedding. The northwest feeder fault is well exposed in the southeastern end of the El Corral pit, and geochemical samples from this zone can contain up to 9.5g Au/t. Although the majority of the mineralization in the El Corral pit is structurally controlled, locally deformed calcareous siltstone units also appear to have been selectively mineralized as well (replacement?).

Gold is associated with weakly developed pervasive argillization and locally intense open-space quartz veining. The quartz veinlets are generally less than 1cm in width, and they are comprised of quartz-iron carbonate-iron oxides (and/or pyrite). In places the veinlets form a sheeted to stockwork vein system.

The mined area and much of the remaining gold mineralization is oxidized and intense goethite-hematite is present throughout the pit. In places gold mineralization extends to depth into locally carbonaceous, calcareous siltstone that contains up to 5% fine-grained disseminated pyrite.

The El Corral deposit has been extensively drilled by both Animas and previous workers in the area, and there does not appear to be an opportunity to extend the mineralized zone.

9.4.3 Becerros Norte Deposit

The Becerros Norte gold deposit was mined by Phelps Dodge in the early 1990's; total production was approximately 1,596,000 tonnes at an average grade of 2.07g Au/t. Gold mineralization is hosted within the Cintura Formation and is closely associated with two, pre-mineralization (?), northwest-striking diorite sills. The Cintura Formation is comprised of mudstone, greenish siltstone, and fine-grain sandstone that strike west-northwest and dips southwest at 50º - 70º. Where in contact with the diorite sills, the Cintura is strongly recrystallized to diopside hornfels. Mineralization generally follows the attitude of the host rocks in a zone of diffuse shearing, faulting, and numerous bedding plane slips. The rocks in the pit are strongly folded, fractured, and deformed.

Gold is associated with locally abundant quartz veining and intense goethite-hematite (and/or pyrite) staining, and mineralization generally parallels bedding within the Cintura Formation. Quartz veining and limonite staining are strongest within the sedimentary rocks adjacent to the diorite, and only very weak quartz veining is present within the intrusive rocks. In spite of the fact that the diorite is inferred to be pre-mineralization in age, it contains no significant gold mineralization.

9.4.4 Amelia Deposit

The Amelia gold deposit was mined by several small operators and then Minera Roca Roja in the 1980's and 1990's; total production is not well documented but past production is estimated to be approximately 100,000 ounces of gold. The Amelia deposit is hosted within the Mural Formation which strikes approximately east-west and generally dips to the north at 50º-70º. The Mural within the immediate mine area though has a near-vertical dip and below the mine, the units are overturned to the south. It is possible that the Amelia deposit is underlain by a north-dipping low-angle fault (normal or thrust fault?). If this is the case, then the gold deposit may be located in an allochthonous plate.

The Amelia mine is at the western end of an inferred east-west trending shear/fault zone that may control mineralization within the Trinidad and Pirinola deposits to the east. Gold is associated with argillization and iron-oxide staining (goethite-hematite) and locally variable, open-space, quartz veining. The quartz veins are generally <1cm in width, and contain quartz-iron carbonate-pyrite (or goethite after pyrite). Locally within the more calcareous units, weak decalcification is also evident. Although the rocks exposed within the main Amelia pit generally are strongly oxidized, along the south wall of the pit, black pyritic (>5%) shale with quartz veining is exposed. Rock-chip geochemical sampling of the pyritic black shales indicates that no significant gold is present within these units (≤ 50 ppb Au).

The immediate Amelia mine area has been extensively drilled by previous operators, and it is clear that the Amelia gold mineralization does not appear to connect with the Pirinola mine located to the immediate east. However, the area to the south of the Amelia-Pirinola mines has not been extensively explored (Lixivian property), and appears to have good exploration potential.

It should be noted that there is a large area of hornfels located immediately south of the Amelia pit. The Mural and Cintura Formations in this area are strongly recrystallized to diopside, and locally garnet, hornfels, and an intrusive is inferred to be present at depth.

9.4.5 Cristina Deposit

The Cristina deposit is located approximately three kilometers south-southeast of the Dora deposit, and it represents a rather unique style of gold mineralization within the greater Santa Teresa mining district. The Cristina deposit has not been mined.

The Cristina deposit is hosted within the Cintura Formation which is in fault contact with underlying Mural Formation (Kl limestone). The Cintura generally strikes northwest and dips southwest at approximately 30º. A major fault separates the two formations and strikes approximately north-northwest and dips southwest at 30º-40º. It is believed that this fault served as the main conduit for the mineralizing fluids.

Gold mineralization within the Cintura Formation is immediately above the fault, and is closely associated with a near stockwork quartz vein zone and weak though pervasive argillization. The veins vary from ≤1cm to +20cm in width and locally contain ±1% pyrite (or goethite after pyrite). The veinlets locally have a preferred north-south and northwest orientation, and they often have an open-space cockscomb texture and locally, quartz pseudomorphs after calcite. The main fault zone contains a massive silica breccia with angular fragments of silica and silica vein material set in a fine-grained, granular siliceous matrix. The siliceous breccia generally does not contain significant gold, and may post-date the main mineralizing event. A late, post-silica, calcite event also is evident at Cristina, but this likewise appears to be devoid of gold mineralization.

In contrast to the approximate 1:1 gold to silver ratio throughout the district, at Cristina it is approximately 1:10.

The main mineralized zone at Cristina strikes north-northwest and dips to the southwest, and appears to be open down-dip to the west and along strike to the south.

9.4.6 Trinidad Deposit

The Trinidad deposit is located approximately 3.5km north of the historic Santa Gertrudis mine office complex.

The Trinidad deposit was discovered by Campbell Resources in 1995 and a reported 15,380oz of gold at an average grade or 2.12g Au/t were produced from the deposit (Hamilton, 2003).

The Trinidad area is comprised of Glance Conglomerate and Morita Formation. The Glance Conglomerate generally consists of interbedded siltstone, sandstone, and coarse-grained, rounded cobble conglomerate. The Morita Formation is generally comprised of siltstone/sandstone with relatively thin interbedded pebble conglomerate. Within the Trinidad area, the lower portion of the Morita Formation is comprised of a sequence of interbedded calcareous siltstone, conglomerate, and limestone, that is locally referred to as the Cerro de Oro "formation". The Glance Conglomerate and Morita Formation generally strike northwest and dip southwest at approximately 40º-75º.

Two major faults and subsidiary fault sets are in the immediate Trinidad area: a northwest-trending, near-vertical to southwest-dipping fault (+70º) and an east-trending, steeply north-dipping (+75º) fault.

The northwest-trending fault set appears to be the older of the two faults, and it is cut and offset (dextral displacement) by the east-trending fault set. It should be noted that although the Glance Conglomerate and Morita Formation generally strike northwest and dip to the south, within the structural block bounded by these two faults, the sedimentary units generally strike northwest and dip north at 60º-75º.

The Trinidad gold deposit exhibits a high degree of structure control, and the best grade gold mineralization and most intense hematite-goethite staining/argillization appear to be spatially associated with the above-described east-, and to a lesser degree, northwest-trending faults. Between the two faults, a V-shaped (open to the west) zone of weaker fracturing/faulting and hematite-goethite staining/argillization has developed, but gold grades within the central portion of this structurally bounded block generally are low.

Gold mineralization at Trinidad clearly is associated with the major fault zones and generally, the highest-grade gold mineralization occurs near the intersection of the two faults. It also is fairly clear that gold mineralization is hosted locally within hanging wall splays extending off of the east-trending fault zone.

In general, the zone of most intense surface hematite-goethite staining/argillization is approximately 600m long in an east-west direction and up to 50m wide, and it tends to weaken and ultimately disappears to the west. The east-trending fault projects directly towards the Amelia and Pirinola deposits, and it is permissive that it also controls gold mineralization in these areas.

10.0 EXPLORATION

All historic exploration is summarized in Section 6.2.

10.1 Animas Resources Ltd Exploration

Since July 17, 2007 Animas has been conducting exploration on the Santa Gertrudis project. As of May 1, 2009, they have completed the following work, which will be detailed in Section 10.1.1, 10.1.2, 10.1.3 and Sections 11.0, 12.0, 13.0 and 14.0:

- Drilled 22 diamond drill holes and 3 reverse circulation drill holes at ten prospective areas. The drilling focused primarily on lateral and down-dip extensions from known gold intercepts, while several holes tested concepts specific to larger targets,
- Recreated the geophysics database with the goal of re-processing and modeling the previously acquired geophysical data sets using 2D and 3D state-of-the-art geophysical processing and computer modeling routines,
- Completed 135.2 line-km of Induced Polarization/Resistivity "IP" surveys and a Reconnaissance Induced Polarization "RIP" survey. This work included two and three dimensional remodeling of these surveys and a re-evaluation of existing aeromagnetic, electromagnetic and radiometric surveying,
- Received a petrographic report completed by Dr. Efren Perez Segura of Hermosillo, Sonora, Mexico,
- In the process of compiling all known current and historic data, including geology, rock and soil geochemistry, and drill hole data including locations, assays, and geology,
- Used Cooper Aerial Surveys Co. ("Cooper"), based in Arizona, to complete an air photo-based topographic map update,
- Conducted extensive geologic mapping with emphasis on alteration and mineralization patterns,
- Collected over 1,500 rock-chip samples for gold and multi-element analysis, and
- Supported a Masters Student thesis at Arizona State University under Dr. Stephen Reynolds, specifically to study the relationship of structure to gold mineralization.

10.1.1 Animas Geophysics

During 2008, Animas Resources completed the following ground geophysical surveys within the Santa Teresa mining district:

- A major (128.7 line-km), pole-dipole Induced Polarization survey by Quantec Geoscience USA Inc. ("Quantec"),

- A more limited (6.5 line-km), detailed dipole-dipole Induced Polarization survey by Durango Geophysical Operations ("Durango"), and

- A Reconnaissance (~30 km²) Induced Polarization survey by Durango.

In addition to the Animas ground geophysical work, a significant portion of the historic geophysical work was reprocessed and/or re-evaluated using more advanced modeling techniques. This work included:

- All Phelps Dodge ground dipole-dipole Induced Polarization data were reprocessed and modeled in 2D by Durango and Wave Geophysics ("Wave"),

- All Oro de Sotula airborne magnetic data were reprocessed and modeled by Wave,

- The Oro de Sotula airborne EM and radiometric data were reprocessed and remodeled by Condor Consulting, Inc ("Condor"), and

- The Minera Teck pole-dipole Induced Polarization data from the San Enrique area were re-evaluated by Durango.

A brief review of this work follows below. See Section 19.0 for a further discussion of the geophysical results and exploration targeting.

10.1.1.1 Durango Geophysical Operations

In the spring of 2008, Durango completed preliminary multi-phase and multi-discipline electrical geophysical surveys over the Santa Gertrudis project area (Durango, 2008a). This work consisted of a Reconnaissance Induced Polarization (RIP) survey over the shallow alluvial-covered pediment area west and southwest of the main area of historic mining activity and a detailed 50m dipole-dipole Induced Polarization/Resistivity survey (search depth ±150m) in the general Mirador-Agua Blanca area. The RIP survey identified several areas of potential exploration interest under shallow alluvial cover, and the detailed IP/Resistivity survey identified a well-defined, moderate chargeability anomaly (sulfide mineralization) in the general Mirador area.

In addition to the above work, Animas' geophysics consultant, John Reynolds of Durango also has been conducting an ongoing program of database re-creation and compilation with the goal of re-processing and modeling the previously acquired geophysical data sets using 2D and 3D state-of-the-art geophysical processing and computer modeling routines (Durango, 2008b, 2009a-d). As part of this ongoing database work, Reynolds also reviewed the existing Induced Polarization data from Minera Teck's work in the San Enrique area (Durango, 2008b, 2009a).

10.1.1.2 Quantec Geoscience USA Inc.

In June 2008 Quantec completed an IP survey on behalf of Animas. This work consisted of approximately 128.7 line-km of pole-dipole, Induced Polarization/Resistivity surveying on twenty-six separate lines using 100m dipole spacing. Data were collected in the time domain using a 0.125 Hz (2 seconds on 2 seconds off), and the IP/Resistivity data were presented as standard pseudosection format (Quantec, 2008). These data have been re-processed and modeled using 2D Zonge Smooth Model inversion code by John Reynolds of Durango.

Several large areas with mapped surface alteration/mineralization and coincident chargeability anomalies were delineated as a result of this work (Mirador and Dora South areas).

10.1.1.3 Condor Consulting, Inc

Condor was contracted by Animas to reprocess and analyze the frequency-domain EM survey done at Santa Gertrudis by Aerodat in 1996 (Condor, 2008). The original work was done on behalf of Oro de Sotula (Campbell) and used several data reprocessing approaches. These included Layered Earth Inversion and time constant derivation reprocessing, and this work resulted in the delineation of discrete EM responses from the profile data.

Although the Condor work did not result in the delineation of specific targets, it seemed to identify mapped, inferred, and previously unknown faults and structural deformation zones.

10.1.1.4 Wave Geophysics

Dr. Craig Beasley of Wave Geophysics, Golden, Colorado, re-processed Oro de Sotula (Campbell) aeromagnetic data and applied 3D computer model generation utilizing modeling routines developed by the Geophysical Inversion Center at the University of British Columbia (Durango, 2009a). Additionally, Dr. Beasley assisted Condor with work on the airborne electromagnetic datasets and provided a review of the airborne radiometric and VLF-EM data. Dr. Beasley's work with the aeromagnetic data aided Animas personnel in identifying areas potentially underlain by buried intrusives which are thought to be possible sources for the Santa Gertrudis gold mineralization.

Dr. Beasley also provided a 2D inversion model study of the historic Phelps Dodge 300m dipole-dipole IP data.

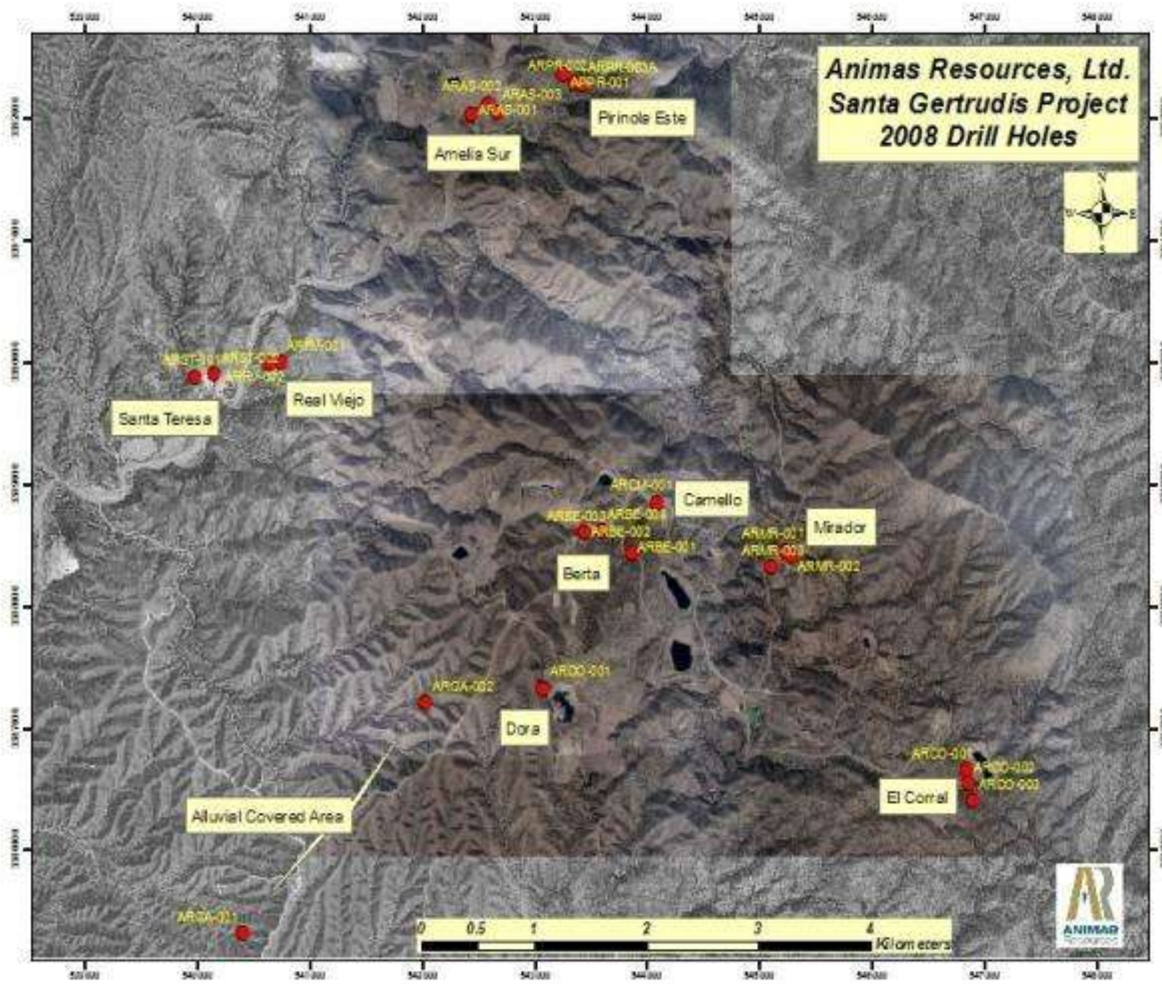
10.1.2 Animas Surface Sampling

Animas collected over 1,500 rock samples for gold and multi-element analysis. These samples were collected to support the ongoing surface mapping program and also to provide data for specific studies supporting graduate student investigations. Combined with the historic soil and rock samples collected by previous workers, the resultant database provides extensive geochemical data for target identification and district-wide mineral zoning. See Section 9.3.1 for a discussion of the existing geochemical data.

10.1.3 Animas 2008 Drilling Program

Animas Resources drilled 22 diamond core and 3 reverse circulation drill holes for a total of 5,690.2m of drilling completed in 2008. This drilling was done in ten general areas: Amelia Sur, Berta, Camello, Dora, El Corral, Mirador, Pirinola Este, Real Viejo, Santa Teresa, and the alluvial-covered area west of the main area of historic mining (Figure 10.1).

Figure 10.1 Animas 2008 Drilling



Each of the general drilling areas is described briefly below, and significant assay results are shown in Table 10.1.

Amelia Sur

Three diamond core holes (ARAS-001 through ARAS-003) were drilled in the Amelia mine area for a total of 703.75m. The holes were drilled entirely within an overturned and fault-repeated section of Mural Formation, and the drilling was done to test the down-dip projection of three zones of surface alteration (pyroxene hornfels and FeOx) containing highly anomalous gold mineralization (up to 6.6g Au/t).

Many relatively thin zones (2m to 4m) of low-grade grade gold mineralization (less than 0.5g Au/t) and one 12.25m zone of 0.596g Au/t were intersected in this drilling. It is of interest to note that these holes also intersected local zones of highly anomalous arsenic ± zinc and antimony that were spatially associated with the gold mineralization.

All three holes cut significant intersections of pyritized and locally quartz-veined pyroxene ± garnet hornfels at depth, but no significant intrusive bodies were seen in any of the holes.

Table 10.1 Animas Drilling Significant Assay Results

		Drill Interval			Grade
Drill hole	Area	From (m)	To (m)	Thickness (m)	g Au/t
ARAS-001	Amelia Sur	205.90	208.70	2.80	1.330
ARAS-002	Amelia Sur	151.55	163.80	12.25	0.596
ARAS-003	Amelia Sur	164.40	169.00	4.60	1.306
ARBE-001	Berta	238.05	246.55	8.50	2.980
ARBE-004	Berta	19.30	28.25	9.95	0.967
ARBE-004	Berta	41.25	48.60	7.35	0.909
ARBE-004	Berta	57.45	65.95	8.50	2.814
ARBE-004	Berta	379.75	383.50	3.75	1.148
ARCM-001	Camello	173.25	178.60	5.30	0.422
ARCO-001	El Corral	100.70	102.25	1.55	3.220
ARCO-002	El Corral	171.60	181.00	9.40	0.469
ARCO-002	El Corral	220.50	222.00	1.50	2.700
ARCO-003	El Corral	91.90	119.00	27.10	0.318
ARCO-003	El Corral	127.40	132.20	4.75	0.933
ARCO-003	El Corral	220.50	222.00	1.50	1.690
ARMR-001	Mirador	171.45	174.20	2.75	0.432
ARMR-002	Mirador	165.55	168.00	2.45	0.534
ARMR-003	Mirador	184.95	186.50	1.50	2.480
ARMR-003	Mirador	342.35	344.50	2.10	1.127
ARPR-002	Pirinola Este	44.40	46.60	2.20	1.370
ARPR-003A	Pirinola Este	88.50	109.50	21.00	0.446
ARRV-001	Real Viejo	134.25	141.05	6.80	1.760
ARST-001	Sta. Teresa	98.60	100.10	1.50	3.040
ARST-001	Sta. Teresa	128.80	133.55	4.75	0.793
ARST-002	Sta. Teresa	21.85	24.60	2.75	1.091
ARST-002	Sta. Teresa	81.20	84.20	3.00	0.923
ARST-002	Sta. Teresa	90.20	116.40	26.60	1.405

Berta

Four diamond core holes (ARBE-001 through ARBE-004) were drilled in the Berta area for a total of 1,133.7m. The holes were drilled within the Lower Cintura Formation, and the drilling was done to test the down-dip projection of strong surface alteration (clay-FeOx) containing anomalous gold mineralization (up to 7.4g Au/t).

Several relatively thin zones of good grade gold mineralization (8.5m of 2.81g Au/t and 3.75m of 1.15g Au/t,) and several thicker zones of low-grade gold mineralization (9.95m of 0.97g Au/t as example) were intersected.

The Berta area is still considered to have potential to contain a significant gold deposit, and the Animas geological staff is continuing to review all available data from the area.

Camello

One diamond core hole (ARCM-001) was drilled in the Camello mine area for a total of 226.6m. The hole was drilled entirely within an overturned section of Mural Formation, and tested the northwest strike extension of gold mineralization intercepted within a historic drill hole (12m of 1.45g Au/t).

Low-grade grade gold mineralization (5.3m of 0.42g Au/t,) was intersected in this drilling and the hole did end in 3.5m of 0.55g Au/t.

The Animas hole is located along the southwestern margin of a large IP anomaly and the low-grade mineralization encountered in the drill hole could be reflecting a substantial area of mineralization associated with the IP anomaly. The area is still considered to have potential to contain a significant gold deposit, and the Animas geological staff is continuing to review all available data from the area.

Dora

One diamond core hole (ARDO-001) was drilled in the Dora mine area for a total of 254.3m. The hole was drilled to test the down-dip projection of a mineralized historic drill intercept (11m of 0.81g Au/t) in the Mural Formation.

Although no significant gold mineralization was encountered in this hole, a major low-angle normal fault was intersected. This fault is believed to be post-mineralization in age, and it appears to separate overlying Mural Formation from underlying Cintura Formation hornfels.

El Corral

Three diamond core holes (ARCO-001 through ARCO-003) were drilled in the El Corral area for a total of 783.05m. The holes were drilled mainly within the Lower Mural Formation and to a limited extent, within the upper portion of the underlying Morita Formation. In general, the drilling tested both the inferred El Corral "feeder" structure at depth and the down-dip projection of mineralized historic drill intercepts (15m of 3.0g Au/t, 18m of 2.41g Au/t, and 28m of 0.52g Au/t).

Drilling results indicated that although gold mineralization did continue to depth, grades and thicknesses decreased rather dramatically. In general, only thin intercepts of relatively high-grade gold mineralization (1.55m of 3.22g Au/t and 1.5m of 2.7g Au/t) or wider zones of low grade gold mineralization (27.1m of 0.318g Au/t) were intersected. The El Corral "feeder" structure was not clearly intersected in any of the holes, and although the fault/feeder structure may still exist (there are several weakly mineralized faults in the holes), it does not appear to be strongly mineralized.

Mirador

Three diamond core holes (ARMR-001 through ARMR-003) were drilled in the Mirador mine area for a total of 1,028.6m. The holes were drilled mainly within the Lower Cintura Formation, the Mural Formation, and to a limited extent, within the upper portion of the underlying Morita Formation. In general, the drilling tested the down-dip projections of shallower, historic drill-indicated, gold mineralization (19m of 2.51g Au/t) and also explored for the inferred heat source for the widespread hornfels alteration seen in the area (variably quartz-veined and pyritized, biotite-pyroxene hornfels).

Drilling results indicated that gold mineralization does continue to depth, but that grades and thicknesses decreased rather dramatically. In general, only thin intercepts of relatively high-grade gold mineralization (1.5m of 2.48g Au/t) or wider zones of very low-grade gold mineralization were intersected. No intrusive that could be inferred to be responsible for the extensive hornfels alteration was intersected in any of the three Animas holes.

Pirinola Este

Three diamond core holes (ARPR-001 through ARPR-003) and one reverse circulation hole (ARPR-003A) were drilled in the Pirinola Este area during 2008 for a total of 421.05m. The holes were drilled in an overturned section of Morita Formation and the drilling tested the down-dip projection of a zone of strong surface clay and iron oxide alteration containing anomalous gold mineralization (up to 1.73g Au/t).

In general, the rock in this area is highly fractured and faulted, and drilling conditions were extremely difficult. Consequently, all three of the core holes failed to reach their proposed depths.

Although no potentially economic gold grades were intersected in the three holes, drill hole ARPR-003A intersected 21m of 0.45g Au/t. This mineralization is believed to be controlled by an east-west or northwest-trending mineralized fault, and it may be associated with the Trinidad mineralized zone which is located approximately 500m to the east.

Real Viejo

Two diamond core holes (ARRV-001 and ARRV-002) were drilled in the Real Viejo area for a total of 353.35m. The holes were drilled in an overturned section of Cintura Formation (Ksl) and tested the down-dip projections of several mineralized historic drill intercepts that contained up to 21.0m of 1.32g Au/t, and Animas surface channel samples that averaged 10.5m of 1.44g Au/t.

Drilling results indicated that gold mineralization does continue to depth, but that grades and thicknesses decreased. Although generally only relatively thin intercepts of low-grade gold mineralization were intersected, hole ARRV-001 intercepted a 6.8 meter zone that averaged 1.76g Au/t. Anomalous arsenic and zinc also were associated with the gold mineralization.

Santa Teresa

Two diamond core holes (ARST-001 and ARST-002) were drilled in the Santa Teresa area for a total of 399.1m. The holes were drilled in an overturned section of Cintura Formation and tested the down-dip projection of historic drill intercepts that contained 11.2m of 1.73g Au/t and 9.0m of 1.54g Au/t.

Drilling results indicated that gold mineralization does continue down-dip. A number of thin mineralized intercepts were encountered and hole ARST-002 intersected 26.6m of 1.405g Au/t.

Alluvial-Covered Area

Two reverse circulation holes (ARGA-001 and ARGA-002) were drilled in the alluvial-covered area west of the main area of historic production for a total of 387.0m. The holes were drilled to test two large airborne magnetic anomalies which are covered by thin, post-mineralization, alluvial cover. ARGA-001 intersected unaltered diorite and ARGA-002 intersected unaltered Cintura Formation.

In general, drilling results were not encouraging, and only one significant drill intercept (3.0m of 0.24g Au/t in hole ARGA-001) was intersected. However, drilling did confirm that the alluvial cover was relatively thin in this area (35 to 66m thick) and that potentially favorable host rock for gold mineralization in the Cintura Formation also is present. As such, it is permissive that economically viable gold systems could be present under shallow alluvial cover west of the main area of historic mining.

11.0 DRILLING

The Santa Gertrudis project area has been drilled by six companies (Phelps Dodge, Minera Roca Roja Campbell, Sonora Gold, Teck and Animas). The historic drilling and results are discussed in Sections 6.2 and 6.3, while the Animas drilling results are discussed in 10.1.3. Section 11.0 will provide the status of and the information contained within the current Animas drill database. Specific drilling information for the various drill programs, if available, is also discussed.

11.1 Animas Database

A summary of the drilling data within the Animas database is in Table 11.1. As discussed in Sections 6.2 and 6.3, there are some discrepancies with historic reports concerning number of holes and meterage which cannot be resolved at this time.

Table 11.1 Santa Gertrudis Drill Hole Summary (from Animas database)

Company	Years	No. RC holes	RC (m)	No. core holes	core(m)	total holes	total (m)
Phelps Dodge	1988-1994	538	62,218.8	276	27,912.1	814	90,130.9
Campbell	1994-2000	1,032	96,539.5	206	19,002.7	1,238	115,542.2
Sonora Gold*	2002-2005	-	-	16	1,994	16	1,994.0
Minera Teck	2005	4	1,198	5	1,217	9	2,415.0
unknown	-	72	7,313.5	36	3,798.5	108	11,112.0
Animas	2008	3	517.5	22	5,172.7	25	5,690.2
Total		1,651	167,787	561	59,097	2,212	226,884

* does not include 16 RC holes reported to be drilled in the La Eme, Amelia #5, and El Tascalito areas or 105 shallow percussion holes.

The drill-hole database contains collar coordinates, azimuths, dips and depths for all drilling. These data has been compiled from various digital sources, as described in greater detail in Section 14.6.1, while the specific collar coordinate survey information (companies, techniques, and equipment used) are discussed in Section 11.8.

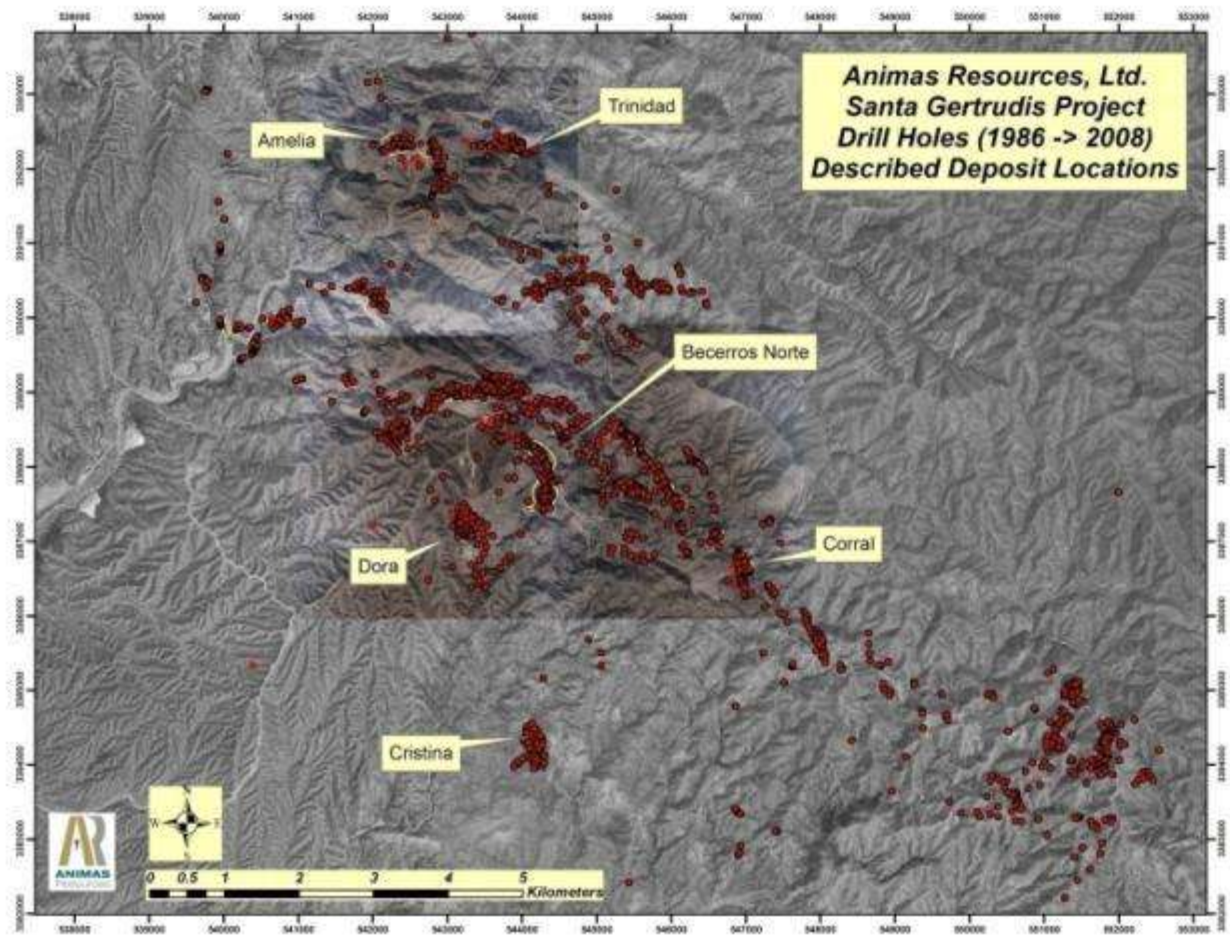
Down-hole survey readings are included within the database for many of the historic core holes. Some of these data can be checked against the recorded information on the individual drill logs but for many holes there is not a non-digital source. There is no information available which describes the equipment or techniques used by past operators in collecting the down-hole survey data. Information on the Animas down-hole survey program is provided in Section 11.7.

Assays have been compiled for most of the drilling. The database currently contains 108,751 gold assays, with a lesser number of silver, arsenic, mercury and base metal analyses. These data have been compiled primarily from historic digital and paper files. The historic gold “final” values currently in the database are frequently an average of two or more individual assays and due to the incomplete historic record, the individual assay values and assay type employed are often not known. As a result, both fire assay and atomic absorption gold assay values can be unknowingly mixed within the same data set.

The database continues to be updated by MDA and Animas from both digital sources and from what appears to be a full set of original drill logs on file in the Santa Gertrudis field office. Section 14.1 provides information on the status of the on-going data compilation and verification effort.

A map of the historic Santa Gertrudis project drilling (Figure 11.1), as currently compiled in the Animas database, indicates that drilling is distributed over a 15km by 8km area. This map does not include, due to a lack of specific collar and assay data, the approximately 200 drill holes that Hamilton (2003) estimated were drilled by Minera Roca Roja at the Amelia mine.

Figure 11.1 Historic Drill Hole Map



The following sections describe the current knowledge of the drilling details for the various historic drill programs. Unfortunately, the historic reports cited in this Technical Report provide very limited specific information on the historic drill programs. Any detailed information concerning the following topics can only be found as notes on the historic drill logs: name of drill contractor and type of drill rig, core size, reverse circulation drill hole diameter, wet or dry reverse circulation sampling, sample recovery, etc. A compilation of this information is ongoing.

Previous operators' core, reverse circulation samples, coarse rejects and pulps, with very few exceptions, have been destroyed or rendered unusable.

All of the drilling contractors known to have operated on the Santa Gertrudis property are large, well-known companies and it is assumed that industry-standard practices were followed while drilling and collecting samples for analysis.

11.2 Phelps Dodge Drilling

Various drilling campaigns were conducted by Phelps Dodge between 1986 and 1994, yet there is limited information on the drilling programs within the historic record. Phelps Dodge (1988) reported that over 16,500m of diamond drilling was completed through June 1988. Of that over 10,500m of NC and NX core was drilled in the seven deposits that were put into production in 1991. This drilling was on 40m centers with local in-fill on 20m centers. Structural, geologic and assay data were obtained on the core.

Rodriguez and Lopez (1992a, 1992b) reported on the exploration and drilling results for the Cristina and Dora deposits, respectively, while a 2003 annual report by Rodriguez-Barraza, et. al., (1994) reported on the district-wide exploration program completed that year. None of these in-house reports contain specific drill data.

The current Animas database has 814 holes for 90,131m drilled by Phelps Dodge between 1986 and 1994. This includes 538 reverse circulation ("RC") holes for 62,219m and 276 diamond core ("core") holes for 27,912m. The database also includes 107 holes (36 RC and 71 core) totaling over 11,000m that cannot be attributed at this time to a specific company but it is believed that most of these holes were likely drilled by Phelps Dodge.

As determined from an initial review of most of the Phelps Dodge drill logs, with some assumptions made that the same contractor and drill rig was used for a temporal sequence of holes, Boyles Brothers of Mexico ("Boyles Brothers") was the primary diamond drilling contractor. It appears that over 230 core holes were drilled by Boyles Brothers with less than five holes each drilled by Tonto Dynatec and Perforacione DIGSE. Thirty-three core holes have an unknown drill contractor. Information on the type of drill rig is more sporadic but where noted, the primary drill rig used was a truck-mounted Longyear 44. Other drill rig types reported were Joy 22 and Joy 44 rigs but these were noted on fewer than ten drill logs. Core size, which was noted only rarely on the drill logs, was NC (48mm-diameter core). The "NX" core size (54mm-diameter core) noted in the Phelps Dodge (1988) report was not recorded on any of the drill logs.

Core recovery data was recorded for most core holes, though for many holes only a single average recovery value was noted on the log. There are a number of core holes, usually clustered within the main deposits, in which more detailed recovery data and other rock quality determination ("RQD") data were recorded on separate geotechnical sheets. None of the various recovery and RQD data have been compiled and/or included within the current database.

Little of the Phelps Dodge core is still intact due to the pre-Animas collapse of the core storage shed and the discarding of much of the material; however, Animas personnel have been able to salvage a small percentage of the Phelps Dodge core.

The Phelps Dodge RC drill logs indicate that Drilling Services Mexico ("Drilling Services") was the primary RC drilling contractor having drilled 383 RC holes. Major Drilling of Mexico ("Major") is noted as the drill contractor for nineteen holes while Tonto Dynatec drilled 2 RC holes. The drill contractor is unknown for 134 RC holes but it is expected that further data compilation will reduce this number. Where noted, Drilling Services used a truck-mounted TH-60 RC rig that utilized a 5.25in-diameter drill bit though there is no record of drill bit type (rotary tri-cone, percussion hammer, etc.). A larger 5.75in-diameter bit is noted for the 56 RC holes drilled in the Cristina deposit though the drill contractor is unnamed for these holes.

There are no records of any RC sample recovery data and on none of the drill logs reviewed are there any notes concerning wet versus dry drilling. The original RC samples (rejects and pulps) are no longer available.

11.3 Campbell Resources Drilling

Hamilton (2003) reports that Campbell drilled 98,620m of reverse circulation drilling in 1,017 holes and 21,122m of diamond drilling in 225 holes. These drill figures include pit definition and condemnation drilling of approximately 23,500m of reverse circulation drilling and 6,000m of diamond drilling. No drilling details concerning contactor, hole size, recovery, etc., are noted in any of the historic reports.

The drilling attribute to Campbell in the Animas database is 1,032 RC holes for 96,540m and 206 diamond core holes for 19,002.8m for a drilling total of 1,238 drill holes for 115,541m. The number and meterage differences with those reported by Hamilton (2003) cannot be explained by MDA at this time. Further data compilation and research might indicate that some of the core holes in the database with the company designation of "unknown" are actually Campbell holes.

From the information recorded on the drill logs, and making the same temporal assumptions as for the Phelps Dodge drilling, it appears that almost all core holes drilled for Campbell were completed by Major. Only six core holes are noted as being drilled by Dateline International ("Dateline") while just one core hole was drilled by Layne of Mexico ("Layne"). No additional drilling details (hole size, core recovery, etc.) for the Campbell core drilling have been compiled at this time.

Both Dateline and Layne were used for the RC drilling. Dateline appears to have drilled over 500 RC holes while Layne drilled over 300 RC holes. The drill contractor for approximately 200 holes is still unknown. No other RC drilling information has been compiled at this time. It is not known what proportion of the RC drilling was wet versus dry but the statement from Hamilton (2003) that:

> "*Reverse circulation sampling by Campbell was done in 1.5 metre intervals. The chips were processed through a Jones splitter wherein 50% of the sample was discarded after mixing and splitting.*"

indicates that dry drilling techniques were employed since a Jones splitter is used on RC rigs for dry samples. This does not rule out that some RC drilling was wet.

None of the Campbell core or RC samples are still available.

11.4 Sonora Gold Drilling

Kern and Sibthorpe (2005 and 2007) report that Sonora Gold drilled sixteen RC holes for an unknown meterage in the La Eme prospect area, sixteen core holes for 1,995m in the San Enrique area, and 105 shallow percussion holes for 1,050m in the Ontario zone in the Greta prospect area. Neither individual nor total drill depths are reported for the first nine RC holes; the last nine have a reported total meterage of 867m. Additional drilling may have been done elsewhere on the property, but the records are incomplete. No drilling details are provided in the historic reports.

Animas has not identified information on any of the La Eme area RC drill holes, except through Sonora Gold press releases, so the database does not include those holes. The database does have collar information, but no assay data, for the sixteen core holes at San Enrique and the 105 percussion holes at the Ontario zone. The collar information was compiled from a digital source. No other drilling details are available. None of these samples are available.

11.5 Sonora Copper Drilling

According to Wallis (2006), *"Chuqui* (Mexican subsidiary of Sonora Copper) *has not carried out any drilling in the Project area."*

11.6 Teck Cominco Drilling

Teck Cominco held the San Enrique and the Greta/Ontario prospect areas from June 2005 until mid-2007 (Kern and Sibthorpe, 2005; Hernández, 2007; Barboza, 2007). They considered it a copper/molybdenum prospect and drilled four reverse circulation holes (RCSE-001 to RCSE-004) for 1,198m and five core holes ((DSE-001 to DSE-005) for 1,217m on the property. No drilling details are provided in the historic reports.

The nine Teck Cominco drill holes, with the same meterages as reported above, are in the Animas database. The database does have collar information compiled from a digital source, but no assay or geology data, for the nine holes. No other drilling details are available.

11.7 Animas Drilling

Animas Resources has completed 22 diamond core drill holes for 5,172.7m and 3 reverse circulation drill holes for 517.5m at the Santa Gertrudis project. All of the drilling was completed in 2008. Because core from previous drill campaigns has been mostly destroyed, Animas focused on core drilling for the additional geologic information it would provide. The location of the Animas drilling is shown in Figure 10.1 while the specific drill hole data is listed in Table 11.2. Animas' drilling tested ten targets spread throughout the property. The exploration target descriptions and drilling results are discussed in Section 10.1.3. All of the Animas drill data is in the current database.

The drill contractor for the Animas drilling was Major Drilling de Mexico ("Major") based in Hermosillo, Sonora State, Mexico. The holes were completed using a truck-mounted UDR-1000 drill rig that is capable of drilling both RC and core. The core drilling was completed predominantly with HQ drill bits (63.5mm-diameter core) though one drill hole (ARMR-003) was reduced in size and the final 143.05m finished with NQ (47.6mm-diameter core) when drilling became difficult.

Down hole survey readings were collected by Major on 20 of the core holes. The survey equipment was a Reflex EZ-Shot gyro-based instrument which recorded magnetic and temperature data along with the hole azimuth and dip data. Upon the completion of the hole, survey readings were taken a few meters above the final drill hole depth and then at approximate 100m intervals up the hole. The azimuth readings were adjusted to true north using an 11° E magnetic declination.

Core recovery and RQD data were recorded for every core hole. A detailed compilation of these data has not been completed.

The RC holes were drilled using a tricone at the start of the hole and a percussion hammer for the majority of the drilling. The drilling was dry within the upper portions of all three RC holes though water was encountered in all three holes and the holes were completed by drilling wet. Significant groundwater was encountered at the base of the gravel (50m to 60m depth) in the two holes (ARGA-001 and ARGA-002) within the alluvium-covered area west of the historic mine. Groundwater was also encountered in the RC hole (ARPR-003) drilled at Pirinola Este, at a depth of 100m. Animas believes that groundwater occurs at a depth of about 100m below the surface throughout the property. This is borne out by the presence of water in the bottom of all the historic open-pits. Down hole survey readings were not collected for the RC drill holes.

Table 11.2 Animas Resources 2008 Drilling

Drill hole	Drill Type	Area	Azimuth	Dip	Depth (m)
ARAS-001	core	Amelia Sur	195	-60	332.45
ARAS-002	core	Amelia Sur	203	-70	191.30
ARAS-003	core	Amelia Sur	203	-80	180.00
ARBE-001	core	Berta	240	-50	264.85
ARBE-002	core	Berta	195	-50	143.15
ARBE-003	core	Berta	195	-50	317.10
ARBE-004	core	Berta	195	-50	408.60
ARCM-001	core	Camello	0	-90	226.60
ARCO-001	core	Corral	50	-60	259.30
ARCO-002	core	Corral	60	-65	247.05
ARCO-003	core	Corral	45	-65	276.70
ARDO-001	core	Dora	0	-90	254.30
ARGA-001	RC	Gravel	0	-90	150.00
ARGA-002	RC	Gravel	0	-90	237.00
ARMR-001	core	Mirador	40	-60	262.05
ARMR-002	core	Mirador	45	-70	280.55
ARMR-003	core	Mirador	40	-75	486.00
ARPR-001	core	Pirinola Este	190	-60	195.85
ARPR-002	core	Pirinola Este	190	-60	55.10
ARPR-003	core	Pirinola Este	190	-60	39.60
ARPR-003A	RC	Pirinola Este	190	-60	130.50
ARRV-001	core	Real Viejo	180	-70	158.80
ARRV-002	core	Real Viejo	180	-55	194.55
ARST-001	core	Sta. Teresa	135	-60	243.30
ARST-002	core	Sta. Teresa	135	-65	155.50

11.8 Drill Hole Collar Coordinate Surveys

11.8.1 Historic Survey Information

Phelps Dodge established a local “Mine Grid” covering the project area at Santa Gertrudis. The claim monument for the “Santa Gertrudis” claim (PP - E4184) was chosen as the location for 50,000E and 100,000N on the Mine Grid. The Mine Grid utilized a NAD27 Zone 12N datum without any rotation with the conversion to Mine Grid as:

NAD27 Z12N	Mine Grid
542794.2647E	50,000E
3391646.6259N	100,000N

Phelps Dodge used a system of control points normally located on hilltops and scattered around the district for use in drill-hole collar surveying and all other mine surveying matters. These control points were established by standard land surveying techniques by the engineering group within Phelps Dodge's Mexican operating subsidiary Compania Minera Santa Gertrudis. The survey equipment used by Phelps Dodge is not known.

Following the sale of the Santa Gertrudis assets of Phelps Dodge to Campbell Resources' Oro de Sotula Mexican subsidiary, Oro de Sotula personnel continued to use the Phelps Dodge "Mine Grid" for their exploration and production activities. It is assumed that Oro de Sotula used a combination of standard land surveying equipment and incorporated GPS technology as it became available.

There is no drill hole collar survey information available concerning the Sonora Gold, Sonora Copper, or Teck Cominco exploration work.

11.8.2 Animas Resources Surveying

Animas Resources made the decision to translate the various data sets into the WGS84 Zone 12N coordinate base. MDA helped establish a coordinate conversion factor for the historic "Mine Grid" coordinates to WGS84 coordinates. That conversion is:

[WGS84 X] = [Mine Grid X] + 492724.5241

[WGS84 Y] = [Mine Grid Y] + 3291839.7306

Animas utilized Ing. Francisco Javier López Olivas ("López"), a licensed surveyor certified by the Mexican government, during claim status due diligence and for the location of control points for the 2008 Cooper aerial photography work. López, who had previously worked for Phelps Dodge and Oro de Sotula, also re-located 18 of the historical drill-hole collars and assisted in the effort to re-consolidate the Santa Gertrudis database. Due to the significant surface disturbance from the past mining, only a few historic drill holes can be accurately located in the field. Lopez utilized a Trimble 4600 series Real Time Kinematic GPS acquisition system. Precision for this system is 1.5cm horizontal and 2.0cm vertical.

A 2009 GPS study undertaken on behalf of Animas by Ingenieria Topografica ("Topografica") based in Hermosillo, Sonora continued the effort to re-capture Phelps Dodge and Oro de Sotula drill-hole collar locations. Topografica re-located 15 historic drill hole collars and also acquired collar coordinates on the 23 drill holes drilled during 2008 by Animas. All surveying completed by Topografica used a Topcon Model Hiper / GB500, Real Time Kinematic GPS acquisition system. Precision for this system is 1.5cm horizontal and 2.0cm vertical.

12.0 SAMPLING METHOD AND APPROACH

All available information regarding sampling method and approach for all previous operators is included in the sections below. MDA cannot give any opinion on their sample quality or reliability. Geological information, including rock types is described where known. Mineralized zone geometry is not recorded in the available historical literature.

12.1 Phelps Dodge Sampling Method and Approach

There are few records available concerning Phelps Dodge's sampling method and approach for either diamond drilling or reverse circulation drilling. Wallis (2006) states that *"drill hole samples taken by Phelps Dodge were on one-metre intervals. The core was stored on site."*

In 1999 Phelps Dodge's core shack collapsed and a majority of their core was lost. Campbell attempted to salvage representative drill holes from each of the deposits developed by Phelps Dodge (Hamilton 2003). As of the date of this report, all core previously stored on site has been lost or rendered unusable.

12.2 Campbell Resources Sampling Method and Approach

According to Hamilton (2003):

> *Core sampling by Campbell ranged in lengths from 10 centimetres to a maximum of two metres. The drill hole was sampled from top to bottom, including visually unmineralized sections. Generally the weathered and friable core was split with a manual splitter, although a diamond saw was occasionally employed if the drill core was sufficiently competent. Reverse circulation sampling by Campbell was done in 1.5 metre intervals. The chips were processed through a Jones splitter, wherein 50% of the sample was discarded after mixing and splitting. The remaining 50% of the mixed material was split into two equal parts, one of which was shipped to the laboratory, while the second split was retained as a witness sample. The individual samples so collected averaged between six and eight kilograms.*

According to Kern and Sibthorpe (2007):

> *Generally, deposits were drilled off* (by Campbell) *on 20-meter sections prior to mining. The majority of the core drilled by Campbell is stored on site at several core shacks.*

The majority of Campbell and Phelps Dodge core stored on site has been rendered useless.

12.3 Sonora Gold Sampling Method and Approach

There is no information available on Sonora Gold's sampling method or approach.

12.4 Teck Cominco Sampling Method and Approach

There is no information available on Teck Cominco's sampling method or approach.

12.5 Animas Sampling Method and Approach

Roger Steininger, Qualified Person for Animas sampling reports (Steininger, 2008) on the drill sampling methods at Santa Gertrudis for the 2008 drilling program:

> *The current* [2008] *drill program is collecting core that is 5.5 cm in diameter. Fairly typical core handing procedures are in place at the drill starting when the wireline core tube is removed from the drill steel and the core is slid into a metal catchment tray. The driller is responsible for marking footage blocks that correspond with the drill hole footage of the lower end of each core run. The core is then moved from the metal tray into plastic core boxes. A wooden footage block is place in the core box at the end of the interval. Core boxes are numbered in sequence, the lid secured, and the boxes are transported to the core cutting facility at camp.*

In August 2008, Steininger noted that during transfer of the core from the metal catchment tray to the plastic core boxes there can be small chips of core and fine material from the drilling that remain in the tray and thus are lost to the sample. A core handling procedure was implemented at that time to assure that the complete sample, including all fines, was transferred to the core box with all pieces going to their respective places in the core sequence.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The information available concerning sample preparation, analysis and security for Phelps Dodge, Campbell, Sonora Gold and Teck are summarized in the following sections. Information regarding sample integrity and validity is not available. MDA cannot express an opinion regarding the adequacy of the sample preparation, security or analytical procedures for these operators.

13.1 Phelps Dodge Sample Preparation, Analysis and Security

According to Phelps Dodge (1988), all core samples taken through 1988 were analyzed at Skyline Laboratories in Tucson, Arizona. First-pass assays were by atomic absorption methods using hot cyanide digestion. In mineralized areas these were followed by duplicate one assay-ton fire assays for gold and silver. Check analyses were performed on duplicate pulps from every tenth sample and check fire assays were run on every fifth sample by another laboratory (LeDoux West). Data from check analyses indicated that the reproducibility and accuracy were good.

According to Wallis (2006):

> *Phelps Dodge samples were analyzed at Skyline Laboratories in Tucson, Arizona, and American Assay in Reno, Nevada. Gold in excess of 0.5 g/t was reassayed using a 2 t gravimetric assay [sic]. Standards were submitted every 20 samples, and batches were rerun if the checks deviated from the mean.*

According to Hamilton (2003):

> *The majority of the diamond drill core drilled by Phelps Dodge was lost when the Agua Blanca core shack collapsed in 1999, although attempts were made by Campbell to salvage one or more representative drill holes from each of the deposits developed by Phelps Dodge. All of the chip trays of reverse circulation holes drilled by Campbell and most of the holes drilled by Phelps Dodge are stored on site in the core shacks* (Hamilton, 2003).

13.2 Campbell Resources Sample Preparation, Analysis and Security

According to Hamilton (2003):

> *Core holes drill*[ed] *by Campbell were logged and split at the core shack adjoining the exploration office at the Santa Gertrudis mine site. As described above, reverse circulation samples were split at the drill site, with the primary sample transported to the exploration office on a daily basis for shipment to the laboratory. The witness sample was transported to a storage area. Upon receipt of the assay results, a decision was made to either retain those witness samples corresponding to mineralized intersections, or to discard the samples. Beyond sample splitting, no sample preparation was performed on site.*
>
> *During Campbell's exploration programme from 1994 to 2000, three laboratories were used for assaying of drill samples, as well as rock and soil samples. These were SGS XRAL Laboratories, Barringer Laboratories Inc. (now Inspectorate America Corporation) and Bondar Clegg Laboratories (then part of Intertek Testing Services). SGS XRAL Laboratories carried out gold*

fire assays as well as cold vapour atomic adsorption mercury analyses in Hermosillo, Mexico and any other multi-element analyses in Toronto, Ontario. Barringer Laboratories only had a preparation lab in Hermosillo, and all analyses were performed in Sparks, Nevada. Bondar Clegg carried out gold assaying in Hermosillo, and all multi-element analyses were undertaken in North Vancouver, British Columbia.

All gold assays were performed on a 50 gram sub-sample by standard fire assay techniques with an atomic absorption finish. Any over-limit sample (i.e.; greater than 10 grams of Au) was re-assayed by fire assay with a gravimetric finish. Multi-element analyses were generally performed on all reconnaissance-scale rock samples, and both the initial trench samples and drill holes into a new target. These comprised the standard (generally 30 to 33 elements) packages available from the laboratories, with mercury analyzed by cold vapour atomic absorption techniques. Blanks, standards and duplicates were routinely run by the three laboratories and these values were reported to Campbell; however, no control samples were submitted by Campbell. All intersections of significance were checked by having the sample rejects of the mineralized interval and several surrounding samples analyzed at a different commercial laboratory. Occasionally, the reverse circulation witness sample was assayed by the laboratory at the Santa Gertrudis mine site. This not only provided a check between the commercial and the company laboratories, but also allowed comparison between the primary and the witness sample. Exploration samples were only rarely assayed at the mine site laboratory due to an inability of the laboratory to handle the volume of samples generated, as well as a lack of multi-element analysis capability.

Campbell's soil samples were largely analyzed by Barringer Laboratories, although Bondar Clegg performed some of the work. In addition to the laboratories' internal quality control measures, a duplicate sample was submitted every twentieth sample. These samples were carefully monitored for quality control problems.

The majority of the diamond drill core drilled by Campbell is stored on site in several core shacks. All of the chip trays of reverse circulation holes drilled by Campbell and most of the holes drilled by Phelps Dodge are stored on site in the core shacks. Due to the lack of significant results from the drill holes, coupled with limited storage space, none of the witness samples were retained.

13.3 Sonora Gold Sample Preparation, Analysis and Security

Reporting for Sonora Gold, Kern and Sibthorpe (2005, 2007) state that:

During the week of February 7th 2005, Richard Kern, the qualified person revisited quality control methods in place during the current exploration program and concluded that procedures put in place for rock chip, soil geochemistry and exploration drilling conform to 43-101 standards.

Soil geochemistry surveys followed standard procedures. Grid baselines are established using a GPS with 3m accuracy. The high relief of the area allowed location of intermediate points using topography. All sample points were labeled with aluminum tags on wooden stakes. Holes were *dug to the C horizon to eliminate as much organic material as possible and reduce the surface weathering effect. A minimum of 1,000 grams of soil was collected in olefin bags and closed securely. Sample numbers were written on the bags, a sample tag placed inside and a brief description given of the sample. The samples were shipped to ALS Chemex in Hermosillo in rice sacks. Sample preparation involved crushing and pulverizing the entire sample to -10 mesh and further pulverizing 100 grams to -80 mesh. A 30 gram split was digested with aqua regia and analyzed with ICP for Au, Ag, Cu, and associated elements. The geochem lab includes standards, blanks and repeat samples in its procedure.*

Numerous dozer and excavator trenches have been semi-channel sampled on 3m intervals using tied olefin bags. Sampling was done only where outcrop is exposed. Approximately 2 kg of rock was taken per sample horizontally along the trench using care to take equal amounts of sample throughout. Wooden stakes with numbered aluminum tags were placed in the ground above the sample sites. The sample number was written on the outside of the bag and a sample tag placed inside. From this point on the samples were treated the same as soil samples.

Core samples, with footage blocks at least every 3m were brought from the drill rig daily and stored in secure storage. Under the supervision of a project geologist the core was logged and split using 1.5m intervals. Splitting was done using a hand operated core splitter. One-half of the core was sampled on 1.5m intervals or less where relevant and sent to the lab for preparation and analysis as for soils and rocks. The remaining one-half core remains in secure storage. The core being split was still averaging +90 percent recovery and yielded reliable geochemical results. The sampling and analysis procedures in place at Santa Gertrudis meet current industry standards and are time and cost effective.

From a Sonora Gold press release dated 2005:

"Sonora Gold Corp has in place a rigorous QA/QC program consistent with National Instrument 43-101 and using best industry practice. ALS Chemex Labs of Hermosillo, Mexico and Vancouver, BC are responsible for all the Sonora Gold Corp assaying."

13.4 Teck Cominco Sample Preparation, Analysis and Security

There is no information available regarding Teck Cominco's sample preparation, analysis or security.

13.5 Animas Resources Sample Preparation, Analysis and Security

13.5.1 Sample Preparation and Security

Roger Steininger, Qualified Person for Animas sampling reviewed (Steininger, 2008) sample collection procedures at the drill and core cutting facilities at Santa Gertrudis, and the sample preparation laboratories in Hermosillo, Mexico and Skyline in Tucson. The following core splitting and sample shipping procedures are recorded:

Core boxes are delivered to the logging facility where the geologists are responsible for estimating recovery and laying out sample intervals at 1.5 meter increments. If there are *significant lithologic and/or alteration changes shorter sample intervals are designated, but not less than 0.5m. Sample intervals are marked on the sides of the core boxes as a permanent record.*

Core is moved to the sawing area by the cutting crew. The entire core is sawed in half with one half maintained in the core box for logging and future reference, and the second half bagged as an analytical sample. In areas of strongly broken rock half of the fractured rock is subdivided without sawing using a metal sampling device. Each analytical sample is given a unique number from pre-numbered sample tag books. That number is marked on the outside of the plastic sample bag. The sample tag is composed of two identically numbered parts, one remains in the book for future reference and has the drill hole number and footage recorded. The second half with only the sample number is placed in the numbered plastic bag with the sample. Each bag is sealed by the sample handler and not opened again until it reaches the sample preparation facility. Groups of sample bags are placed in rice bags that are also sealed and labeled to identify the contained individual samples. The rice bags are not opened until they reach the sample preparation facility.

The retained portion of the core is returned to the original core box that has been labeled with the hole number and representative core footage, both on the bottom and top of the core box. Labeling of the core boxes is the geologists' responsibility. After logging all core is stored on racks for future reference.

John Wilson is responsible for inserting standards into the sample stream as outlined below. A bag of standards is shipped with the samples and the standards are inserted at designated points in the pulp sequence after drill core preparation.

All of the samples that were transported to Hermosillo were hauled by Animas personnel. Samples shipped to Skyline Labs are hauled to the U.S. border by Animas personnel and transferred to the Skyline agent who imports them and arranges transportation to Skyline in Tucson.

Steininger recommended at the time of his report that more care be taken to divide all fines and small chips in any given core sample to assure that the split sample is representative of the whole.

Steininger further noted that, "Initially sawed core was shipped to Sonora Sample Preparation Labs in Hermosillo. After a site visit by John Wilson, Greg McKelvey, and Roger Steininger it was determined that the facility was unacceptable … and sample preparation was moved to Skyline Labs in Tucson." Drill holes prepared in the Hermosillo facility are ARCO-0001, 002, and 003, ARMA-001 and 002, ARCM-001, ARBE-001 and ARAS-001. "All subsequent holes were shipped to Skyline."

The sample preparation procedures at Sonora Sample Preparation lab in Hermosillo, as noted by Steininger, are as follows:

Samples are received and placed on pallets and stored in the open in a closed yard until the preparation process is started. Several potential problems were immediately obvious; we were allowed to roam freely through the facility, there was no apparent security to insure no sample *tampering, and during movement of the samples on pallets it was observed that some bags were ripped open and material spilled. Trays used to hold samples for drying were not fully cleaned after use, representing potential cross contamination.*

The sample preparation procedure started with organizing samples in sequence and emptying each sample into a sample tray, which as noted above was not always thoroughly cleaned. During this stage of the processing it was observed that not all of the material was removed from the sample bag, particularly if the sample was wet. The sample tag in each bag is placed in the respective tray with the sample. Trays were placed on racks and placed in drying ovens at 80^{0}C. If the samples were not wet drying time was about two hours; if the samples were wet the minimum drying time was four hours, or until thoroughly dried. The drying ovens are immediately next to the crusher and pulverizing area with only a thin porous wall as separation. During our visit dust from the crushing and pulverizing area was abundant in the drying area and represented a potential source of contamination. The dust collection system in the lab seemed to be inadequate for the task at hand. Once dried the sample and the Animas sample tag were placed in new plastic bags, with the Animas sample number written on them by the lab personnel.

Each sample was crushed to 80% passing 10 mesh, and about 200 grams were split off and placed in a bag with the Animas number for pulverizing. The crusher and splitter are reportedly cleaned with compressed air after each sample. While we observed the splitter being cleaned after each use, the crusher was not always cleaned during our visit. The 200 gram sample was then placed in a ring and puck pulverizer and reduced to 95% passing 150 mesh and split into two analytical pulps. The pulps were placed into two envelopes marked with the Animas numbers. The lab reported that all crushing and pulverizing sizes were checked every tenth sample. The analytical pulps were shipped by Sonora Labs directly to IPL without Animas regaining control.

The sample preparation procedure at Skyline Labs in Tucson is as follows:

All of the core half samples are delivered by Animas personnel to Skyline's customs broker at Nogales, Mexico who arranges transport across the border and to Skyline in Tucson. At the lab it is decided if the samples need drying or can go directly to the preparation room. Drying is at about 105^{o}C for sufficient time to produce a crushable product.

Jaw crushing produces a product that is 70-80% passing 10 mesh. The sample size is checked each morning, or at the start of every new job. Computer-generated sample labels accompany each sample in a thoroughly cleaned tray throughout the process. The entire crushed sample is passed through a Jones splitter three times for blending and then about 270 grams are split out to be pulverized. The 270 gram split is placed in a ring-in-puck pulverizer and reduced to 95% -150 mesh and placed in an analytical envelope with the computer generated sample label adhered. The analytical pulps are shipped to IPL for analyses.

13.5.2 Sample Analysis

Split core samples were prepared and analyzed at Skyline Assayers & Laboratories in Tucson, Arizona and at Assayers Canada in Vancouver, British Columbia. Prepared standards and duplicates were inserted at the project site to monitor the quality control of the assay data. Analyses for gold was by one assay ton fire assay with an AA finish (Skyline's FA-1 procedure), and an additional one assay ton gravimetric fire assay for samples containing more that 3g Au/t in the original assay (Skyline's FA-3 procedure). Multi-element analyses were by *aqua regia* leach analyzed by ICP/OES for 34 elements (Skyline's TE-2 procedure). The quality assurance results are reviewed by Dr. Roger Steininger, an independent Qualified Person as defined by National Instrument 43-101.

14.0 DATA VERIFICATION

14.1 Phelps Dodge Data Verification

There is no information available concerning Phelps Dodge's data verification.

14.2 Campbell Resources Data Verification

Hamilton (2003) reports the following concerning Campbell's data verification:

> *Blanks, standards and duplicates were routinely run by the three laboratories and these values were reported to Campbell; however, no control samples were submitted by Campbell. All intersections of significance were checked by having the sample rejects of the mineralized interval and several surrounding samples analyzed at a different commercial laboratory. Occasionally, the reverse circulation witness sample was assayed by the laboratory at the Santa Gertrudis mine site. This not only provided a check between the commercial and the company laboratories, but also allowed comparison between the primary and the witness sample.*
>
> *Duplicate samples were submitted with every twentieth soil sample, and these comparative results were closely monitored.*

14.3 Sonora Gold Data Verification

There is little information available concerning Sonora Gold's data verification procedures. Kern and Sibthorpe (2005, 2007) discuss sampling methods, sample preparation and analysis (see Section 12.0 and 13.0) and state that, regarding soil sampling…*the geochem lab includes standards, blanks and repeat samples in its procedure.* They do not include a discussion of Quality Assurance/Quality Control ("QA/QC") regarding drill samples.

Sonora Gold did not directly sample material previously analyzed by Campbell (Kern and Sibthorpe (2005, 2007).

14.4 Sonora Copper Data Verification

According to Wallis (2006):

> *During SUNDANCE's* [consultant to Chuqui, subsidiary of Sonora Copper] *site visit, four samples were taken to verify the presence of mineralization. The samples were brought back to Vancouver by the author and submitted to Assayers Canada for analysis using standard fire assay techniques for gold and silver and wet chemical methods for the As. Table 14.1 gives the results which confirm the general tenor of the mineralization in the Project area.*

Table 14.1 Independent Sampling Results

Deal Capital Ltd. – López-Limón Concessions				
Location	*Sample #*	*Au (g/t)*	*Ag (g/t)*	*As (%)*
Dora pit, random chip, black shale	*3671*	*0.01*	*0.1*	*<0.01*
Dora pit, random chip ox shear	*3672*	*0.99*	*1.5*	*0.55*
Cristina, trench grab	*3673*	*1.19*	*33.7*	*<0.01*
Cristina, 1.5 m channel	*3674*	*1.21*	*34.8*	*<0.01*

According to Wallis (2007):

In 2005 Chuqui collected five grab samples and had them assayed at NA Degerstrom Inc. in Spokane WA as shown in Table 14.2. The El Corral samples are from a dump on the adjoining Santa Gertrudis property. SUNDANCE did not supervise this sampling and cannot confirm the location of the samples and they may not be representative of the mineralization on the property.

Table 14.2 Chuqui Sampling Results

Deal Capital Ltd. – López-Limón Concessions				
Location	*Sample #*	*Au (ppm)*	*Ag (ppm)*	*As (ppm)*
Dora black shale	*1*	*0.059*	*0.97*	*33*
El Corral black shale, bx	*2*	*4.187*	*192*	*184*
El Corral black shale stockwork	*3*	*0.44*	*2.48*	*32*
El Corral sandstone	*4*	*4.650*	*5.52*	*492*
El Corral west, sandstone	*5*	*6.047*	*3.77*	*405*

14.5 Teck Cominco Data Verification

There is no data verification information available.

14.6 Animas Data Verification

14.6.1 Animas Database Construction and Verification

In preparation for this technical report, and to also serve as a foundation for further exploration work, Animas had MDA compile various historic data and construct a working project database. MDA started with a database provided by Animas that was composited from approximately 58,700 files restored from various digital archives. Of these files, 892 summary files were used to create the initial database. There were numerous errors in the individual source files, such as mislabeled column headings (oz Au/t instead of g Au/t), which caused problems in the final compilation. Data in the individual source files was also entered differently, with some of the sources using a negative value for analyses below the detection limits, others using a zero value, and still others using a positive value of half the detection limit. The original composited assay table had over 12 million records, many of which were duplicates. After removing duplicates, the composited database now contains over 1.7 million distinct assay records. This database is currently being used as a data source for information and is referred to as the "historic database".

The certificate database is constructed from two sources: original lab certificates obtained electronically and hand-verified data from scanned images of the original certificates. The database is highly normalized to insure data integrity. The general structure of the database centers around two main tables, the collar table and the transmittal table. The collar table stores information about individual drill hole collars (or trenches), whereas the transmittal table stores the high level information about laboratory submittals. This structure allows for great flexibility in storing the data, enabling each drill-hole assay to be tracked back to the originating lab transmittal, while maintaining a high-degree of relational data integrity. The schema can be thought of as based on two distinct data centers, a "collar schema" and a "certificate schema", which are connected through a single relational join.

The collar table has several related tables. The CollarSurvey table stores down-hole survey information for the drill holes. The CollarCoords table stores coordinates from different surveys in differing coordinate systems. The SampleFootage table details the down-hole samples taken and their disposition. On the Transmittal table side of the schema, the TransmittalAnalysis table stores information about the analyses for each analytical certificate (transmittal). The TransmittalSample table stores pertinent information about each sample sent to the lab, which includes a reference to the SampleFootage primary key, tying the "certificate side" of the database to the "drill hole" side of the database schema. The Assays table stores the individual analytical results and details of each sample received by the lab.

On the "certificate schema" side, the Transmittal table is storing the header information for over 3700 individual assay certificates. The TransmittalAnalysis table has descriptions of about 30,000 analyses. The TransmittalSample table has over 130,000 individual samples stored in it. The Assay table currently stores the original lab value for well over a million individual assays.

To create a working database to be used by Animas for exploration planning and by MDA in the current resource estimate, data missing from the certificate database is pulled in from the historic database using a set of rules created largely from experience in working with these historic data. As more and more data has been entered into the certificate database, the quality of the working database, created from both the certificate and historic databases, has increased dramatically. Currently, about 70% of the data in the working database comes from the certificate database. Data is continually being incorporated into the certificate database, prioritized by project area as needed, so this percentage will continue to increase with time.

The current Santa Gertrudis working database, as constructed by MDA, consists of 2390 collar records, with a total meterage of 231,044m. The database includes holes drilled between April of 1984 and October of 2008 and classified into the following hole types: air track, core, RC/core, RC, percussion, and unknown. Also included are sample data from 23 surface trenches. The drill totals and meterages of each of these types are shown in Table 14.3. The 49 "unknown" holes listed in Table 14.3 are holes for which there are no existing drill logs or digital information providing hole depths but there is some other historic data (survey, assays, etc) which indicates the existence of these drill holes.

Table 14.3 Summary of Data in the Santa Gertrudis Working Database

Hole Type	Count	Meterage
Air Track	1	0
Core	556	56,558.3
RC/Core	5	2,538.7
Percussion	105	1,050.0
RC	1,651	167,787.0
Trench	23	3,109.5
Unknown	49	0
TOTAL	**2390**	**231,043.5**

In compiling the historic database, each drill hole was categorized by project area based on information provided in the original files. The purpose was to allow for priority to be given to complete and verify data for those project areas which will be the focus of further exploration or resource estimate work. The current historic database contains over 100 unique project areas; many have less than five holes while the largest single total (159 holes) is assigned to the Becerros area. It should be noted that the second largest drill total is assigned to "unknown". A full listing by project area of the drill-hole count and meterages in the database is included in Appendix D.

14.6.2 MDA Site Visits

March 2008 MDA Site Visit

A site inspection by Peter Ronning was conducted on March 16, 2008 through March 20, 2008. This inspection included a review of available data in Animas field offices at the project site, discussions with Animas' project geologists and consultants, visits to all of the historic pits and a number of prospect areas, and the collection of 27 independent rock chip samples. The samples were collected from sites that ranged from near the Corral pit in the southeast to near the Santa Teresa pit in the northwest. They were continuous chip samples, whose lengths ranged from 10cm to 120cm. Their purpose was simply to demonstrate, through independent sampling, the presence of gold mineralization similar to that described by previous workers. Analyses provided by International Plasma Labs of Richmond, B.C., showed gold to be present, as expected. Results ranged from 21ppb Au to 18.56ppm Au, with 10 of the 27 samples having more than 1ppm Au. The sample containing 18.56ppm Au was a 75cm continuous chip collected at the Corral Pit.

Ronning's visit took place prior to the commencement of drilling by Animas. Don Avery of MDA visited the site during the same period as Ronning. Avery's work concentrated on reviewing the available digital archives left by prior operators, an initial step in the process of compiling Animas' new comprehensive digital database for the project.

February and March 2009 MDA Site Visits

Paul Tietz, MDA geologist, conducted a site visit on February 7, 2009 through February 12, 2009. The primary purpose of the inspection was to conduct a field check and data audit of the Cristina subset of the Animas database. Emphasis was placed on the Cristina deposit in preparation for the MDA resource estimate. The site audit focused on reviewing the project and Cristina deposit geology with the Animas geologists, and specifically confirming Cristina drill-hole locations and down-hole orientation data. The latter was accomplished by auditing the current database against the original Cristina drill logs and geologic cross-sections. A complete set of logs and cross-sections is on file at the project site. The visit included a field inspection of the Cristina area during which drill-hole locations were verified and the deposit geology was field checked.

As a result of the Cristina review/audit, corrections were made to the collar location for one drill hole and orientations (azimuth and dip) for two drill holes. Down-hole survey readings were added to the database for five core holes. Historic trench data was identified and field checked before being incorporated into the database.

Paul Tietz conducted a second visit on March 13, 2009 through March 17, 2009. The site inspection focused on an audit of the Trinidad deposit in preparation for a future MDA resource estimate. The procedures and items reviewed were similar to the February site visit; the Trinidad drill-hole collar and down-hole data were confirmed and the deposit geology reviewed with the project geologists. The historic open-pit at Trinidad was visited to better understand the deposit geology and to confirm more recent drill-hole locations.

Among the results of the Trinidad review/audit were the addition into the database of data from one historic drill hole and down-hole survey readings for five core holes.

14.6.3 Animas Quality Assurance /Quality Control

As part of the 2008 Santa Gertrudis drilling program, a limited Quality Assurance/Quality Control ("QA/QC") program was implemented to insure that reliable analytical results were obtained. The QA/QC work consisted of inserting standards into the sample stream, in-lab pulp duplicate analyses, and quarter-core replicate samples from three Animas core holes. Dr. Roger Steininger was responsible for the Animas QA/QC program.

A set of four different certified pulp standards was purchased from Minerals Exploration & Environmental Geochemistry of Reno, Nevada (Table 14.4). Since the drill samples were in the form of sawed half of core and the standards consisted of pulverized material in individual sample envelopes it was impossible to conceal the standards. The procedure was to supply a bag of standards and instructions on where to insert each specific standard to the analytical laboratory with each batch of core samples. Each standard was labeled with the same number as the proceeding sample where it was to be inserted and an "A" was added to the standard sample number. While this was not the most advantageous approach to inserting standards, once the samples entered the lab they were assigned unique control sample numbers and the standards become blind to the assayer. One standard was inserted after each 15th sample at the lab and analyzed with the drill samples.

Table 14.4 Animas Resources QA/QC Standards

Standard Number	Gold Grade (g Au/t)
Standard 1	0.45
Standard 2	1.20
Standard 3	3.80
Standard 4	6.00

In addition to the standards, the laboratories routinely analyzed blind duplicates samples about every 10^{th} sample. Samples to assay in duplicate were selected by the lab and reported on the assay certificates.

As analytical results were received the quality controls were reviewed before analyses were released for distribution. The protocol established at the start of drilling was that if any control data failed to meet a minimum standard, the lab was requested to re-analyze the batch in question. A total of 229 standard and 231 pulp duplicate analyses were completed. The pulp duplicate samples showed excellent reproducibility with only one duplicate above a gold grade of 0.25g Au/t having more than a 10% difference with the original pulp.

Six assays of standards fell outside of the two standard deviation error range but since these few standards were within intervals that were unmineralized it was considered insignificant and no request was made for re-analyses.

As a further check on quality, nineteen mineralized intervals within holes ARCO-001, 002, and 003 were quartered and submitted for assay at the end of the drilling program. The original assays on half core were conducted by IPL and the assays for the quartered core were performed by Assayers Canada; both are Vancouver, B.C. labs. A comparison of the results indicate that for the nine sample pairs above the 200 ppb Au level, the Assayers Canada quartered core samples on average have a 125% high bias as compared to the original IPL values. The variability ranged from a -59% to a +780% difference. Eliminating the one highly variable sample (+780%) reduces the bias to 41%. As a check on these results, the two sets of pulps were sent to American Assay Lab in Reno, Nevada for re-assay. The pulp duplicate analyses by American Assay confirmed the high bias in the quarter core versus the original half core samples. The American Assay pulp duplicates also showed a consistent 10% to 15% low bias as compared to both the IPL and Assayers Canada samples. The results from this limited quarter-core study suggest that there is potentially significant variability in the gold mineralization and/or there was a possible bias or error introduced in the sampling of the core. It is recommended that additional core duplicate samples be analyzed to provide greater understanding towards the potential natural variability of the gold mineralization. This additional work should include coarse reject and pulp duplicate checks.

15.0 ADJACENT PROPERTIES

Premium Exploration, Inc held claims directly south of and adjacent to the property controlled by Animas. In 2004 they did preliminary reconnaissance mapping and sampling on the claims, and identified mineralization in existing shallow pits and workings as "silicified fracture fills and quartz veins in shear zones and along lithic contacts as well as disseminated zones in stockwork mineralization." Their 122 surface samples averaged 1,606 ppb gold, with a high assay of 73,700 ppb gold (Struck, 2005). Premium does not hold the claims at this time.

According to Animas, no additional current exploration programs are known adjacent to the Animas Resources-controlled concessions.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The Santa Teresa mining district, the subject of this Technical Report, has a long history of precious metals mining. Small-scale lode and placer gold mining has occurred sporadically for many years. Limited amounts of copper-silver ore were mined in both the eastern and western parts of the district and minor lode gold was mined from the original Santa Gertrudis and El Espíritu areas. For a time limited amounts of ore were mined from the Amelia, Maribel, and Carmen deposits, and shipped to the Phelps Dodge smelter at Douglas, AZ as precious metal-bearing flux. All of these activities took place over varying time periods and are poorly documented, especially with respect to the source deposit. Small-scale heap leach and carbon in column ("CIC") operations were later developed on-site near the Phelps Dodge exploration camp, and a primitive metal recovery plant to strip the precious metals from the carbon was installed in the town of Magdelena, Sonora. The stripped solution was treated by Merrill Crowe precipitation. It is not clear where the precipitates were sold Hanks, J. T., personal knowledge based on numerous site-visits from1987 through 1989).

Beginning in 1984 Minera Zapata, a forty-nine percent owned subsidiary of Phelps Dodge, conducted systematic exploration in the area. This led eventually to the development by Phelps Dodge of the Santa Gertrudis project, initially a 2,000 tpd heap leach with metal recovery by CIC adsorption, stripping, and Merrill Crowe (MC) zinc precipitation of precious metals from the strip liquor. Precipitates were shipped to the Phelps Dodge refinery at El Paso. TX. In 1992 Phelps Dodge (Sections 16.2 and 16.3) sold the property to Campbell Red Lake Resources.

The information and data provided in Section 16.1, 16.2 and 16.6 was written and interpreted by independent qualified persons Jerry T. Hanks, P. E. (Sections 16.1 and 16.2) and James Bradbury, P. E. (Section 16.6). Mr. Hanks was Phelps Dodge's staff metallurgist from 1986 to 1991. The primary reference for the Phelps Dodge historical test work and original reports, as described in Sections 16.1 through 16.2, is *"Phelps Dodge Exploration Company-- Santa Gertrudis Project Feasibility Study, KD Engineering Company, Tucson, October 1988, Vol I – IV*." The primary references for the Sonora Copper test work, as described in Section 16.6, are the N.A. Degerstrom Lab Reports (Bradbury, 2006a-d).

The metallurgical testing discussed in this section was completed prior to, and during Phelps Dodge's production at the Santa Gertrudis mine. Additional testing was completed by Sonora Copper in 2005 and 2006.

16.1 Phelps Dodge Metallurgical Testing

The Phelps Dodge metallurgical testing included agitation and column leach studies, with and without agglomeration, on primarily oxide ore, flotation and roasting tests on carbonaceous sulfide ore, and dye penetration tests (Phelps Dodge, vol III, 1988). A large amount of the test work was conducted on the Agua Blanca and Los Becerros deposits. More limited work was performed on samples from the El Corral and Hilario deposits, and these were also included in the feasibility study. The flotation and roasting tests were performed on samples from the Amelia and Maribel deposits.

As stated in the metallurgy summary of the 1988 feasibility study (Phelps Dodge, vol I, 1988), "*Testwork has shown that the "ore" is very amenable to recovery of precious metals by heap leaching at a size of 38mm or finer. Average annual recoveries varying from 64 to 91 percent are forecast with* *an overall average of 82 percent*." The summary also indicates that deep samples from El Corral, Gregorio and El Toro "*gave poor recoveries in standard bottle roll tests. Further tests confirmed that the poor recoveries were due to "preg robbing, i.e., adsorption of leached gold from solution by carbonaceous material in the ore. This deep ore has been excluded from mineable reserves*."

Two metallurgical studies report on the results of treating the carbonaceous sulfide material (Phelps Dodge, vol III, 1988). Both studies were done in 1985 by Mountain States Mineral Enterprises (Tucson, AZ) using material from the Amelia mine. The first testwork consisted of bulk rougher flotation and fine grind cyanide agitation leach. Results indicated gold extractions of 8% and 10% while similar testing of oxide material gave extractions of 89% to 90%. The initial flotation recovered over 70% of the gold for both the sulfide and oxide samples. The second testwork on two high-grade samples (12.12g Au/t and 23.83g Au/t) consisted of bulk flotation followed by roasting the flotation concentrate and cyanide leaching the roasted concentrate and the flotation tail. The tests indicated a 60% gold extraction though the report stated that a 70% overall extraction is anticipated under optimal roasting conditions.

In January 1993, a report by John O. Marsden was issued entitled: "*Summary of Preliminary Metallurgical Testwork Results for the Dora and Cristina Deposits of Minera Zapata, S.R.L. de C.V.* This report contains thirteen appendices detailing the test work, which covered cyanide leaching, principally bottle roll tests, mineralogy and preg-robbing characterization. Both deposits produce fairly good recovery on the oxide samples. However some of the material tested from the Dora deposit contained appreciable organic material which was found to be highly preg-robbing. A more detailed discussion of the Cristina test work and results is in Section 16.5.

16.2 Phelps Dodge Operating Results

Mining and processing of the Santa Gertrudis ores was limited to the oxide resources. The processing was conventional:

- Crushing
- Heap leaching
- Carbon adsorption and stripping
- Zinc precipitation

Production at Santa Gertrudis began in 1991. Because the Santa Gertrudis property contained numerous scattered deposits, the carbon columns were located near the initial heap, and were designed to be relocated as mining progressed to more remote deposits. Kern and Sibthorpe (2005) note that the material placed on the leach pads was crushed to four inches. The carbon, when loaded, was transported to the plant for stripping. The original concept was to use electrowinning to recover the precious metals from the strip solution, then smelting the deposited sludge to produce doré, but the design was changed to integrate Santa Gertrudis production with the Phelps Dodge refinery in El Paso, TX.

Only the Agua Blanca, Becerros Sur, Becerros Norte, and some ore from El Corral were mined during the time Phelps Dodge operated the property. El Corral could only be mined during daylight hours so the shovel or loader operator could avoid the dark, carbonaceous material (private communication with Mr. Gary Loving, formerly resident manager of the Santa Gertrudis operation).

During the first year of operation, the area received three times the normal annual precipitation. Under these conditions mining was difficult, and the pregnant solutions were diluted by rainfall and runoff. Additional columns were installed to handle the high flow rates. With the exception of the carbon adsorption circuit, the processing plant was capable of handling the increased flow. Additional mining equipment was added and eventually the mining rate reached 2,750tpd (from the original 2,000tpd design rate). Because no additional pad area was developed, the leach cycle was accelerated to match the mining rate (private communication with Messrs. John Marsden, Phelps Dodge Consulting Metallurgist, and Ted Mackey, Santa Gertrudis Plant Manager).

Despite the problems, the production was satisfactory with gold recovery of 78 to 80% based on metal production and head assays. After the operation was suspended, pending sale to Campbell, the heaps were drilled and assayed. The gold recovery calculated from metal production and residue assays was slightly over 80% (private communication with Mr. Ted Mackey, Santa Gertrudis Plant Manager, personal knowledge, J. T. Hanks).

16.3 Phelps Dodge Cristina Deposit Metallurgical Testing

The Cristina metallurgical testing is limited to work completed by Phelps Dodge in 1991 and 1992 and which is summarized in a report by Marsden (1993). The Phelps Dodge Cristina testwork consisted of 57 bottle-roll cyanide leach tests and a single bulk column leach test; the details of the individual test programs are included as Appendices in the Marsden (1993) report. The Cristina testing was completed in concert with the testing of material from the Dora deposit and both deposits were reported on, and summarized, in the Marsden (1993) report. Neither MDA nor Animas is aware of any other metallurgical testing on material from the Cristina deposit. The following information is taken from the Marsden (1993) report.

16.3.1 Cristina Bottle-Roll Cyanide Leach Tests

The bottle-roll analyses were completed in two test programs. The first in August 1991 consisted of 16 analyses while the second, using 41 samples, was completed in March 1992. Both test programs used reverse circulation drill cutting samples and each sample tested was a 1m to 3m composite sample of the individual 1m drill intervals. All of the bottle-roll tests were run at Phelps Dodge's Tucson laboratory using a procedure of 1) crushing the whole sample to 100% minus 10 mesh (2mm) and 2) leaching 250g of the material in a 1.0 g/l NaCN solution at pH 11.0 for 48 hours. The average head grade of all samples was 1.27g Au/t though this value is skewed high by the inclusion of four samples which assayed greater than 5g Au/t.

Average gold recovery from all of the bottle-roll tests was 73%, with lime and cyanide consumptions of 1.5 kg/t and 0.05 kg/t, respectively. Four of the tests were repeated using a 96hr monitored procedure; two of these tests indicated that the gold is fast leaching while the two others tests showed considerable gold still dissolving at the end of the test. Silver recovery was highly variable but averaged 20%.

Two of the bottle-roll tests returned gold recovery values of less than 50%. One had a low head grade (0.20g Au/t) and the recovery value (36%) was attributed to sample variance. The second, with a recovery of 48% was strongly mineralized with a head grade of 9.59g Au/t. The latter high-grade sample was re-tested using the 96hr procedure which showed very little improvement in gold recovery over the 48hr result. Hot cyanide assays were done on the same head material, both as received, and after roasting at 600^{o}C. The similar results for hot cyanide assays indicate that the low gold recovery was probably due to silica locking and/or coarse gold and not from sulfide encapsulation, or preg-robbing from carbonaceous material.

16.3.2 Cristina Bulk Column Leach Test

Two bulk samples were taken from two surface trenches excavated across an outcrop at the top of the deposit. The samples were sent to McClelland Laboratories, Inc., Reno, Nevada where they were composited into one 2,300kg sample and leached in a 15 inch diameter by 20ft high column. The size of the material as removed from the excavation was approximately 80% minus 2.5cm. No agglomeration was required although 6.5kg/t lime were added prior to loading the column. The material was leached with a 1.0 g/l NaCN solution at pH10.5-11.0. Solution was applied at a rate of 0.005 gpm/ft^2. The head grade of the material was 0.82g Au/t.

Overall gold recovery was 82% after 84 days of leaching and water washing. This compares with a recovery of 74% by bottle roll leaching of a split of the same sample crushed to 80% minus 1.25cm. Cyanide consumption was moderate at 0.9 kg/t. The gold was distributed evenly throughout the tailings.

16.3.3 Cristina Metallurgical Testwork Summary/Conclusions

The following is a summary statement concerning the metallurgical testing from Marsden (1993):

"*Because of the low grade of the deposit (0.75g Au/t), leaching at run-of-mine size is likely to be the most economically attractive treatment scheme. Based on the limited amount of testwork, the Cristina ore appears to be amenable to cyanide heap leaching, with recoveries in the range of 65-70% at run-of-mine size projected from the testwork. The leaching rate appears slower than that of Dora material, based on the results of a single column leach test and the monitored (96 hr) bottle roll leach tests. However, no dye penetration tests were run on Cristina ore and in the absence of additional supporting data this is inconclusive. It would be wise to allow for extended leach times and gold production schedule when planning the development of Cristina.*

Cyanide consumption for Cristina is projected to be moderate at 0.5 kg/t. Initial indications are that lime consumption will be higher than Dora. Testing of the bulk surface sample indicated a high lime consumption of 6.5 kg/t, but this conflicted with the average bottle roll leach test lime consumption of 1.5 kg/t. Additional tests are required to confirm this since it represents a difference in operating costs of about $0.30/tonne.

Cristina does not contain any significant amount of carbonaceous material."

16.4 Campbell Resources, Inc Metallurgical Testing

Animas and MDA has not completed a full audit and analysis of the metallurgical testing completed by Campbell. Historic research has focused on metallurgical testing on Trinidad deposit material in preparation for a possible future resource estimate. Current knowledge is limited to work completed by Oro de Sotula (Campbell subsidiary) in 1996 and 1997 (Cohoon, 1996, Martinez, 1997a and Martinez, 1997b, respectively). The work consisted of 12 bottle rolls from core and RC holes, 2 column tests on material from core holes, and a single column test on a 2,900kg bulk sample collected from the small open-pit in 1997. All of the analyses were done at Oro de Sotula's in-house laboratory in Mexico. Neither MDA nor Animas is aware of any other metallurgical testing on material from the Trinidad deposit.

16.4.1 Trinidad Bottle Roll Cyanide Leach Tests

Oro de Sotula created 12 composite intervals from core and reverse circulation reject samples for use in the bottle roll cyanide leach tests (Martinez, 1997a). Eleven of the samples were composited intervals from individual drill holes; with composite lengths ranging between 2m and 8m. The twelfth sample was a split of the composite core sample used in the column cyanide leach test described below. All of the bottle-roll tests were run at Oro de Sotula's laboratory using a procedure of 1) crushing the whole sample to 100 percent minus 6 mesh (3.35mm) and 2) leaching 200g of the material in a 0.5 g/l NaCN solution at pH 10.5-11.0 for 20 hours. The average head grade of all samples was 2.58 g Au.

The bottle roll results indicated recoveries ranging from 70% to 97% (85% average) with lime and cyanide consumptions of 3.1 kg/t and 0.8 kg/t, respectively (from table in Martinez, 1997a). The low recovery was for the composite core sample used in the column test. The next lowest recovery was at 77% with the remainder of the results progressing higher in small increments above the 77% recovery.

16.4.2 Trinidad Column Cyanide Leach Tests

16.4.2.1 Core Composite Column LeachTests

A total of 51m of split core from four core holes (TR-005 thru TR-008) was composited to create a single 64kg sample (Cohoon, 1996). This composite was sent to Oro de Sotula's laboratory where it was crushed to approximately 80% passing 1.25cm and then split into two samples for testing. The head grade of the core composite, as calculated by fire assay methods, was 2.04g Au/t (Martinez, 1997a). This compares to the weighted average grade of 1.485g Au/t (Cohoon, 1996) calculated using the weights of the individual core samples and the original assay (on the other half of the drill core). This reason for this difference has not been determined but indicates local sample variance within the deposit.

The two composites were leached in a 0.13m diameter by 2m high column for a 15 day period and then washed for 5 days. No agglomeration was required and there is no indication that any lime was added prior to leaching. The material was leached with a 0.5 g/l NaCN solution at pH10.5.

Overall gold recovery was 78% and 82% for the two tests while cyanide consumption was 0.71 kg/t and 0.54 kg/t, respectively. This compares with the recovery of 70% by bottle roll leaching of the same material as discussed above in Section 16.6.1. The reason for the discrepancy between the bottle-roll and column results is not known.

16.4.2.2 Bulk Column Leach Test

A single 2,900kg sample from the Trinidad Pit was sent to the Oro de Sotula laboratory where it was crushed to 80% passing 2.5cm (Martinez, L. A., 1997b). It is not known whether this sample is of one unique rock type or a composite of multiple rock types. The sample had a head grade of 3.53g Au/t. After an 87 day column test, a final recovery of 89% was attained with moderate CN consumption (Martinez, L. A., 1997b).

16.5 Sonora Gold Metallurgical Testing

There are no records that indicate that any metallurgical testing was completed by Sonora Gold.

16.6 Sonora Copper Metallurgical Testing

During Phelps Dodge's mining of the oxide ore, carbonaceous and refractory sulfide ore was encountered, and selective mining was implemented to avoid this material. Any future production of gold would likely be a combination of oxide material and carbonaceous and refractory sulfide material. In 2005 and 2006 Sonora Copper contracted with the N. A. Degerstrom Lab to run metallurgical tests on the carbonaceous and refractory ore to determine its metallurgical characteristics.

Samples for testing were taken from the Dora and El Corral pits. The results of that testwork are described in a series of informal reports or memoranda issued between September 2005 and June 2006 (Bradbury, J., 2006a, 2006b, 2006c, and 2006d).

It was found that the samples tested were transition-type ores containing a combination of oxide/sulfide/carbonaceous material. Testing also showed that not all samples containing carbonaceous material were preg-robbing. Basic flotation and cyanide leach testing showed that each method alone would not recover a significant percentage of the gold. However, cyanide leaching of the flotation tails did show overall good gold recovery. Flotation was shown to also recover and remove a good portion of the carbonaceous material from the ore.

Therefore, a concept was formulated to use flotation for removing the sulfides and carbon, and cyanide leaching for recovering the gold in the tails. Carbon-in-leach ("CIL") treatment of the tails was also proposed because not all of the carbon was floated and adsorption on active carbon might override any preg-robbing tendencies. The proposal and the results summarized below are described in Bradbury, J., (2006a, 2006b, 2006c, and 2006d).

The second batch of samples was sent from Santa Gertrudis and different blends were made up according to their classification:

- Blend 1: oxide/sulfide (3.29g Au/t)
- Blend 2: oxide/sulfide/carbonaceous; non-preg-robbing (5.79g Au/t)
- Blend 3: oxide/sulfide/carbonaceous; preg-robbing (3.53g Au/t)

Flotation was tested using different grind sizes, copper sulfate activation, and cleaning of the concentrate. Copper sulfate activation was found to improve the gold recovery. Cyanide leaching was done on the flotation tails, both with and without CIL. In Blend 3, it was found that CIL treatment would override the effect of its preg-robbing characteristic.

Bulk sulfide flotation, using PAX (potassium amyl xanthate), with copper sulfate activation, seemed to work well with this type of material and cyanide CIL leaching of the flotation tailings worked well, with low lime and moderate cyanide consumptions (3.0 to 4.4 lb/ton lime, 3.8 to 5.2 lb/ton NaCN).

A summation of this flotation/cyanide CIL leach testing is shown:

	Flotation Au Recovery	Weight Upgrade Ratio	Cleaner Conc. Au (oz/ton)	CIL Leach Au Recovery	Total Au Recovery	Head/Tail Au Recovery
Blend 1	52.7%	25.0	0.474	86.7%	93.7%	88.2%
Blend 2	58.0%	15.5	1.275	70.9%	87.8%	79.6%
Blend 3	52.5%	21.6	0.303	82.2%	91.5%	83.5%

Although these tests were encouraging, the tests were on transitional ores and the deeper ores generally trend to more sulfide and carbonaceous material and less oxide.

A CIL treatment of the tails could be used to recover the gold in the tails. No testing was performed on the flotation cleaner concentrate and some method to treat the refractory sulfides, such as roasting, autoclaving, or bio-oxidation would be needed.

This testing was preliminary in nature and any future work should entail testing of deeper ores, locked-cycle flotation, slime depression, and continuous cyanide CIL leaching.

16.7 Animas Resources Ltd Metallurgical Testing

Animas has not undertaken any metallurgical testing to date.

16.8 Summary Statement

Phelps Dodge completed a significant amount of metallurgical testing for their 1998 mine feasibility study. This work included numerous bottle-roll tests on various ore types, agitation and column leach studies, with and without agglomeration, on primarily oxide ore, flotation and roasting tests on carbonaceous sulfide ore, and dye penetration tests. A large amount of the test work was conducted on the Agua Blanca and Los Becerros deposits while more limited work was performed on samples from the El Corral and Hilario deposits. The flotation and roasting tests were performed on samples from the Amelia and Maribel deposits.

The feasibility testing indicated that the oxide ore at a size of 38mm or finer is amenable to recovery of precious metals by heap leaching. The average recovery was forecast at 82 percent. This was confirmed at the completion of mining by Phelps Dodge when the overall gold recovery was determined to be 80 percent for the life of the mine. This was calculated from metal production and residue assays of the leach pads from material mined from the Agua Blanca, Becerros Sur, Becerros Norte, and some ore from El Corral pits.

Bottle-roll and column leach testing on the deep carbonaceous sulfide material indicated very poor gold recoveries and the initial flotation and cyanide agitation leach testing resulted in recoveries less than 10 percent. Additional flotation testing that included a roasting circuit before leaching increased recoveries to 60 percent. Due to the high cost of gold recovery from the carbonaceous, sulfidic material, the deep ore was excluded from Phelps Dodge's mineable reserves.

The Cristina deposit metallurgical testing is limited to work completed by Phelps Dodge in 1991 and 1992. The Phelps Dodge testwork consisted of 57 bottle-roll cyanide leach tests using drill sample reject material, and a single bulk column leach test on material from two trenches. Average gold recovery from all of the bottle-roll tests was 73%, with lime and cyanide consumptions of 1.5 kg/t and 0.05 kg/t, respectively. Silver recovery was highly variable but averaged 20%. Additional testing on a single sample with a gold recovery of 48% indicated that the low gold recovery was probably due to silica locking and/or coarse gold and not from sulfide encapsulation, or preg-robbing from carbonaceous material. The bulk sample column test on a composited 2,300kg sample had an overall gold recovery of 82% after 84 days of leaching and water washing. The bulk sample was approximately 80% minus 1 inch material with a head grade of 0.82g Au/t. No agglomeration was required although 6.5 kg/t lime were added prior to loading the column. Cyanide consumption was moderate at 0.9 kg/t. The gold was distributed evenly throughout the tailings.

Sonora Copper completed additional testwork on carbonaceous and refractory sulfide samples from the Dora and El Corral pits. The initial testing indicated that these were transition-type ores containing a combination of oxide/sulfide/carbonaceous material. The testing focused on using flotation for removing the sulfides and carbon, and cyanide leaching for recovering the gold in the tails. Carbon-in-leach ("CIL") treatment of the tails was also proposed because not all of the carbon was floated and adsorption on active carbon might override any preg-robbing tendencies.

The Sonora Copper results indicated a total gold recovery of between 80 and 90 percent with between 50 and 60 percent of the gold occurring in the flotation concentrate. No testing though was performed on the flotation cleaner concentrate and some method to treat the refractory sulfides, such as roasting, autoclaving, or bio-oxidation will still be needed.

17.0 MINERAL RESOURCE ESTIMATE

The resources reported herein are the first independent NI 43-101-compliant estimate for the Cristina gold deposit.

17.1 Database

The Cristina database was treated as a distinct subset of the total Animas database. The database, while compiled by MDA from historic files, was audited, checked, and modified with data from the project site. Auditing the database and general database discussion were described in Section 14.6 of this report. There are 13 core holes and 58 RC holes for a total of 7,057 gold assays and 6,581 silver assays in the Cristina database. All 58 RC holes and 9 core holes were completed by Phelps Dodge; Campbell drilled the remaining four core holes. The Campbell core holes were apparently drilled for petrographic studies and neither MDA or Animas is aware of any down hole sampling and assaying for these four holes. Overall silver grades are low and poor silver metallurgical recovery resulted in the decision to not conduct a silver resource estimate. There are no cyanide soluble gold assays but there are some bottle roll tests. Details of the database are given in Table 17.1. Drill holes locations are shown in Figure 17.1.

Table 17.1 Descriptive Statistics of the Cristina Database

All Cristina Data
(excluding trench samples)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
From	7,067					0.0	293.0	
To	7,067					1.0	294.0	
Length	7,067		1.013			0.100	6.000	m
AuA	7,057	0.060	0.238	0.546	2.293	0.000	12.020	g/t
Au_Cap	7,057	0.060	0.238	0.546	2.293	0.000	12.020	g/t
AuCN	none							g/t
Ag	6,581	0.50	1.36	3.41	2.50	0.00	134.00	g/t
Ag_Cap	6,581	0.50	1.36	3.41	2.50	0.00	134.00	g/t
Zone	7,067	11.00	48.85	48.63	0.995	1.00	99.00	

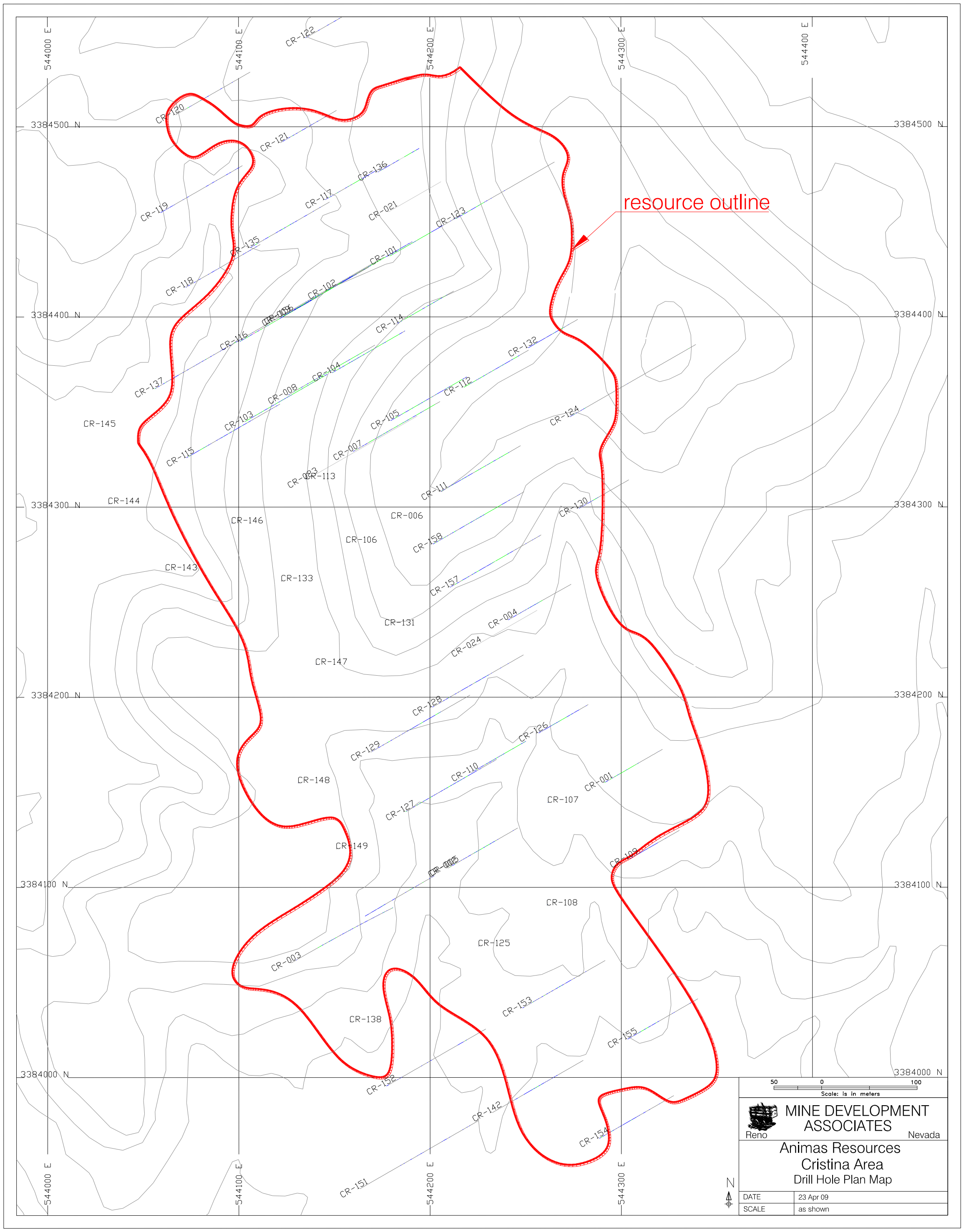
17.2 Modeling

The geologic sections were modeled by geologists on site, and in so doing, it became clear that the lithologic model explained and supported the shallowly dipping mineralization lying over a low-angle fault model as illustrated in Figure 17.2 and Figure 17.3. Using the geology as a guide along with the color-coded assays representing natural distributions, mineral domains were modeled. The mineral domain grade ranges were derived from a quantile plot of the gold mineralization (Figure 17.4). The generally linear orientation of the quantile plot suggests that the Cristina gold mineralization was likely one unique event but the minor changes in slope indicate distinct natural populations related to geological features or depositional sites.

The gold mineralization occurs predominantly above a low-angle fault zone gently dipping at about 30^{o} to the west-southwest. The deposit as it is presently defined strikes for about 600m and dips for about 300m. Descriptive statistics of the gold data used in mineral domain modeling are given in Table 17.2. Capping was not done as the deposit, within each domain, has low coefficients of variation and no outliers. Three styles of gold mineralization were modeled and they are characterized by a low-grade shell (<~0.4g Au/t) of weak silicification and diffuse stockwork/veining enclosing a mid-grade (~0.4 to ~5g Au/t) zone of moderate to strong silicification associated with silica stockwork and/or thin silica veins. Volumetrically small, high-grade (<~5g Au/t) zones of veining and strong stockwork occur sporadically throughout the deposit. All of the mineral types are oriented sub-parallel to the underlying low-angle fault though this orientation is especially strong within the mid- and high-grade mineralization. A small volume of low-grade mineralization occurs within the footwall immediately below the low-angle fault. This mineralization is treated as a separate mineral domain within the resource estimate, and is considered a higher-risk than above the fault but not below the Inferred classification.

The original interpretation was made on irregularly spaced (25 to 50m spaced) sections looking $N30^{o}W$. These sections' geology and mineral domains were digitized, loaded into MineSight® mining software, and cleaned. Attempts were made to build three-dimensional solids of the gold domains, but these solids were found to be too complicated for efficient and accurate modeling. As a consequence, the block model was rotated 30^{o} and non-orthogonal long sections were interpreted looking $N60^{o}E$ perpendicular to the long dimension of the block model and with one section per column of blocks. The mineral domains were re-interpreted on these sections, which were used to code composites and the block model. Solids were made for the footwall Mural Formation.

Figure 17.1 Cristina Drill Hole Location Map with Resource Outline



Note to above figure: lines extending from drill hole designations (CR-) are horizontal projections of angle drill holes.

Figure 17.2 Cross Section of the Cristina Geology and Gold Domains (Section 250)

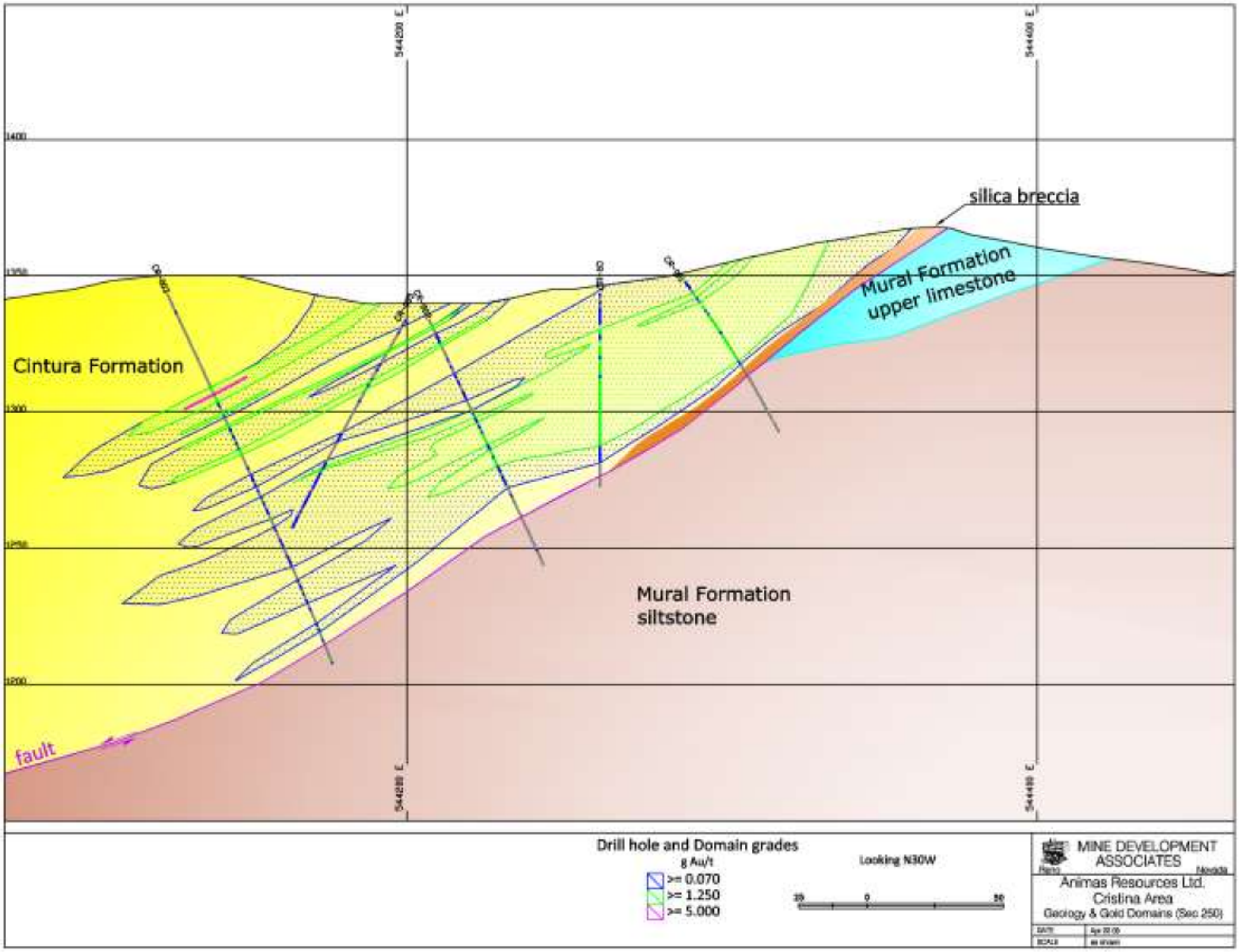


Figure 17.3 Cross Section of the Cristina Geology and Gold Domains (Section 500)

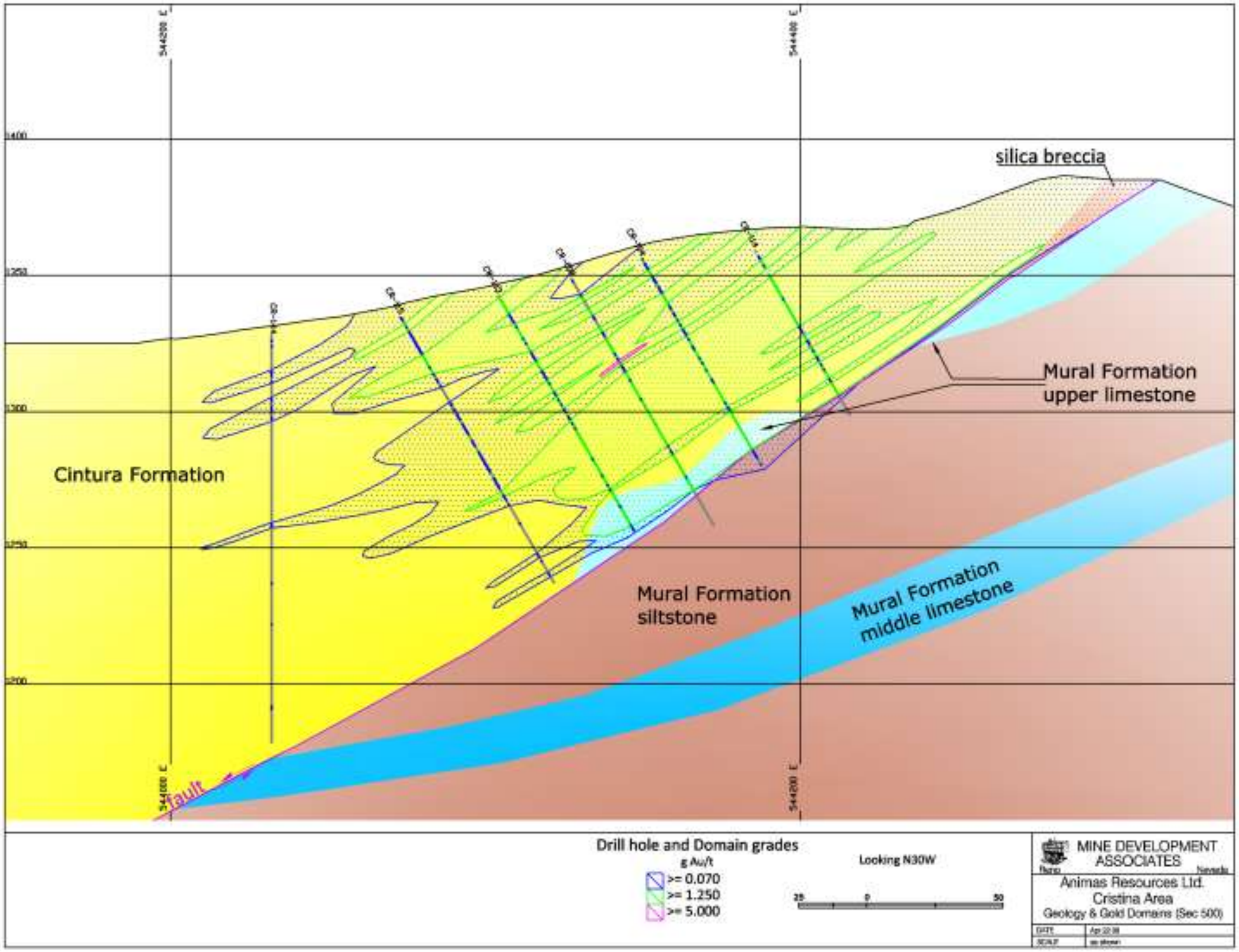


Figure 17.4 Quantile Plot of Gold Grades at Cristina
(excluding trench samples)

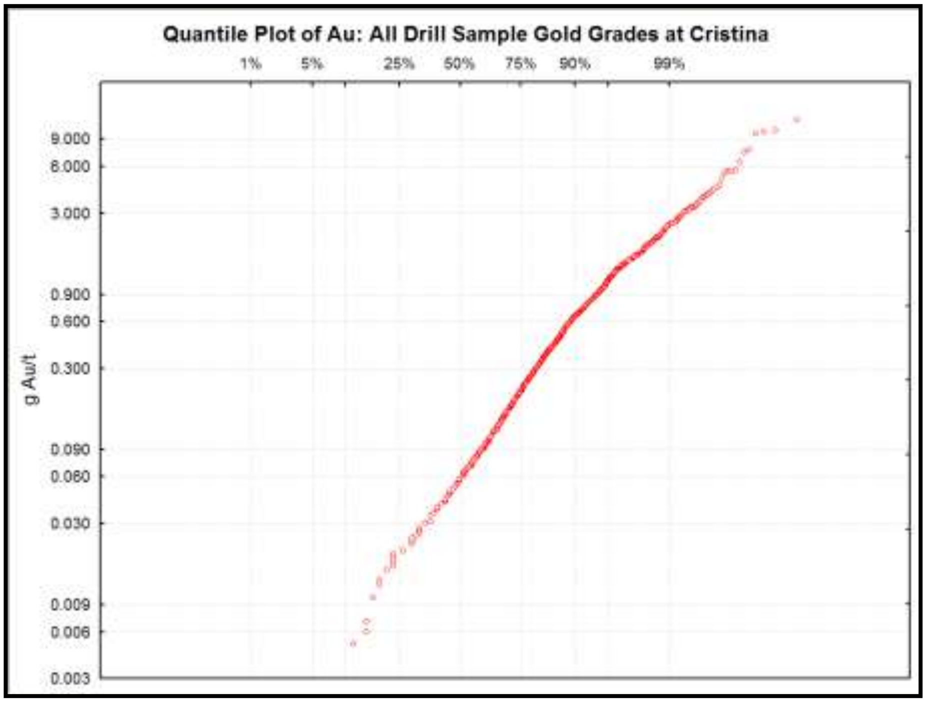


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Table 17.2 Descriptive Statistics of the Cristina Drill-Hole Database

(excluding trench samples)

Cristina Low-grade Gold Domain			**1**	**to**	**1**	**Capping**	**none**	**g Au/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
From	2,279					0.0	180.0	m
To	2,279					1.0	181.0	m
Length	2,279	1.00	1.02	0.27	0.27	0.450	6.000	m
Au	2,273	0.120	0.158	0.131	0.828	0.000	1.301	g/t
Au_Cap	2,273	0.120	0.158	0.131	0.828	0.000	1.301	g/t
Ag	2,189	0.70	1.49	2.91	1.96	0.00	90.00	g/t
ZONE	2,279					1.00	1.00	

Cristina Mid-grade Gold Domain			**2**	**to**	**3**	**Capping**	**none**	**g Au/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
From	1,238					0.0	108.0	m
To	1,238					1.0	109.0	m
Length	1,238	1.00	1.03	0.32	0.31	0.250	5.000	m
Au	1,236	0.686	0.905	0.719	0.795	0.015	4.600	g/t
Au_Cap	1,236	0.686	0.905	0.719	0.795	0.015	4.600	g/t
Ag	1,106	1.50	3.42	6.59	1.93	0.00	134.00	g/t
ZONE	1,238					2.00	3.00	

Cristina HG Structure Gold Domain			**4**	**to**	**4**	**Capping**	**none**	**g Au/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
From	13					2.0	89.0	m
To	13					3.0	90.0	m
Length	13	1.00	0.98	0.10	0.10	0.550	1.000	m
AU	13	6.448	7.339	2.322	0.316	5.010	12.020	g/t
Au_Cap	13	6.448	7.339	2.322	0.316	5.010	12.020	g/t
AG	13	3.20	4.62	3.92	0.85	0.10	14.00	g/t
ZONE	13					4.00	4.00	

Cristina Footwall Gold Domain			**11**	**to**	**11**	**Capping**	**none**	**g Au/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
From	112					36.0	101.0	m
To	112					37.0	102.0	m
Length	112	1.00	1.00	0.00	0.00	1.000	1.000	m
AU	112	0.110	0.150	0.110	0.731	0.020	0.660	g/t
Au_Cap	112	0.110	0.150	0.110	0.731	0.020	0.660	g/t
AG	112	0.50	0.59	0.74	1.26	0.00	3.90	g/t
ZONE	112					11.00	11.00	

Cristina Unmineralized Gold			**99**	**to**	**99**	**Capping**	**0.6**	**g Au/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
From	3,425					0.0	293.0	m
To	3,425					1.0	294.0	m
Length	3,425	1.00	1.00	0.07	0.07	0.100	3.000	m
Au	3,423	0.020	0.026	0.046	1.721	0.000	1.300	g/t
Au_Cap	3,423	0.020	0.026	0.037	1.412	0.000	0.600	g/t
Ag	3,161	0.30	0.57	0.86	1.52	0.00	21.00	g/t
ZONE	3,161					99	99	

17.3 Compositing

The drill samples were composited into 3m down-hole composites. Compositing was done down-hole first honoring the high-grade veins and the footwall contact. Then the composites were coded by the cross section interpretations, allowing for compositing across soft boundaries between the unmineralized material, the low-grade and the mid-grade. Clearly the high-grade mineralization has hard boundaries and it is likely that the footwall mineralization, if it is real, is a separate domain. Table 17.3 presents the descriptive statistics of the composite database used for gold domains.

17.4 Density

MDA has found no density measurements for the Cristina area and has assigned two densities to the model:

- 2.5g/cm^3 for the hanging wall Cintura Formation and
- 2.6g/cm^3 for the footwall Mural Formation.

These are the same density numbers used in historic Cristina resource estimates. MDA appreciates that these are simplified estimates and most likely the densities will vary spatially as well as vary from these given numbers. But these are reasonable numbers for these types of rocks in this environment for an Inferred resource.

Table 17.3 Descriptive Statistics of the Cristina Composite Data
(excluding trench samples)

Cristina Low-grade Gold Domain **1**

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	773	3.00	2.98	0.16	0.05	0.30	3.00	m
Au	773	0.157	0.195	0.159	0.814	0.020	1.285	g/t
Au_Cap	773	0.157	0.195	0.159	0.814	0.020	1.285	g/t
Ag	757	0.770	1.628	2.529	1.554	0.000	31.530	g/t
ZONE	773					1	1	

Cristina Mid-grade Gold Domain **2**

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	419	3.00	2.98	0.17	0.06	1.00	3.00	m
Au	419	0.702	0.826	0.494	0.598	0.170	3.413	g/t
Au_Cap	419	0.702	0.826	0.494	0.598	0.170	3.413	g/t
Ag	374	1.615	3.205	5.028	1.569	0.000	69.630	g/t
ZONE	419					2	2	

Cristina HG Structure Gold Domain **4**

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	12	1.00	1.14	0.40	0.35	0.50	2.00	m
Au	12	6.550	7.330	2.302	0.314	5.469	12.020	g/t
Au_Cap	12	6.550	7.330	2.302	0.314	5.469	12.020	g/t
Ag	12	3.350	4.635	3.924	0.847	0.100	14.000	g/t
ZONE	12					4	4	

Cristina Footwall Gold Domain **11**

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	39	3.00	2.96	0.23	0.08	1.00	3.00	m
Au	39	0.118	0.148	0.085	0.577	0.039	0.407	g/t
Au_Cap	39	0.118	0.148	0.085	0.577	0.039	0.407	g/t
Ag	39	0.370	0.558	0.589	1.055	0.000	2.330	g/t
ZONE	39					11	11	

Cristina Unmineralized Gold **99**

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	1167	3.00	2.96	0.22	0.08	0.10	3.00	m
Au	1167	0.022	0.030	0.040	1.319	0.000	0.478	g/t
Au_Cap	1167	0.022	0.030	0.037	1.235	0.000	0.478	g/t
Ag	1087	0.370	0.579	0.745	1.287	0.000	9.400	g/t
ZONE	1167					99	99	

17.5 Oxidation and Cyanide Recoveries

The data from the drill hole geologic logs and metallurgical testwork completed at Cristina by Phelps Dodge in 1991 and 1992 (Marsden, 1993) indicate that the Cristina deposit is predominantly oxidized and the gold is amenable to cyanide heap leach extraction techniques.

The results of the 57 bottle roll cyanide leach tests, and 2 bulk column cyanide leach tests, indicate that a 70% gold extraction rate can be used to determine an economic cut-off for the reported resource (see Section 16.3 for a more detailed discussion of the metallurgical analyses). The relatively consistent bottle roll results the deposit indicate that there is not significant internal variation in the expected gold extraction and a single recovery figure would present a fair reflection of an Inferred resource.

The drill logs indicate the presence of minor pyrite only in the deeper levels of the deposit, mostly down-dip and below the current resource. There are no bottle roll tests within these sulfidic areas. Metallurgical testing on similar sulfidic material elsewhere on the Santa Gertrudis property indicates that this material is not amenable to heap leach extraction techniques. There is therefore the possibility that a small portion of the Cristina deposit may not have such favorable gold recovery characteristics.

17.6 Estimation

Following compositing and the previously described statistical analyses of those composites, correlograms were constructed in multiple directions for all the mineralized domains together. Cristina showed no particularly strong anisotropy. The estimation criteria were, in part, defined by these correlograms and, in part, by attempting to honor understood geologic controls and distributions. Those estimation parameters are given in Table 17.4. In all cases, length weighting was used on composites during estimation.

Inverse distance estimation was chosen as the base case, while an estimate was also made by nearest neighbor and Kriging. The latter two were used as checks on the given estimate. Trench data was not used in estimation.

Table 17.4 Estimation Parameters

Description	Parameter
Low-grade Gold Domain (hanging wall only)	
Samples: minimum/maximum/maximum per hole	1 / 12 / 3
Rotation/Dip/Tilt (variogram and searches)	330^o / 30^o / 0^o
Search (m): major/semimajor/minor (vertical)	150 / 150 / 50
Inverse distance power	3
High-grade restrictions (grade in oz Au/t and distance in ft)	None
Mid-grade Gold Domain	
Samples: minimum/maximum/maximum per hole	1 / 12 / 3
Rotation/Dip/Tilt (variogram and searches)	330^o / 30^o / 0^o
Search (m): major/semimajor/minor (vertical)	100 / 100 / 50
Inverse distance power	3
High-grade restrictions (grade in oz Au/t and distance in ft)	None
High-grade Structurally Controlled Gold Domain	
Samples: minimum/maximum/maximum per hole	1 / 12 / 3
Rotation/Dip/Tilt (variogram and searches)	330^o / 30^o / 0^o
Search (m): major/semimajor/minor (vertical)	50 / 50 / 10
Inverse distance power	3
High-grade restrictions (grade in oz Au/t and distance in ft)	None
Footwall Gold Domain (low-grade only)	
Samples: minimum/maximum/maximum per hole	1 / 12 / 3
Rotation/Dip/Tilt (variogram and searches)	330^o / 30^o / 0^o
Search (m): major/semimajor/minor (vertical)	100 / 100 / 50
Inverse distance power	3
High-grade restrictions (grade in oz Au/t and distance in ft)	None
Outside Mineralized Zones	
Samples: minimum/maximum/maximum per hole	3 / 12 / 3
Rotation/Dip/Tilt (variogram and searches)	330^o / 30^o / 0^o
Search (m): major/semimajor/minor (vertical)	50 / 50 / 15
Inverse distance power	3
High-grade restrictions (grade in oz Au/t and distance in ft)	6

17.7 Resource

MDA classified the Cristina resource based on geological and quantitative confidence into an Inferred category as defined by "CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines", issued in 2000 and modified with adoption of the "CIM Definition Standards - For Mineral Resources and Mineral Reserves" in 2005 to be in compliance with Canadian National Instrument 43-101. CIM mineral resource definitions are given below:

Mineral Resource

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase 'reasonable prospects for economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable. These assumptions must be presented explicitly in both public and technical reports.

Inferred Mineral Resource

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.

Indicated Mineral Resource

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

Measured Mineral Resource

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

Mineralization or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

MDA is reporting the resources at cutoffs that are reasonable for deposits of this nature and mining conditions of this type considering economic conditions because of the requirement that the resource exists "in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction". Presently, MDA believes that all exploitation at Cristina would be by open pit methods. Considering cyanide-extraction recoveries described in Section 17.5, MDA believes that the resource reporting cutoff for heap leachable open pit material would be approximately 0.3g Au/t.

Figure 17.5and Figure 17.6 present the same cross sections as earlier in the report but with block model grades included. The model blocks are 6m in a N30°W orientation by 6m in a N60°E orientation by 3m high. The 3m dimension was chosen as possible, though somewhat small, size for open pit mining of this small, dominantly sub-horizontal deposit.

The Inferred resource is presented in Table 17.5. At a 0.3g Au/t cut-off, the Cristina reported resource is 7,139,000 tonnes at an average grade of 0.66g Au/t for a total of 152,000 ounces gold. The resource is classified as Inferred because of the lack of independent verification or check sampling and QA/QC. Additional density data and metallurgical testing is also needed. The supporting geologic interpretations and the apparent predictability of the deposit suggest that, with a few infill drill holes for verification and some density measurements and more metallurgy, a good portion of the deposit resource could be upgraded to at least Indicated.

Table 17.5 Total Gold Resources for Cristina: Inferred

Cutoff g Au/t	Tonnes	Grade g Au/t	Ounces Au
0.2	10,879,000	0.52	181,000
0.3	**7,139,000**	**0.66**	**152,000**
0.4	5,526,000	0.75	134,000
0.5	4,425,000	0.83	118,000
0.6	3,480,000	0.91	102,000
0.7	2,671,000	0.99	85,000
0.8	1,893,000	1.08	66,000
0.9	1,241,000	1.21	48,000
1.0	851,000	1.33	36,000
1.5	167,000	1.96	11,000
2.0	49,000	2.58	4,000
3.0	11,000	3.36	1,000

Figure 17.5 Gold Block Model Grades in Section for Cristina (Section 250)

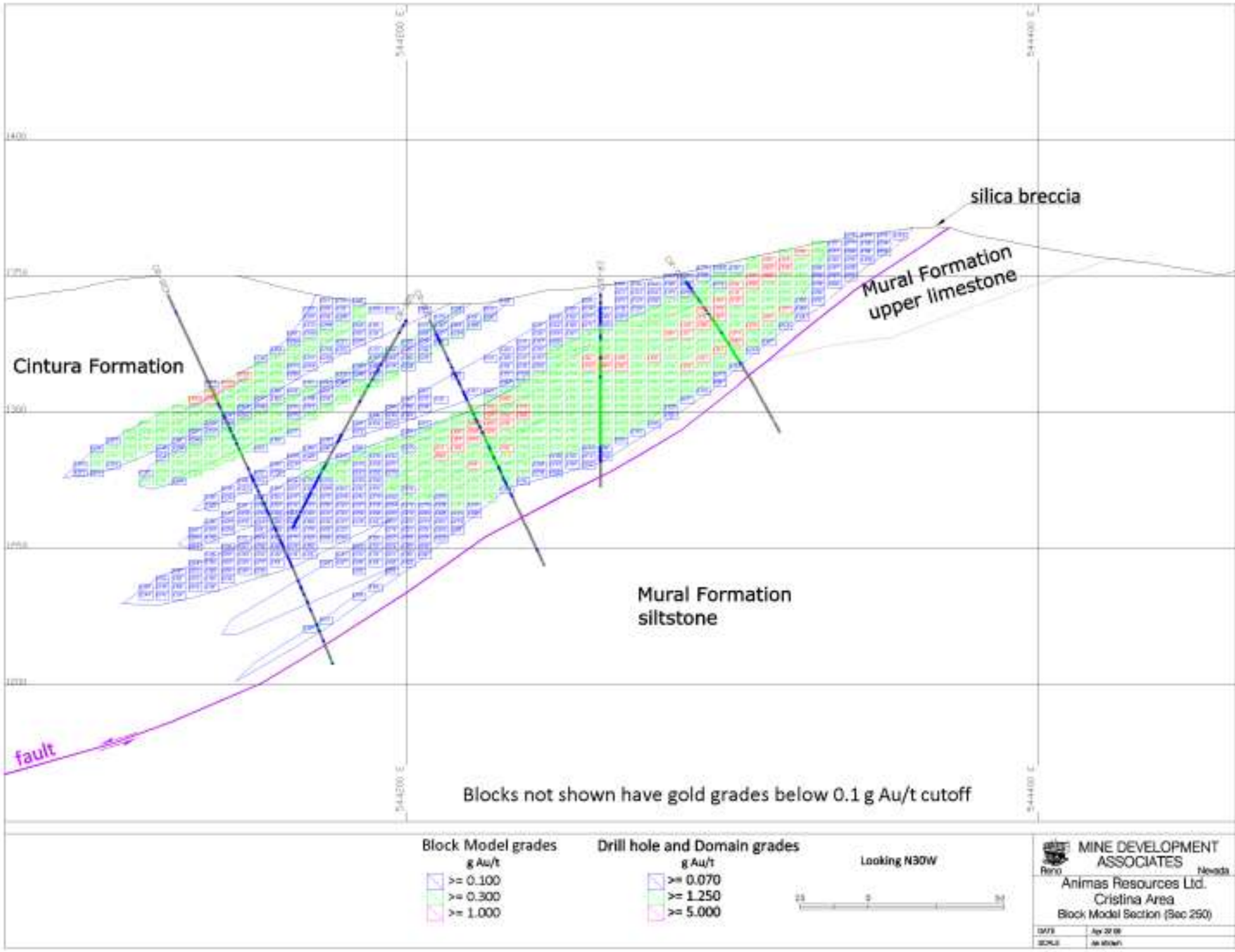
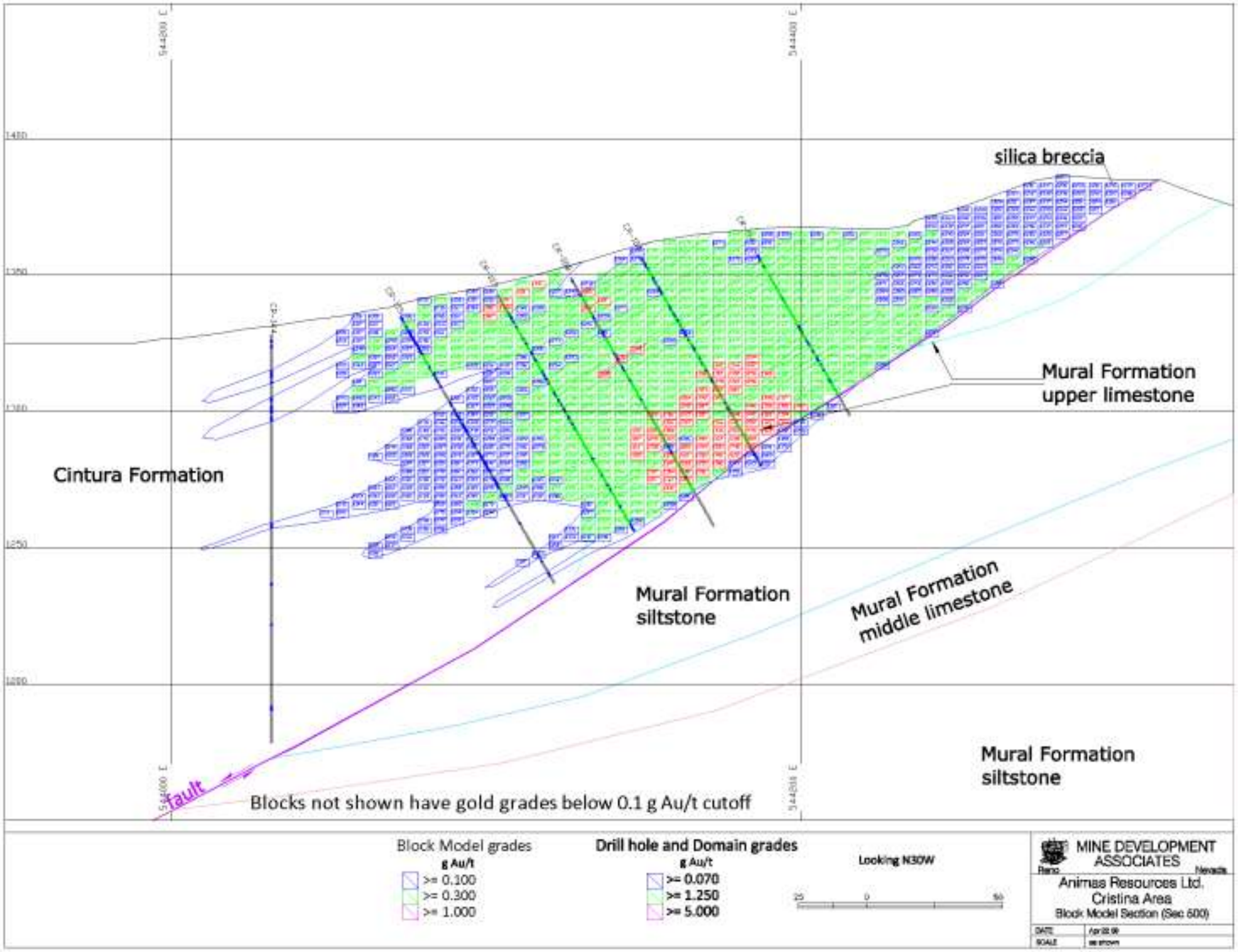


Figure 17.6 Gold Block Model Grades in Section for Cristina (Section 500)



17.8 Resource Validation and Checking

Checks were made on the Cristina resource model in the following manner:

- Cross sections with the mineral domains, drill-hole assays and geology, topography, sample coding, and block grades with classification were reviewed for reasonableness;
- Block-model information, such as coding, number of samples, and classification were checked by domain and lithology on the computer; and
- and a nearest neighbor and ordinary kriged model were made for comparison.

In conclusion, it is deemed that the resource estimate is reasonable and supported by the geologic model.

17.9 Discussion, Qualifications, Recommendations and Potential

This first NI 43-101-compliant resource estimate for Cristina represents a confirmation of historic resource estimates for the deposit. The current resource estimate also provides a basis for an infill verification program as well as a model for further exploration. MDA expects that this well-behaved gold deposit at Cristina would withstand the test of drilling and continue to demonstrate predictability. While the relationship of sub-horizontal geologic features to mineralization is for the most part strong, there is some uncertainty concerning the orientation of the isolated higher grade zones.

There are no recent drill holes for data validation and there is a lack of QA/QC analyses for the historic drilling. More effort should be put into added precision of the material-type definition, in particular a more detailed density model. This would require more sample measurements and more detailed geology, including primary lithology and alteration. Some model and data verification holes would add sufficient confidence to increase classification to Indicated for at least a portion of the resource.

While dilution has been built into the model, it is likely that some additional minor dilution would occur during mining. The dilution in this reported resource is using 3m high blocks. If mining were to take place on 6m benches, dilution would certainly be greater. Bench-heights studies could assess the impact of dilution based on varying heights.

18.0 OTHER RELEVANT DATA AND INFORMATION

MDA is not aware of any other relevant data or information that is not already discussed elsewhere in this report.

19.0 INTERPRETATION AND CONCLUSIONS

MDA believes that the Santa Gertrudis project is a property of merit whose principal asset is a large land position that controls a major gold district with significant past production and which contains existing resources with historic estimates. The size and exploration potential of the property is demonstrated by the occurrence of approximately 30 gold deposits within a northwest-trending mineral belt approximately 20km long and up to 8km wide. The full extent of the mineral belt is not known due to post-mineralization cover to the west and northeast.

The majority of Animas' exploration work completed during the past 12 months at Santa Gertrudis has been directed towards target identification and the discovery of major, new gold resources. The work has included basic geological, alteration, mineralization, and structural mapping, a considerable amount of new rock-chip geochemical sampling, ground geophysical surveying and an in-depth re-interpretation of existing geophysical data, and a compilation/review of the massive project database. The results of this work have been invaluable in developing a better understanding of the global gold potential of the Santa Teresa mining district. Some of the more significant features of the Santa Teresa mining district are:

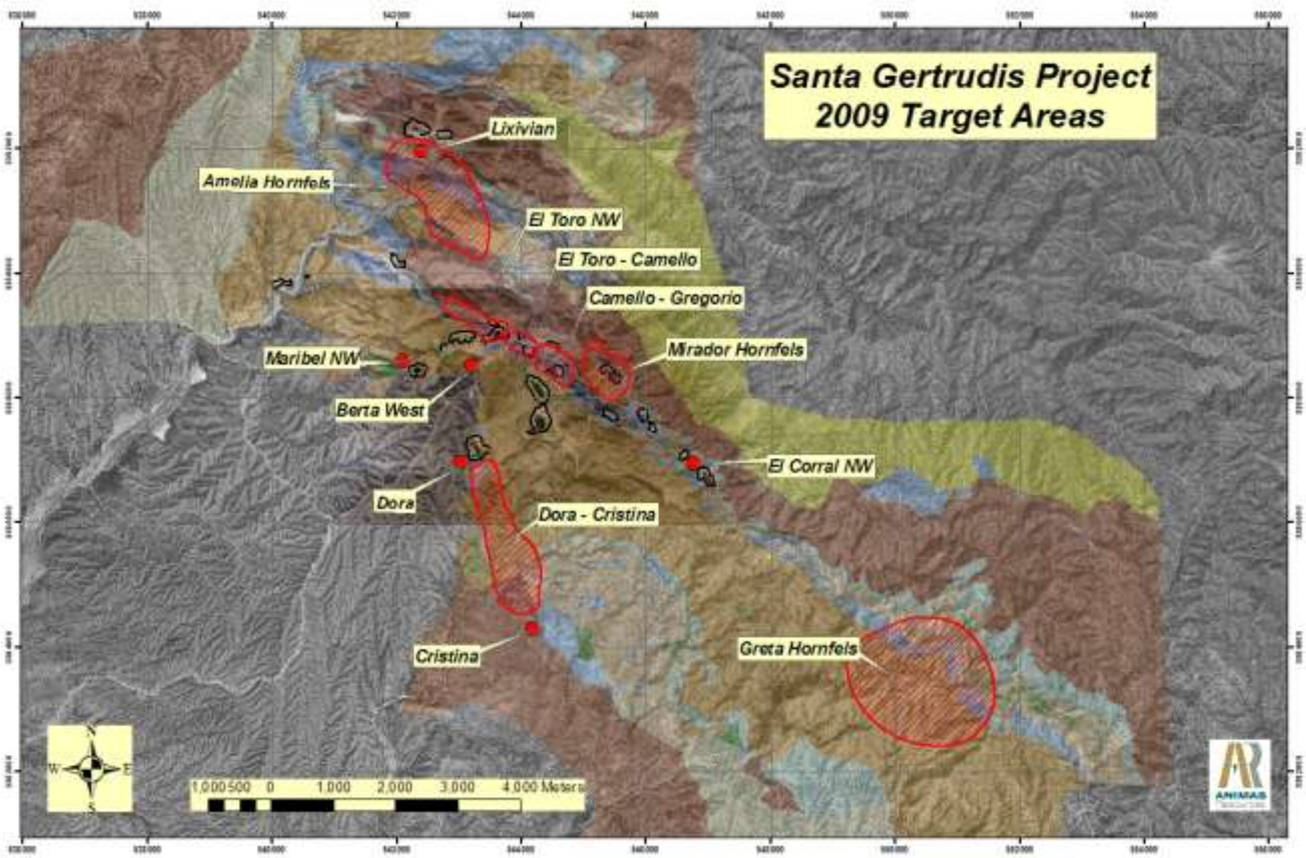
- Gold is hosted in most sedimentary rock types and persists over an area not easily explained by one source or event.
- While much of the gold mineralization is hosted in sedimentary rocks and have many features consistent with Carlin-like gold deposits, the mineral zoning identified from drilling and surface rock geochemistry indicate that the gold mineralization occurs distal to a large hydrothermal system, or systems.
- Four large (3+ km^2), zones of contact metamorphic alteration (hornfels), which represent potential buried intrusive centers, have been identified.
- Most major structures are pre-mineralization and serve as important conduits and/or hosts for mineralization; post-mineralization structures off-set and can "hide" mineralization under un-mineralized rock.
- Numerous untested gold (>0.1g Au/t in soil and >1.0g Au/t in rock) and trace element anomalies occur within an area of approximately 160 km^2 (20km by 8 km).
- Surface mapping and drilling, complimented by geophysics, have identified several large potentially mineralized targets peripheral to known deposits.
- Additional potential for further discoveries extends under post-mineralization alluvial cover.

The exploration targets identified by Animas are subdivided into two sub-categories: "resource expansion" targets adjacent to existing, known deposits and new, "large-tonnage" targets that have been developed as a result of the more basic exploration conducted to date. The former target-types probably are relatively limited in size; each with the potential for an additional 50,000 to 100,000 ounces of new gold resources. However, the latter of these two target-types is thought to have significant resource potential, and it is believed that these target types could well add new gold resources significantly larger in size than historically reported estimates.

The exploration drilling completed during 2008 was designed primarily to test clearly identified "extension" targets. Animas' primary exploration focus in 2009 is the identification and drill testing of large targets that have the potential to contain large tonnage gold deposits at Santa Gertrudis.

A brief review of the "large-tonnage" and "extension" targets recommended for drilling during 2009 follows. However, it is likely that these targets may be modified, or new targets identified, as additional work is done, and the following is meant to be a status-only review of where Animas now stands in this regard. These targets as well as other targets currently being evaluated are shown on Figure 19.1 and summarized in Table 19.1.

Figure 19.1 Santa Gertrudis 2009 Targets
(from Animas)



Note to above figure: refer to Figure 7.2 for the lithology color codes

Table 19.1 Targets Selected for Additional Work and/or Drill Testing During 2009

Prospect Name	Exploration Concept	Target Type	Planned Work
Cristina	Extension of known oxide gold mineralization	Extension	Additional mapping & sampling, & drilling 2009
Dora	Extension of known oxide-sulfide gold mineralization	Extension	Additional mapping & sampling, & possibly drilling 2009
Maribel NW	NW extension of known gold mineralization	Extension	Additional mapping & sampling in 2009
Berta West	Extension of known gold mineralization	Extension	Additional mapping & sampling in 2009
Lixivian	Zone of surface alteration and anomalous gold mineralization	Extension	Additional mapping & sampling in 2009
El Toro NW	Extension of known gold mineralization	Extension	Additional mapping & sampling in 2009
El Corral NW	Extension of known gold mineralization	Extension	Additional mapping & sampling in 2009
El Toro-Camello	Strong surface alteration and anomalous gold, IP anomaly, untested	Large tonnage	Additional mapping & sampling, & drilling 2009
Camello-Gregorio	Strong surface alteration and anomalous gold, IP anomaly, untested	Large tonnage	Additional mapping & sampling, & drilling 2009
Mirador	Strong surface alteration and anomalous gold, IP anomaly, untested	Large tonnage	Additional mapping & sampling, & drilling 2009
Dora-Cristina	Defined feeder fault system, variable surface alteration and anomalous gold, IP-Res anomaly	Large tonnage	Additional mapping & sampling, possible drilling 2009
Greta Hornfels	Strong surface alteration and anomalous gold, mag anomaly, untested	Large tonnage	Additional mapping & sampling, possible drilling 2009
Amelia Hornfels	Strong surface alteration and anomalous gold, mag anomaly, untested	Large tonnage	Additional mapping & sampling, possible drilling 2009

19.1 Large-Tonnage Targets

The primary large tonnage targets at Santa Gertrudis are situated within a 3.5km long northwest-trending corridor extending from the Mirador deposit in the southeast to the El Toro deposit in the northwest. These targets are associated with a string of deposits and are characterized by favorable lithology and structural setting, strong surface alteration and geochemistry, and anomalous geophysical signatures. Away from the known deposits, the majority of drilling has tested to depths, though variable, of only approximately 100m.

19.1.1 El Toro - Camello Target

The El Toro - Camello Target, as the name implies, is located between the historic El Toro and Camello pits/deposits (Figure 19.1).

The area is comprised of limestone and calcareous siltstone/black shale of the lower Mural Formation. The Mural Formation is overturned in this area, and it dips steeply north at about 80º. The limestone unit is generally unaltered but the adjacent siltstone/shale is moderately argillized, FeOx-stained (goethite/hematite), and locally quartz veined (with local jasperoid). The zone of alteration is up to 400m wide and trends northwesterly for a distance of approximately 500m from the inactive/backfilled Camello pit to the El Toro Norte deposit.

Mineralization within the historic El Toro and Ruben deposits appears to be controlled by northeast-trending "feeder" faults and re-activated northwest-trending, bedding-parallel faults and shears of possible Laramide age. Further to the east in the area of the historic Mirador mine, a low angle (30º±), southwest-dipping, pre-mineralization (?) normal fault has been mapped, and it is believed that this low-angle fault underlies the El Toro-Camello area at depth of approximately 300m. The fault may have acted as a dam to or a conduit for the ascending hydrothermal solutions, and as such, it is considered a potential gold localization target.

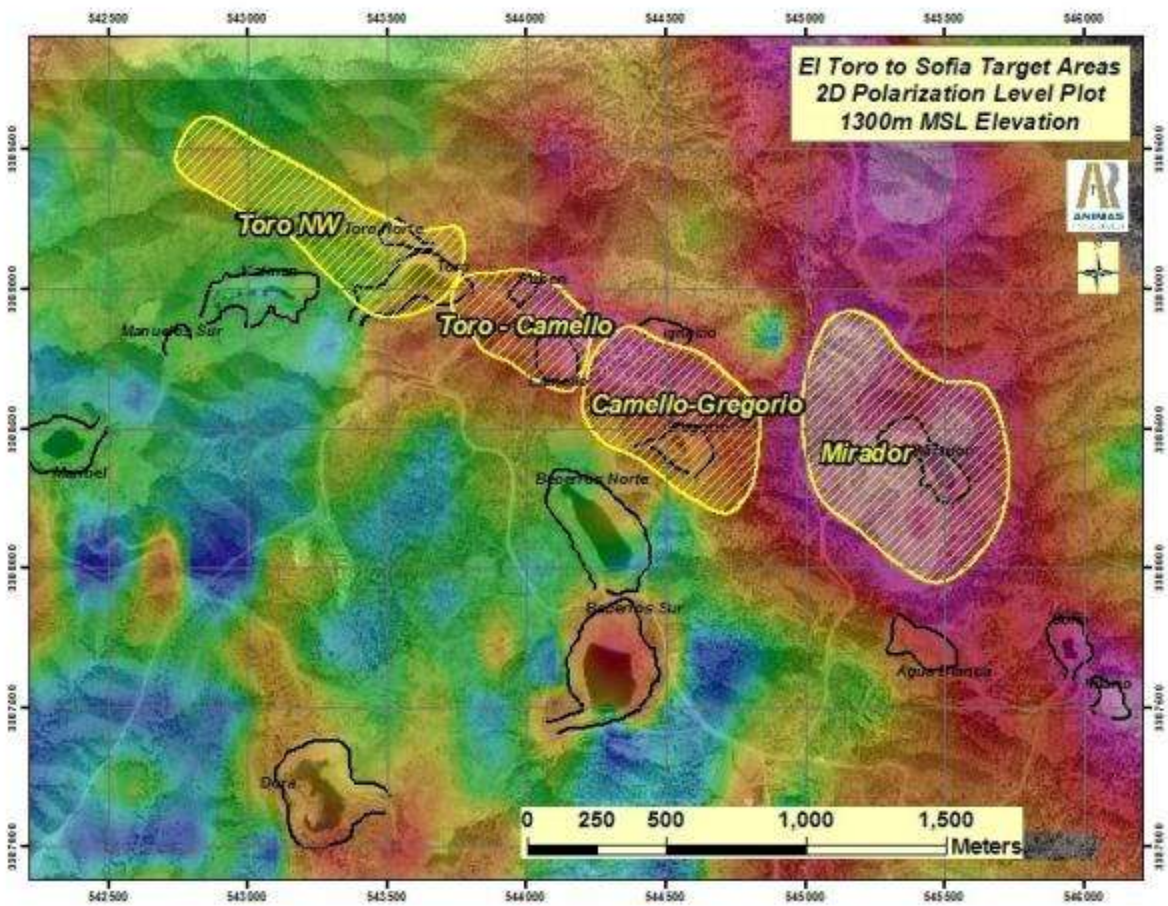
In total, the four mines in the area (El Toro Norte, El Toro, Ruben, and Camello) produced approximately 41,600 ounces of gold, and reportedly, mineralized material that may contain approximately 50,000 ounces of gold remains in the area (as reported in Hamilton, 2003). The Ruben deposit was a fairly small (6,400±oz gold) but relatively high-grade (average grade 3.85g Au/t) gold deposit, and locally, samples assaying up to 40g Au/t have been taken from the bottom of the pit.

Surface rock-chip geochemistry in the El Toro-Camello also area indicates that the area is highly anomalous in gold (up to 3.2g Au/t) and arsenic (up to 3,370ppm As).

The El Toro – Camello area has not been well tested by drilling. Outside of the immediate Camello pit area, the majority of the holes are less than 100m deep (vertically). It should be noted that Animas drill hole ARCM-001, located immediately northwest of the Camello pit, ended in 3.5m of mineralized black calcareous shale that averaged 0.55g Au/t from 223.1 to 226.6m. The drill hole is at the southwestern margin of a large chargeability anomaly and it is possible that the hole was just beginning to enter a more substantial zone of gold mineralization reflected by the geophysical anomaly.

Animas' 2008 IP survey identified a well-defined, weak to moderate, northwest-trending IP chargeability anomaly (see Figure 19.2) in the El Toro-Camello area. This anomaly is nearly coincident with the zone of surface alteration and anomalous gold mineralization, and it is permissive that it represents an unexposed sulfide zone at depth. Depth to sulfide response models indicate that the sulfide-bearing zone may be at a depth of approximately 100 to 150m. Airborne EM data and Animas 100m IP resistivity data show a semi-circular orientation to several resistive responses (bodies?) immediately to the southwest of the El Toro-Camello area.

Figure 19.2 El Toro to Mirador Target Areas
(from Animas)



Note to above figure: warm colors indicate areas of high IP chargeability

In summary, the El Toro – Camello area has favorable lithology, moderately pervasive clay-goethite-hematite surface alteration, anomalous surface gold and arsenic, significant past gold production, existing gold resources associated with the old mines, and a weak, deeper chargeability anomaly which is inferred to be a sulfide-bearing body. In addition, the area has never been tested with deep drilling. As such, the El Toro – Camello is considered to be one of the highest priority, deeper gold targets at Santa Gertrudis.

19.1.2 Camello – Gregorio Target

The Camello-Gregorio target, as the name implies, is located between the historic Camello and Gregorio pits/deposits, and in some respects, it is a continuation of the El Toro – Camello target (Figure 19.1 and Figure 19.2).

The 1,200m by 500m target area is comprised of a sequence of Lower Mural Formation limestone and calcareous siltstone/black shale similar to that seen in the El Toro – Camello area. The Mural Formation is overturned and dips steeply north at about 80º, but further to the southeast, near the Gregorio pit, it becomes upright and then dips steeply to the south. The limestone unit is generally unaltered but the adjacent siltstone/shale is moderately argillized, FeOx-stained (goethite/hematite), and locally quartz veined. The zone of alteration trends northwesterly from southeast of the Gregorio pit to the inactive/backfilled Camello pit.

The Camello and Gregorio deposits produced a total of approximately 18,700 ounces of gold but no known additional gold resources remain in this area (as reported in Barrera, 2000).

Historic and Animas rock-chip geochemical sampling within the Camello - Gregorio area indicates that highly anomalous gold (up to 2.6g Au/t) and arsenic (up to 1,176ppm As) are locally present in outcrop.

The 2008 IP survey by Animas identified a fairly well-defined, moderate chargeability anomaly immediately north of the Gregorio pit and east of the Camello pit, and a weaker chargeability anomaly continues to the southeast (Figure 19.2). The entire zone of surface alteration and anomalous gold mineralization is coincident with a variable intensity chargeability anomaly, and it is permissive that an unexposed sulfide zone exists at depth. Depth to sulfide response models indicate that the sulfide-bearing zone may be at a depth of approximately 150m. Airborne EM data and Animas 100m IP resistivity data show two, semi-circular, resistive responses (bodies?) within the target area, and these are more or less coincident with the above described chargeability anomaly north of the Gregorio pit. The coincident high resistivity and definite polarization response within the northwest portion of the Camello – Gregorio target area should be considered for drill testing.

The Camello – Gregorio area has no deep drill holes and outside of the immediate Camello pit area, the majority of the holes are less than 100m deep (vertically). In addition, no holes deeper than about 80m (vertical depth) have been drilled within the strongest IP (chargeability) anomaly, and this anomaly basically is untested.

In summary, the Camello – Gregorio area has favorable lithology, moderate surface alteration (pervasive clay-goethite-hematite), anomalous surface gold and arsenic, significant past gold production, and a well-defined, deeper IP (chargeability) anomaly which is inferred to be a sulfide-bearing body. In addition, the area has never been deeply drilled.

19.1.3 Mirador Gold Skarn Target

The Mirador gold skarn target is located in the vicinity of the historic Mirador and Sofia pits (Figure 19.1).

The 1,200m by 600m target area is comprised of limestone and calcareous siltstone/black shale of the lower Mural Formation which is overlain by locally calcareous siltstone and sandstone of the Cintura Formation. In this area, the Mural and Cintura Formations dip steeply south at -70º to -80º. The limestone units generally are unaltered but the adjacent siltstone/shale is moderately argillized, FeOx-stained (goethite/hematite), locally quartz veined, and strongly altered to biotite-diopside hornfels. The zone of surface alteration trends northwesterly from the inactive Sofia pit to northwest of the Mirador pit. Hematite-goethite-clay alteration continues to the southeast of the Sofia deposit towards the El Corral deposit, but the hornfels alteration appears to be absent.

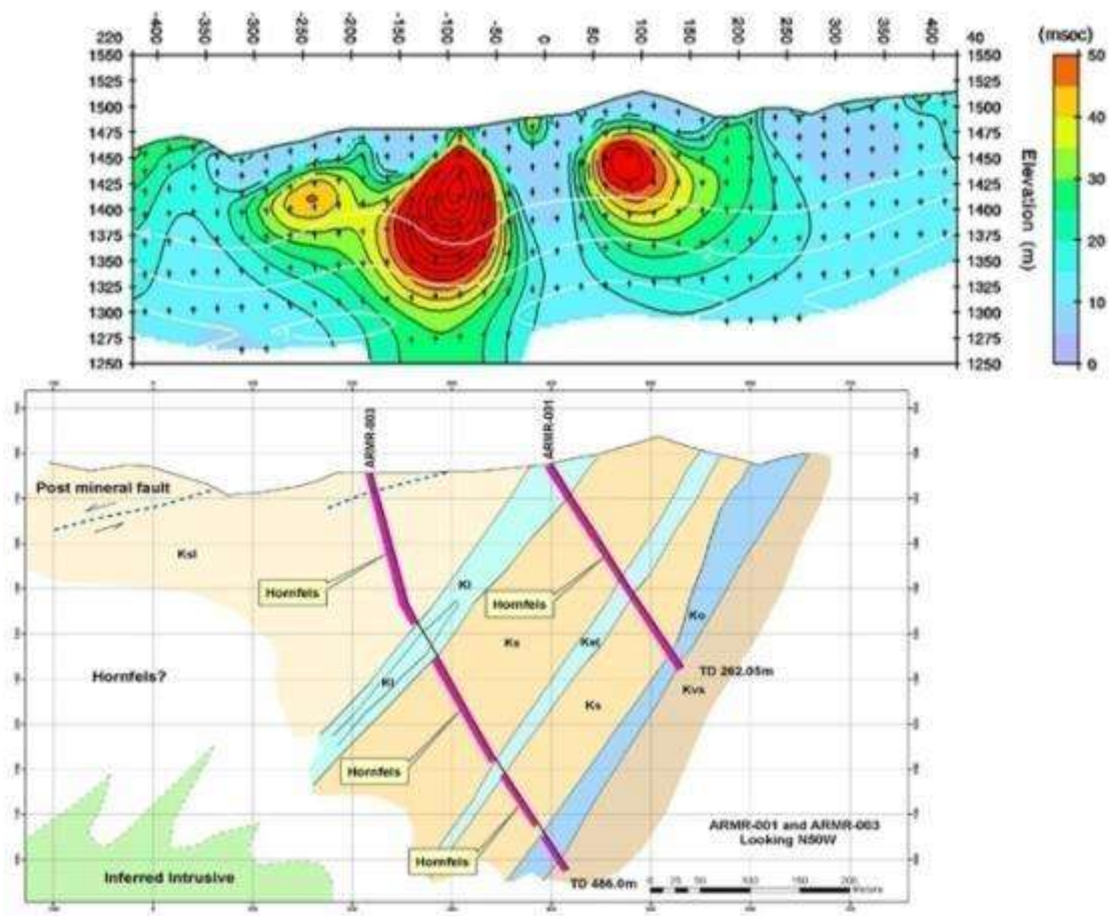
The Sofia and Mirador deposits were fairly small gold deposits, and reportedly, they produced approximately 7,200 ounces of gold and 10,200 ounces of gold, respectively. A body of mineralization containing about 45,100 ounces of gold still remains at Mirador (as reported in Hamilton, 2003).

Surface rock-chip geochemistry (Animas and previous workers in the area) in the Mirador-Sofia area indicates that the area is highly anomalous in gold (up to 3.1g Au/t) and arsenic (up to 3,370ppm As). The anomalous gold is spatially associated with the strong goethite-hematite-clay alteration and hornfels, and it is believed that it is in part genetically associated with the contact metamorphic alteration event.

Both the Mirador and the Sofia deposits appear to be controlled by northwest-trending faults/shears but no observable northeast-trending “feeder” structures have been recognized. A low angle (30º±), southwest-dipping, normal fault has been mapped south of the Mirador deposit, but this fault appears to truncate the hornfels alteration. As such, this fault is believed to be post-hornfels in age, and it is permissive that the gold target may actually exist to the south under the post-hornfels low-angle normal fault.

Geophysical work in 2008 delineated two well-defined IP chargeability anomalies in the Mirador - Sofia area (Figure 19.3). These anomalies were partially tested by drill holes ARMR-001 and ARMR-003 as shown in Figure 19.3. The southwestern anomaly tested by ARMR-003 appears to be open to the southwest. ARMR-003 is a 486m-deep, northeast-trending exploration drill hole that was designed to test the favorable Mural Formation at depth where it was inferred to be in contact with an un-exposed, underlying intrusive. Although only minor thin zones of gold mineralization were intersected in this hole, the entire length of the hole was in strongly hornfels-altered Cintura and Mural Formations. The upper portion of this hole also intersected hornfels with a moderate to strong retrograde alteration assemblage of quartz-calcite-pyrite-chlorite veining. The strength of this retrograde alteration assemblage appears to decrease with depth, and it is permissive that the main center/source of the retrograde alteration event could be located farther to the south.

Figure 19.3 Mirador Gold Skarn Target Geophysics and Drilling
(from Animas)



Note to above figure: in upper cross-section, warm colors indicate areas of high IP chargeability. In lower cross-section, the drill holes (ARMR-001 and ARMR-003) are shown with the final drill depths noted at the bottom of each drill hole. See Figure 7.2 for the lithology color codes.

Although numerous drill holes do exist within the general Mirador-Sofia area, the majority of these holes are in the immediate area of the old pits, and it is clear that the main center of hornfels alteration/mineralization and the IP anomaly were never drill tested to any significant depth (>100m) to either the south or the east.

In summary, the Mirador - Sofia area has favorable lithology, strong, pervasive, surface clay-goethite-hematite alteration, anomalous surface gold and arsenic values, significant past gold production, an historic gold resource, and a deeper IP anomaly which is inferred to be an expression of a sulfide-bearing body. In addition, the area has never been deeply drilled.

19.1.4 Other Large-Tonnage Targets

In addition to the above-described targets, several other areas currently are under evaluation for the purpose of identifying large-tonnage-type targets. These prospects, and respective sizes, are: Dora-Cristina (2.5km by 600m), Amelia South hornfels (2.5km by 900m), and Greta hornfels (2.5km by 2.5km). All of these prospects have large areas of hematite-goethite staining, variable argillization (± variable quartz veining), and erratic anomalous gold in rock-chip samples. In addition, none of these areas have been deeply drilled. There is also potential for discovering new deposits under post-mineralization pediment gravel cover to the west of the Santa Gertrudis mine.

19.2 Resource Expansion Targets

19.2.1 Cristina Deposit

The Cristina gold deposit is hosted within the Lower Cretaceous Cintura Formation which is in contact with the underlying Mural Formation (Kl limestone). A major, pre-mineralization fault separates the Cintura Formation from the underlying Mural Formation, and this fault strikes at approximately 340º and dips at 30º-40º to the southwest. This low angle fault appears to be a major normal fault, and although the amount of actual displacement cannot be measured, movement is inferred to have been southwest directed. In outcrop, this fault can be traced on the surface from south of the Cristina deposit northwards to the Dora pit, and at several locations along this fault, the structure clearly controls hydrothermal alteration (silicification, goethite-hematite-staining, clay alteration) and gold mineralization.

Gold mineralization at Cristina is hosted within the Cintura Formation and is closely associated with stockwork quartz veining and weak to moderate pervasive argillization. The veins vary from ≤1cm to +20cm in width and locally contain about 1% pyrite (or goethite after pyrite). The veinlets locally have a preferred north-south and northwest orientation, and they oftentimes have an open-space cockscomb texture and locally, quartz pseudomorphs after calcite.

The main fault zone that forms the base of the deposit contains a massive silica breccia with angular fragments of silica and silica vein material set in a siliceous matrix. The siliceous breccia generally does not contain significant gold and there has been no testing or analyses of just the angular siliceous fragments to see whether they are mineralized and/or if they are locally derived. The current belief is that the siliceous breccia post-dates the main mineralizing event. A late, post-silica, calcite event also is evident at Cristina, but this likewise appears to be devoid of gold mineralization.

Induced polarization ("IP") surveying conducted by Animas during 2008 has identified a strong resistivity anomaly (1000+ ohm-m) to the west and to the south of the Cristina deposit, and these anomalies may represent unexposed, strong silicification at depth. Weak to moderate chargeability anomalies of 20-30 millisecond/millirad ("ms/mr") also are associated with the possible westward extension of the Cristina high-resistivity feature. However, the potential southern extension of Cristina may connect with a large, highly resistive body that has a strong polarization response (40+ ms/mr). The 1997 Airborne EM resistivity data show Cristina as a relative resistor and although neither the possible westward or southern extensions are visible due to the shallow depth of investigation of the airborne EM data (4175 Hz), four discreet shallow high-resistivity zones are located immediately north and northwest of Cristina. These zones will be investigated by Animas' geologic staff, and it is possible that additional targets may be delineated in these areas.

The main mineralized zone at Cristina strikes north-northwest and dips to the southwest, and based on a cross-sectional review of the data, it appears that the zone of gold mineralization may be locally open down-dip and along strike to the south-southeast.

19.2.2 Other Extension Targets

In addition to the Cristina target, several other extension targets are under evaluation, including: Dora Extension, Maribel Northwest, Berta West, Lixivian, El Toro Northwest, and El Corral Northwest. All of these areas have moderate to strong hematite-goethite staining, variable argillization and quartz veining in outcrop, and anomalous gold in rock-chip samples extending from areas of known gold mineralization. Only limited previous drilling has tested these targets and exploration work is scheduled to continue in all of these areas.

19.3 Resources

MDA's current Cristina resource is similar to historic estimates for this deposit. Bringing the historic estimates up to NI 43-101 standards will require varying levels of site-specific work which could include, and is not limited to, metallurgy, sample integrity work, confirmation drilling, more detailed geology, *etc*. There is a concern that a portion of the existing resources contains significant sulfide-rich material. Previous metallurgical testing indicates that the sulfide-bearing mineralization is not amenable to standard heap leaching and that gold extraction from this material would be costly. Therefore, it is likely that part of the historic resource would not be converted to a classified resource because of the regulatory requirement that the material must exist "in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction". The actual amount of sulfide-bearing historic resource is still unknown since there has not been a detailed review of the previous estimates. Continued effort toward modeling the existing resources will aid in evaluating the oxide and sulfide potential and will also prove to be an exceptionally valuable tool for further district-wide exploration.

MDA believes that the emphasis of further work at Santa Gertrudis should be aimed at exploration for both extensions of known mineralization and also for larger tonnage undiscovered mineralization, possibly beneath the known deposits or peripheral under post-mineralization cover. It must be realized that any mineralization discovered at depth will likely be sulfide-bearing so the mineral grades must be significantly higher than those within the historic open-pit deposits.

20.0 RECOMMENDATIONS

Santa Gertrudis is a project of merit whose principal asset is a large land position that controls a major gold district with significant past production and which contains gold resources with estimates considered historic by NI 43-101 regulations and one NI 43-101-compliant resource (reported in this document). The geologic environment certainly justifies additional work, which should be focused on exploration and discovery with detailed geologic evaluations including at least geologic modeling of each of the known deposits.

20.1 Stage 1 Recommendations

The most important aspect of any exploration is defining the geologic setting. As such, MDA recommends that Animas complete the following:

- **Continue surface geologic mapping.** Continue surface mapping with special attention to the mineralization and alteration is warranted. This is expected to take three months at a cost of US$25,000.

- **Continue select geochemical sampling.** A total of 1,000 samples are expected to be taken at a cost, all inclusive of geologist, sample shipment and analysis, and reporting of US$20,000.

- **Reprocess the new and historic geophysics on a target-by-target basis.** The work for this is mostly data manipulation and computer analysis. The work is expected to take about two months at a cost of US$25,000.

- **Target definition and prioritized selection of best targets and projects.** GIS analysis and data integration will be the largest part of this work, culminating in identifying targets for additional exploration, at a cost of US$20,000.

- **Miscellaneous geologic studies.** Successful exploration requires good geologic information. Petrographic studies and age dating could improve the odds of successful exploration on the Santa Gertrudis project. MDA suggests that these sorts of studies, the specifics of which would be determined by Animas' exploration staff, could justify a cost of US$20,000.

- **Complete resource estimates for drilled areas.** Work on this would require six months to fully assess all the potential resource-bearing areas. The cost of this work including site visits, modeling, and reporting are expected to be US$100,000.

- **Scoping studies.** It is important to assess potential economics of the Santa Gertrudis resources by completing preliminary economic assessments on at least those resources having the greatest economic potential. This cost is expected to be US$100,000.

As the evaluation of the project continues, some areas will be shown to have much less potential than others, and Animas should consider reducing costs by reducing the size of its property holdings.

The total cost of these recommended Stage 1 tasks is approximately US$300,000.

20.2 Stage 2 Recommendations

Following successful completion of Stage 1 tasks, it is anticipated that drilling will be justified.

- **Drilling several of the larger targets.** MDA believes that 10,000m of drilling in 40 holes is merited. MDA prefers to explore with the more cost effective RC drilling, with follow up by core drilling. The cost of this program would be US$1,200,000.

- **Infill/expansion drilling on existing resources.** If the preliminary economic studies prove positive, then infill drilling will be needed to upgrade the resources and provide independent verification and possibly resource expansion. Some 30 holes, mostly RC with selective core, could be justified, this cost would be US$1,000,000 assuming the holes are 200m each.

- **Detailed geochemical zoning review.** If the preliminary vectoring geochemical review indicates that multi element-geochemistry can clearly distinguish mineralization centers, the study should be expanded. The cost of this program would be US$ 40,000.

- **Infill and detailed Geophysics.** This cost is expected to be US$25,000.

- **Continued exploration as described in Stage 1 Recommendations.**

The total cost of these recommended Stage 2 tasks is US$3,000,000.

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22.0 DATE AND SIGNATURE PAGE

Effective Date of report: May 1, 2009

The data on which the contained resource estimates are based was current as of the Effective Date.

Completion Date of report: May 1, 2009

"Steve Ristorcelli" ***May 1, 2009***

______________________________ Date Signed:

Steven Ristorcelli, P. G., R.P.G.

"Paul Tietz" ***May 1, 2009***

______________________________ Date Signed:

Paul Tietz, P. G., R.P.G.

"John Wilson" ***May 1, 2009***

___________________________ Date Signed:

John Wilson, P.G.

"Jerry T. Hanks" ***May 1, 2009***

___________________________ Date Signed:

Jerry T. Hanks, P.E.

23.0 AUTHOR'S CERTIFICATE AND SIGNATURE PAGE

1. I, Steven J. Ristorcelli am currently employed as Principal Geologist by:

Mine Development Associates, Inc.
210 South Rock Blvd.
Reno, Nevada 89502.

2. I graduated with a Bachelor of Science degree in Geology from Colorado State University in 1977 and a Master of Science degree in Geology from the University of New Mexico in 1980.

3. I am a Registered Professional Geologist in the states of California (#3964) and Wyoming (#153) and a Certified Professional Geologist (#10257) with the American Institute of Professional Geologists.

4. I have worked as a geologist continuously for a total of 29 years since my graduation from undergraduate university.

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 am one of the authors of the report entitled "Technical Report Update on the Santa Gertrudis Gold Project, Sonora, Mexico" and dated May 1, 2009. I take co-responsibility for all sections of this report except for Sections 7.0, 8.0, 9.0, 12.5, 13.5, 14.6.3, 16.0 of the Technical Report and subject to reliance upon other experts as described in Section 3.0. I have not visited the project.

7. I have had no prior involvement with the property or project.

8. To the best of my knowledge, information and belief, this technical report contains all the scientific and technical information that is required to be disclosed to make this technical report not misleading.

9. I am independent of Animas Resources Ltd. and all their subsidiaries as defined in Section 1.4 of NI 43-101 and in Section 3.5 of the Companion Policy to NI 43-101.

10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

11. The Technical Report contains information relating to mineral titles, permitting, environmental issues, regulatory matters and legal agreements. I am not a legal, environmental or regulatory professional, and do not offer a professional opinion regarding these issues.

12. A copy of this report is submitted as a computer readable file in Adobe Acrobat© PDF© format. The requirements of electronic filing necessitate submitting the report as an unlocked, editable file. I accept no responsibility for any changes made to the file after it leaves my control.

Dated this 1st day of May, 2009.

"Steven Ristorcelli"
Signature of Qualified Person

Steven Ristorcelli
Print Name of Qualified Person

1. I, Paul Tietz, am currently employed as Senior Geologist by:

   Mine Development Associates, Inc.
   210 South Rock Blvd.
   Reno, Nevada 89502

2. I graduated with a Bachelor of Science degree in Biology/Geology from the University of Rochester in 1977, a Master of Science degree in Geology from the University of North Carolina, Chapel Hill in 1981, and a Master of Science degree in Geological Engineering from the University of Nevada, Reno in 2004.

3. I am a Certified Professional Geologist (#11004) with the American Institute of Professional Geologists.

4. I have worked as a geologist for a total of 29 years since my graduation from undergraduate university.

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 am one of the authors of the report entitled "Technical Report Update on the Santa Gertrudis Gold Project, Sonora, Mexico" and dated May 1, 2009. I take co-responsibility for Sections 7.0, 8.0, 9.0, 12.5, 13.5, 14.6.3, 16.0 of the Technical Report and subject to reliance upon other experts as described in Section 3.0. I have visited the project on February 7, 2009 to February 12, 2009 and on March 13, 2009 to March 17, 2009.

7. I have had no prior involvement with the property or project.

8. To the best of my knowledge, information and belief, this technical report contains all the scientific and technical information that is required to be disclosed to make this technical report not misleading.

9. I am independent of Animas Resources Ltd. and all their subsidiaries as defined in Section 1.4 of NI 43-101 and in Section 3.5 of the Companion Policy to NI 43-101.

10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

11. The Technical Report contains information relating to mineral titles, permitting, environmental issues, regulatory matters and legal agreements. I am not a legal, environmental or regulatory professional, and do not offer a professional opinion regarding these issues.

12. A copy of this report is submitted as a computer readable file in Adobe Acrobat© PDF© format. The requirements of electronic filing necessitate submitting the report as an unlocked, editable file. I accept no responsibility for any changes made to the file after it leaves my control.

Dated this 1st day of May, 2009.

"Paul Tietz"
Signature of Qualified Person

Paul Tietz
Print Name of Qualified Person

I, Jerry Travis Hanks, P.E. do hereby certify that:

1. I am a self-employed as a Metallurgical/ Mineral Processing Engineer doing business as:

Jerry T. Hanks P.E.

7307 W. Mesquite River Drive

Tucson, AZ 85743

2. I graduated with the degree of Metallurgical Engineer from the Colorado School of Mines in 1963

3. I am Registered as a Professional Engineer in Colorado (P.E. #10042; expires 1/13/2011) and Arizona (P.E. #21106; expires 3/31/2012)

4. Since graduation I have worked as a Metallurgical/ Mineral Processing Engineer for 46 years of which approximately 20 years has been in operations and maintenance, and the balance in design, engineering, and research. I have been self employed for the past 10 years.

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 am responsible for or was involved with the preparation of Section 16 of this report titled *Technical Report Update on the Santa Gertrudis Gold Project, Sonora, Mexico* for Animas Resources, Ltd. dated May 1, 2009, (the "Technical Report").

7. Prior to my present involvement with the project I worked for the Phelps Dodge Exploration Corporation as Staff Metallurgist, and also served as client's representative during the preparation of the 1988 Feasibility Study. I was also responsible for metallurgical test work from 1987 through 1991. I visited the property approximately ten times during this period.

8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

9. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-11. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. I consent to the filing of the Technical Report with any securities regulatory authority, stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 1st day of May 2009.

"Jerry T. Hanks"

Signed and Sealed: Jerry T. Hanks, P.E.

AUTHOR'S CERTIFICATE AND SIGNATURE PAGE

1. I, John R. Wilson am currently employed as Vice President, Exploration by:

Animas Resources Ltd.

325 Howe Street, Suite 410

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2. I graduated with a Bachelor of Science degree in Geology from University of Minnesota, Duluth in 1967 and a Master of Science degree in Geosciences from the University of Arizona in 1976.

3. I am a currently a member of the Society of Economic Geologists

4. I have worked as a geologist continuously for a total of 40+ years since my graduation from undergraduate university.

5. I am one of the authors of the report entitled "Technical Report Update on the Santa Gertrudis Gold Project, Sonora, Mexico" and dated May 1, 2009. I take co-responsibility for sections 7.0, 8.0, 9.0, 10.1.2, 10.1.3, 11.7, 17.0 (partial), 19.1, and 20.0 (partial) of this report

6. I have worked on this project exclusively since September 2007.

7. To the best of my knowledge, information and belief, this technical report contains all the scientific and technical information that is required to be disclosed to make this technical report not misleading.

8. I am currently employed by Animas Resources Ltd. and all their subsidiaries as defined in Section 1.4 of NI 43-101 and in Section 3.5 of the Companion Policy to NI 43-101.

9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. The Technical Report contains information relating to mineral titles, permitting, environmental issues, regulatory matters and legal agreements. I am not a legal, environmental or regulatory professional, and do not offer a professional opinion regarding these issues.

11. A copy of this report is submitted as a computer readable file in Adobe Acrobat© PDF© format. The requirements of electronic filing necessitate submitting the report as an unlocked, editable file. I accept no responsibility for any changes made to the file after it leaves my control.

Dated this 1st day of May, 2009.

"John R. Wilson"

Signature of Author

John R. Wilson

John R. Wilson

Appendix A

List of Concessions

Name of the claims	*Owner of the claims*	*No. de Exp.*	*Claim number*	*Type*	*Date of Claim Staked*	*Date of Claim Expiry*	*Area in Hectares*
Santa Gertrudis, Cucurpe, Sonora							
Concessions held by Minera Chuqui, S. A. de C.V							
Chuqui 1	Minera Chuqui	82/29799	226284	**Minera**	6-Dec-2005	5-Dec-2055	286.6572
Chuqui 2	Minera Chuqui	82/29800	226285	**Minera**	6-Dec-2005	5-Dec-2055	1,133.6668
Chuqui 3	Minera Chuqui	82/31311	230022	**Minera**	10-Jul-2007	9-Jul-2057	19,205.9116
Chuqui 4 Fraccion A	Minera Chuqui	82/31312	230036	**Minera**	11-Jul-2007	10-Jul-2057	5,837.4716
Chuqui 4 Fraccion B	Minera Chuqui	82/31312	230037	**Minera**	11-Jul-2007	10-Jul-2057	40.0000
Chuqui 5	Minera Chuqui	82/31652	231176	**Minera**	22-Jan-2008	21-Jan-2058	1,228.4781
Chuqui 6	Minera Chuqui	82/31978	231845	**Minera**	7-May-2008	6-May-2058	10,159.7300
							37,891.9153
Concessions held by Limón López							
Maribel	Limón López	321.1-9/876	185883	**Minera**	14-Dec-1989	13-Dec-2039	20.0000
Fracc. 4 Agua Blanca I	Limón López	4/2/00031	219219	**Minera**	18-Feb-2003	25-Nov-2043	100.0000
Los Manueles	Limón López	321.1-4/248	195368	**Minera**	14-Sep-1992	13-Sep-2042	14.0000
Dora	Limón López	82/28003	218137	**Minera**	11-Oct-2002	10-Oct-2052	87.0000
Cuca	Limón López	82/28004	218138	**Minera**	11-Oct-2002	10-Oct-2052	83.2929
Erika	Limón López	82/28182	219096	**Minera**	4-Feb-2003	3-Feb-2053	140.0000
San Francisco	Limón López	82/28181	219095	**Minera**	4-Feb-2003	3-Feb-2053	16.8406
Fabiola	Limón López	82/28684	221737	**Minera**	19-Mar-2004	18-Mar-2054	272.0000
Karen	Limón López	82/28873	222689	**Minera**	13-Aug-2004	12-Aug-2054	115.6160
Susan	Limón López	82/28874	222690	**Minera**	13-Aug-2004	12-Aug-2054	737.0000
							1,585.7495
Concessions held by Victor Juvera							
El Tascalito	Victor Juvera	4/2.4/2415	216066	**Minera**	9-Apr-2002	29-Jul-2042	24.0000
La Peque	Victor Juvera	321.1/4/713	191734	**Minera**	19-Dec-1991	18-Dec-2041	9.3864
La Peque I	Victor Juvera	321.1/4/712	195805	**Minera**	22-Sep-1992	21-Sep-2042	7.4929
							40.8793

Name of the claims	*Owner of the claims*	*No. de Exp.*	*Claim number*	*Type*	*Date of Claim Staked*	*Date of Claim Expiry*	*Area in Hectares*
Concessions held by Agustin Albelais							
La Víbora	Agustín Albelais	321.1/4/675	191263	**Minera**	19-Dec-1991	18-Dec-2041	10.0000
El Aguaje	Agustín Albelais	321.1/4/696	191900	**Minera**	19-Dec-1991	18-Dec-2041	12.0000
							22.0000
Concessions held by Minera Lixivian,S.A. de C.V.							
Ofelia	Minera Lixivian	321.1/4326	182549	**Minera**	27-Jul-1988	26-Jul-2038	23.2195
Santa Gertrudis	Minera Lixivian	082/04184	190480	**Minera**	29-Apr-1991	28-Apr-2041	42.0000
							65.2195
Concessions held by First Silver Reserve, S.A. de C.V.							
Agua Blanca	First Silver	185587	321.1-9/797	**Minera**	14-Dec-1989	13-Dec-2039	492.4498
Agua Blanca Fracc. X	First Silver	185584	321.1-9/802	**Minera**	14-Dec-1989	13-Dec-2039	430.5168
Santa Teresa	First Silver	185882	321.1-9/874	**Minera**	14-Dec-1989	13-Dec-2039	297.3420
San Ignacio	First Silver	179845	321.1-4/207	**Minera**	17-Dec-1986	16-Dec-2036	10.0000
Cosahui	First Silver	191262	321.1-4/669	**Minera**	19-Dec-1991	18-Dec-2041	347.3400
Cosahui I Fracc. Sur	First Silver	191231	321.1-4/671	**Minera**	19-Dec-1991	18-Dec-2041	393.1968
Carmen	First Silver	179846	321.1-4/208	**Minera**	17-Dec-1986	16-Dec-2036	40.0000
Fracc. 7 Agua Blanca I	First Silver	202598	4/1.3/1202	**Minera**	8-Dec-1995	7-Dec-2045	459.0000
Fracc. 8 Agua Blanca I	First Silver	202879	4/1.3/1203	**Minera**	2-Apr-1996	1-Apr-2046	495.0000
Fracc. 10 Agua Blanca I	First Silver	202600	4/1.3/1205	**Minera**	8-Dec-1995	7-Dec-2045	229.9457
Fracc. 11 Agua Blanca I	First Silver	202878	4/1.3/1207	**Minera**	2-Apr-1996	1-Apr-2046	350.0000
Fracc. 12 Agua Blanca I	First Silver	202601	4/1.3/1206	**Minera**	8-Dec-1995	7-Dec-2045	450.0000
El Pinito I	First Silver	214804	4/2.4/2253	**Minera**	4-Dec-2001	14-Dec-2048	828.0000
Rocio fracc 1	First Silver	225834	82/29745	**Minera**	27-Oct-2005	26-Oct-2055	9,014.8899
Rocio fracc 2	First Silver	225835	82/29745	**Minera**	27-Oct-2005	26-Oct-2055	561.0000
							14,398.6810
Concessions held by Recursos Escondidos, S.A. de C.V.							
Amelia	Recursos E	179904	321.1-4/209	**Minera**	20-Mar-1987	19-Mar-2037	25.2679
Espíritu	Recursos E	190582	321.1-4/524Bis	**Minera**	29-Apr-1991	28-Apr-2041	14.5196
Amelia No. 2	Recursos E	190583	321.1-4/589	**Minera**	29-Apr-1991	28-Apr-2041	35.0000
Amelia No. 6	Recursos E	190646	321.1-4/604	**Minera**	29-Apr-1991	28-Apr-2041	54.0713
Amelia No 7 Fracc I	Recursos E	190759	321.1-4/607	**Minera**	29-Apr-1991	28-Apr-2041	480.0000

Name of the claims	*Owner of the claims*	*No. de Exp.*	*Claim number*	*Type*	*Date of Claim Staked*	*Date of Claim Expiry*	*Area in Hectares*
Amelia No 7	Recursos E	191693	321.1-4/606	**Minera**	19-Dec-1991	18-Dec-2041	496.3388
Amelia No. 4	Recursos E	191724	321.1-4/590	**Minera**	19-Dec-1991	18-Dec-2041	29.5026
Amelia No. 3	Recursos E	191725	321.1-4/603	**Minera**	19-Dec-1991	18-Dec-2041	22.0952
Amelia No. 5	Recursos E	211857	4/1.3/1575	**Minera**	28-Jul-2000	27-Jul-2050	9.2460
Amelia No 8 Fracc I	Recursos E	196284	4/1.3/818	**Minera**	16-Jul-1993	15-Jul-2043	433.5921
Agua Blanca No. 2	Recursos E	198541	4/1.3/792	**Minera**	30-Nov-1993	29-Nov-2043	38.7967
Venado	Recursos	220540	82/28520	**Minera**	15-Aug-2003	14-Aug-2053	200.0000
Alce	Recursos	220541	82/28521	**Minera**	15-Aug-2003	14-Aug-2053	118.0496
Bura	Recursos	220539	82/28519	**Minera**	15-Aug-2003	14-Aug-2053	192.0000
							2,148.4798
Total							***56,152.9244***

Appendix B

Environmental Report

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MINING UNIT SANTA GERTRUDIS-LA AMELIA
LEGAL CURRENT SITUATION MINING-ENVIRONMENTAL
FEBRUARY, 2009

IN ENVIRONMENT MATTER
a)SANTA GERTRUDIS MINING UNIT

On September 27, 2006, the legal representative of the company FIRST SILVER RESERVE, SA DE CV, appeared via written form before the Federal Delegation in the State of Sonora (E26) of the Federal Environmental Protection Agency of the Republic of Mexico (PROFEPA), presenting documentary evidence of compliance for the irregularities and establishment of corrective measures in matters of Environmental impact and Risks, extemporaneously, which were deployed to the project. Also the body of the letter manifests the intention of the company, of complying with the administrative proceeding instituted against it and requests the closure of the respective files (Adm. File No. 245/2002 and 891/2003), considering that the omissions that gave rise to the summons, have been corrected.

On October 12, the authority on the subject (PROFEPA), issued Administrative Resolution No. PFPA/SON/SJ/54/1600-06, imposing on the company, a fine of $ 14,601.00 pesos, for violations of environmental regulations , giving way to the closure of the case, the company desisted the administrative appeal for review against the resolution, as well as the non promotion of soliciting a commutation of the fine. The fine was covered on time, on October 27 of 2006. Annex No. 1, displays a copy of the aforementioned documents.

In such resolution, the authority on the matter, took into account as mitigating factors in imposing the sanction, the provision of the company to comply with environmental regulations in effect, as well as the fact that the mining unit manifested that it has not exhausted its potential mineral reserves and that these are economically feasible for exploit, so as to determine a closure or abandonment of productive activities, not by condemnation and depletion of its ore, but on the contrary, the environmental liabilities that the authority considered required immediate restoration, were in fact part of the assets of the company (Heap leaching pads, Mining Pit and existing infrastructure) for a future recovery operation in the "Santa Gertrudis " mining unit.

Due to the fact, that the previous authorization is without effect (Resolution No. D.O.O.DGOEIA.-04759.-05-VIII-1997 SANTA GERTRUDIS PROYECT), because of its term expiration, the responsibility for closure and abandonment is pending, when the company FIRST SILVER RESERVE, SA DE CV, determines to do so or transfers rights of the mining concessions comprising of the mining unit estate; ***not existing to date, environmental liability, documentary or administrative matter,*** and physical evidence that may be considered as environmental liabilities (Heap leaching pads, Mining Pit and existing infrastructure), these will be classified as such, when the company FIRST SILVER RESERVE, SA DE CV, desists from the rights and obligations conferred upon the mining claims or incurs on cancellation causes promoted by the authority on mining.

Therefore it would immediately have to neutralize, restore, and reforest all the residual and marginal material, the product of old operation (Leach pads and depleted ore fields); close and reforest operation roads, as well as fencing and stabilizing Mining Pit slopes; dismantling and removing facilities, infrastructure and solid waste in general from the mining unit.

b) LA AMELIA MINING UNIT

Under the same conditions and on the same dates, that the company FIRST SILVER RESERVE, SA DE CV, appeared before the Federal Delegation in the State of Sonora (E26) of the Federal Environmental Protection Agency of the Republic of Mexico (PROFEPA) the appearance of the company RECURSOS ESCONDIDOS, S.A. DE C.V. was carried out, by presenting documentary evidence of compliance with the irregularities and corrective measures made regarding environmental impacts and risk, , which were deployed to the project. Also the body of the letter manifests the intention of the company, of complying with the administrative proceeding instituted against it and requests the closure of the respective files (Adm. File No. 244/2002 and 892/2003), considering that the omissions that gave rise to the summons, have been corrected.

On October 12, the authority on the subject (PROFEPA), issued Administrative Resolution No. PFPA/SON/SJ/54/1579-06, imposing on the company, a fine of $ 17,034.50 pesos, for violations of environmental regulations , giving way to the closure of the case, the company desisted the administrative appeal for review against the resolution, as well as the non promotion of soliciting a commutation of the fine. The fine was covered on time, on October 27 of 2006. Annex No. 2, displays a copy of the aforementioned documents.

Under the same arguments of mitigating factors cited in the case of the Mining Unit "Santa Gertrudis", and due to the fact, that the previous authorization is without effect (Resolution No. A.O.O.DGNA.-0404.-18-I-1994 LA AMELIA PROYECT), also the responsibility of the closure and abandonment, remains under the guide of RECURSOS ESCONDIDOS, SA DE CV ***not existing to date, environmental liability, documentary or administrative matter***, and the physical evidence that may be considered as environmental liabilities (Heap leaching pads, Mining Pit and existing infrastructure) are classified as such, up to the moment when the company RECURSOS ESCONDIDOS, SA DE CV, desists from the rights and obligations conferred upon the mining claims or incur on respective grounds for cancellation of those rights, promoted by the mining authority.

EXPLORATION AUTHORIZATION PROGRAM

On July 02 2008, the "Direct Mining Exploration Startup Activities Notification Report" for the "Santa Gertrudis-Amelia" project (identified as one mining unit), whose applicant was awarded to the company, COMPAÑÍA MINERA CHUQUI, S.A. DE C.V., was presented at the integral Center of Services of the Federal Delegation in the State of Sonora of the Environmental and Natural Resources Secretary (SEMARNAT).

The report, was presented in conformity to the Mexican Official Standard NOM-120-SEMARNAT-1997 and Articles 28 and 29 of the General Law of Ecological Equilibrium and Environmental Protection (LGEEPA), as well as Article 5, incise L, Section II of the Regulation on Environmental Impact Assessment of the LGEEPA. Norm (NOM-120-SEMARNAT-1997) which states that the acknowledgment of receipt (as presented to the authority) is regarded as the authorization for the execution of works and Direct mining exploration activities. Annex No. 3, contains a copy of the aforementioned documents.

That report was admitted on a voluntary basis (Agreement that amends the NOM-120-SEMARNAT-1997, dated 06 May 2004) in order to comply with the agreements that were made before the administrative resolutions (No. PFPA / SON / SJ/54/1600-06 and PFPA/SON/SJ/54/1579-06) with the local environmental authority, when they supported the process of adjustment that were both mining units before 2006.

The requested validity was for one year, which expires on July 08 2009 and was made to drill 25 holes by the core method, for a total of approximately 4250 meters, with the possibility of extending the validity of the same and the number of drill holes, according to the needs of the business of Exploration, this is possible based on subsection 4.1.6 "General Specifications" in the NOM-120-SEMARNAT-1997.

ENVIRONMENTAL RESPONSIBILITY FOR MINE DEVELOPMENT

As it was already mentioned in previous paragraphs, the previous authorization (Resolution No. D.O.O.DGOEIA.-04759.-05-VIII-1997 SANTA GERTRUDIS PROYECT y Resolution No. A.O.O.DGNA.-0404.-18-I-1994 LA AMELIA PROYECT) to develop mining in Environmental Matter, is without effect by virtue of that its validity expired; as well as to the fact of having paid off or closed the administrative files for both Mining Units (Santa Gertrudis and The Amelia).

Similarly, the processing of applications for authorization to reactivate the development of the Santa Gertrudis Mine (called Project "Santa Gertrudis"), was presented the Federal Delegation of the Environmental and Natural Resources Secretary (SEMARNAT). On September 09 2004, which accounted for folio No. 16296, which accompanies this application, the "Statement of Environmental Impact, Particular Mode (MIA-P)" for evaluation and opinion in the respective environmental impact, ***the procedure of processing incurred on grounds for revocation***, in accordance with Article 147 of the General Law of Ecological Equilibrium and Environmental Protection (LGEEPA); of Articles 17, 18,19, 20 21 and 22 LGEEPA: Regulations on Environmental Impact Assessment, as well as Articles 43 and 60 of the Federal Law of Administrative Procedure, ***even though it was not met on time***, with the request made at the time by the Federal SEMARNAT Delegation by motion No. DS-SG-UGA-V16296-787-04 dated September 23, 2004 and received by the company on November 23, 2004. Annex No. 4 contains a copy of the aforementioned documents.

Now then, to this date the environmental responsibility to develop mining in both Mining Units (Santa Gertrudis and The Amelia), by themselves or on the whole, would be to request their respective authorization for their reactivation, considering the characteristics of the mining process type, volumes, investment and time required to carry out the productive activity. The application must be accompanied by a Manifestation of Environmental Impact, Particular modality (MINE-P), a Study of Environmental Risk, Modality Analysis of Risk (ERI-level 2) and of a Technical Study for the Change of Use of the Grounds, so that the environmental authority evaluates and emits a verdict of Favorable or Reasonable authorization, to carry out the development of the Mine.

USES OF UNDERGROUND WATERS AND DISCHARGE OF RESIDUAL WATERS

On June 26, 2006, before the Commission Nacional del Agua (CNA or CONAGUA), in accordance with the regulations of the National Water Law in Mexico in order to regularize the Federal Grant No. Title 02SON102321/09IMGR03 use groundwater and wastewater discharges, for the user then recognized by the authority: SOTULA DE ORO, SA DE CV, because it was in the expiration period of validity of Rights (13 January 2002-12 January 2007).

Record is processed Interrupted Expiration, Term and Extension of Transmission final total on the Rights of the concession in favor of FIRST SILVER RESERVE, SA DE CV, obtained by the resolution of CNA BOO.00.R03.04.2.-Oficio No. 5162 dated August 29, 2007, which is authorized for FIRST SILVER RESERVE, SA DE C.V. , Extending the term of concession for a period of 5 years (January 13, 2007 - 12 January 2012). In Paragraph No. 5, annexed copy of the aforementioned documents.

Likewise regularly on time, the statement of services on National Waters, on a quarterly and annual periods in 2006, 2007 and 2008 has been made periodically. Such declarations have been reported in zeros, by failing to use that period. Annex No. 5, contains copies of the official format of the statements, with bank certification, in accordance with the Federal Law on Water Rights.

LEGAL MINING FOUNDATION

To date the Public Mining Registry has, a total of 55 lots with current and active mining concessions, accumulating a total surface area considering both order of mining units 85,635.4352 hectares. Annex No. 6, displays a relationship by lot and by the owner of the mining right.

ATENTAMENTE

ING. JOSÉ ALBERTO IBARRA SAGASTA
Consultor Técnico-Legal Minero-Ambiental
Perito No. 1292

Hermosillo, Sonora, February 12, 2009.

Appendix C

durango geophysical operations Geophysical Review

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ANIMAS RESOURCES LIMITED

Santa Gertrudis Project Area – Santa Teresa Mining District

Cucurpe Municipality, Sonora, Mexico

Geophysical Program Review - 1988 through 2008

Animas Resources' Santa Gertrudis Project area, located in north central Sonora, Mexico has been the focus of several episodes of geophysical exploration beginning with Induced Polarization and limited ground geophysical orientation surveys run by Phelps Dodge Mining Company (PD) between 1988 and 1994. The IP and orientation surveys (ground Total Field magnetics and VLF-EM programs) were run under the direction of Anthony M. Hauck, III, Chief Geophysicist for Phelps Dodge Mining Company (PD) and their Mexican subsidiaries, Compania Minera Zapata and Compania Minera Santa Gertrudis. In 1994, PD sold the Santa Gertrudis mining operation to Campbell Resources. Campbell Resources' Mexican subsidiary, Oro de Sotula carried out a series of three airborne geophysical programs in 1995, 1996 and 1997. Animas Resources consolidated the Santa Gertrudis claim block during 2006 / 2007 and Animas personnel began a program of database re-creation with the goal of re-processing and modeling the previously acquired geophysical data sets using 2D and 3D State-of-the-Art geophysical processing and computer modeling routines.

Dr. Craig Beasley of Wave Geophysics, Golden, Colorado, was retained by Animas to focus on the aeromagnetic datasets by applying 2D and/or 3D computer modeling routines to the data and to assist with the radiometric, multi-frequency electromagnetic and VLF-EM data. Condor Consulting, Lakewood, Colorado, under the guidance of Ken Witherly, re-processed and then modeled the extensive multi-frequency electromagnetic dataset and assisted with analysis of the aeromagnetic and radiometric data.

Animas Resources contracted Quantec Geoscience of Reno, Nevada to begin a 100m pole-dipole IP data acquisition program to systematically and uniformly cover the past gold production areas and extend coverage into the immediate and proximal regions around the numerous open pits.

durango geophysical operations, of Durango, Colorado, conducted Reconnaissance Induced Polarization (RIP) surveys in the gravel covered area immediately southwest of the Maribel and Dora pits with the goal of identifying potential buried targets in an area of gravel cover. *durango geophysical operations* also ran a series of 50 meter detail dipole-dipole IP lines to help target the first phase of drilling in the Mirador hydrothermal target area.

During 2007, TeckCominco, Vancouver, B.C., conducted a target-specific IP program using 100 meter pole-dipole over the San Enrique region located in the south-central Santa Gertrudis claim package. This work, along with aeromagnetic data re-processing of the earlier Aerodat data covering the San Enrique region, was done under a Joint Venture agreement with Sonora Gold, one of the previous claim owners in the Santa Gertrudis project area. Following termination of the TeckCominco / Sonora Gold joint venture, Animas acquired rights to the San Enrique / Greta-Ontario regions and the accompanying databases.

These data sets are part of the Animas Resources extensive exploration database covering the Santa Gertrudis project area and are the subject of continued re-processing, computer modeling and analysis. Efforts are focused toward new discovery opportunities.

Phelps Dodge / Minera Zapata – pre-1992

The Phelps Dodge (PD) IP surveys began in late 1988 and 1990 and these early programs, run by Sr. Luis Ortiz Herrera, Hermosillo, Sonora, consisted of 50 meter detail investigations of the Maribel and Manueles Sur areas (1988) and 300 meter reconnaissance dipole-dipole survey lines run along the main Santa Gertrudis trend (1990). The relative quality of the 300 meter dipole-dipole data is lower than desired due primarily to the lack of power in the transmitter current source. The under-powered transmitter resulted in poor quality readings at the deeper "n-spacing" readings making the n=4, n=5 and n=6 readings noisy and therefore suspect. (see Appendix A, attached)

These 300 meter IP data have been modeled using terrain corrected 2D Smooth Model algorithms (UBC and Zonge codes) by Wave Geophysics and Durango Geophysical Operations. Data files for the final 2D models run by *durango geophysical operations* have been manually edited to remove the more suspect readings.

Phelps Dodge / Minera Zapata – pre-1994

300 meter and 100m dipole-dipole IP surveys were run by BAR GEOphysics, Englewood, Colorado, during 1992. A combined BAR GEOphysics and Phelps Dodge crew continued the 300 meter reconnaissance and 100 meter detail program in the fall of 1993. The relative quality of these data is good to excellent as the equipment utilized for the data acquisition was of sufficient transmitted power to produce quality measurements and the IP receivers were of modern digital design incorporating enhanced signal stacking and noise reduction technology.

The effective depth of exploration for the 100 meter dipole data is estimated between 200 and 300 meters while the effective depth of exploration for the 300 meter dipole work is estimated between 600 and 900 meters. These IP data have been modeled using terrain corrected 2D Smooth Model algorithms (Zonge code) by *durango geophysical operations*.

Additionally, a limited orientation program was run using a ground Total Field Magnetic and VLF-EM system to investigate the potential benefits of a proposed airborne magnetic and electromagnetic survey over the Santa Gertrudis project area. The results of this orientation survey were favorable and Anthony M. Hauck, III, Chief Geophysicist for Phelps Dodge recommended flying the airborne survey. These surveys were later flown by Campbell Resources (see discussion below). The eastern regions of the Santa Gertrudis project area were also covered by Reconnaissance Induced Polarization (RIP) array investigations. (see Appendix A, attached)

Campbell Resources / Oro de Sotula – 1995 - 1997

The Mexican subsidiary of Campbell Resources, Oro de Sotula contracted a helicopter-borne aeromagnetic program flown by High Sense Geophysics covering the greater Santa Gertrudis property position in May, 1995 (High Sense Job # 950207). A total of 1,950 line-kilometers were flown using a N45E primary line orientation with a 100 meters line spacing. [Note: digital datasets have been re-delivered by Fugro, corporate successor to High Sense but the original report documents and delivered CDROM's are missing from the SG data archive.]

Oro de Sotula continued helicopter geophysical acquisition with two programs consisting of combined aeromagnetic, electromagnetic, radiometric and VLF-EM airborne survey flown by

Aerodat of Mississauga, Ontario during early March, 1996 over the northwestern portion of the claim block (1300 line-kilometers) and a program flown over the southeastern claim area during May, 1997 (2174 line-kilometers). Specifications of the Aerodat data acquisition system for both surveys are given as "*Principal geophysical sensors included a five frequency electromagnetic system, a high sensitivity cesium vapour magnetometer, a multi-channel gamma ray spectrometer and a VLF system. Ancillary equipment included a GPS navigation system with GPS base station, a colour video tracking camera, radar and barometric altimeters, power line monitor and a base station magnetometer*." Specifications of the surveys in the Aerodat reports (Job # 9609 & Job # 9706) state a bi-directional data acquisition scenario with lines flown N45E and N45W with a 100m line separation and a stated "nominal" aircraft terrain clearance of 60 meters. Inspection of the actual data files reveal a greater terrain clearance that the stated 60 meters. (see Appendix B, attached)

High Sense and Aerodat airborne data have been computer modelled by Wave Geophysics and Condor Consulting and these efforts, as discussed below, are the continued focus of additional terrain correction and data reprocessing by *durango geophysical operations*. It is felt that these data will play an integral part in the ongoing discovery efforts of Animas Resources.

Animas Resources / Minera Chuqui – 2006 - 2008

Wave Geophysics – Aeromagnetic data reprocessing and 3D Computer Modeling Studies

Dr. Craig Beasley of Wave Geophysics, Golden, Colorado, re-processed Campbell era aeromagnetic data and applied 3D computer model generation utilized routines developed by the Geophysical Inversion Center at the University of British Columbia (UBC). Additionally, Dr. Beasley assisted Condor Consulting with work on the airborne electromagnetic datasets and provided a review of the airborne radiometric and VLF-EM data. Dr. Beasley's work with the aeromagnetic data aided Animas personnel with identifying areas potentially underlain by buried intrusives which are thought to the be possible source of the extensive Santa Gertrudis gold mineralization.

Condor Consulting – Airborne Electromagnetic data reprocessing and 3D Computer Modeling Studies

Condor Consulting, Lakewood, Colorado, under the guidance of Ken Witherly, re-processed and then computer modeled the extensive multi-frequency electromagnetic dataset using Layered Earth Inversion codes (UBC's "FarEM" and Encom's "EMFlow" software programs), Adaptive Time Constant studies (EM Solutions software), 3D modeling of the northern block of aeromagnetic data (Job ID#9609 using UBC's "Mag3D") and completed a picking of anomalous features based on the individual data section panels. Condor also assisted Dr. Beasley with analysis of the aeromagnetic and radiometric data. Condor reports that the relative quality of the EM data is considered "poor" and this required the final picking of anomalous responses to be done manually from the plotted sections rather than use computer anomaly recognition routines. (see Appendix C, attached)

Quantec Geoscience – 100 meter pole-dipole Induced Polarization Survey

Animas Resources contracted Quantec Geoscience of Reno, Nevada to acquire 128+ line-kilometers of pole-dipole IP data on 26 separate lines using 100 meter dipoles. Data were acquired in the time domain and Quantec delivered both the raw instrument dump files and processed pseudo-sections along with database files in standard Geosoft format. The program was overseen by Jon Powell, Quantec's General Manager for Mexican operations and John Reynolds, consulting geophysicist for Animas Resources. The goal of this program was to enhance earlier IP program data coverage with a more comprehensive, grid-based acquisition program. The IP method maps the apparent resistivity and polarization components of the surveyed area. For the Santa Gertrudis program, areas of higher resistivities may represent the more massive limestone units or may be associated with areas of increased silicification. Data quality for the Quantec IP program is considered good to excellent. (see Appendix D, attached)

durango geophysical operations applied terrain corrected, Zonge 2D Smooth Model inversion code to these IP data.

durango geophysical operations – Reconnaissance Induced Polarization (RIP) & 50 meter dipole-dipole Induced Polarization Survey

Reconnaissance Induced Polarization (RIP) array surveys were run by Durango Geophysical Operations over the gravel covered exploration areas west and southwest from the main Santa Gertrudis trend. Approximately 30+ square kilometers were covered with the RIP arrays. Three detail IP lines were surveyed using 50 meter dipole-dipole arrays with the focus of helping to target specific zones for drill testing in the Mirador – Agua Blanca area. Drill hole ARMR003 tested the strong western IP anomaly located on Line MRD01 and the core shows extensive hornfels and pyrite hydrothermal alteration across a significant thickness (>350 meters). Assay results for this hole are pending. 2D terrain corrected Smooth Model inversions were generated for these IP lines. (see Appendix E, attached)

Sonora Gold / Minera TeckCominco JV – 2006 - 2007

As part of the San Enrique – Greta Joint Venture between Sonora Gold and TeckCominco, TeckCominco geophysicst Boris Lum reprocessed the earlier Aerodat airborne datasets and oversaw a 100 meter pole-dipole IP program and subsequent 2D modeling of these data. The exploration efforts were centered between the San Enrique project and the Greta project. Even though there were several anomalous responses identified by this survey, TeckCominco chose not to drill test the zones. In addition, the interpretation of Mr. Lum focused primarily on the polarization parameter (a measure of the potential sulfide content of the earth) and obvious apparent resistivity "highs", a possible silicification indicator, were not highlighted. (see Appendix F, attached) A review of these data has been provided by John Reynolds of *durango geophysical operations* and this review is attached as Appendix G.

Animas Resources personnel and consultants continue to refine and rework these geophysical data sets with the goal of extracting as much meaningful information as possible to aid in the ongoing exploration discovery efforts at Santa Gertrudis. Additional terrain/sensor corrections are being done to maximize the response characteristics of the aeromagnetic data set, a key component to the exploration. Additionally, multiple geophysical parameter algorithms are being prepared to help recognize gold-bearing signatures in the various data sets. Of particular focus is the airborne electromagnetic data that highlights the northeast-trending structures which are currently thought to play a primary role in the migration of gold bearing fluids into the permissive host horizons.

(Note: MDA has referenced this document as February 2009)

Appendix D

Animas Working Database: Drill Hole Count and Meterage by Project Area

Area	Collar Count	Total Meterage	Area	Collar Count	Total Meterage
Agua Blanca	80	5019.85	Corral NW	45	2565
Agua Blanca NW	5	499.8	Corral SW	4	1731
Agua Blanca SW	5	426	Cosahui	12	1446
Agua Blanca West	3	587	Cristina	92	10510.98
Allison	13	627	Dora	137	17969.1
Allison Este	1	102	El Leon	5	310.6
Allison Sur	1	57	El Leon Sur	7	697.5
Amanda	11	931.7	El Salto	3	88.5
Amanda Norte	1	66	El Toro	120	13203.45
Amelia Sur	3	703.75	El Toro SW	1	72
Anabel	3	312	Elena Sur	2	117
Beatriz	1	44.2	Emma	35	3625.1
Becerros	159	16379.3	Emma Sur	4	191.3
Becerros Norte	4	527	Enrique (San)	34	5175.51
Becerros Sur	12	1570.5	Enrique W (San)	1	51
Berta	33	3851.85	Escondida	55	4157
Camello	28	3530.3	Escondida Centro	22	1998.27
Carmen	10	601.4	Escondida Este	1	97.5
Carolina	13	649.5	Escondida NW	2	216
Carolina Sur	4	352.2	Escondida SE	2	105
Centauro	21	2700.9	Esperanza	10	861
Centinela	6	300	Eva	6	438
Chupacabras	6	546	Gallo Sur	1	90
Cora	5	662.5	Graves	2	387
Corral	76	8986.78	Gregorio	27	2424.27
Greta	100	9797	Melissa NW	21	1886.9
Hilario	21	1639.2	Mirador	51	5374.22
Ines	8	970.5	Mirna	6	371.4
Jabali	5	561	Muerto Norte	4	420
Karla	1	70.1	Muerto Sur	5	435
Katie	23	1895.3	Nadia	4	337.5
La Gloria	52	4733.35	Nelly	7	778.5
La Gloria Sur	1	81	Nelly Este	4	252
La Juliana	1	160.5	Nelly Norte	3	169.5
La Verde	3	370.5	Patios (Pads)	3	355.5
Laura	8	773	Patricia	4	465
Laura West	1	111	Peluche	6	1137
Leon Sureste	1	132	Peque	33	3020.1
Lola	18	1390.8	Pino Cuates	5	363
Lola Este	3	399	Pirinola Este	4	575.6
Lola Sur	3	157.5	Porton	2	156
Lupita	17	1702.7	Real Viejo	4	507.8
Lupita Sur	5	691.5	Real Viejo Norte	14	1414.5
Manueles Norte	87	9520.75	Ruben	46	5146.94
Manueles Oeste	14	1379.5	Samuel	2	171
Manueles Sur	41	4206.8	San Eduardo	4	240.2
Maria	5	614.5	San Ignacio	33	2792.3
Mariana	8	1080.6	Santiago	2	180

Area	Collar Count	Total Meterage	Area	Collar Count	Total Meterage
Maribel	79	8440.8	Sara	1	75
Melissa	22	1726.5	Sargento	6	585
Sebastian	9	1279.5			
Shelia	5	328.5			
Sofia	25	2058.3			
Sta. Teresa	18	1849			
Sta. Teresa Oeste	1	144			
Tigre	29	2622.1			
Tigre SE	2	93			
Toro Norte	17	1209			
Tracy	31	3313			
Trinidad	114	11146.4			
Trinidad SE	2	229.5			
Unknown	155	3192.4			
Venado	2	204			
Veronica	2	334.5			
Veronica NW	11	1014			
Vibora	11	1216.5			
Viviana	18	2263.5			
Viviana NE	2	147			
Viviana W	1	45			