

Los Venados Field Examination Report

Prepared for

Wolverine Minerals Corporation

By

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Introduction

The following report outlines the observations of a field review of the Mulatos District and the Los Venados concession during the period 17 through 20 November, and includes a discussion of the Mulatos deposit stratigraphy and structure as it relates to the geology of the concession and potential mineralization.

The author was contacted by Mr. Doug Blanchflower to conduct a limited field visit to orient Almadex geologist Armando Vazquez to the Mulatos district geology. A full field day was spent reviewing the Mulatos district volcanic stratigraphy and mineralization styles. The second field day was spent traversing the southern portion of the Venados concession to review the bedrock geology and place it within the district stratigraphic context, as well as conduct a reconnaissance evaluation of the predominant altered areas. The final day was spent examining in detail the area of silicified breccias concurrent with soil gold anomalies in the southeastern portion of the concession that is believed to be the highest priority exploration area.

Due to time constraints, reconnaissance activities were concentrated in the southern portion of the Mulatos concession to extend known Mulatos geology into the Venados concession, and evaluate potential for fault-offset extensions of Mulatos deposit mineralization. Additional objectives were to place the predominant soil gold anomaly into context and assess preliminary locations of the proposed drill sites.

The author has over fifteen years managing exploration programs in the district for both Placer Dome and Alamos Gold Inc. All drafted diagrams in the following report were modified from originals previously publicly presented by the author by permission from either Placer Dome US or Alamos Gold Inc., as well as posted at various times on the Alamos Gold website.

Mulatos District and Los Venados Regional Geology

The Los Venados concession is located within the northern portion of the Mulatos District, an approximately 25km x 25km area of mid-Tertiary volcanic rocks hosting numerous occurrences of high sulfidation style alteration and mineralized occurrences (Figure 1). Three generalized rock packages are present in the district, andesitic rocks correlative with the Lower Volcanic Series of the Sierra Madre, bimodal felsic pyroclastic and mafic basaltic rocks of the Upper Volcanic Series, and dacitic dome complex rocks that are localized at the unconformity between Upper and Lower Series units. Dacitic dome complex rocks are of primary interest as they host most of the economic mineralization in the

district and almost all gold reserves. District mineralization is gold-dominant, with accessory silver and copper. Most economic gold mineralization occurs within silicic alteration, but significant gold occurs within advanced argillic assemblages of pyrophyllite-dickite proximal to silicic alteration. No economic mineralization has been identified in the lower temperature illite-montmorillonite argillic alteration assemblages.

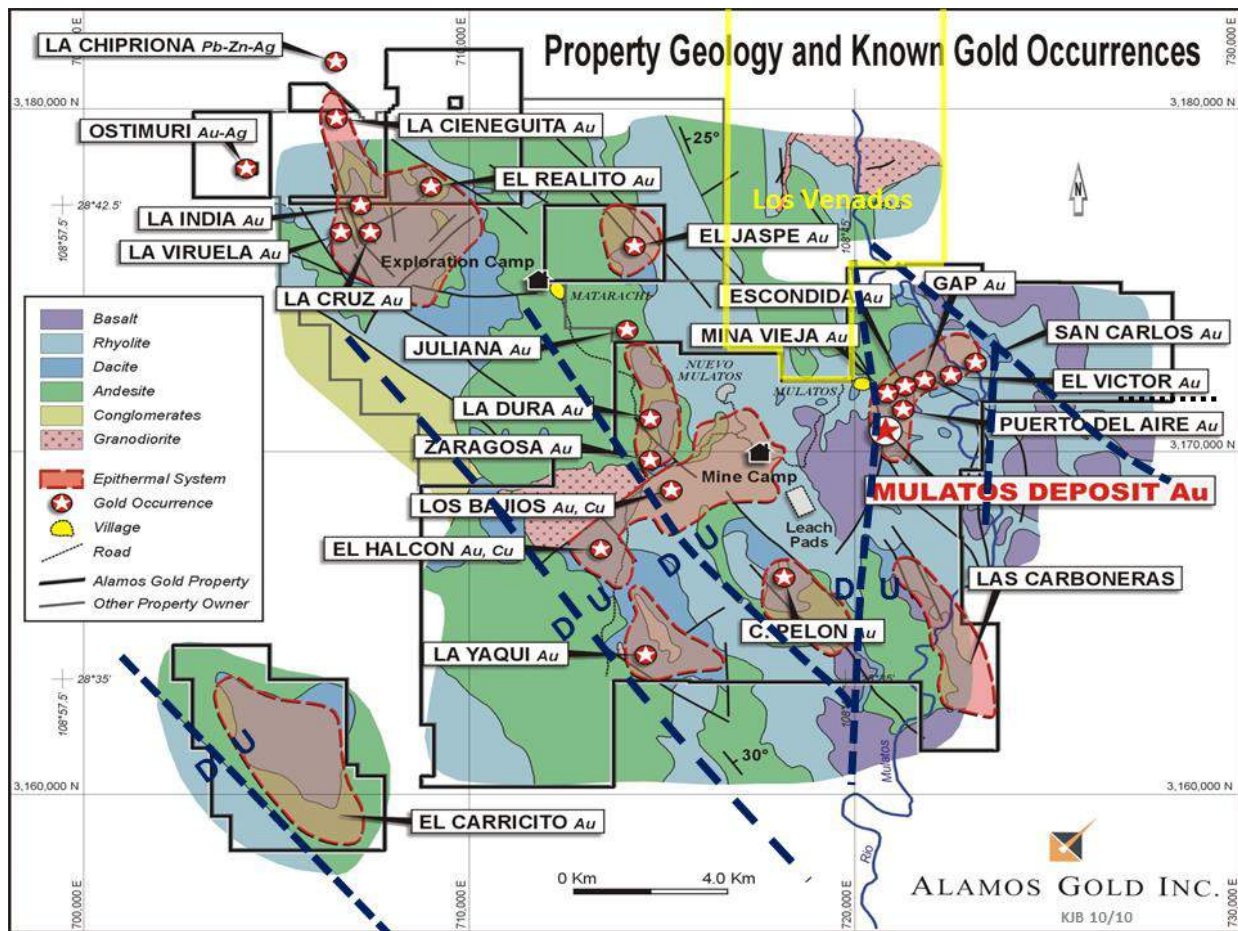


Figure 1. Mulatos District generalized geology showing relative location of Venados concession with respect to the Mulatos Mine complex and district mineralized occurrences. Note northwest and north-south major regional normal faults crossing district. Modified from Balleweg et al (2004, 2012), Mulatos Feasibility Reports.

Upper Series rocks are comprised of laterally extensive pyroclastic volcanic rocks comprised of predominantly crystal and lithic lapilli tuffs. The Upper Series rocks in the immediate Mulatos deposit area are completely barren of mineralization and were thought to be post-mineral, but more recent exploration and development east of the Mulatos River has shown mineralization to extend into the Upper Series units, most likely as a younger mineralization stage. It is also possible that a regional low angle fault place barren Upper Series units over mineralized dacite dome complex rocks, giving a misleading representation of mineralization timing in the deposit area.

Lower Series rocks are comprised predominantly of bedded andesite tuffs, local tuff-breccia, and occasional andesite porphyry flows. They are not known to host economic mineralization in the district, but may be intensely argillized where underlying mineralized dacitic dome complex rocks. Mineralization where present typically consists of base-metal veins with localized alteration envelopes. The La Dura altered system apparently is the only known system overlying unaltered andesitic rocks without apparent extensive dacitic dome complex rocks, but is not well documented.

The dacitic dome complexes are located at the unconformable contact between Upper and Lower series rocks, although are localized and not everywhere present throughout the district. Upper Series volcanic units outside of the dome complexes directly overlie Lower Series andesitic rocks. Volcanic stratigraphy within individual dome complexes is highly complex due to multiple near-vent volcanic units, very localized eruptive units, and dome destructive volcanoclastic rocks that exhibit rapid lateral and vertical facies changes.

The Mulatos gold deposit is located within the largest recognized dome complex of at least 10km² extent. Deposit characteristics vary depending on location within the dome complex and host rock lithology. The southern portion of the deposit is hosted predominantly at flow boundaries within stratified dacite and rhyodacite flows, whereas the northern portion is predominantly stratiform and hosted within coarse-grained volcanoclastic rocks (Figure 2). The stratiform component is expected in the Venados concession if any extensions of the deposit exist across the major normal faults offsetting the northwestern portion of the Mulatos deposit.

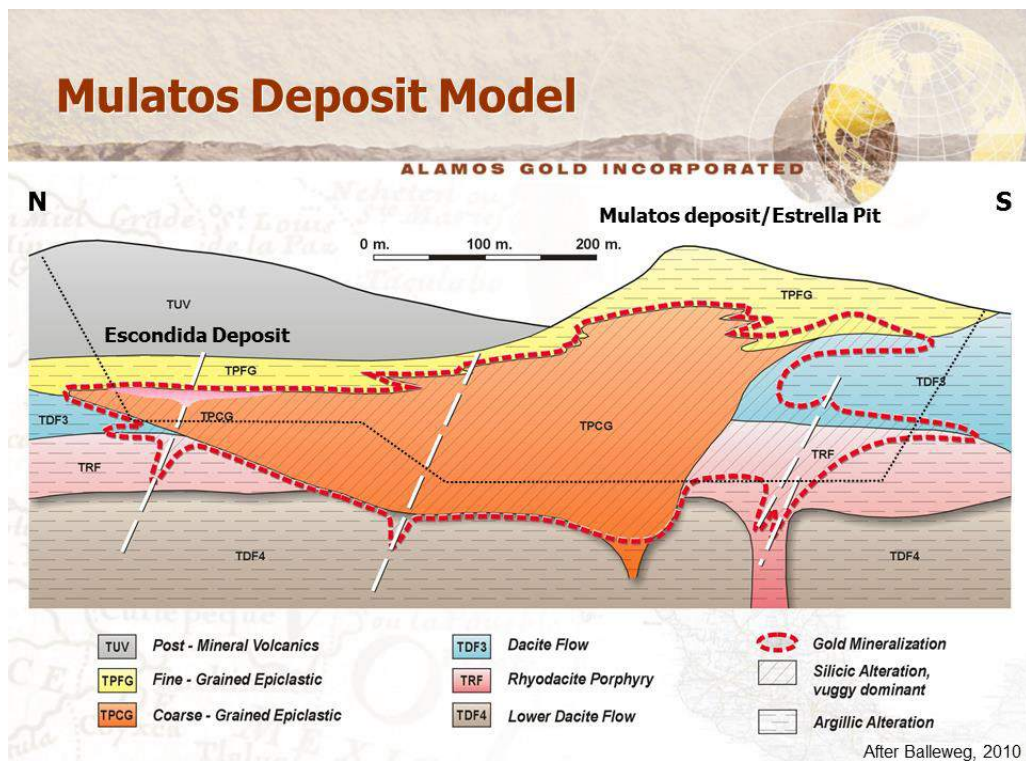


Figure 2. Schematic diagram of Mulatos deposit geology showing flow-hosted gold mineralization in the southern portion of the deposit and concealed stratiform mineralization in the northern portion. From Balleweg (2014).

Regional bedding across the district is northwest-striking, dipping to the northeast approximately 25 degrees. The district is transected by a series of northwest-trending normal faults which have rotated the volcanic stratigraphy to the regional attitude, and repeated the stratigraphic section numerous times across the district.

The most significant fault in the district is a major north-south trending normal fault, the Mulatos Fault Zone (MFZ), which offsets the Mulatos deposit (Figure 3). The western hanging wall block has been down-dropped 300-400m based on stratigraphic relationships, with the highest and youngest units of the district stratigraphy (Tbu) in fault contact with mineralized dome complex rocks low in the stratigraphic column. The MFZ is a complex fault zone at least 100m wide with numerous northwest and northeast trending splays.

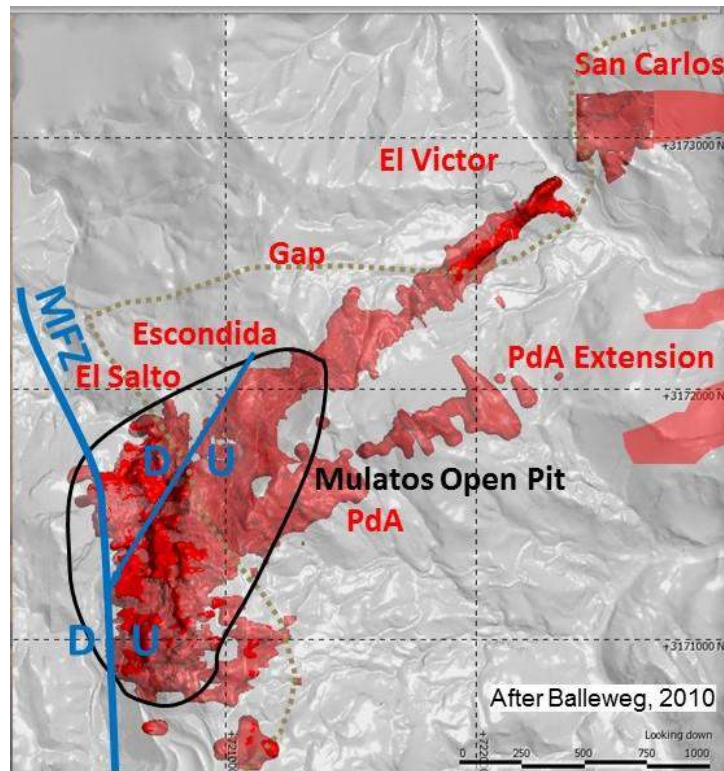


Figure 3. Greater Mulatos deposit footprint as defined by silica alteration (red) showing fault offset along Mulatos fault. Dotted brown line is the approximate limit of Upper Series cover.

Escondida-Gap-El Victor-San Carlos Long Section

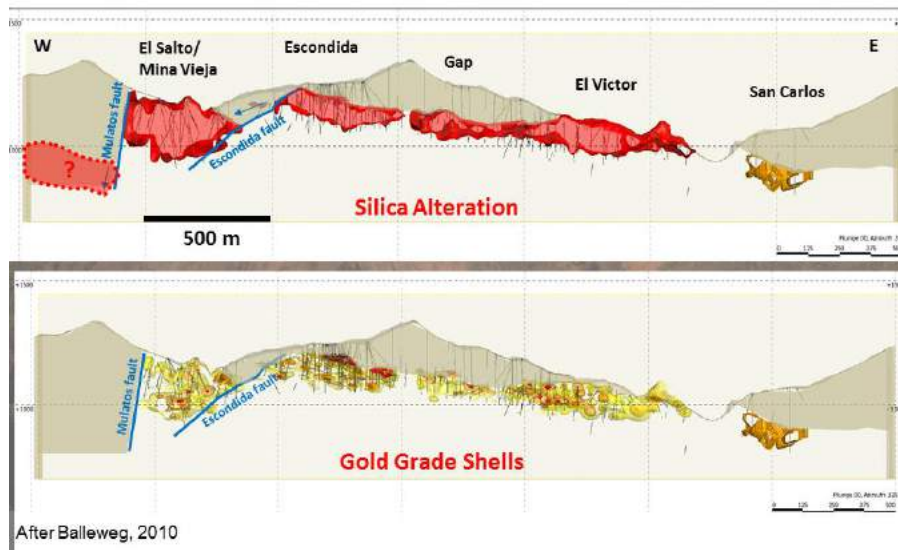


Figure 4. Greater Mulatos Deposit long section showing silica alteration containing gold mineralization (red) under barren Upper Series rocks (gray) and normal fault offset to the west, possibly with concealed mineralization in the Mulatos Fault hanging wall. From Balleweg (2010).

Faulted extensions of the deposit are likely, but have previously been considered too deep to be of economic interest. However, recent work by the author suggests that a graben-like structure may give a misleading impression of total offset, and that up-dip mineralization extensions may be possible in the hanging wall west of Mulatos and potentially extending into the Venados concession under barren Upper Series cover (Figure 4).

The Mulatos deposit area stratigraphy was first defined by Kennecott geologists in the early 1990's prior to extensive drilling and mine development, and modified by the author from extensive exploration activities and pit exposures from 1997-2000 and 2003-2016. The generalized stratigraphic column is included in Figure 5, which applies to the area now included in the large open pit (Figure 6). The Upper Series 'post-mineral' and Lower Series andesitic section is largely correlative throughout the district, but the dome complex stratigraphy is confined to the immediate deposit area. Lower portions of the Upper Series units as well as the Lower Series andesitic rocks are present in the Los Venados area, and are discussed in following sections. Dacitic dome complex rocks were not observed on the Venados concession, although the area of silicified breccias may be time and stratigraphic equivalent.

Mulatos Deposit Stratigraphic Column

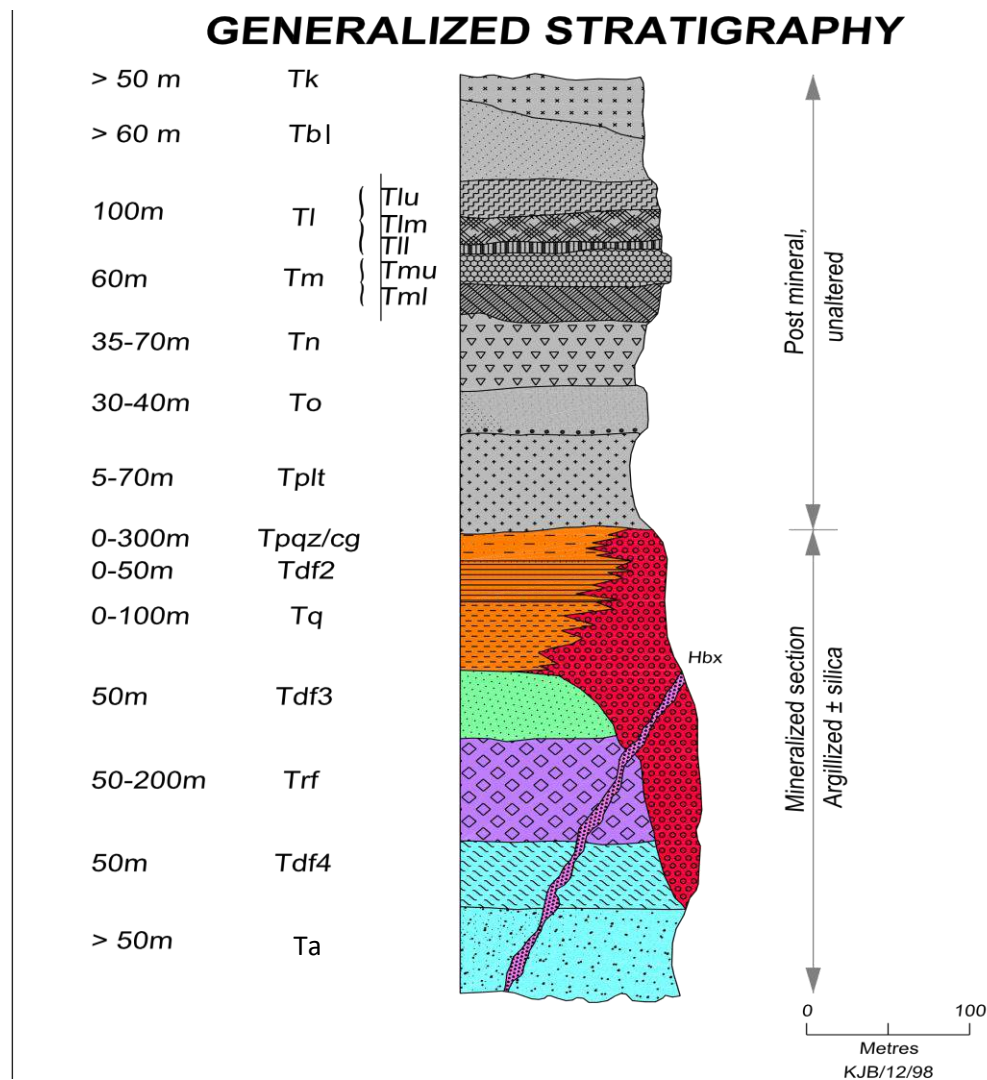


Figure 5. Composite stratigraphic column of the Mulatos deposit area, applicable to Los Venados. The upper basaltic agglomerates and vesicular basalts overlying Tk are not shown.

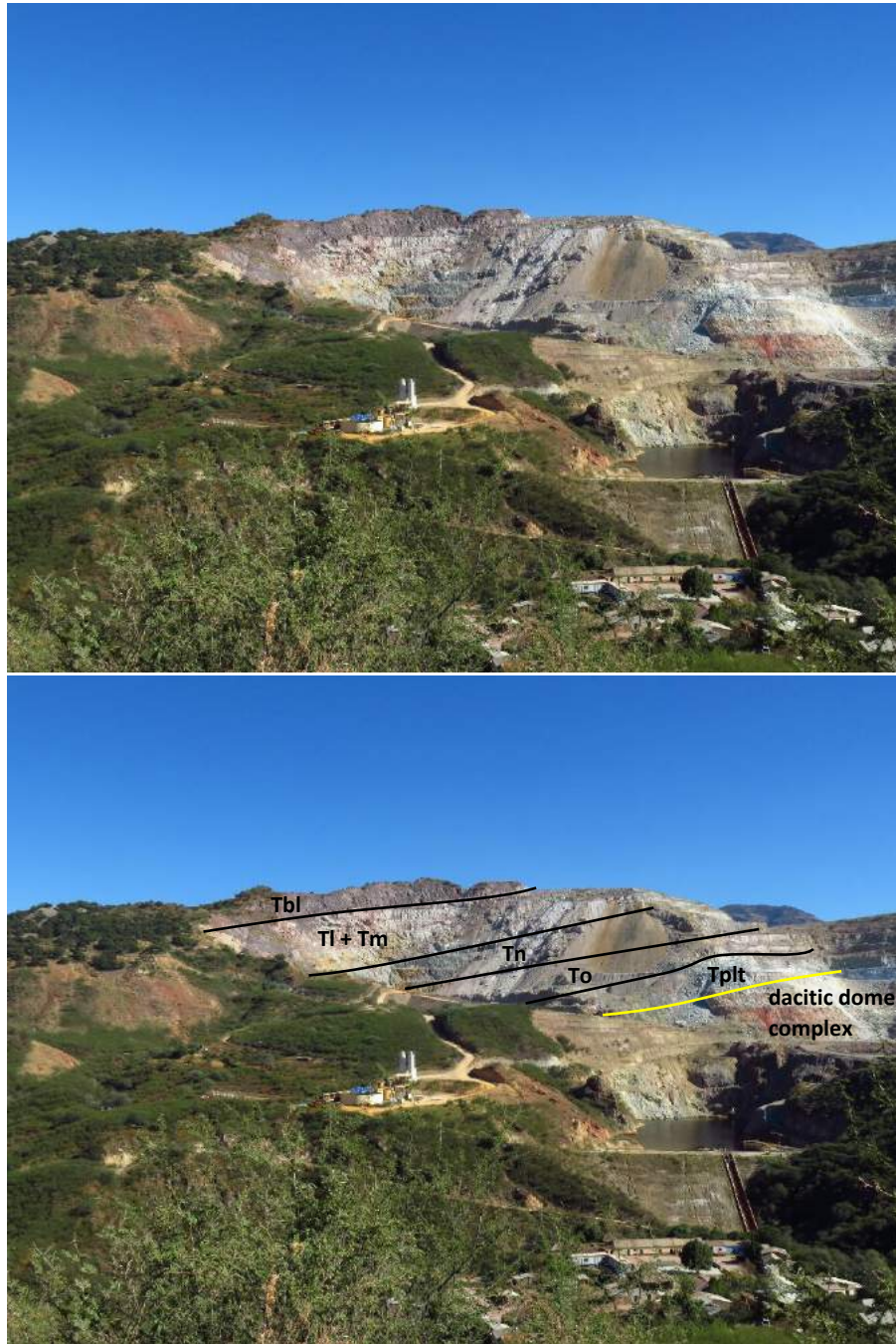


Figure 6. Upper Series 'post mineral' units overlying mineralized dacitic dome complex rocks in the Escondida Pit area, Mulatos Mine. The Upper Series is barren of mineralization and had to be stripped to the level of the dacitic rocks hosting the high grade Escondida deposit.

Venados Concession Geology

Due to time constraints, field activities were concentrated in the southern portion of the Venados concession to extend known Mulatos geology and identify any potential fault-offset mineralization extensions on the Venados concession. Simplified geology is presented in Figure 7.

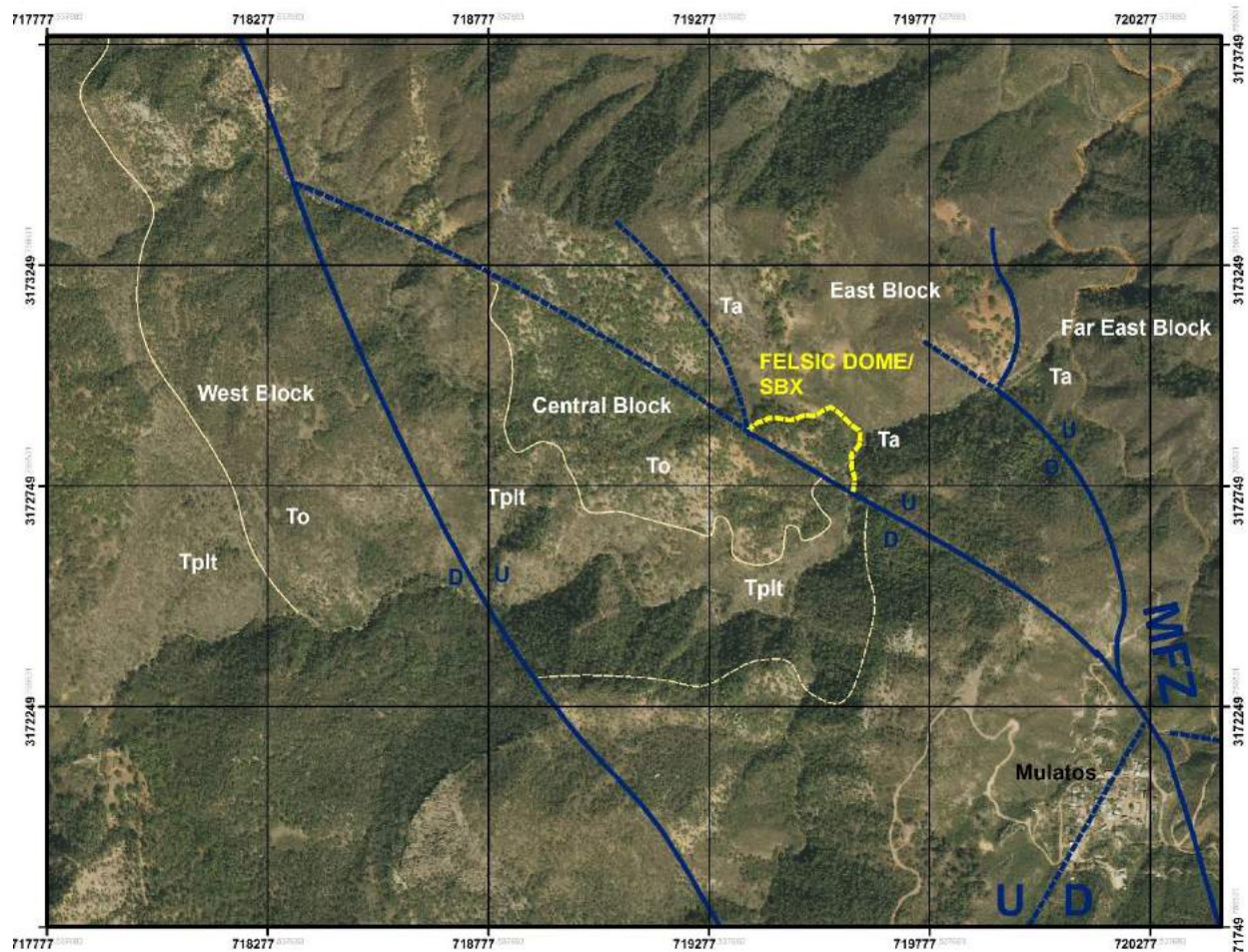


Figure 7. Simplified geology of the southern Venados concession in the area showing major fault blocks and Mulatos district stratigraphic units. The Mulatos deposit is in the footwall of the Mulatos Fault Zone (MFZ) directly southeast of the Mulatos town site at lower right. Unmapped structure exists between the Mulatos town site and the Venados area of interest. UTM coordinates in NAD27.

The western portion of the southern Venados area is underlain by the two stratigraphic units that directly overlie the altered and mineralized dacitic dome complex rocks of the Mulatos deposit, a rhyolite crystal tuff correlative with the Tplt unit of the Mulatos stratigraphic column, and a series of pyroclastic lithic lapilli tuffs correlative with the To unit. There is a fault repetition of the Tplt unit due to a northwest trending normal fault traversing the south-central portion of the concession.

The eastern portion is comprised of Lower Series andesitic rocks (Ta) that are generally unaltered. Where altered, the alteration is predominantly argillic and localized, and appears comprised of low temperature illite-montmorillonite.

Three significant normal faults were observed to transect the southern portion of the Venados concession, all of which appear to be splays off the Mulatos fault. These faults exhibit the district-wide pattern of parallel, northwest trending normal faults that define fault blocks of repeated stratigraphy. The most easterly fault is along strike of the MFZ, which can be mapped from just north of the Mulatos town site into an area of argillic alteration at the southeastern concession boundary. This fault is not well exposed, but is inferred due to a change from Lower Series andesites in the footwall to dacite porphyry directly along strike of the last known exposure of the MFZ.

The second fault is located directly west of the exposure of silicified breccias in the south-central portion of Venados concession and places Lower Series andesite hosting silicified breccia in contact with overlying Upper Series rhyolitic crystal tuff (Tplt), lithic lapilli tuff (To), and andesitic basalt porphyry

(Tn) units. The favorable dacitic rocks hosting the Mulatos deposit mineralization are inferred to underlie the hanging wall rocks at shallow to moderate depths.

A third fault located near the southwestern edge of the concession places Tplt footwall lithology to the east in contact with an apparently normal Tplt-To sequence to the west.

For purposes of discussion and exploration, these three faults define four distinct blocks in the southern Venados concession. The Far East Block is primarily footwall to the MFZ and comprised of predominantly unaltered Lower Series andesite and overlying dacite porphyry. The East Block appears to be in the upper portion of the Lower Series andesite, and contains the silicified breccia and other areas of localized alteration. The Central Block is comprised of Tplt and To units inferred to overly favorable dome complex rocks, and has weak pervasive alteration in the To unit. The West block is comprised of a thick To and Tplt sequence lacking alteration. Most favorable exploration potential is in the western portion of the East Block within and near the silica breccia, and in the eastern portion of the Central Block underlying the weakly altered To unit. Interpretation of the IP results should consider the bedrock lithology changes across the fault blocks.

The extreme southeastern portion of the concession adjacent to the AGI Salamandra concession is inferred to have additional unrecognized faults, and is the most likely area to have a concealed faulted extension of the Mulatos deposit. The area is structurally complex, with favorable alteration located directly south of the Venados southern boundary. The area should be detail mapped to fully understand the relationship between the silica breccia occurrence and the Mulatos deposit.

Felsic Dome/Silica Breccia Complex

The reconnaissance traverse across the southern portion of the Venados concession along with the soil geochemical results indicate that the primary area of interest is the area of silicified breccia located in the southeastern portion of the area. Considerable time was spent on understanding the occurrence and the exploration implications. The silicified breccias are thought to be part of a felsic intrusive complex located near the upper portion of the Lower Series andesite.

The silicified breccias are comprised of cryptocrystalline silica clasts with relict felsic porphyry textures, classified as a rhyolite due to the abundance of quartz phenocrysts (Figure 8). Breccia matrix ranges from intense silica to limonitic clay. Silicification and brecciation are multi-stage and coeval processes, due to silicified felsic porphyry clasts occurring in a silicified matrix. Breccia textures are identical to those observed near the historic workings in the north end of the main Mulatos deposit in the El Salto and Mina Vieja area, and are most likely related. Not all silicified rock is comprised of breccia, as massive unbrecciated intensely silicified rhyolite porphyry was exposed in the northern portion of the area (Figure 9).

Low to moderate angle silicified breccias with distinct slickensided footwalls are common in the silica breccia area and exhibit radial morphologies both along strike and down dip. The breccias are also multi-stage, as they contain silicified clasts in an intensely silicified matrix (Figure 10). Similar breccias are present elsewhere in the district, particularly at the El Halcon Cu-Au-Ag system, and are interpreted to be carapace breccias resulting from emplacement of an expanding felsic dome-like intrusion. The breccias are well-developed with an arcuate morphology, with bedding attitudes defining a radial morphology around individual domes. Carapace breccias appear to steepen at dome margins, as expected with dome growth (Figures 11-14). Domes were fault-offset during growth as evidenced by a silicified fault breccia offsetting dome margins, as well as internal silicified fault zones offsetting carapace breccia (Figure 14).



Figure 8. Intensely silicified breccia, South Dome area. Intense silicified felsic porphyry clasts in a silicified matrix. Similar breccias were observed near high grade mineralization in the El Salto and Mina Vieja portion of the Mulatos deposit.



Figure 9. Intense cryptocrystalline silica alteration of rhyolite porphyry with abundant quartz phenocrysts, North Dome intrusive.



Figure 10. Intensely silicified carapace breccia on upper surface of north dome. Breccias are multi-stage, arcuate, and on the upper surface of the interpreted felsic dome intrusions.



Figure 11. Arcuate upper surface and low-angle carapace breccia (arrow) on North Dome. Pronounced slickensides rake in direction of arrow, indicating movement along with dome growth. View to northwest.



Figure 12. Low angle intensely silicified carapace breccia overlying earlier silicified breccia on upper surface of North Dome. View to south down dip from dome top.



Figure 13. Arcuate upper surface and carapace breccia on North Dome. Pronounced slickensides rake upper left to lower right, indicating movement concomitant with dome growth. View to north.

The basal contact of the felsic dome complex and silica breccia is exposed in the main drainage along the east margin of the occurrence where it appears to directly overly unaltered thickly bedded andesite tuff. The exact contact is covered by colluvium, but can be placed within a few meters. The footwall andesites are largely unaltered, although very localized minor silica alteration was noted in one locality. The contact dips at an anomalous shallow angle to the south unconformable with the bedding attitudes

in the underlying andesite, either due to original intrusion or possibly due to a low angle fault. Silica breccia extends for an unknown distance to the south east under cover.



Figure 14. Faulted upper surface of the North Dome showing arcuate nature and slickensided fault plane in intensely altered felsic porphyry and silica breccia that appears to indicated faulting coincident with dome growth and silicification. View to south.

The northern boundary of the silica breccia area exhibits contact relationships contrary to the eastern boundary, with altered bedded andesite tuff overlying intense stratiform silica alteration. The tuffs are weakly to strongly argillized and exhibit highly anomalous bedding attitudes. Anomalous bedding is believed to be due to deformation accompanying dome intrusion. The change in contact relationships occurs across a northwest trending silica breccia/fault zone that appears to have normal fault relationships; the eastern portion is believed to be lower in the system with the basal contact of the silica breccia exposed, whereas the western portion is down-dropped with the upper contact exposed.

The western boundary of the dome area is inferred to be in fault contact with the overlying Tplt rhyolite tuff, with any potential extension of the silica breccia down-dropped to the west.

The silica breccia contact relationships and internal morphologies are consistent with the interpretation of a felsic dome complex. Similar relict felsic porphyry lithologies and dome-like morphology were observed by the author during underground development of the Escondida and San Carlos deposits and are believed to be directly related to high grade gold mineralization in those deposits.

At least two well-defined domes are indicated in the outcropping area, with dome diameter being 50-100m across. The complex extends to an unknown distance to the southeast under cover toward the Mulatos deposit. Additional extensions may also be present under Upper Series cover to the northwest across the inferred post-mineral normal fault.

Time constraints did not allow for a detailed examination of the altered area northwest of the silica breccia across the inferred northwest fault, but a reconnaissance traverse shows argillic alteration in the To and Tn units overlying the main mineralized horizon in the Mulatos deposit and may be reflecting underlying mineralization, possibly as a continuation of the dome complex.

Float boulders of silicified breccia are present in the main drainage north of the primary breccia mass and are most likely sourced by the altered area approximately 200m north of the silica breccia. Another felsic intrusive may exist at this locality.

The soil gold anomaly as defined by Almadex Minerals coincides well with the known extents of the felsic dome/silica breccia complex (Figure 15). Anomalous soil gold is also present in weakly altered Upper Series rocks to the west of the inferred bounding fault, further evidence that an extension of the felsic dome/silica breccia may underlie the area.

The felsic dome/silica breccia complex is the highest priority exploration target observed in the southern portion of the Venados concession due to the multi-stage silica breccia and the coincident gold anomalies.

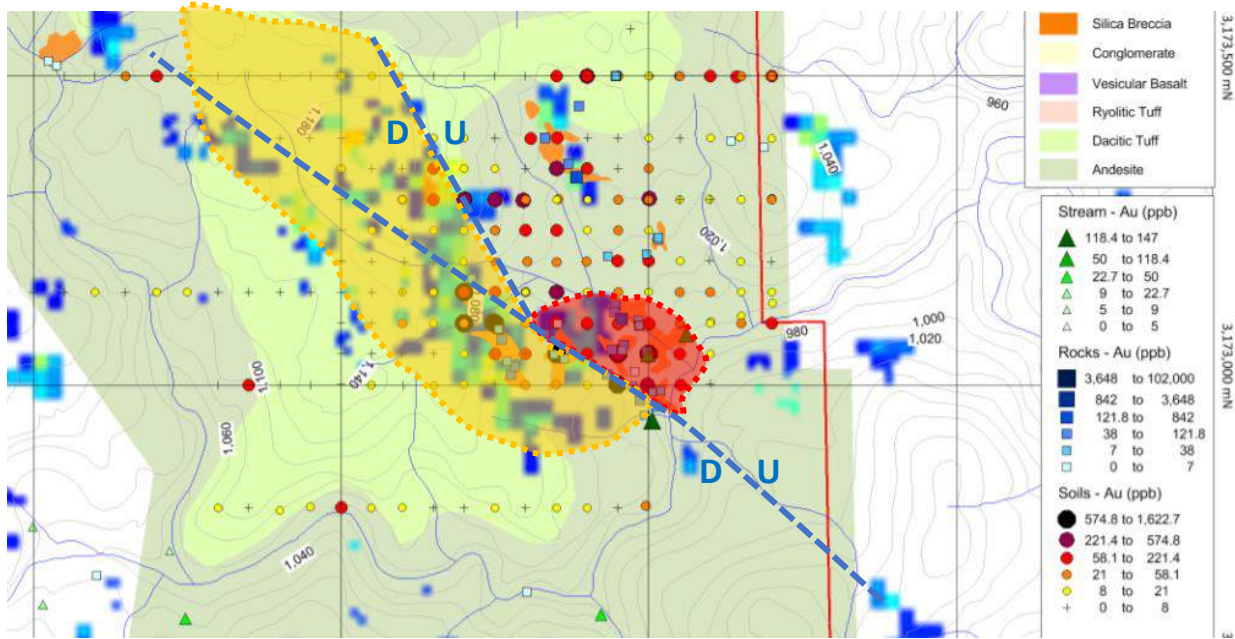


Figure 15. Soil gold geochemical results with generalized location of felsic dome/silica breccia complex (red), west bounding fault (blue), and weakly altered Upper Series To lithologies (yellow) possibly reflecting underlying mineralization. The portion of the gold anomaly north of the silica breccia appears to be due to transported colluvium derived from outcrops west of the fault. A second anomaly is present to the north in another area of probable silica breccia.

Other Altered Occurrences

Two other areas of stratiform argillic alteration were encountered during the south Venados traverse. An area of argillized bedded Lower Series andesite is present near the confluence of the main arroyo draining the southern portion of Venados and the Arroyo Mulatos near the southeastern concession boundary along the strike of the MFZ. The alteration is comprised of moderate to strong argillic alteration with local silicified beds (Figure 16). Clay alteration appears to be low temperature illite-montmorillonite without higher temperature varieties proximal to alteration in the Mulatos deposits. Bedding within the altered occurrence is deformed with western dips, suggesting either deformation associated with the MFZ or perhaps associated with intrusion an underlying felsic dome, such as that observed on the north end of the main dome complex. The clay alteration appears predominantly stratiform in outcrop.

Another area of stratiform argillic alteration is present in the west central portion of south Venados at approximately 3172350N, 718600E (NAD 27). Bedded andesites are weakly to moderately argillized with apparent low temperature illite-montmorillonite clay assemblages and disseminated pyrite.



Figure 16. Stratiform silicic alteration approximately 1m thick within argillized andesite, near Mulatos Arroyo and inferred trace of the Mulatos Fault Zone. View to north.

A pronounced area of stratiform argillic alteration is present approximately one kilometer northwest of the Wolverine exploration camp, but could not be investigated due to arriving at dark during the traverse and following time constraints (Figure 17). It warrants investigation due to the long strike length (>1km), and locally resistant nature suggestive of advanced argillic or silicic alteration.



Figure 17. Pronounced stratiform argillic alteration overlying unaltered Lower Series andesite west of Wolverine camp site. Resistive nature suggests local advanced argillic alteration. View to north.

Comments on Proposed Drill Sites

The limited traverse of the southern Venados area proposed for drilling allows for some preliminary recommendations on the drill hole locations. Further comments require detail mapping and evaluation of the geophysical response utilizing the geology presented in this report. The area of felsic domes and silicified breccia is believed to be the primary drill target due to the intensity of alteration and brecciation, strongly anomalous gold in surface sampling, and similarity to economic mineralization in the Mina Vieja and El Salto portions of the Mulatos deposit. No drill holes directly target this area, however (Figure 18). The closest site is LV-03, set to collar in unaltered andesite and most likely missing the target unless angled to the west. The proposed drill site would be better placed approximately 200m to the west high in the felsic dome complex, supplemented by additional holes to fully test the intrusive center. Site LV-04 appears to be a good test of concealed mineralization west of the dome complex bounding fault, although it is recommended to be moved to the southeast to more directly west of the exposed silica breccia. Site LV-02 and LV-05 also appear to be good tests for concealed mineralization in the Central Block, but may need to be relocated based on the latest geologic mapping and geophysical results. A drill site (or sites) is recommended to the south of LV-03 to test for southeast extensions to the silica breccia in the area of limited outcrop east of the drainage. LV-06 appears to be a good test of the probable silica breccia to the north of the main mass if angled to the west. LV-010 appears to be located below the adjacent stratiform argillic alteration, and should be relocated to the east, with a westerly angled hole to fully test the alteration; it does not appear to be a high priority target, however. LV-011 is believed to be a very low priority drill site with no obvious target from surface mapping.

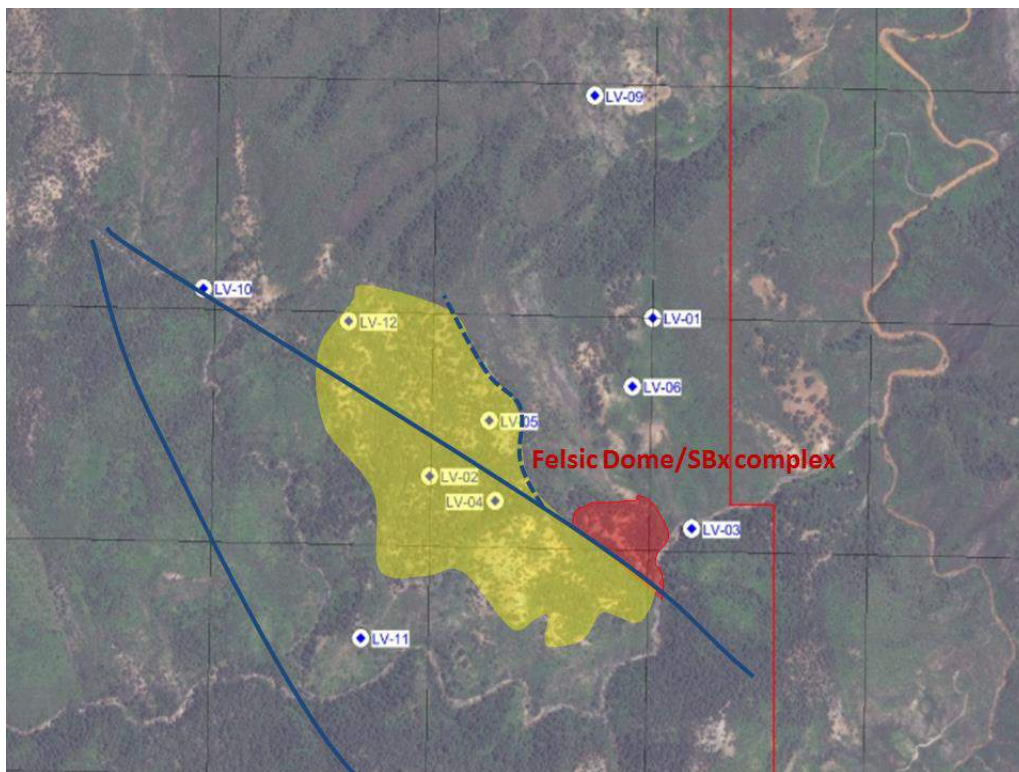


Figure 18. Wolverine Minerals proposed drill sites in the southern portion of the Venados concession with respect to the felsic dome/silica breccia complex (red), altered Upper Series rocks (yellow), and major faults (blue). Geology is generalized and subject to revision through detailed mapping.

Recommendations

- Detailed mapping of the felsic dome/silica breccia complex to define dome morphology and brecciated vs non-brecciated portions. Non-brecciated portions are most likely barren of gold mineralization.
- Detailed mapping of the altered Upper Series units (To and Tn) to the west and northwest of the silica breccia outcrop area across the west bounding fault to fully define structure.
- SWIR/Terraspec analysis of hand samples from clay-altered areas for identification of high vs low temperature assemblages, particularly to establish zoning vectors in the altered Upper Series units west of the silica breccia outcrop area. Resources Geosciences de Mexico (RGM) in Hermosillo provides this service with interpretations by Dr. Francisco Querol.
- Infill soil geochemical sampling at 50m x 25m spacing in main anomaly area. Soil sampling is believed to be important for identifying non-resistant fracture-controlled or non-silicified gold zones that most likely do not outcrop.
- Mapping and sampling of the altered area approximately 200m north of the main silica breccia to determine if another felsic dome is present.
- Detailed mapping of the area south of the silica breccia exposures, extending to the Mulatos town site, to fully understand the structure and potential for concealed faulted extensions of the main Mulatos deposit.
- IP Evaluation of the altered hanging wall block west and northwest of the silica breccia mass to determine if a buried extension of the felsic dome complex is present. The overlying Tplt rhyolite tuff may also give a highly resistive response, however. Geophysical responses should consider the district stratigraphy, as felsic rhyolite tuffs such as Tplt and Tk usually result in a resistivity anomaly.
- RC drilling with center return bits is the preferred drilling method for the silicified breccia, based on extensive core vs RC drilling experience in the main Mulatos deposits. The high-grade gold mineralization of the Escondida Hanging Wall zone was missed by two core drilling campaigns due to poor core recovery in the coarse native gold zone. Gold is frequently loosely held in friable areas of extreme fracturing or brecciation, and grades underestimated if recovery is not 100%, which is difficult in highly fractured silica. The bonanza-grade Escondida mineralization was found only through superior quality samples from a later RC drilling program.
- Continued mapping of the central and northern Venados concession using Mulatos district stratigraphy to place into geologic context and fully evaluation mineral potential.