The Geology and Mineralization at the US Grant Mine Property, Virginia City, Madison County, Montana, USA

NI 43-101 Technical Report for:

Transatlantic Mining Corporation
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Prepared By:

J Chris Pfahl, PE, PLS
Nesbert Nyama, MAIG
David Tahija, PE

Effective Date: **May 30, 2017**

Report Date: **July 28, 2017**

J. Chris Pfahl

Principal and Owner
Silver Valley Engineering
64270 Golconda Rd
PO Box 438
Wallace, Idaho, 83873
Telephone: 208-753-3812, ex 21
Email: sveng@hughes.net

CERTIFICATE of QUALIFIED PERSON

1. I am an Independent Consulting Mining Engineer and reside at:
   64270 Golconda Rd
   Wallace, Idaho 83873

2. I graduated in 1977 with a BS in Mining Engineering from the Montana College of Mineral Sciences and Technology and have practiced my profession continuously since 1977.

3. I am a Registered Professional Engineer in the State of Idaho (PE 4458), the State of Colorado (PE 25285), and the State of Arizona (PE 50378). In addition, I am a registered member of the Society of Mining Engineers of AIME (2530800RM) and a Registered Professional Land Surveyor in the State of Idaho (PLS4458).

4. I have worked as a mining engineer for a total of 39 years since my graduation as both an employee of a major mining company (38 years) and as a consulting engineer (35 years). Over that period, I have performed, been involved with, and/or reviewed resource estimates, geologic models, preliminary economic analysis, feasibility studies, and mine plans for both exploration projects and active mining operations involving both surface and underground metallic mineral deposits. I have extensive experience with underground vein type deposits.

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 in responsible charge of the preparation of the technical report titled: “The Geology and Mineralization at the US Grant Mine Property, Virginia City, Madison County, Montana, USA” with an effective date of May 30, 2017 (the “Technical Report”), with the exception of Sections 7-11, 12.3, 12.5, and part 24.

7. Other than touring the underground workings at the US Grant Mine while it was operating in the late 1970’s, I have not had prior involvement with the US Grant Mine Property that is subject of the Technical Report. I performed a thorough onsite inspection of the US Grant property in February 2016.

8. I am independent of the Transatlantic Mining Corp. applying all of the tests in section 1.5 of National Instrument 43-101.

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

10. As of the effective date of the Technical Report, May 30, 2017, and the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed and 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.

Signed and dated this 28th day of July 2017 by:

Signature of Qualified Person

J. Chris PFAHL

Print Name of Qualified Person

Nesbert Nyama

Geologist
31 Chandala Turn
Ellenbrook WA, Australia 6069
Telephone: +61 447 920195
Email: nesbertny@yahoo.com

CERTIFICATE of QUALIFIED PERSON

I, Nesbert Nyama, do hereby certify that:

1. I am currently employed as Geologist/Engineer at Rio Tinto, Australia.

2. I am holder of an Honors Degree in Geology (University of Zimbabwe) and a Masters Degree in Geology (Curtin University, Australia).

3. I have worked as an Exploration Geologist for over 16 years since 1997 after completion of my BSc General Geology (1995–1997) and Honors Degree in Geology (1999) for various mining companies in Africa, Australia and Europe. I recently completed an MSc in Geology at Curtin University (2015–2016). My experience in the deposit type includes 5 years exploration experience in lode type gold deposits in granite-greenstone terrains in Zimbabwe and Australia, and 2 years in placer type and vein-type gold deposits (remobilized) in sedimentary basin systems in Western Australia.

4. I am a member of the Australian Institute of Geoscientists (MAIG-5621).

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 the responsible author for Sections 7, 8, 9, 10, 11 and 12 (with exception of 12.2) of the report titled “The Geology and Mineralization at the US Grant Mine Property, Virginia City, Madison County, Montana, USA”, with an effective date of May 30, 2017 (the Technical Report). This was completed without having to physically visit the US Grant Mine Property, hence my view is based on review and

verification of data and information provided by Transatlantic Mining Corp, as well as personal communications with Transatlantic Mining representatives.

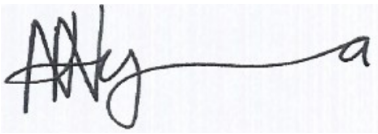
7. I am independent of the Transatlantic Mining Corp. applying all of the tests in section 1.5 of National Instrument 43-101.

8. I have not had prior involvement with the properties that are the subject of the Technical Report.

9. I have read NI 43-101 and Form 43-101F1 and the Sections of the Technical Report for which I am responsible have been prepared in compliance with that instrument and form.

10. As of the effective date of the Technical Report, May 30, 2017, and the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed and 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.

Signed and dated this 28th day of July 2017 by:



Signature of Qualified Person

NESBERT NYAMA

Print name of Qualified Person

Dave Tahija

Juneau, Alaska, USA

CERTIFICATE of QUALIFIED PERSON

To accompany the report entitled: The Geology and Mineralization at the US Grant Mine Property, Virginia City, Madison County, Montana, USA, dated effective May 30, 2017 (the "Technical Report").

I, Dave Tahija, residing in Juneau, Alaska, do hereby certify that:

1. I graduated with a BS in Mining Engineering from Montana Tech in 1977. I graduated with a BS in Metallurgical Engineering from Montana Tech in 1983. I graduated with an MS in Metallurgical Engineering from Montana Tech in 1985;

2. I have practiced my profession as a Mining Engineer since 1977. I have practiced my profession as a Metallurgical Engineer since 1983. My experience includes mine evaluation and design, process evaluation and design, metallurgical and environmental testing, mine operations, mill operations, environmental mitigation, and mill auditing regarding industrial minerals, base metals, and precious metals;

3. I am a Qualified Professional with registrations as a Professional Engineer in the States of Montana (PEL-PE-LIC-5102) and Colorado (PE.0027999);

4. I have read the definition of "qualified person" set out in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101") and certify that by virtue of my education, professional licensing and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101;

5. I have not visited the US Grant property. In the preparation of the sections of this report I am responsible for, I have relied on reports by firms and individuals known by me to be knowledgeable, competent, and reliable;

6. I am a reviewer of the Technical Report and am responsible for Section 13 and Section 24 of the Technical Report;

7. I am independent of the issuer applying all of the tests in Section 1.5 of National Instrument 43-101;

8. I have read NI 43-101 and the Sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1; and

9. As of the effective date of the Technical Report, May 30, 2017, to the best of my knowledge, information and belief, the Sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 28th day of July 2017,
by

Dave Tahija

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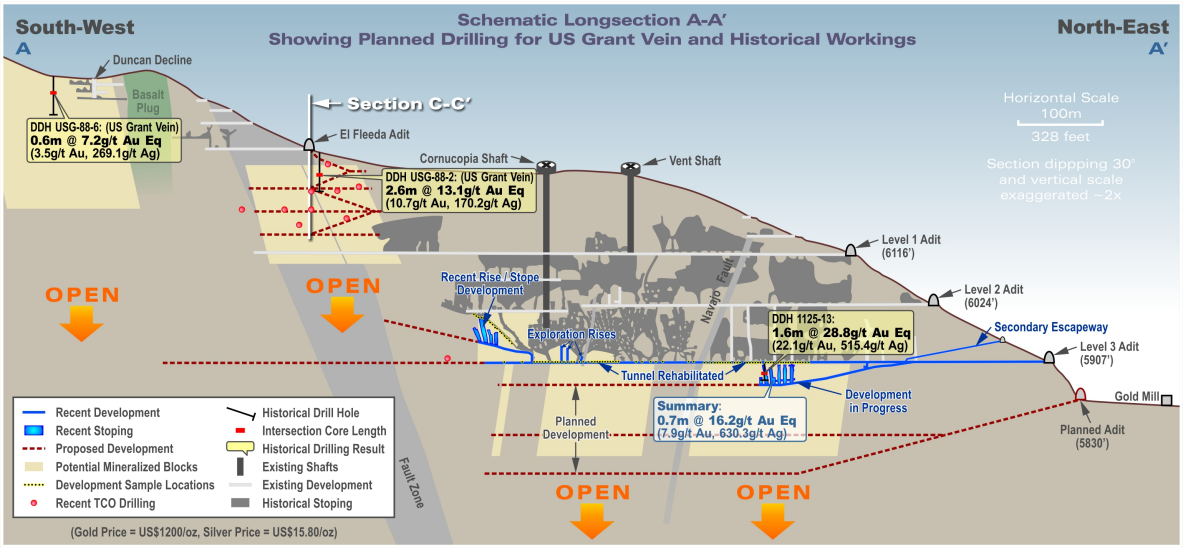
1 SUMMARY

The US Grant Mine is a group of patented and unpatented claims within the Alder Mountain Project. The Alder Mountain Project property comprises a total of a 535 acre land package with 5 patented and 28 unpatented claims located in the Virginia City Mining District of Madison County, Montana.

Transatlantic Mining Corporation (TCO) has an exclusive Option and Lease to Purchase Agreement with current owners, Madison Mining Corporation (MMC) and Elite Properties, for the US Grant Mine and Alder Mountain Project which commenced on January 18, 2016. On completion of the terms of this agreement, TCO, at its election within the 16 month (4 month due diligence and 12 month lease) period, can earn 100% ownership on election to purchase. TCO can also utilize all plant and equipment within the lease period with direct processing benefit and has elected to purchase subject to closing conditions.

The primary purpose of this report is to provide a National Instrument 43-101 (NI 43-101) *Standards of Disclosure for Mineral Projects* compliant geology and mineralization report for the patented portion of the US Grant Mine property based predominantly on recent TCO sampling programs, historic survey and technical information, as accessible from and at the US Grant Mine workings. The US Grant Mine property has a current Small Miner's Exclusion Statement permit #25-221 which allows for up to five acres of disturbance. No additional permitting from the Montana Department of Environmental Quality is necessary at this time.



**Mine development in the absence of mineral resources and reserves, historically, have increased risks of technical and/or economic failure.*

The most recent reported historic resource estimate for the US Grant Mine was reported in 1990 (McLeod,1990). The reported historical resource was estimated as:

Tons	Gold grade opt	Silver grade opt	Category[1]
23,000	0.53	16.5	Proven
200,000	0.53	16.5	Probable
158,400	0.3	5	Possible

[1] *NI43-101 corresponding resource categories Proven/Measured; Probable/Indicated; Possible/ Inferred*

**The Qualified Person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves.*

The US Grant Mine property has had only a limited amount of exploration drilling during its history. An **Exploration Target** in the range of **1.7- 2.6 million tons, with grade range of 0.19-0.28 opt equivalent gold** (approximate range of **350,000 to 750,000 equivalent gold ounces** based on gold/silver at US$1200 and US$15.80, respectively) is estimated based on vein data, average widths, down dip projections, US Grant literature and regional vein grades. *Note: the potential quantity and grade above is conceptual in nature as there has been insufficient exploration to date to define a mineral resource, and it is uncertain whether further exploration will result in the target being delineated as a mineral resource.*

It is the opinion of the author that the US Grant Mine property has not been adequately explored. Surface drilling targeted the vein system to less than 300 feet below the surface from three locations. Underground drilling targeted the vein system less than 100 feet below the US Grant Mine #3 level and only provided a cursory look for additional vein systems in the hanging wall and foot wall of the US Grant vein.

Both surface and underground drill programs are recommended to further refine geological data and extent of mineralization at the US Grant Mine property. The intercept in drill hole USG-88-2 is open along strike and down dip and the well-developed road system at the property provides access to offset drill this intercept. The US Grant Mine #3 level should be extended approximately 1,800 feet to the southwest end line of the property and the vein developed where grade and widths indicate the potential for resource expansion. Both ribs of this new development should be drilled to the limit of the claim block to look for additional mineralized structures.

TCO has designed conceptual drill programs over the US Grant Mine property and there is strong potential to extend areas of known mineralization. The initial surface exploration drilling of 14 holes was completed by TCO around the historic hole USG-88-2 in late 2016 (Section 10). Results support the historic drill data and the geological interpretations of the US Grant Mine Property. Additionally, exploratory mine drifting and sampling below the Level 3 indicate that mineralization is not closed off at depth or laterally.

It is recommended to develop an NI 43-101 compliant mineral resource estimate using applicable historic data, recent TCO exploration drilling data, recent TCO exploratory mine drifting and channel sample data.

The US Grant Mine property benefits from previous mining and test work which provides essential information about the nature of mineralization, mining methods and processing. Continued exploration, rehabilitation and explorative mining along with processing of mineralized rock and testing capabilities of the plant are warranted to support the position of purchasing the asset on election to do so.

It is cautioned that mine development in the absence of mineral resources and reserves, historically, have increased risks of technical and/or economic failure.

2 INTRODUCTION

Transatlantic Mining Corporation (TCO) contracted Silver Valley Engineering to prepare this National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101) compliant technical report for the US Grant Mine property at the Alder Mountain Project. The author performed a detailed site visit in February 2016 at which time, the mine and mill were inspected, infrastructure was inspected, site personnel were interviewed and available records were reviewed.

The US Grant Mine property of the Alder Mountain Project comprises 5 patented and 28 unpatented claims (totaling approximately 535 acres) in the Virginia City Mining District (VCMD) of Madison County, Montana. Effective January 18, 2016, TCO signed an Exclusive Lease Option and Election to Purchase Agreement with the current owners, Madison Mining Corporation (MMC) and Elite Properties, for the Alder Mountain Project (Appendix A). On completion of the terms of this agreement, TCO, at its election in the 16 month (4 month due diligence and 12 month lease) period, can earn 100% ownership in the Alder Mountain Project (see Section 4.4 for further discussion). The focus of this technical report is primarily the patented portion of the US Grant Mine Claim Group within the greater Alder Mountain Project. The unpatented claims within the greater Alder Mountain Project are only addressed in Section 9 Exploration Target Potential.

This report is part of the listing requirements for the Toronto Stock Exchange - Venture (TSX-V) and has been prepared for TCO by, or under the supervision of, Qualified Persons as defined by NI 43-101. The primary focus of TCO is to develop an understanding of the geology and mineralization in the gold-silver vein systems that were historically mined during intermittent periods between 1864 and 1988. This is based mainly on recent TCO sampling programs of accessible US Grant Mine workings and historic survey and technical information.

The data contained in this report came from underground sampling programs and surface drilling conducted by TCO and files of Madison Mining Corporation (MMC). Most of the MMC data, including assay maps, drill logs, level plans and various longitudinal section views were converted to digital formats and visually validated. Drill data such as hole depth, orientation, assay values and rock types were tabulated for import into various databases.

The authors reviewed and to the extent possible, verified the information provided by TCO representatives, consultants and current owners of the Lease, as well as on the data that describes the Montana exploration rights, surface rights, obligations and mineral property dimensions and coordinates.

Figure 2.1 shows the location of the Alder Mountain Project which the US Grant Mine property claims are within.

Figure 2.1 Location of the Alder Mountain Project, Montana, United States
(Source: TCO)

3 RELIANCE ON OTHER EXPERTS

This report is not intended to assess all potential environmental, political or legal issues or liabilities regarding the Alder Mountain Project property. The author did not rely on any other expert for this information. To the extent this type of information was available, it has been provided in the report.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Description

The Alder Mountain Project property is comprised of 28 unpatented lode mining claims totaling approximately 453.3 acres and 5 privately owned patented claims totaling approximately 81 acres (Table 4.1). Figure 4.1 illustrates the two claim groups of the Alder Mountain Project Property: The US Grant Claim Group and the Golden Boy Claim Group. Figure 4.2 details the location and distribution of the US Grant Claim Group. The claim blocks lie in areas ranging from relatively steep partially tree covered hillsides and gulches to rolling open sage brush covered hills cut by NE-trending secondary drainages.

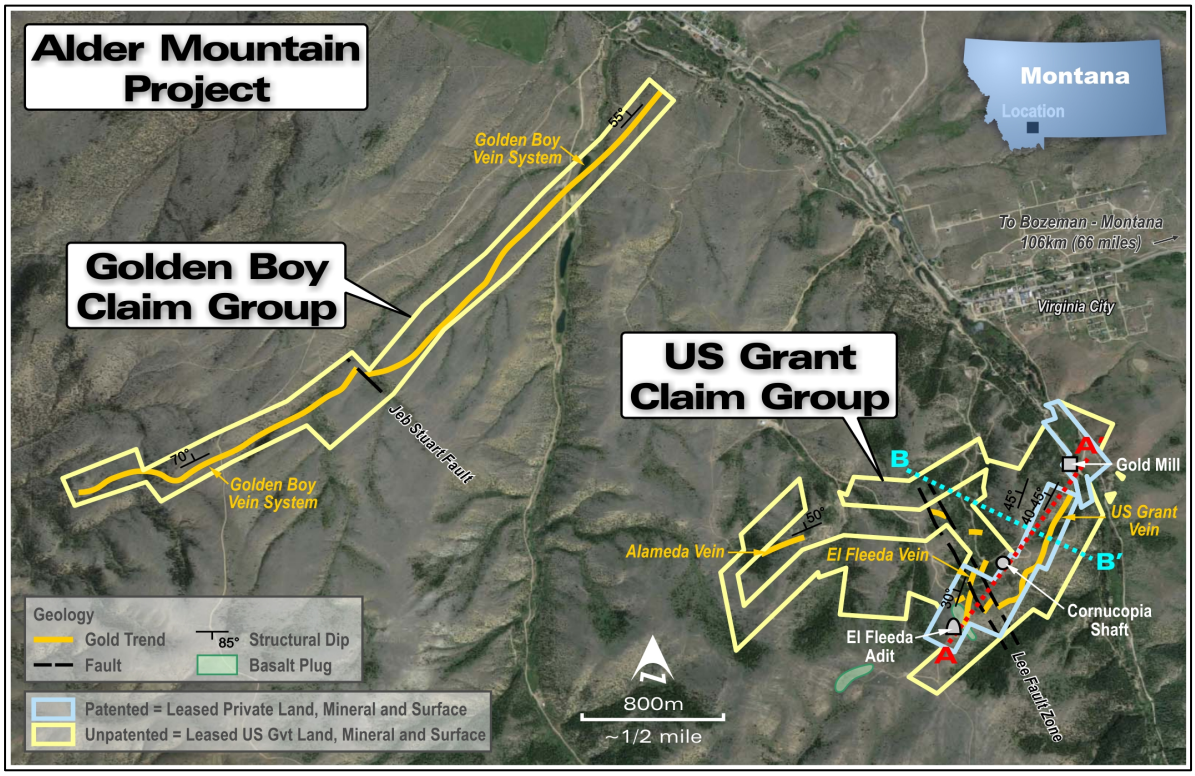


Figure 4.1 Alder Mountain Project Claim Groups
(Source: TCO)

Table 4.1 List of the claim units within the Alder Mountain Project Property

MADISON MINING CLAIM GROUP				
Claim Name	**Claimant(s)**	**BLM-MMC Number**	**Claim Type**	**~Acreage**
GOLDEN LEDGE	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN GIRL	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN BOY	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
LITTLE NUGGETS	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GEN CREIGHTON #1	MADISON MINING CORP	MMC150692	UNPATENTED	18.6
GEN CREIGHTON #2	MADISON MINING CORP	MMC150692	UNPATENTED	12.5
EAST FLEEDA NO 10	MADISON MINING CORP	MMC20614	UNPATENTED	3.4
EAST FLEEDA NO 11	MADISON MINING CORP	MMC20614	UNPATENTED	9.5
GOLD LODE	MADISON MINING CORP	MMC20614	UNPATENTED	18.4
GOLDEN GATE	MADISON MINING CORP	MMC20614	UNPATENTED	10.1
GEN CREIGHTON #3	MADISON MINING CORP	MMC150692	UNPATENTED	12.3
WEST FRACTION	MADISON MINING CORP	MMC150692	UNPATENTED	7.9
BUCKTAIL #2	MADISON MINING CORP	MMC20614	UNPATENTED	19.6
CREIGHTON NO 3	MADISON MINING CORP	MMC20614	UNPATENTED	12.6
HIGHLAND SURPRISE #2	MADISON MINING CORP	MMC20614	UNPATENTED	15
MIDWAY	MADISON MINING CORP	MMC20614	UNPATENTED	19.4
WINTER NO 1	MADISON MINING CORP	MMC20614	UNPATENTED	14.4
WINTER NO 2	MADISON MINING CORP	MMC20614	UNPATENTED	16.9
WINTER NO 3	MADISON MINING CORP	MMC20614	UNPATENTED	17.1
CREIGHTON NO 1	MADISON MINING CORP	MMC20614	UNPATENTED	12.5
BUCKTAIL #1	MADISON MINING CORP	MMC20614	UNPATENTED	8.2
GOLDEN RIDGE	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN CHOICE	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN CHANCE	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN GULCH	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN HOMESTEAD	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
GOLDEN OVERLOOK	MADISON MINING CORP	MMC20614	UNPATENTED	20.66
EAST FLEEDA NO 1	MADISON MINING CORP	MMC20614	UNPATENTED	18.3
Total Unpatented		**28**		**453.3**
Claim Name	**Owner**	**Mineral Survey No.**	**Claim Type**	**~Acreage**
US GRANT	MADISON MINING CORP	MS1576	PATENTED	20.66
CORNUCOPIA	MADISON MINING CORP	MS10898	PATENTED	19.67
EL FLEEDA	MADISON MINING CORP	MS2739	PATENTED	20.66
PLACER CLAIM	MADISON MINING CORP	MS330	PATENTED	15.3
ALDER GULCH MILL SITE	MADISON MINING CORP	MS10982	PATENTED	4.8
Total Patented		**5**		**81.09**
Total Acres		**5**		**534.39**

4.2 Property Location

The Alder Mountain Project property is located in Sections 26, 27, 34, 35, 20, 21, 29 and 30 Township 6 South, Range 3 West P.M.M., Madison County, Montana, adjacent to the town of Virginia City (Figures 4.1 and 4.2). It is centered at approximately UTM 12T coordinates 426,000mE/5,014,000mN (NAD 83 datum) and lies approximately 80 km southwest of Bozeman, Montana.

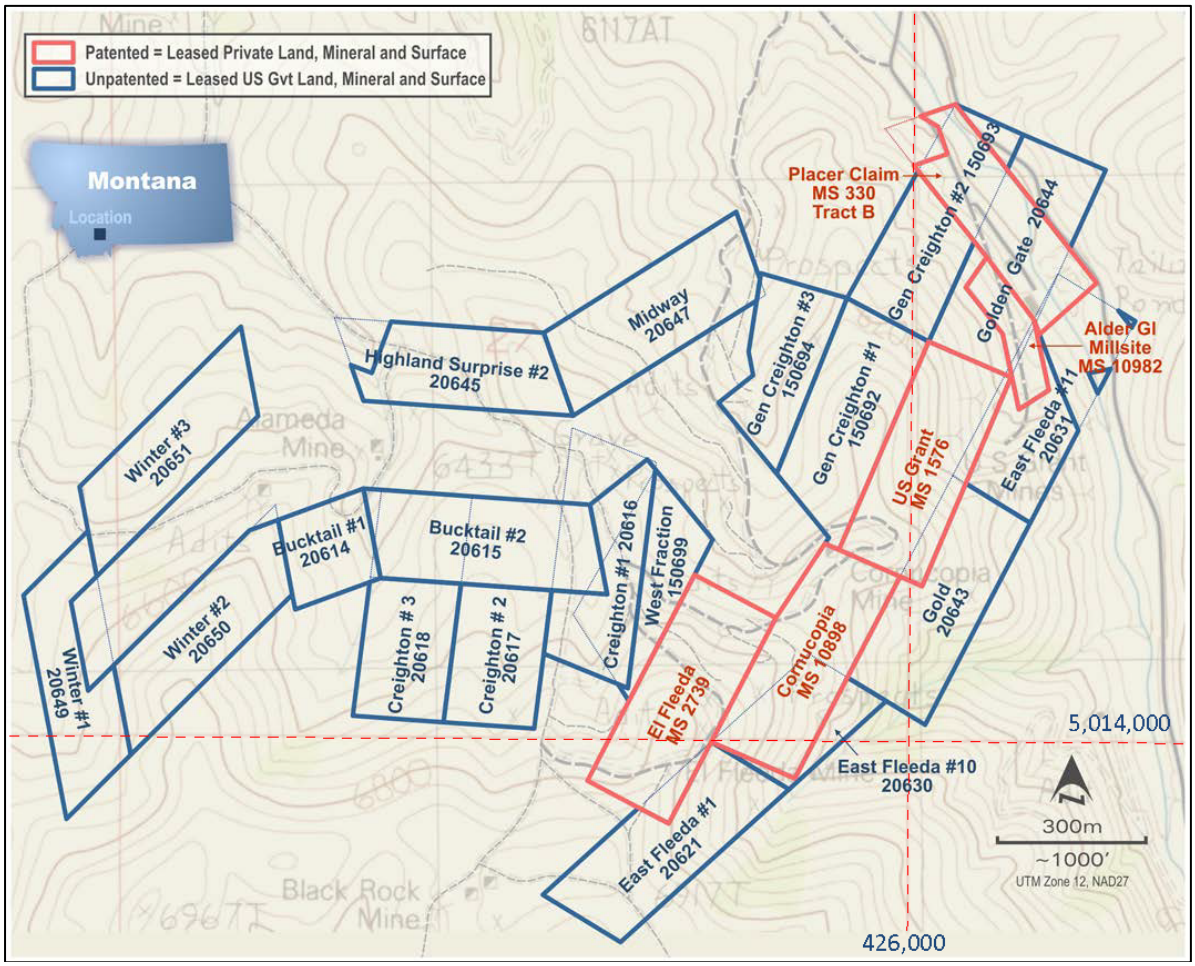


Figure 4.2 Location/Distribution of US Grant Claim Group, Alder Mountain Project
(Source: TCO)

4.3 Mineral Tenure

The US Grant Mine and processing facility is within the claims collectively termed US Grant Claim Group within the Alder Mountain Project property (Figure 4.1, Figure 4.2). Table 4.1 lists the claim names, BLM-MMC claim numbers, and mineral survey numbers as recorded at the Madison County, Montana Courthouse and in Bureau of Land Management (BLM) Land Status records.

United States mining law is based on the principle of extralateral rights, where a miner has a right to claim on public land to mine veins whose outcrops are present on the surface of the claim even though the veins extend under the surface outside of the claim. Extralateral rights is also known as the apex rule or intraliminal right.

There are three requirements to be satisfied before claiming extralateral rights:

1. A claim should be located on the public domain,

2. The apex of the mineral vein lies within the boundaries of a claim, and

3. The mineral vein should dip downward from its apex.

The US Grant vein formed in a particularly persistent and well-mineralized fracture three miles long the apex of which outcrops on the Cornucopia Claim. The vein is generally 2 to 4 feet wide, strikes N30° to 40°E, dips downward 25 to 55°NW as observed on the #3 level. It outcrops discontinuously on the MMC claims from the #2 level portal to the Duncan workings area, a distance of approximately 3,200 feet.

The Cornucopia as well as all other patented claims within the property group were initially public domain lands which where staked and perfected in compliance with the 1872 Mining Act.

4.4 TCO's Interest in the Alder Mountain Gold Project

TCO has an exclusive Option and Lease to Purchase Agreement with MMC and Elite properties for the Alder Mountain Project effective as of January 18, 2016 with the following general terms and conditions:

An exclusive 4-month period for due diligence for $50K and an option to extend the lease an additional 12 months at $25K per month with an election to purchase or withdraw on 3 days notice.

On TCO's election to purchase the following consideration is detailed as such:

Payment 1: USD 2 Million on election to purchase minus the due diligence and lease payments, option must be exercised no later than May 18, 2017

Payment 2: USD 2 Million 12 months thereafter followed by

Payment 3: USD 2 Million 12 months after Payment 2 as final payment

TCO has exclusivity during this period with full use of all equipment on site and the ability to toll treat any mineralized rock with full revenue to the TCO account.

On election to exercise the purchase option, TCO will not be required to pay any trailing royalties to any previous owners and will only be required to pay applicable government taxes and duties.

The reader is cautioned that no mineral reserves or resources had been identified to NI 43-101 requirements previously with only internal numbers to U.S. Securities and Exchange Commission (SEC) classification compiled by companies and authors prior to 1990.

The current status of the agreement is that TCO has elected to purchase the US Grant Mine property with the first payment installment subject to the conditions of the agreement.

4.5 Royalties

No known private royalties are in place against the property.

4.6 Environmental Liabilities

No historic acid mine drainage issue has been associated with the property, and the water discharging from the US Grant Mine level #3 portal was tested in June 2016 and is in compliance with state requirements. The US Grant site does not discharge water to any stream or body of water. The mill recirculates water from the lined tailings pond for process. Future mine waste dumps and low grade stockpiles should be evaluated for composition and areas of placement to insure no future environmental issues arise.

4.7 Permits Required and Status

All mining activities in the state of Montana must be permitted by the Montana State Department of Environmental Quality (DEQ). Under Montana State Statute 82-4-301, mining operations may apply for a Small Miner's Exclusion Statement (SMES) if the following are met.

1. Mining Activities operations less than or equal to 5 acres of total surface disturbance, including roads (unless operator bonds for the roads).
2. May have 2 mine sites of less than or equal to 5 acres of total surface disturbance as long as they are more than 1 mile apart at their closest points.
3. Types of activities may include, but are not limited to: Open Pit, Placer, Underground, Rock Picking etc.
4. An operator may not hold a Small Miner's Exclusion Statement in addition to an operating permit that exceeds 100 acres of permitted disturbance.

The current operations at US Grant Mine qualify for a SMES permit as it is approximately two acres of total disturbance. In January of 2016, TCO applied for and was granted an SMES permit # 25-221 from the Montana DEQ. This permit will remain in effect without modification until the mine area of disturbance exceeds 5 acres. This permit has a bond of USD $14,500 for reclamation. Under the current laws of the State of Montana this is the only bonded permit required for an operation the size and scope of that currently contemplated at the US Grant Mine. These monies have been tendered to the Montana DEQ and are being held by the State of Montana.

The mill at the US Grant Mine property was constructed in 1975 and predates Montana State's SMES permitting. As a result its footage is not calculated in the five acres of

allowed disturbance under the SMES permit and its operations do not need additional bonding or permitting providing it remains within its original footprint.

4.7.1 Cyanide Use in Mineral Processing

The Montana Code, the Administrative Rules and DEQ opinions, together indicate that the use of Cyanide by a Small Miner operation was "grandfathered" in 1998 legislation. As the US Grant Mine was in operation on and prior to November 3, 1998 and US Grant operations qualify, and continue to operate, as a Small Miner. The US Grant Mine has received the appropriate permit approval for cyanide use in its processing operations subject to safety and reclamation requirements. The mine has complied with the Small Miner required provisions of Montana Code §82-4-305.

- The history of the Montana Code, DEQ Opinion, and Montana Administrative Rules is as follows. 1998, Montana Code §82-4-390:

  (1) Open-pit mining for gold or silver using heap leaching or vat leaching with cyanide ore-processing reagents is prohibited except as described in subsection (2). (2) A mine described in this section operating on November 3, 1998, may continue operating under its existing operating permit or any amended permit that is necessary for the continued operation of the mine.
  (History: En. Sec. 1, I.M. No. 137, approved Nov. 3, 1998; and. Sec. 1, Ch. 457, L. 1999) As further detailed in Administrative Rule 17.24.101(4).

- April 13, 2000, the DEQ, having prior taken a contrary position, notified Madison Mining Corp that the grandfather clause for small miner cyanide operations continued in effect pursuant to §82-4-390(2).

- December 19,2000, DEQ Published Rule Requirements included:

  D. SMES Leaching Permit Rules: Adopted on February 18, 1991, these rules require that a small miner intending to operate a cyanide or other metal leaching solvent ore-processing facility obtain an Operating Permit and post an adequate reclamation bond for that part of the operation where cyanide or other metal leaching solvent is used (ponds, leach pads, leaching vats, Merrill-Crowe or carbon plant, LAD areas, detoxification facilities/circuits, etc.). The rules outline the types of information required in baseline study plans, operating plans, and reclamation plans. Bonding is required, and the amount of bond must cover the actual cost of reclamation if it had to be performed by DEQ.

4.7.2 Water Rights

In the state of Montana water rights and permits are regulated by the Montana Department of Natural Resource Conservation. Water Rights in Montana are guided by the prior

appropriation doctrine or “first in time, first in right”. The US Grant Mine has two valid water rights registered with the State of Montana:

- Permit #41C 6164 00 with a priority date of July 15, 1910 allowing .25 cfs from a pump system, and
- Permit, #41C 6165 00 has a priority date of July 15, 1947 allowing 135 gpm from a developed spring on the property.

Both permits are active and in good standing with the State of Montana.

4.8 Risks Affecting Access, Title, or Right to Perform Work

At this point in time, no additional bonding is required for the patented property at the US Grant Mine. Any surface activities or disturbance on the unpatented claims would require approval of the BLM and DEQ. For current bonding status, refer to Section 20.2.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The property is accessible via Montana Highway 287 which crosses the ridge formed by the junction of the Tobacco Root Mountains and the Gravelly Range (Figure 5.1). The highway connects the town of Ennis in the Madison Valley to the east, to Sheridan located in the Ruby Valley to the west and follows the course of Alder Gulch. The historical mining town of Virginia City is situated at the point in the valley where the Tobacco Root Mountains become more subdued and Alder Gulch widens downstream to the west.

5.2 Climate

The climate in the area is typical of the high desert, Rocky Mountain region. It is predominately sunny with temperatures ranges from an average low of 12°F in December to an average high of 82°F in July. Average annual precipitation in Virginia City is around 15 inches, most of which falls in the form of snow.

There is year round access to the US Grant Mine and mill. The roads to the upper mine portals require snow removal to maintain winter access. Geological field work is feasible when the snow clears in April or May and can continue through to November.

5.3 Local Resources and Infrastructure

A three-phase 2200 volt transmission line from Virginia City connects to the transformers at the mill and a single phase 220 volt line supplies the office and living quarters on the property. Water is available from Alder Creek for mill processes under ‘grandfathered’ rights. The US Grant Mine #3 level portal discharges water year-round. A well provides potable water to the office and living quarters.

The towns of Virginia City, Sheridan, Ennis, Whitehall and Butte (Montana) all have experienced mining personnel who could provide a source of exploration and mining manpower.

The majority of the business interests in Virginia City are concerned with tourist activities such as restaurants, theaters, hotels and shops. The buildings and design of the city have been restored to resemble Virginia City during the 19th Century. Regional hunting and fishing opportunities attract sportsmen to the vicinity, as well. The nearby towns of Butte and Bozeman also have regional airports and services to support the mining industry.

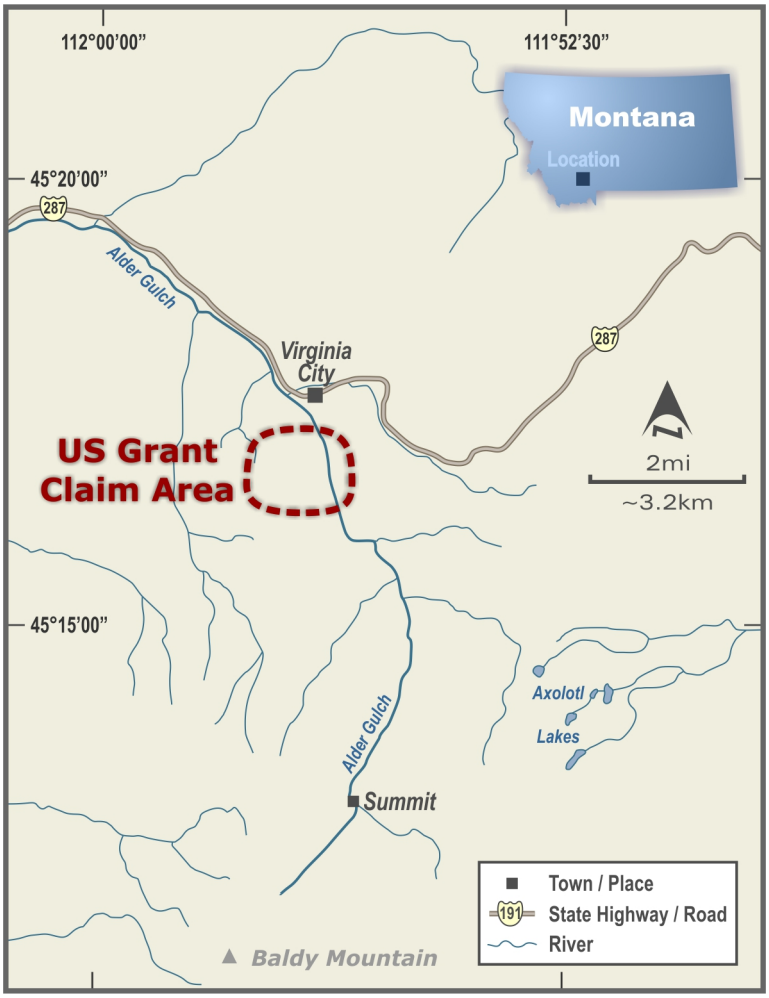


Figure 5.1 Location and Accessibility of US Grant Mine Site
(Source: TCO)

5.4 Physiography and Flora

The topography varies from moderate to gently-rounded ridges and hills in the vicinity of Virginia City to subalpine terrain to the north in the Tobacco Root Mountains and in the

Gravelly Range to the south. The area is incised by two major drainages, Alder Gulch (mentioned above) and Browns Gulch. The Browns Gulch drainage runs generally north-south through the western portion of the VCMD joining with Alder Gulch near Nevada City, just northwest of Virginia City proper. Elevations in the area range from 5,700 feet in the northern part of the district to 8,570 feet in the south. (Childs, 2012) The US Grant Mine property has an elevation range from 5,800 at the mill to 6,800 feet near the upper El Fleeda workings at the highest point.

6 HISTORY

6.1 Prior Ownership and Ownership Changes

The Virginia City placer deposits were discovered in 1863 by William H. Fairweather in Alder Gulch, less than half a mile north of the US Grant Mine property. Over the next 100 years the Alder and Brown's Gulch deposits would become known as some of the richest placers in the United States. Over 2.6 million ounces of gold and 350,000 ounces of silver were recovered from placer operations in the VCMD between 1863 and 1963 (Barnard, 1992).

Lode/vein mining started soon after the placer discoveries as prospectors worked their way up side branches of the main gulches. The El Fleeda claim was staked in 1865 and patented in 1889. The US Grant claim was located lower down the mountain on the same vein structure in 1876 and patented in 1887 (Andrews-Jones, 1987). Little is reported on the Cornucopia claim which is on the US Grant vein and was developed by a shaft and two levels.

Production records for the US Grant Mine are incomplete. No production records for the Cornucopia or El Fleeda mines were found in the MMC files. The property has operated under various ownership intermittently throughout its life, supporting a mill from 1902 to 1907, and was reported to have produced 13,000 tons of high grade mineral in 1916 (Andrews-Jones, 1987).

After a period of inactivity, the US Grant Mine was reopened in 1944 by Walter H. Meyers to provide silica flux for the Anaconda smelter. The US Grant Gold Mining Company was incorporated in December 1944. From 1944 to 1947 production amounted to $600,000 in smelter returns. The Cornucopia Mine was also reopened by Meyers and produced high grade mineral from 1946 to 1952. (Andrews-Jones, 1987).

The US Grant Mine #3 level portal was started in 1949, and the Meyers crosscut was driven from the end of the #1 level to the El Fleeda claim. Additional access to the #1 level, the Blair Tunnel, may have been driven at this time and connects to the Meyers crosscut.

Ed Scheitlin acquired the US Grant Mine property in the early 1970's, initiated mill construction in 1975, and reopened the various levels. In 1978 the property was leased to R & D Minerals of Missoula who operated the mine and mill until litigation closed the operation in 1982.

The property was on care and maintenance status from 1982 to 1986. In late 1986 the US Grant Gold Mining Company of Vancouver, British Columbia obtained the property. From 1987 to 1988 the company rehabilitated the mill and processed mineralized rock and dump material. From this 2,170 ounces of gold and 25,000 ounces of silver were realized at a recovered grade of 0.24 opt Au and 2.77 opt Ag. Mining for this period was documented as 10,600 tons (McLeod, 1990).

In 2007, MMC purchased the Alder Mountain Project group of claims. During MMC and Elite Properties tenure, the mine has had limited development work and was on care and maintenance status. During this period a small amount of toll milling was done for some of the local small mine operators.

Access to the mine currently is through the #3 level as the #1 and #2 levels and the Blair tunnel are closed due to caved ground. Since January 2016, TCO has rehabilitated the US Grant Mine #3 level, ongoing review of the process plant, and is commissioning low grade material through the processing plant while also undertaking various upgrades to the processing facility.

6.2 Previous Exploration and Development

There are numerous paper files and maps that document exploration work done at the US Grant Mine property. MMC files contain data from previous operators for exploration programs between 1979 to 1994.

Ingenuity Exploration of Missoula, Montana mapped and sampled the stopes accessible from US Grant Mine #3 level in 1979 and in 1980 conducted a VLF-EM survey from the US Grant Mine to the Bamboo Chief (Gignoux, 1989a). This work was done for the R & D Minerals Company.

An economic investigation of the property was undertaken from September 1980 to January 1981 by the Kemmerer Coal Corporation of Wyoming as part of due diligence for a potential joint venture with R & D Minerals. This investigation included mapping and sampling of US Grant Mine #3 level, drilling 659 feet in 9 core holes from 4 drill stations on #3 level, surface dump sampling and magnetometer surveys. The underground sampling delineated potential for mineralized shoots below the level. The drilling confirmed vein widths similar to those observed on #3 level, however gold and silver grades were lower than on #3 level. The nine holes covered about 1,300 feet of vein strike and tested to about 50 feet down the dip of the vein below the level.

From November 1987 to January 1988, the US Grant Gold Mining Company drilled 1,878 feet in 13 core holes from the #3 level. About 1,100 feet in 7 holes were drilled from a station approximately 140 feet into the hanging wall of the US Grant vein. The drilling confirmed vein geometries and is described as follows. "*A drilling program in early 1988 was unable to demonstrate the downward extension of the US Grant vein just 70 feet beneath the #3 level - on an oreshoot that had been mined at least 500 feet up dip and 500*

feet along strike. The poor drill results were considered due, in part, to recovery problems." (Gignoux, 1989a). From July to October 1988, Prime Explorations Ltd. of Vancouver, British Columbia contracted Ingenuity Exploration to explore the property. This work included soil geochemistry, VLF-EM surveys and a surface core drilling program of 1,480 feet in six holes. Two of the surface holes intersected significant mineralization with hole USG-88-2 returning 0.31 opt Au and 4.96 opt Ag across a true vein width of 5.6 feet. (Gignoux, 1989a).

Mine plan maps, sample data and stope development longitudinal sections were compiled in the late 1970's by James Ludwick, PE and property owner Ed Scheitlin. The longitudinal sections were digitized for use to support future resource estimation and the overall future production from the US Grant Mine, as well as for current mine and exploration planning.

6.3 Historic Reported Resource

Table 6.1 outlines historic resource estimates compiled by previous companies pre-2001. The author has not done sufficient work to classify the historic estimates as a current mineral resource or mineral reserve, and TCO is not treating the historic estimate as either a mineral resource or mineral reserve as defined in NI 43-101.

Table 6.1 Historic resource estimates to SEC reporting standard

Tons	Au grade opt	Ag grade opt	Category[1]	Information Source[2]
23,000	0.53	16.5	Proven	McLeod, 1990
200,000	0.53	16.5	Probable	McLeod, 1990
158,400	0.3	5	Possible	McLeod, 1990
	recoverable	grade		
	0.23 opt	3.37 opt		McLeod, 1990
110,000	0.53	16.5	Proven	Ludwick, 1977a
183,000	0.53	16.5	Probable	Ludwick, 1977a
34,000	0.53	16.5	Proven	Andrews-Jones, 1987
136,000	0.53	16.5	Probable	Andrews-Jones, 1987
450,000	0.53	16.5	Possible	Andrews-Jones, 1987

[1]NI43-101 corresponding resource categories Proven/Measured; Probable/Indicated; Possible/ Inferred [2]See references for report name to historic author

The most recent historic resource estimate was reported in 1990 prepared for US Grant Gold Mining Company The 1990 historic mineral resources were estimated at 23,000 tons 'proven'; 200,000 tons 'probable'; and 158,400 tons 'possible' based on reporting standards to the U.S. Securities and Exchange Commission (SEC) requirements and definitions at that time. These SEC defined resource categories included in the 1987

estimate as Proven, Probable, and Possible are similar to NI43-101 resource categories of Measured, Indicated, and Inferred, respectively.

It appears that the historic estimates within the reports were based on channel sampling and measured vein widths performed in existing drifts, stopes and raises. Probable and possible estimates were based on projecting the mineralization vertically (along vein dip) and laterally (along vein strike) from the exposed sampled and measured locations within the existing mine workings.

Based on a review of all the historic data, the author concurs that the methods used to estimate the historic resource met industry standards at that time and are reliable. There has been little mining completed since the latest historic estimate and the estimates are supported by recent TCO exploration drilling data and recent TCO exploratory mine drifting data. The author, therefore, believes that the 1990 historic resource estimate is a reliable estimate and still relevant.

It is recommended to upgrade the historic resource estimate to a NI 43-101 compliant mineral resource estimate by using the applicable historic data, recent TCO exploration drilling data, and recent TCO exploratory mine drifting data.

The Qualified Person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves within this report.

6.4 Production from the Property

Historic production is poorly documented at the US Grant Mine property. The mine had developed enough mineralized material to support a mill from 1902 to 1907 and reportedly produced 13,000 tons of high grade mineralized material in 1916 (McLeod, 1990). In 1944 the mine shipped mineralized material as silica flux with reported grades of 0.020 to 0.25 opt Au and up to 16 opt Ag. The reported smelter return averages for the period 1946 to 1952 from the Cornucopia claim are 0.34 opt Au and 14.2 opt Ag. From 1987 to 1988, the US Grant Gold Mining Company milled 9,000 tons from 10,600 tons extracted at a grade of 0.24opt Au and 2.77opt Ag. (McLeod,1990). Production record from 1978 to 1982 under R & D Minerals was not complete.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 District Geology

The geology of the VCMD is dominated by crystalline metamorphic and related igneous rocks of the Precambrian Cherry Creek Formation. To the south Paleozoic sedimentary rocks outcrop in the glaciated upper reaches of Alder Gulch where they form the rugged north facing exposures of Baldy Mountain. Tertiary volcanic rocks cover much of the area to the north and east of Virginia City. Large-scale magmatism with associated

mineralization is represented by the late Cretaceous-Tertiary Boulder Batholith to the northwest and the Tobacco Root Batholith to the north of the district.

7.2 Geological Setting

The US Grant Mine property is situated at the southern end of the Tobacco Root Mountains and is underlain by poly-deformed metamorphic rocks of Archean age assigned to the Cherry Creek Formation (Figures 7.1 and 7.2). The formation is dominated by quartzo-feldspathic and hornblende-biotite-garnet gneisses, with subordinate quartzite, serpentinized peridotite, amphibolite and dolomitic marble (Barnard, 1992). Deformation and metamorphism occurred during two orogenic periods, the first between 2.7 and 2.9 billion years ago (metamorphism to upper amphibolite/lower granulite facies) and the second between 1.6 and 1.9 billion years ago (metamorphic grade to upper amphibolite facies (Despotovic, 2000). Pegmatite dikes, along with other small granitic intrusive bodies of Precambrian age can also be found in the central parts of the district, occurring as both concordant and discordant masses (Eimon, 1997).

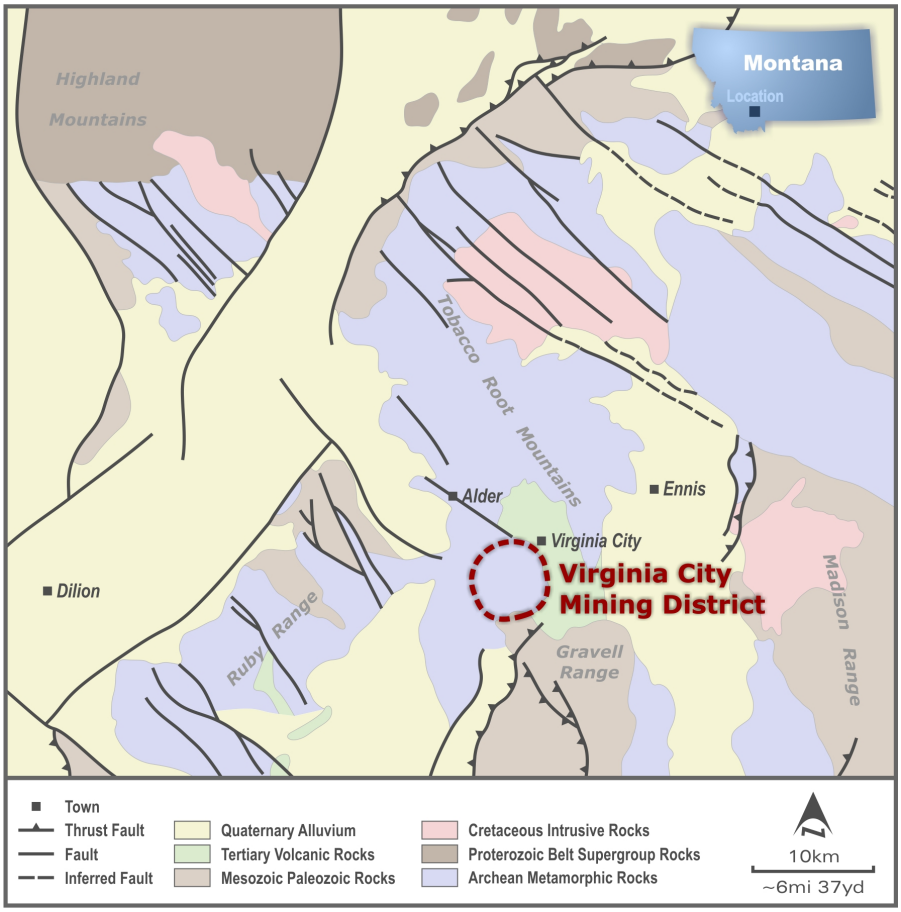


Figure 7.1 Regional geology of southwestern Montana
(Source: Childs, 2012 (modified after Schmidt and Garihan, 1986))

The Tobacco Root Mountains form a large northwest-plunging domal uplift, flanked by younger Paleozoic lithologies deformed during fold and thrust tectonism. Discordant intrusions (e.g. Tobacco Root Batholith) of Cretaceous age are associated with (and/or resulted in) the domal uplift of the Tobacco Root Mountains (Figures 7.1 and 7.2) and are exposed at higher elevations north of the VCMD. Gently dipping Paleozoic limestone, sandstone and shale are exposed in the southern portion of the district, while Tertiary basalt, tuff and sedimentary units occupy the eastern and northern borders of the district. (Childs, 2012).

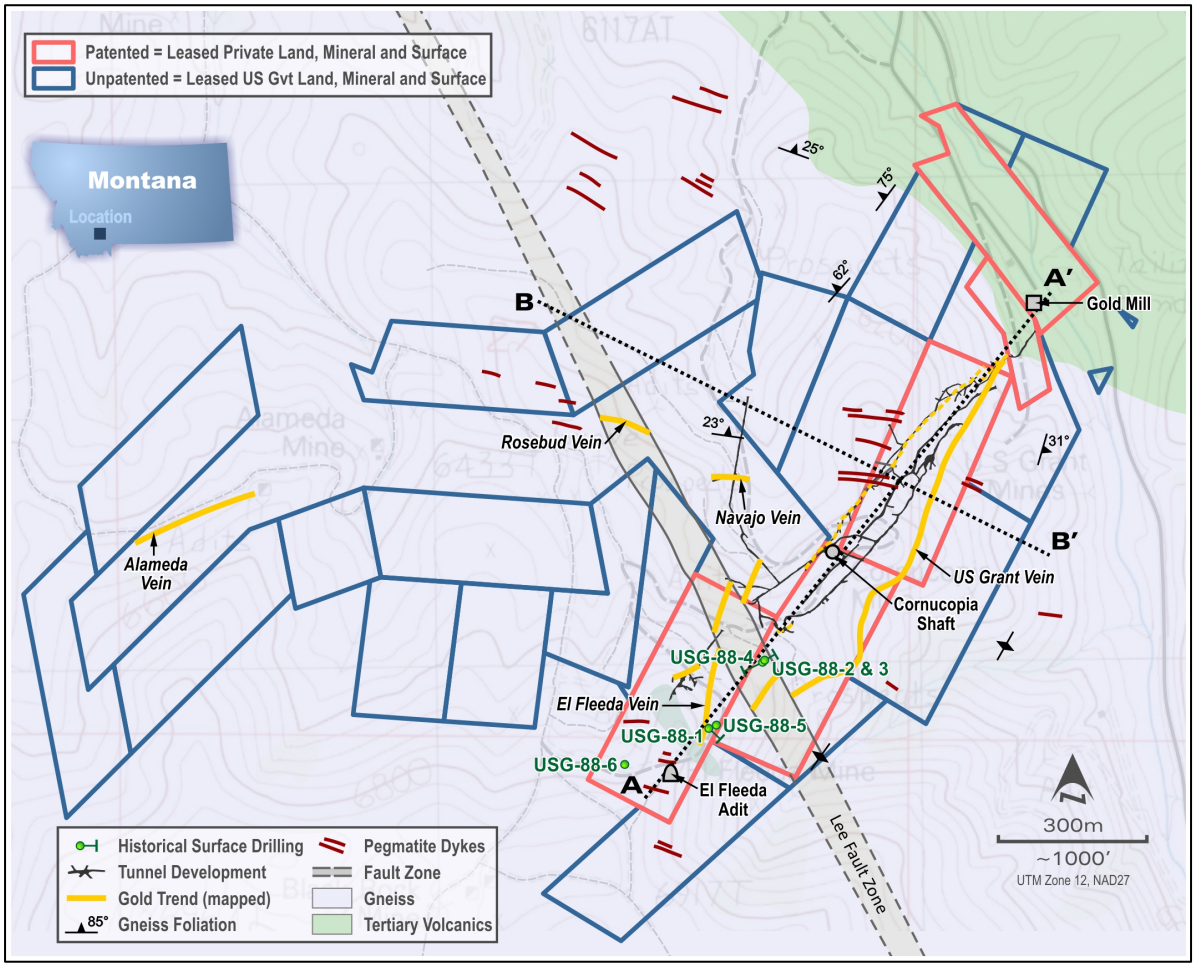


Figure 7.2 Geologic map of the VCMD
(Source: TCO, modified from Gignoux, 1989a and Ruppel and Liu, 2004)

7.3 District Structural Geology Overview

The Precambrian metamorphic rocks display tight northeast-plunging isoclinal folds overturned to the east, developed during early polyphase metamorphism and deformation. Folding in the Paleozoic and Mesozoic sedimentary units is defined by mainly sharp hinged

chevron folds, with either vertical axial surfaces or with bedding overturned on the east limbs of asymmetric anticlines formed during the Cretaceous Laramide orogeny.

Most major faults in the area are east- or northwest-trending strike-slip faults, the most prominent of which is the Virginia City Fault Zone shown in Figures 7.2 and 7.3. These structures have been interpreted as long-lived fault zones initiated in the Early Proterozoic and reactivated several times with movement in various directions since then (Ruppel and Liu, 2004). Northwest and northeast trending faults are also an integral part of the long active fault systems that have controlled regional structure and topography in southwestern Montana to the present (Childs, 2012).

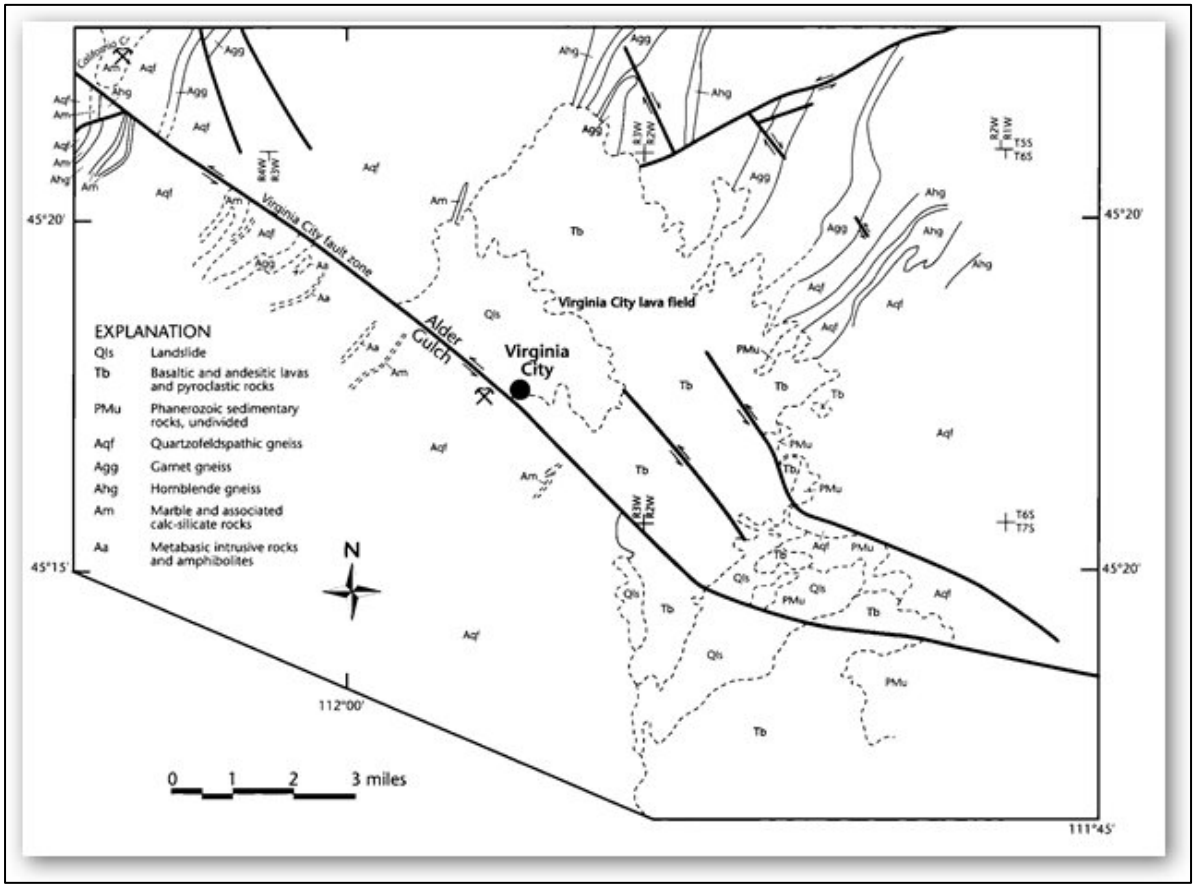


Figure 7.3 Major faults in the VCMD
(Source: Ruppel and Liu, 2004)

7.4 Mineralization Overview

The active debate regarding the age of mineralization in the VCMD is only summarized in this report. One school of thought is that the mineralization is related to the Early Proterozoic intrusive activity that resulted in the formation of the pegmatite and granitoid exposures in the area (e.g. Hammarstrom et al., 2002; Ruppel and Liu, 2004). The second

school of thought (Lockwood, 1990; Barnard, 1992; Eimon, 1997) postulates a buried intrusive of Cretaceous age in upper Alder Gulch. The Precambrian school reasons that if the mineralization is Cretaceous in age, it is difficult to explain the lack of mineralization in the Paleozoic rocks in the area. The Paleozoic carbonates would have been receptive host rocks for mineralization and would have been present during the Cretaceous event. These impure Paleozoic carbonate strata host vein and replacement mineralization in many other districts in Montana. The investigators favoring a Cretaceous age for the veins counter that any deposits that might have developed in the Paleozoic rocks would have been removed by erosion and that this eroded material is responsible for the placer deposits exploited early in the history of the district. The proponents of an Archean age for the veins argue that mass balance calculations suggest that erosion of the upper portion of vein systems hosted by Archean metamorphic rocks could have easily accounted for the prolific placers.

Figure 7.4 shows the hypogene Au:Ag ratios of gold mineralizations in various mines in the district (Shawe and Wier, 1989). The apparent semi-circular distribution of the principal mines and veins (along with considerations of base metal ratios) is cited by some workers as evidence for the existence of hydrothermal activity related to a buried granitic intrusion in the area. The apparent metal zonation would be a result of systematic variations in the interaction between fluids generated by the intrusion and the country rock. Fluid movement would have been facilitated by large (and small) scale structures inherited from earlier tectonism, hence the fairly uniform distribution of vein orientations. Ruppel and Liu (2004) found a similar zonal pattern using Ag:Au ratios rather than the Au:Ag ratios used by Shawe and Wier (1989). A similar semi-circular pattern is apparent in the area when galena: pyrite ratios are considered (Barnard, 1992), further suggesting metal zonation outward from a granitic intrusion. (Childs, 2012)

Four different types of mineralization have been documented by numerous authors for the VCMD. Despotovic (2000) summarized them as follows (three are listed in Table 7.1):

Easton/Pacific Type: Northwest curvilinear, steeply dipping quartz veins and breccias with strongly argillized metamorphic host rocks.

Bartlett Type: Quartz vein systems hosted in silicified dolomitic marble and along contacts between marble and gneiss.

Kearsarge Type: North-northeast trending shear zones with multiple quartz veins in rubble zones with clay gouge.

Lucas/Atlas Type: Fracture-controlled veins with K-feldspar, chlorite and carbonate alteration.

The US Grant vein strikes N30° to 50°E and dips 25° to 60°NW. The vein ranges from a few inches to five feet wide, and is comprised mostly of quartz with variable amounts of wallrock inclusions and sulfides. Gold and silver bearing pyrite is the most common sulfide mineral and occurs as individual grains, clots, and veins. The vein is partially oxidized on the #2 level; iron oxides are by far most common. Minor amounts of copper oxides are

present and are associated with high gold and silver values. The vein is usually associated with coarse grained feldspar rich pegmatite and silicified gneiss/pegmatite breccia. This silicified zone can host low grade mineralization and is generally mined along with the vein.

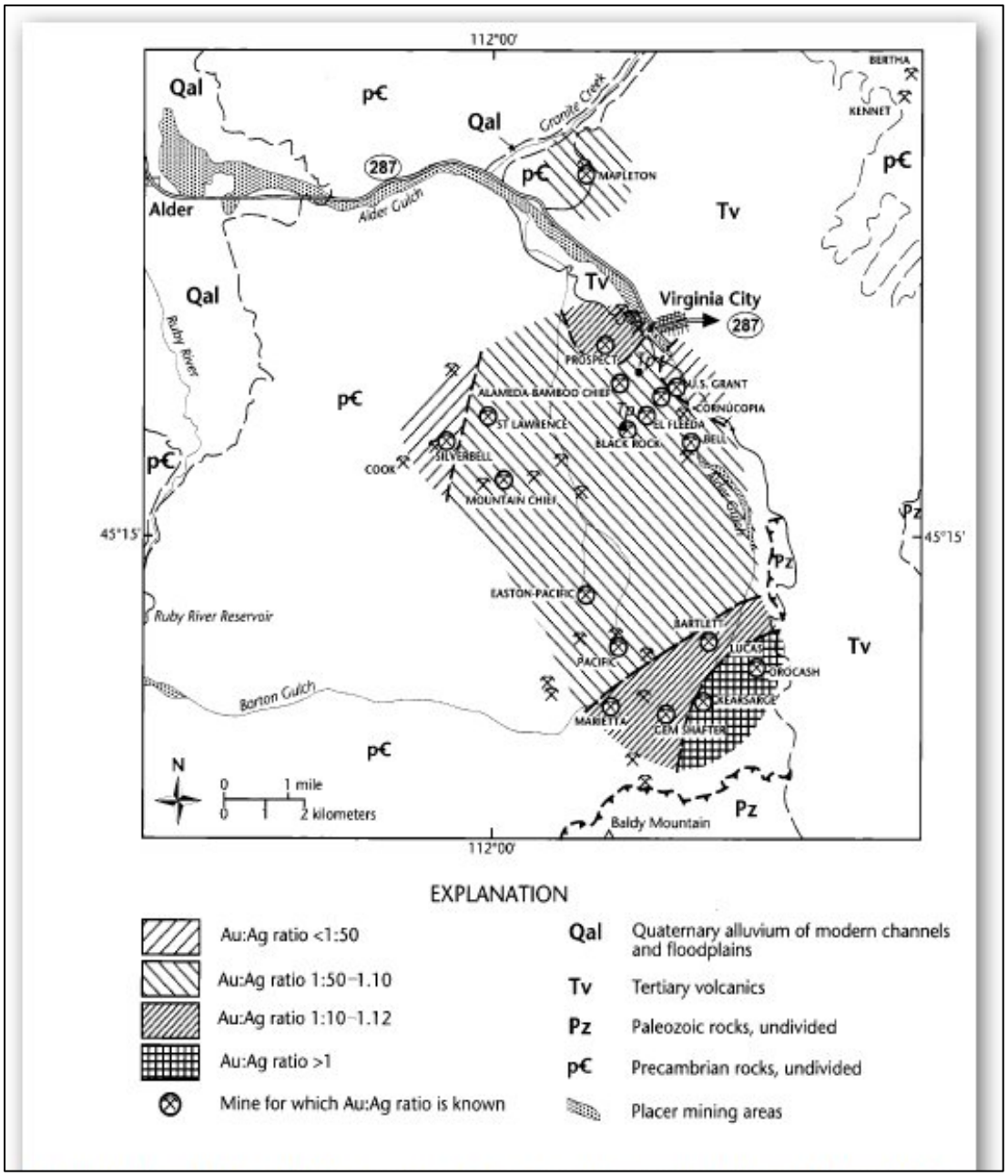


Figure 7.4 The VCMD showing zoning of Au:Ag in gold mineralizations
(Source: Shawe and Wier, 1989)

Table 7.1 Vein types in the VCMD (after Hammarstrom et al., 2002). See Figure 7.4 for a map displaying the locations of some of the veins listed in Table 7.1 and Table 7.2

Spatial Orientation	NW-trending veins	NE- trending veins	
		Bartlett Type	Kearsarge Type
Host Rock	Archean metamorphic rocks	Silicified dolomitic marbles in Archean rocks	Archean metamorphic rocks
Mineralogy	Acanthite, gold, auriferous pyrite, argentite, galena, chalcopyrite, tetra-hedrite, sphalerite, stibnite	Gold, pyrite, chalcopyrite, tetrahedrite	Gold, pyrite, chalcopyrite, sphalerite, galena, tetrahedrite, minor arsenopyrite, tellurides
Supergene Minerals for all types	Goethite, hematite cerussite	Chalcocite, clays hemimorphite	Chyrsocolla, Mn-oxide
Gangue	Quartz, K-feldspar	Quartz, ankerite	Quartz, K-feldspar, calcite, graphite, barite
Dominant Alteration Type	Argillic alteration	Carbonate, graphite	K-feldspar, carbonate, +/- chlorite, graphite, sericite
Mines, prospects and named vein systems	Easton-Pacific, Prospect, Alhambra, Winnetka, Bell, Prospect, Mapleton, Kid vein (Browns Gulch adit) Pearl vein (Hungry Hollow Gulch)	Bartlett, General Shafter	US Grant, El Fleeda, St. Lawrence, Silver Bell, Cornucopia, Black Rock, Fork, High-Up, Irene, Kearsarge, Big Vein, Oro Cache, Garrison, Lucas-Atlas

Table 7.2 Trends of some of the principal quartz veins in the VCMD
(Source: Ruppel and Liu, 2004)

Northeast	Northwest
Kearsarge – Apex N25–35E, 65W - Vertical	Easton-Pacific N48 – 57W, 68–78NE
General Shafter – Keystone NE	Prospect-North End-Excelsior N45–60W, 75NE
Marietta – Irene N45E, 35–50SE	Black Eagle NW, 75NE
US Grant-Cornucopia-El Fleeda-Black Rock N40–60 E, 30–50W	Mapleton N35W, 70N
Silver Bell N50E, 60W	Native Silver NW, 55N
High Up NE, 70N	

7.5 Property Geology

The US Grant Mine property is predominantly underlain by hornblende and biotite gneiss and schist of the Precambrian Cherry Creek Formation of volcano-sedimentary origin. The Precambrian gneisses have been sheared along four structural directions but principally the northeasterly and northwesterly. These rocks have been folded, faulted and metamorphosed to amphibolite facies. Zones of mafic and ultra-mafic composition, limey siltstones and sandstone and garnetiferous horizons exist in the quartzo-feldspathic gneisses. Numerous coarse grained quartz, potassium feldspar, biotite pegmatite dikes intrude the gneisses along WNW to ENE trends. Pegmatitic quartz/feldspar ±biotite is associated with the US Grant vein where observed on #3 level.

The predominant structural trend of the property is generally parallel to the NE-SW foliation of the gneisses and schists. The US Grant and El Fleeda veins strike N35° to 50°E and dip 20° to 60°NW. Vein orientation and host rock foliation are nearly parallel. A second structural trend is well defined by WNW-trending coarse grained quartz-potassium feldspar ±biotite dikes. Numerous examples of these, along with steeply dipping WNW-trending faults and joint sets, occur at US Grant Mine #3 level.

Tertiary volcanics cover extensive areas to the NE of the property and are exposed for the first 175 feet of US Grant #3 level. The poorly sorted matrix supported debris flow has clasts of gneiss, sediments and basalt in a hematite rich sandy matrix. Several small intrusive plugs of Tertiary age have been mapped in the VCMD (Andrews-Jones, 1987). A basaltic plug forms the crest of 'El Fleeda Hill', the highest point on the property at 6,840 feet elevation. The NE trending vein system continues to the southwest and has been prospected by the Duncan, Blackrock and Homestake workings.

A NNW trending fault was reported to cut off the US Grant vein on the Cornucopia #1 level. This fault, or fault zone, forms the offset between the US Grant and El Fleeda veins on the SW portion of the property and is a prominent feature of the Ingenuity Exploration surface map. This fault zone, named here the Lee Fault zone, contains offset portions of both the US Grant and El Fleeda veins (Figure 7.2) (Gignoux, 1989a).

7.6 Property Mineralization

Most of the gold and silver mineralization at the US Grant Mine property is confined to narrow quartz veins hosted by quartzo-feldspathic gneiss and is of high-level, epithermal, fissure-vein type. The quartz veins are typical lode-fissure types formed by silicification, potassic alteration and brecciation with associated mineralization. The mineralization consists mostly of pyrite with minor amounts of galena, sphalerite, chalcopyrite, tetrahedrite, argentite, gold and electrum.

Higher gold values are generally associated with higher percentages of pyrite and trace amounts of galena and sphalerite.

TCO samples of quartz veining with massive pyrite veins up to 6 feet wide assayed 0.902 opt gold and 31.03 opt silver. The gold is usually very fine grained and is rarely visible. The transition from sulfide to oxide mineralization varies in elevation and is generally between the #3 and #2 levels. TCO sampling above #3 level was still in transitional mineralization at about the elevation of the Cornucopia #2 level at approximately 5,980 feet msl. Limited inspection of the #2 and #1 levels due to caved ground conditions shows oxidized vein mineralization with rare zones of partially oxidized pyrite.

The US Grant vein system strikes N40°E and as an average dip of 42°NW (Ludwick, 1977a). It has been traced continuously across five claims, the US Grant, Cornucopia, El Fleeda, Homestake and Blackrock, a distance of 1 mile (Andrews-Jones, 1987). The vertical continuity of the mineralization is about 900 feet as demonstrated by the elevation of highest workings at the Duncan decline (~6,825 ft msl) and lowest workings at #3 level (~5,910 ft msl). Vein thicknesses of up to 12 feet have been observed in some of the stopes, however the average vein width is 3 to 5 feet. (Ludwick, 1977b).

8 DEPOSIT TYPES

The historic lode style mines in the VCMD were underground operations that followed quartz veins, lenses, breccias and faults in strongly fractured and sheared Archean quartzofeldspathic gneisses. The mineralization is generally contained in tabular zones, with tabular alteration haloes, localized in fault and fracture systems that parallel regional structures. The veins are typically narrow, in the three to five foot range, but can reach widths of eighteen feet (Kearsarge mine). The mineralized structures often display gouge zones, with multiple stages of quartz deposition, multiple brecciation events and, locally, mylonitic textures (Eimon, 1997). The intersection of northwest and northeast trending veins, in some cases, has resulted in the development of larger mineralized bodies (e.g. Easton-Pacific vein intersecting Marietta-Irene vein, Eimon, 1997). Some of the wider vein zones consist of multiple, closely spaced veins or lenses with pockets of high grade mineralization. Disseminated mineralization in the wall rocks is found in some locations (Hammarstrom et al., 2002). (Childs 2012).

The NE trending US Grant vein is similar to other fissure veins of the VCMD. Exploration and development of the US Grant vein has been mostly by drifting or raising on the vein to delineate mineralized shoots. The vein on #3 level is in sulfide mineralization and has been drilled to depths of less than 75 feet below the level. Depth extensions of the mineralized shoots defined on and mined above #3 level can be drilled from surface using the current road network or underground, from pre-existing and planned drill stations.

9 EXPLORATION

There has been minimal exploration on the property to date with exploration work largely limited to progressively working from the US Grant Mine to its extensions. Some VLF-EM surveys were undertaken in 1988 that indicated highs in the planes of the vein. There is limited drilling undertaken on any of the claims by previous prospectors and companies as the veins in general were outcropping and developed on vein into the mountainside.

A systematic and planned exploration program has been developed to be progressive from the main mineralized source of the US Grant Mine, and is subject to further funding in the future. As the drill programs are finalized, drilling permits will be acquired and be in place prior to commencement of the drilling program.

9.1 Geological Mapping and Prospecting

The regional mapping to date is based on historic records with spot field checks on the ground by TCO to ascertain rock type and vein positions. Some samples were taken at dumps and veining, where exposed, predominantly for gold and silver.

9.2 Sampling Method and Approach

In October 2015, 38 channel samples of mineralized vein were taken on the US Grant Mine #3 level by TCO personnel. Four hundred feet of strike length was sampled on 10 foot centers, where ground conditions and pillar location permitted, between 950 feet to 1,350 feet from the portal. Access to #3 level was limited to the first 1,400 feet due to caved ground conditions. The 400 foot section from 950 to 1,350 feet was selected based on elevated gold and silver values from two previous sampling programs completed in 1980 and 2012. The samples were taken using hammers, chisels and tarps. Three to seven pounds of vein material was collected at each site. Due to the flat dip of the vein (45° or less), samples were collected from the back and ribs of the #3 level drift. All samples were held in secured, safe storage in the MMC assay lab, located in the mill building, and delivered to American Analytical Services in Osburn, Idaho (ISO-17025).

By May 2016, access was gained to the remaining approximate 1,000 feet of #3 level and to approximately 250 feet of vein above #3 level. An additional 60 samples were taken by the methods described above, 37 from #3 level and 23 from workings above #3 level. These samples were taken from 1,600 to 2,450 feet from the portal. Samples from this program were securely stored in the mill assay lab prior to delivery to Norris Labs, about 30 miles away in Norris, Montana (TCO, 2016).

9.3 Significant Results and Interpretation of the Exploration Information

TCO sampling on the US Grant Mine #3 level supported the results of two previous sampling programs documented in the MMC files:

1. The drift back and rib sampling by the Kemmerer Coal Corporation was on 25 foot centers in 1980. Physical evidence of this sampling is difficult to recognize in the drift as

Kemmerer Coal Corporation assigned a footage designation to the samples in their report and the sample tags remaining at the mine are not labelled as such.

2. RX Exploration sampled the #3 level in 2012. They sampled on 20 foot centers where it was possible. Most of their samples are marked with flagging and their corresponding sample numbers were verified by TCO.

Most of TCO recent sampling was on 10 foot centers while some is at 20 foot or greater centers due to stope and pillar locations. This sampling delineated two mineralized zones that are targeted for exploration and development by TCO. Table 9.1 compares TCO's current sampling results against historic sampling programs. The vein mineralization sampled on #3 level is primarily sulfide. To approximately 50 feet above #3 level, the vein is partially oxidized with mixed zones of sulfide and oxide mineralization. Oxidation increases with elevation. At the Cornucopia #2 level the vein is oxidized with minor remnant sulfide zones.

Table 9.1 US Grant Mine #3 level channel sampling: comparative results

U.S. Grant #3 level sampling 950 to 1,350'			
TCO	Width (ft)	Au (opt)	Ag (opt)
	2.2	0.238	14.9
Kemmerer Coal Co.	Width (ft)	Au (opt)	Ag (opt)
	4.1	0.183	7.5
RX Exploration	Width (ft)	Au (opt)	Ag (opt)
	2.7	0.254	16.0
U.S. Grant #3 level sampling 1,590 to 2,240'			
TCO	Width (ft)	Au (opt)	Ag (opt)
	3.1	0.142	3.4
Kemmerer Coal Co.	Width (ft)	Au (opt)	Ag (opt)
	3.6	0.046	1.7
RX Exploration	Width (ft)	Au (opt)	Ag (opt)
	3.4	0.127	4.6

The results of TCO vein sampling of #3 level from 950 to 1,350 feet and 1,600 to 2,320 feet from the portal are presented in Appendix B.

Figure 9.1 and Figure 9.2 are the plan and longitudinal section views of the #3 level sample results from 950 to 1,350 feet from the portal.

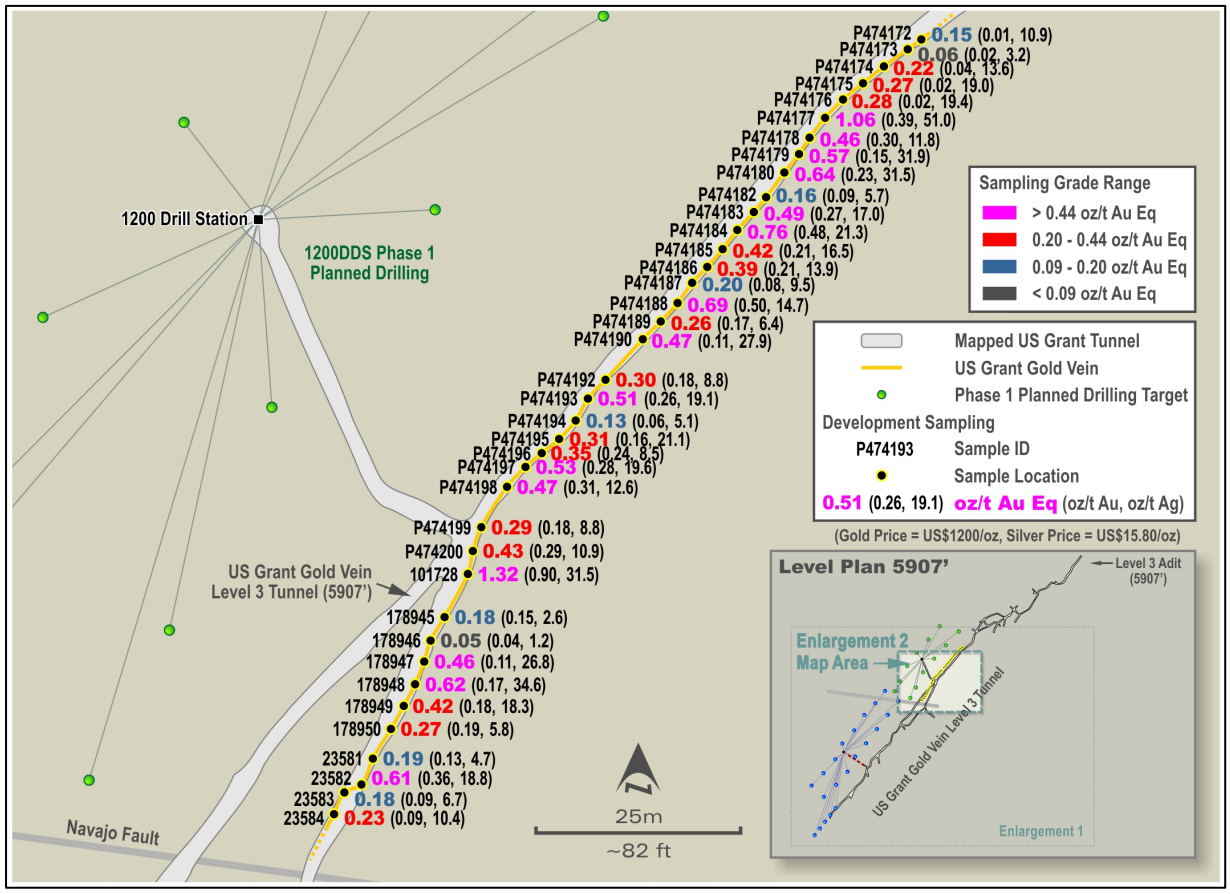


Figure 9.1 Plan view of the #3 level channel sampling, 950 to 1,350 feet in from portal
(Source: TCO)

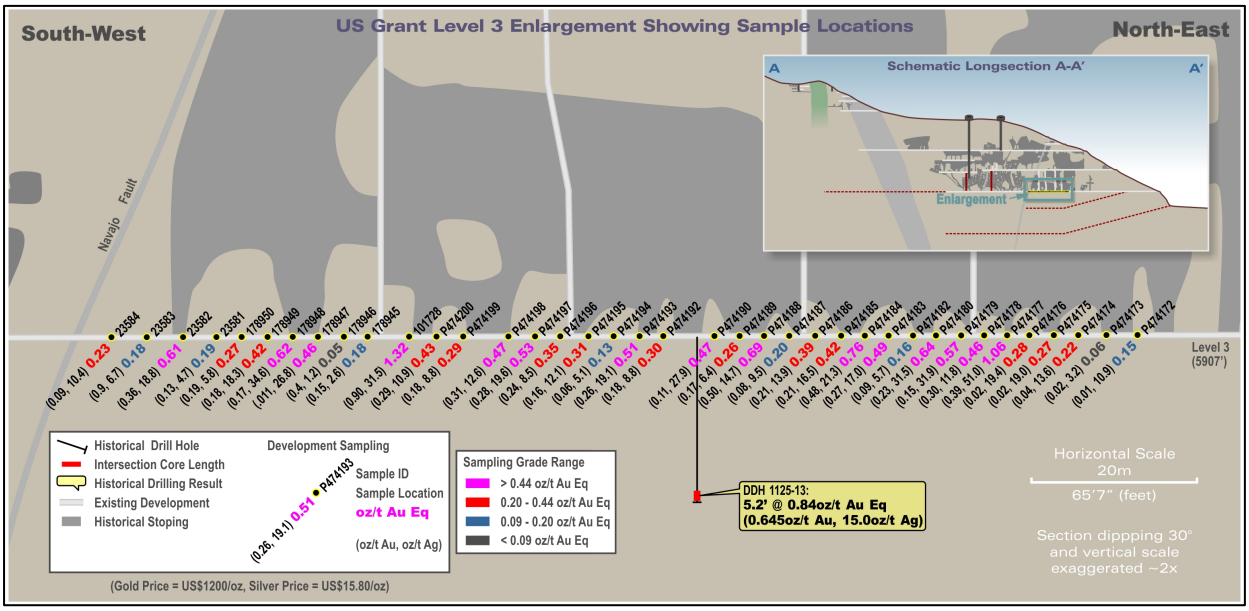


Figure 9.2 Longitudinal section view of the #3 level channel sampling, 950 to 1,350 feet in from portal
(Source: TCO)

Figures 9.3, 9.4 and 9.5 show the assay results from the TCO May/June 2016 sampling program at the #3 level from 1,600 to 2,320 feet from the portal in plan and longitudinal section view.

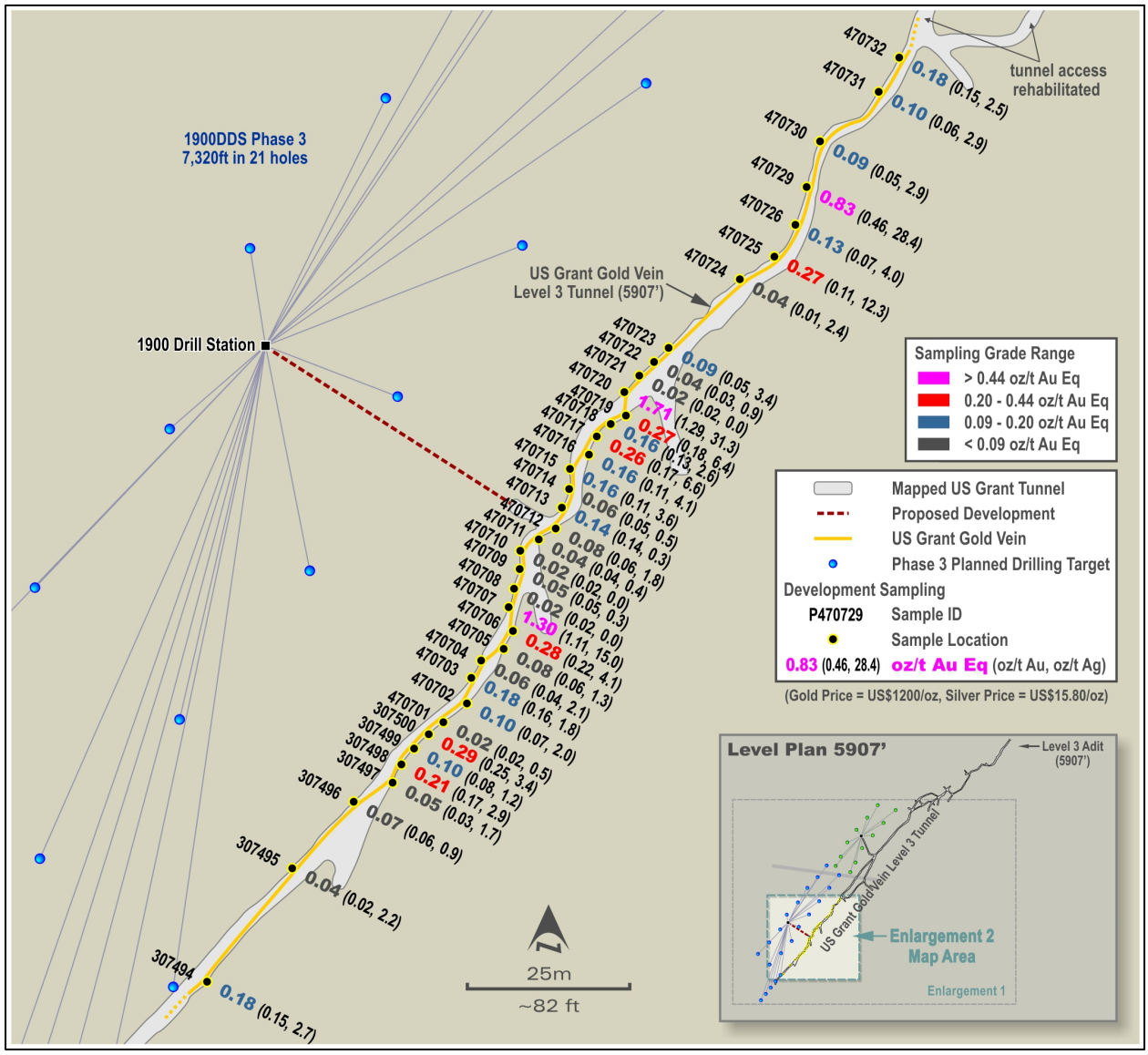


Figure 9.3 Plan view of the #3 level channel sampling, 1,600 to 2,320 feet in from portal
(Source: TCO)

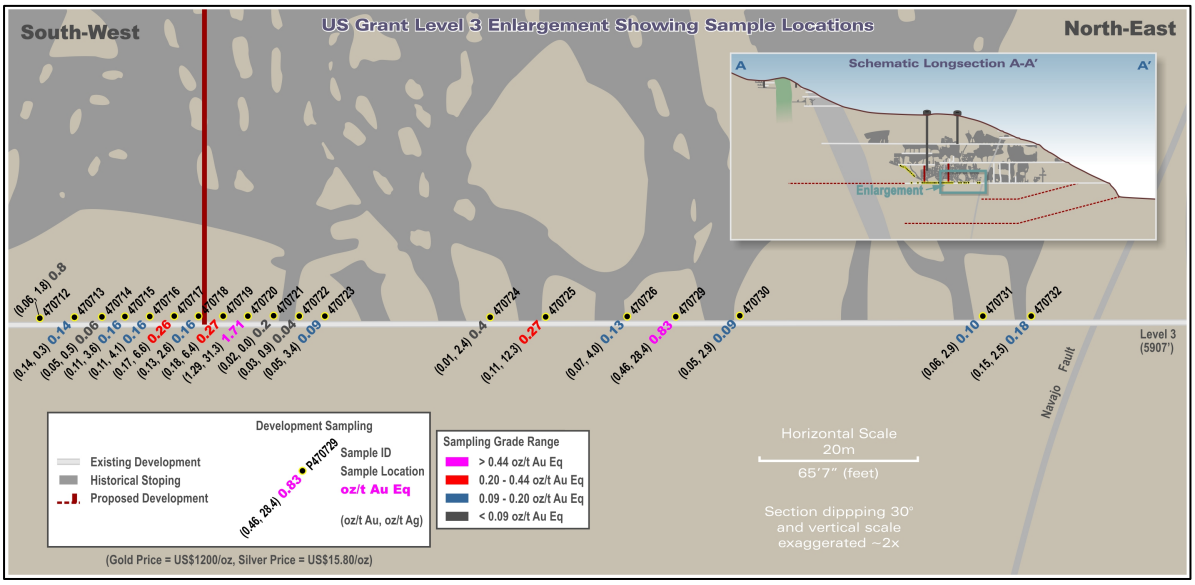


Figure 9.4 Longitudinal section view of #3 level channel sampling, 1,600 to 1900 feet in from portal
(Source: TCO)

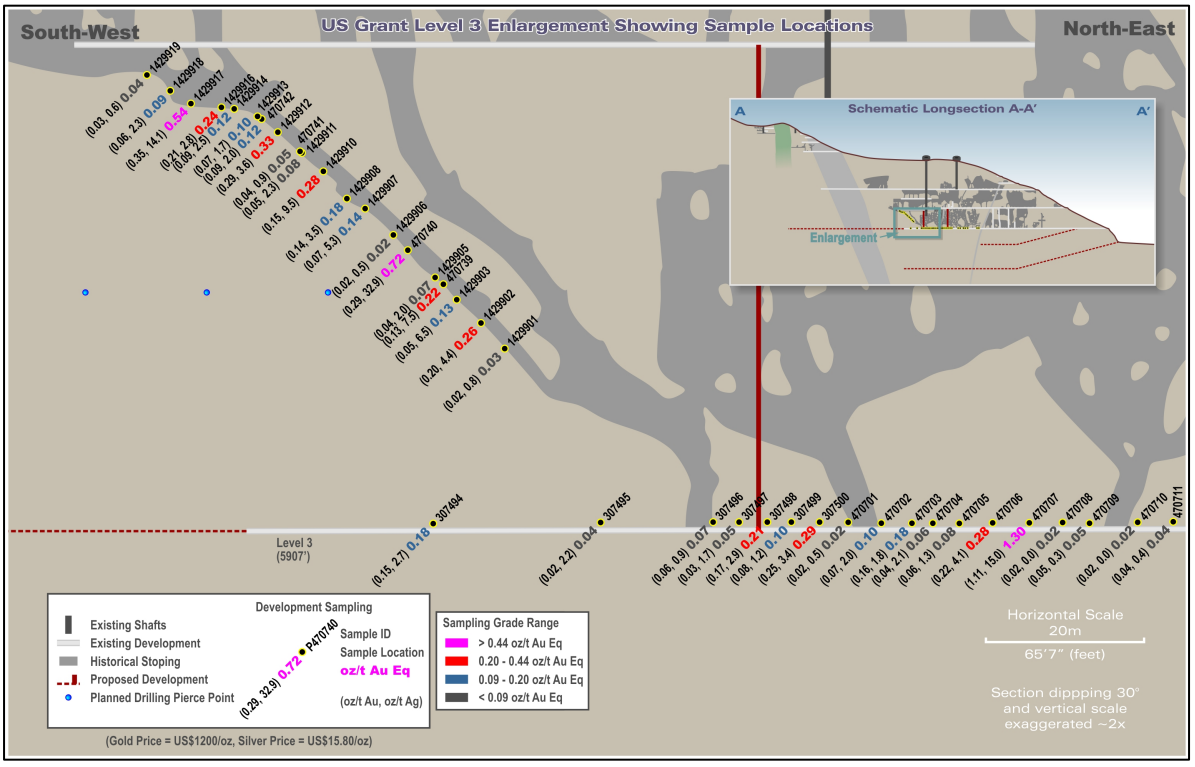


Figure 9.5 Longitudinal section view of #3 level channel sampling, 1,900 to 2,320 feet in from portal
(Source: TCO)

9.4 Exploration Target Potential

Current and future exploration programs include grid drilling the down-dip projections of the US Grant, El Fleeda and Golden Boy Vein systems to depths of 400 to 1,200 feet below their lowest exposure levels. These programs have the target potential to add up to approximately **1.7- 2.6 million tons, with grade range of 0.19-0.28 opt equivalent gold (Au Eq)** (approximate range of 350,000 to 750,000 Au Eq ounces) to the US Grant Mine property on successful conversion and completion*. The equivalent gold grade used to quantify the exploration potential for this drill program is based on US$1200 Au/ounce and US$15.80 Ag/ounce.

**The potential quantity and grade stated of any future drilling is conceptual in nature as there has been insufficient exploration to define a mineral resource. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

TCO has planned an extensive staged drill program from both surface and underground using the various maps and compilations in the MMC files, and is subject to further funding in the future. The gridded topography map prepared by Ingenuity Exploration Inc. (1988) was used by TCO as the basis for the surface exploration drill targeting and planning. This map is a compilation of geological mapping, VLF-EM surveys and vein targets, vein outcrop locations, prospect pit locations, surface drill hole locations, projections of the underground workings and structural projections from the underground workings. Section 10.2 details TCO surface drilling completed to date.

The Ingenuity Exploration's surface traces of the US Grant and El Fleeda veins are based on outcrops, prospect pits and mine workings and review of aerial photographs. Field checks by TCO personnel verified the location of the surface traces of both veins. These traces were used to project the vein targets down dip at 45° on 100-foot vertical intervals. The El Fleeda vein orientation in the area of the El Fleeda #4 adit was projected from the level plan and stope map rather than Ingenuity's surface trace which is the alignment of El Fleeda #4 with the progressively higher El Fleeda #s 3, 2 and 1 adits.

Table 9.2 summarizes the exploration potential for various target areas at the Alder Mountain project. Figure 9.6 shows the exploration potential of the US Grant vein. Two target areas are defined by the Ingenuity Exploration Inc.'s surface drilling: USG-88-2 and USG-88-6. The USG-88-2 target area has the potential for adding approximately 236,000–354,000 tons of mineralized rock containing 73,000-164,000 equivalent gold ounces at 0.30-0.46 opt Au Eq generated from a designed 31,000 feet of surface core drilling in 57 holes (Table 9.2)*. Tonnages are based on a median of 4 feet, a tonnage factor of 11.5 cubic feet per ton. The USG-88-6 target area is southwest of the basalt plug and below the Duncan workings which exploited the US Grant vein near surface. The USG-88-6 target area has the potential for adding approximately 228,000 – 342,000 tons containing 37,000-84,000 equivalent gold ounces at 0.16-0.24 opt Au Eq (Table 9.2)*. **The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

The exploration potential of the El Fleeda Vein is shown in Figure 9.7. Approximately 32,000 feet of drilling would be required to delineate 452,000–678,000 tons of mineralized rock containing 73,000-165,000 equivalent gold ounces at 0.16-0.24 opt Au Eq (Table 9.2)*. All drilling can be done using the current road network with the majority of the drill sites from pre-existing and planned drill stations located on MMC patented claims. If access to the Blair tunnel and Meyers cross-cut can be gained a substantial portion of the drilling can be done from underground.

**The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

Table 9.2 "Exploration target" potential at Alder Mountain Project[1,2,3]

Exploration Area	Tons	Au opt	Ag opt	Au Eq opt	Au Eq oz	Drill Footage
US Grant Vein - Underground drilling	236,000 - 354,000	0.14 - 0.22	6.72 – 10.08	0.23 – 0.35	55,000 – 124,000	37,500
US Grant Vein - Surface USG-88-2 block	236,000 - 354,000	0.25 – 0.38	4.00 – 6.00	0.30 – 0.45	73,000 - 165,000	31,000
US Grant Vein - Surface USG-88-6 block	228,000 - 342,000	0.08 – 0.12	6.32 – 9.48	0.16 – 0.24	37,000 – 84,000	18,000
El Fleeda Vein - Surface drilling	452,000 - 678,000	0.12 – 0.18	3.20 - 4.80	0.16 – 0.24	73,000 – 165,000	32,000
Golden Boy Claims Group	278,000 - 417,000	0.12 – 0.18	3.20 - 4.80	0.16 – 0.24	45,000 – 102,000	6,500
Lee Fault Zone	320,000 - 480,000	0.12 – 0.18	3.20 - 4.80	0.16 – 0.24	52,000 – 117,000	7,500
Totals:	**1,750,000 - 2,625,000**	**0.14 - 0.20**	**4.20 – 6.28**	**0.19 – 0.28**	**335,000 – 757,000**	**132,500**

[1]Vein thickness averages 3-5 ft and 400-1200 ft were used in these target size estimates

[2]Equivalent Au is based on US$1200 Au/ounce and US$15.80 Ag/ounce

[3]The potential quantity and grade is conceptual in nature as there has been insufficient exploration to define a mineral resource. It is uncertain whether further exploration will result in the exploration target being realized.

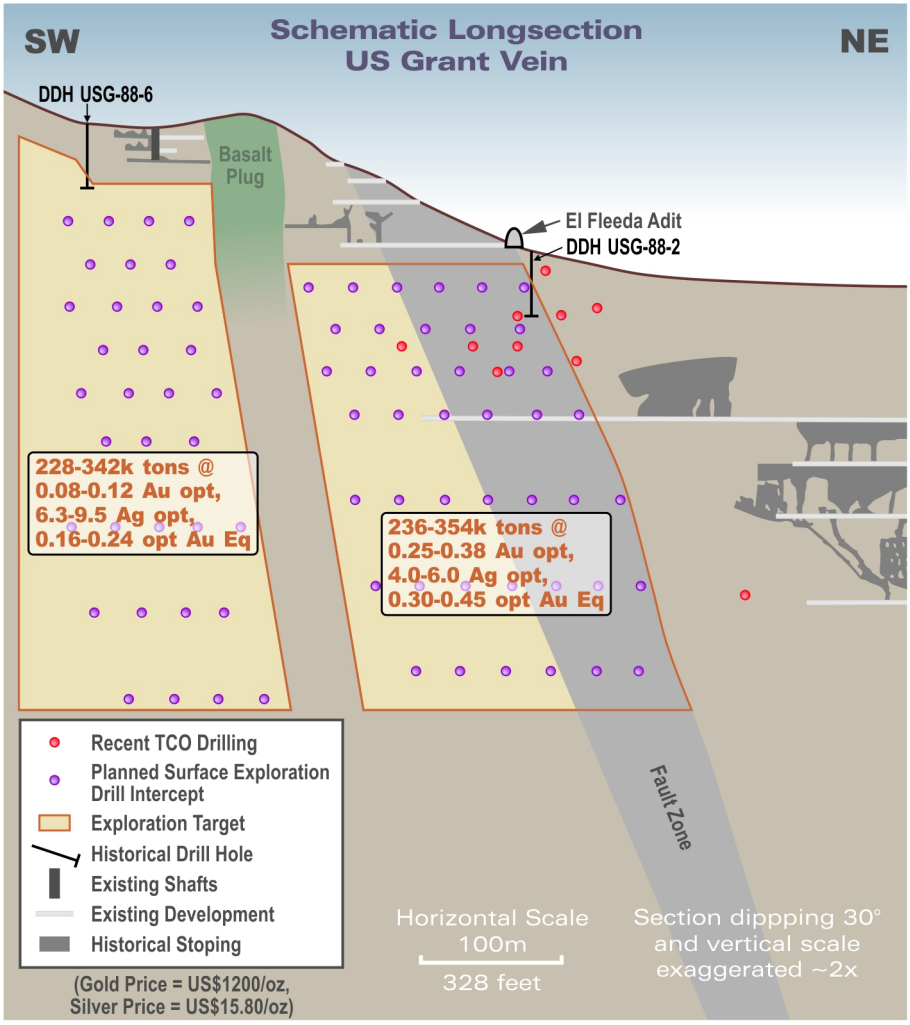


Figure 9.6 Inclined longitudinal section view of the US Grant vein looking N42°W – Exploration Target Drilling
(Source: TCO)

**The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

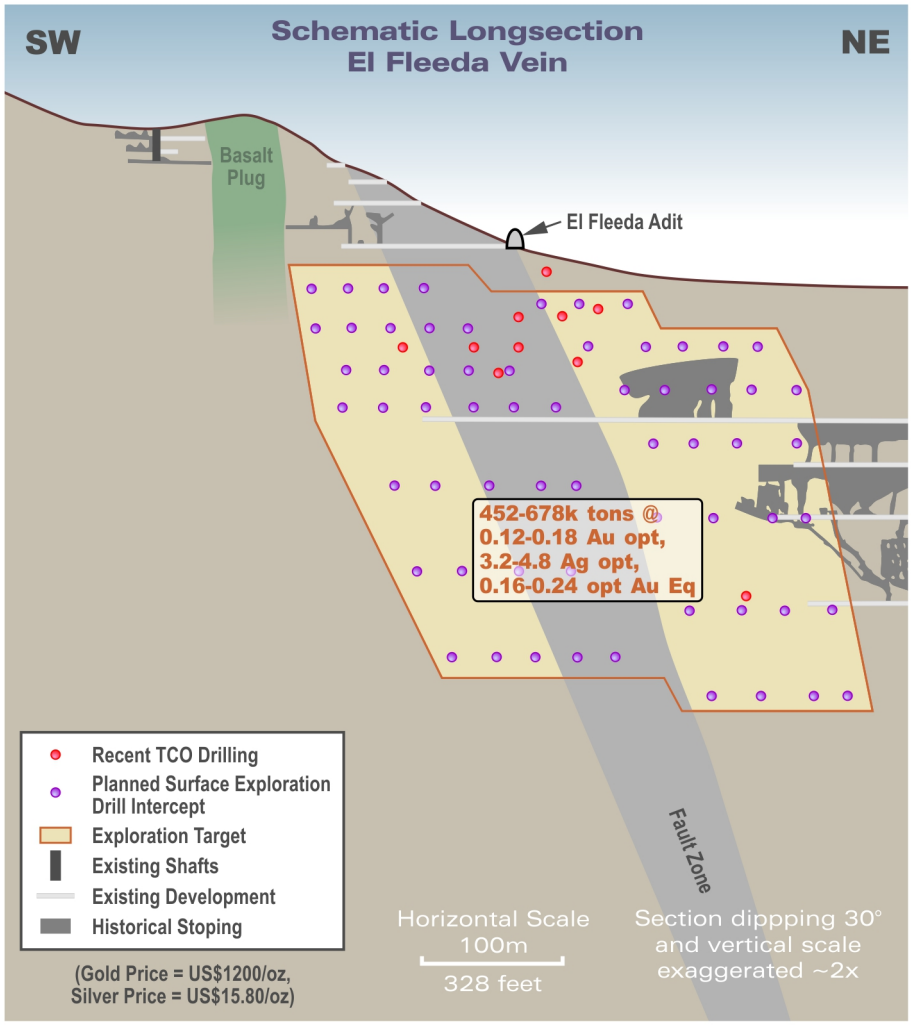


Figure 9.7 Inclined longitudinal section view of the El Fleeda vein looking N42°W – Exploration Target Drilling.

(Source: TCO)

**The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

The TCO sampling and mapping on #3 level formed the basis for targeting the US Grant vein below the level. About 1,800 feet of vein strike will be tested to 500 feet below #3 level. This drill program entails a designed 37,500 feet drilled in 92 holes from four stations. About 825 feet of drift development and station excavation would be required to complete this program. This program has the potential to add 55,000-124,000 equivalent gold ounces contained in approximately 236,000-354,000 tons of mineralized rock at 0.23-0.35 opt Au Eq (Table 9.2)*. Figure 9.8 shows the exploration potential for this drill program. **The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource*.

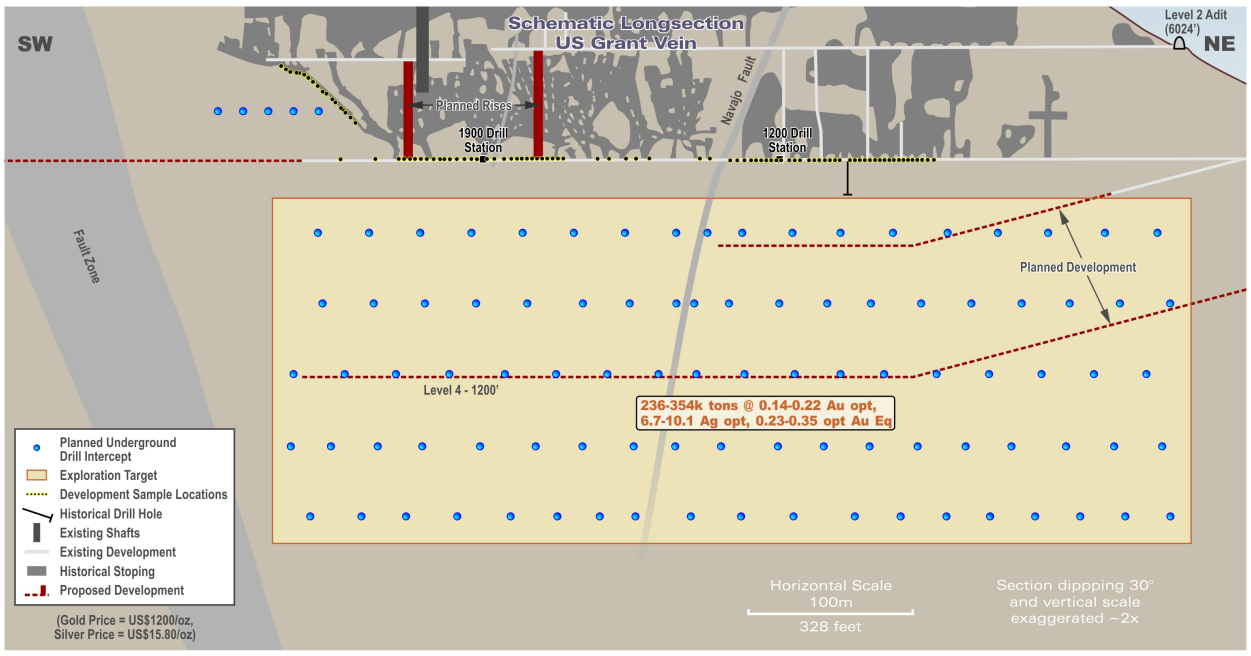


Figure 9.8 Inclined longitudinal section view of the US Grant vein looking N42°W.
(Source: TCO)

**The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

The Golden Boy claim group is located about 2 miles northwest of the US Grant Mine. It is centered on a vein system that has been traced for a distance of 15,000 feet. It is a prominent NE trending shear zone that hosts two quartz veins separated by about 40 feet of altered and iron stained gneiss. One vein is about 8 feet wide, the other is about 4 feet wide; they trend sinuously NE and dip about 45°NW.

Ingenuity Exploration Inc. mapped and sampled all prospect pits, outcropping veins and alteration zones. Nil to trace gold and silver values were reported in the NE two-thirds of the claim block. The southwestern end of the claims has stronger gold mineralization that starts about 500 feet northeast of the southwest end line of the claims and continues south. A VLF-EM survey was performed over four areas on the southern portion of the claim group and more samples were taken. The south end of this group returned assay values in the range of 0.15 opt Au and 1.8 opt Ag from a 2-foot-wide quartz vein (Gignoux, 1989b).

From the above description of exploration results, about 500 feet of the vein system appears to have exploration potential. If mineralized to 1,000 feet below the surface exposure, the two veins have exploration potential for 45,000-100,000 gold equivalent ounces in 278,400–417,000 tons of mineralized rock at 0.16-0.24 opt Au Eq (Table 9.2)*. Subject to all permitting and

financing, a surface core drilling program of about 6,500 feet in 8 holes at a 250-foot spacing would be required to test this exploration potential in the first instance.

**The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

The Lee Fault zone hosts offset segments of both the US Grant and El Fleeda veins. Potential for mineralization exists between the offset portions of the vein along the northeast and southwest bounding faults of the zone. There is about 550 feet of strike length along each fault that is on the MMC claims. If mineralized along this strike length to a depth of 1,000 feet down the plunge of the faults, the exploration potential is 52,000-117,000 gold equivalent ounces in 320,000–480,000 tons of mineralized rock at 0.16-0.24 opt Au Eq (Table 9.2)*.

**The potential quantity and grade stated of any future drilling is conceptual in nature. It is uncertain whether further exploration will result in the exploration target being delineated as a mineral resource.*

10 DRILLING

Drilling at the US Grant Mine property to date includes:

1. A total of 4,585 feet in 32 core holes from six separate historic drill programs conducted between 1980 and 1994; and
2. A total of 4,661 feet (1457 m) in 14 HQ size core holes completed by TCO in October / November 2016.

10.1 Historic Drilling

The historic drilling programs conducted at property by three different operators from 1980 to 1994 were documented in the MMC files and consisted of:

- three diamond core programs drilled underground from various stations on the US Grant Mine #3 level;
- one surface core drill program; and
- two reverse circulation (RC) drill programs.

The historic drill data consists primarily of paper copies of the drill logs. Available data found on the drill logs has been tabulated and converted to digital format. Table 10.1 outlines the data compiled from the surface and underground drill programs at the US Grant Mine property. Table 10.2 summarizes the significant drill hole intercepts for the Alder Mountain Project from the historic drilling. Core intercept widths have been corrected to true widths unless otherwise stated.

Table 10.1 Pre-TCO core drill data for Alder Mountain Project

Hole #	North	East	Elev ft	Total depth ft	Location	Azimuth	Dip degrees	Company
0600-4	99516	99631	5910	29.3	#3 Level		-90	Kemmerer Coal Co.
0600-5	99511	99636	5910	85.3	#3 Level	314	-62	Kemmerer Coal Co.
0850-6	99296	99502	5910	20.2	#3 Level		-90	Kemmerer Coal Co.
0850-7	99289	99505	5910	134.8	#3 Level	290	-46	Kemmerer Coal Co.
1225-1	99047	99215	5915	42	#3 Level		-90	Kemmerer Coal Co.
1225-2	99044	99216	5915	102.1	#3 Level	305	-57	Kemmerer Coal Co.
1225-3	99039	99219	5915	83	#3 Level	295	-50	Kemmerer Coal Co.
1925-8	98656	98700	5915	29.5	#3 Level		-90	Kemmerer Coal Co.
1925-9	98651	98702	5915	133.1	#3 Level	311	-45	Kemmerer Coal Co.
0920-10	99278	99423	5910	145	#3 Level	160	2	US Grant Gold Mining Co.
1125-11	99135	99290	5912	20	#3 Level	322	-50	US Grant Gold Mining Co.
1125-12	99135	99290	5912	50	#3 Level	322	-50	US Grant Gold Mining Co.
1125-13	99136	99291	5912	130	#3 Level	322	-47.5	US Grant Gold Mining Co.
1200-1	98987	99332	5915	153.8	#3 Level	127	-45	US Grant Gold Mining Co.
1200-2	98987	99332	5915	149	#3 Level	128	-60	US Grant Gold Mining Co.
1200-3	98988	99329	5915	168	#3 Level	148	-37	US Grant Gold Mining Co.
1200-4	98987	99336	5915	192	#3 Level	088	-35	US Grant Gold Mining Co.
1200-5	98985	99333	5915	61	#3 Level	108	-80	US Grant Gold Mining Co.
1200-6	98987	99331	5915	184	#3 Level	155	-80	US Grant Gold Mining Co.
1200-7	98977	99340	5915	255	#3 Level	307	2	US Grant Gold Mining Co.
1200-8	98985	99338	5915	226	#3 Level	047	-55	US Grant Gold Mining Co.
1775-9	98741	98792	5915	145	#3 Level	120	-37	US Grant Gold Mining Co.
USG-88-1	97796	97323	6774	220	Surface	135	-65	Prime Explorations
USG-88-2	98162	97771	6603	225	Surface		-90	Prime

								Explorations
USG-88-3	98162	97771	6603	148	Surface	062	-49	Prime Explorations
USG-88-4	98152	97760	6604	287	Surface	249	-60	Prime Explorations
USG-88-5	97847	97345	6757	265	Surface		-90	Prime Explorations
USG-88-6	97241	97085	6780	335	Surface		-90	Prime Explorations
USG-88U-7	98989	99334	5915	131	#3 Level	106.5	-55	Prime Explorations
USG-88U-8	98988	99337	5915	136	#3 Level	084	-45	Prime Explorations
USG-88U-9	98988	99337	5915	150	#3 Level	72	-35	Prime Explorations
USG-88U-10	98987	99338	5915	150	#3 Level	42.8	-65	Prime Explorations

From October to November 1980, Kemmerer Coal Corporation drilled 659 feet in nine AQ core holes from four drill stations that ranged from 25 to 40 feet into the hanging wall of the US Grant vein on the #3 level. These holes tested vein continuity and mineralization generally less than 50 feet down dip of the vein. All holes intersected gold and silver mineralization across 2 to 3 feet vein widths. Table 10.2 includes the significant drill intercepts from this drilling.

During November 1987 to January 1988 the US Grant Gold Mining Company drilled 1,878 ft in 13 core holes from four locations on #3 level. To provide better drill intercept angles, the Kemmerer Coal Corporation drill station at about 1,225 ft in from the portal was extended to approximately 140 ft into the hanging wall of the US Grant vein. Most of the drilling conducted from at this station and tested the vein up to 100 ft down dip of #3 level. Vein widths of up to 7 ft were intersected from this station. Low grade mineralization was intersected by some of the holes. Three core holes were drilled down the dip of the vein from the #3 level drift at approximately 1,125 ft in from the portal. One of these holes, 1125-13, collared in the vein yielded continuous mineralization from 57.6 ft to 63 ft before intersecting the unmineralized hanging wall of the vein. Table 10.2 indicates the significant intercepts from this drilling. Drill holes 1125-12 and 1125-13 were drilled in the plane of the vein. Reported intercept widths for these holes are the downhole lengths of the intercepts.

From August to October 1988, Prime Explorations Ltd. conducted surface and underground core drilling programs at the property. Six surface holes totaling 1,480 ft were drilled on the southwest portion of the property targeting the US Grant vein. Two holes, USG-88-2 and USG-88-6 intersected significant gold and silver mineralization in iron oxidized quartz veining (Table 10.2). At an elevation of approximately 6,450 ft USG-88-2 intersected an uncorrected width 8.4 ft of 0.313 opt Au and 4.96 opt Ag. This intercept is approximately 700 ft southwest and 550 ft above the US Grant #3 level. USG-88-6 intersected an uncorrected width 2 ft of 0.103 opt Au and 7.85 opt Ag at the 6,630 ft elevation, about 1,800 ft southwest of #3 level. The previous two holes had plus 98% core recovery noted in geological logs around the mineralized intercepts. A

total of 567 ft in 4 holes was drilled underground by Ingenuity Exploration Inc. from the 1225 drill station. Three holes intersected quartz veining in altered gneiss on vein projection. One hole has insufficient documentation to assess if it intersected the vein. Table 10.2 summarizes the significant drill hole intercepts for the Alder Mountain Project. Core intercept widths have been corrected to true widths. Drill holes 1125-12 and 1125-13 were drilled in the plane of the vein. Reported intercept widths for these holes are the downhole lengths of the intercepts.

Table 10.2 Pre-TCO significant drill intercepts for Alder Mountain Project

Hole #	from (ft)	to (ft)	width (ft)	Au opt	Ag opt	Au Eq[1] opt	Company
0600-4	15	17	2	0.056	7.70	0.157	Kemmerer Coal Co.
0600-5	43	54	11	0.061	2.30	0.091	Kemmerer Coal Co.
0850-6	11	19	8	0.028	1.10	0.042	Kemmerer Coal Co.
1225-1	22	28	6	0.061	1.15	0.076	Kemmerer Coal Co.
1225-2	41	51	10	0.053	1.35	0.071	Kemmerer Coal Co.
1925-8	8	10	2	0.028	0.60	0.036	Kemmerer Coal Co.
1925-9	45	52	7	0.042	0.26	0.048	Kemmerer Coal Co.
1125-12	3	6.4	3.4	0.767	27.48	1.129	US Grant Gold Mining Co.
1125-13	57.6	60	2.4	1.206	29.24	1.591	US Grant Gold Mining Co.
1125-13	60	63	3	0.198	3.67	0.246	US Grant Gold Mining Co.
1200-1	121	122.1	1.1	0.048	1.18	0.064	US Grant Gold Mining Co.
1200-4	161	165	4	0.036	1.18	0.051	US Grant Gold Mining Co.
1775-9	10.5	12.2	1.7	0.282	6.72	0.370	US Grant Gold Mining Co.
USG-88-2	142.5	150.9	8.4	0.313	4.96	0.378	Prime Explorations
USG-88-6	148	150	2.0	0.103	7.85	0.21	Prime Explorations
USG-88U-7	111.5	119.7	8.2	0.039	0.43	0.045	Prime Explorations
USG-88U-9	34.2	35.6	1.4	0.051	1.76	0.074	Prime Explorations

[1] *Equivalent Au (Au Eq) is based on US $1200/ounce Au, US $15.80/ounce Ag*

Additionally, two reverse circulation drill programs in 1994 were completed on the property targeting shallow mineralization on the US Grant vein southwest of the mine in the area of the

Bluebird and Duncan workings. These programs are poorly documented, the records being hand written notes and drawings. No assays were found for the Duncan workings drilling. One 4-foot interval assayed 0.075 opt Au from the Bluebird workings area.

There are paper copies of the drill logs but no records of logging or sampling procedures for the historic drilling at the US Grant Mine property have been found in the MMC files as complete records. No physical core could be found at the property.

10.2 Current Drilling

TCO has completed planning of a proposed staged exploration program shown in Figure 10.1. The program is strategically designed to test and confirm extensions of existing and known mineralization, and to increase confidence in the exploration target. This section contains a summary account of the results of the first phase of exploration drilling conducted by TCO in October and November 2016 (TCO, 2017).

The first phase of drilling was designed to test and confirm mineralized intercepts contained in historical data and to provide additional information for interpretation of geology and mineralization of the US Grant vein. The drill targets for this program are as illustrated in Figures 10.1 and 10.3. The drill program consisted of 14 holes for a total of 1,457 meters (4,661 ft). The drilling operations were contracted to Timberline Drilling, based out of Hayden, Idaho. Drilling was completed using a sled mounted Atlas Copco U8 Core drill rig.

All collars were marked using a Garmin GPS, and back sites for drill hole azimuth put in place with the use of a Brunton compass, with actual staked locations checked against mine model surfaces and Google Earth images. Drill hole actual azimuth and dip was logged and recorded by the Timberline Drilling using a Reflex Multi-shot downhole drill hole survey instrument every 50 ft of drilling. The logs were transmitted to TCO by Timberline at the completion of each hole. Drill collar coordinates are presented in Table 10.3.

During the drilling operation, the core was retrieved from the core barrel and laid sequentially into wax impregnated cardboard core boxes. Interval blocks were placed at all run breaks. Once the box contained approximately 10 ft of core, the ends and sides were labeled with drill hole identification, from and to intervals and the sequential box number. The box was then covered by a cardboard lid and stacked at the rig to assure that the core was not exposed to any potential contamination or mix-ups. At the end of each drilling shift, the boxes of core were transported by the drilling contractor in a pickup truck or underground cart to the TCO core shed on site. The drill contractors delivered core, at the end of each shift, to the core shed if geology staff were present. Upon receipt at the core shed, the core boxes were arranged in order and the core was washed, photographed and examined to identify mineralized zones. The boxes containing identified mineralization were marked and set aside to be logged and sampled immediately; the remaining boxes were stacked on pallets and stored within one of two locked buildings, to be logged as staff time allowed.

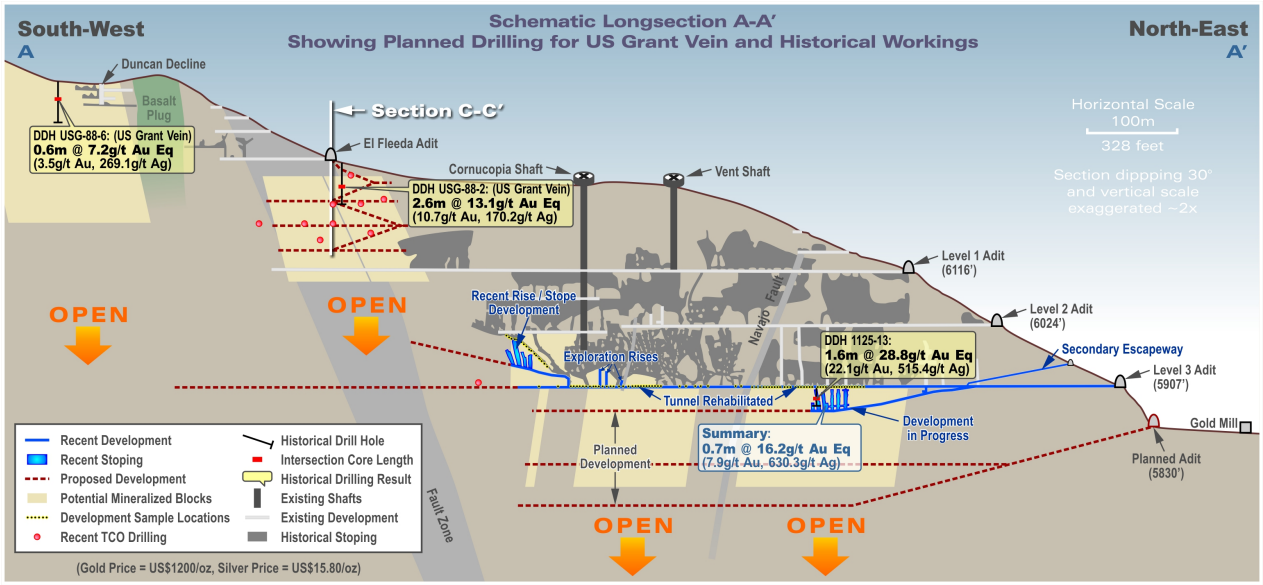


Figure 10.1 US Grant Schematic Long Section with Planned Drilling Targets (red dots)
(Source: TCO)

**Mine development in the absence of mineral resources and reserves, historically, have increased risks of technical and/or economic failure.*

Table 10.3 Drill Collar Coordinates from Phase 1 Surface Drilling Program

Hole #	east	north	elevation (ft)	total hole depth (ft)	Azimuth	Dip (degrees)
SURDH#1	98132	97764	6610	229	146	-89
SURDH#2	98132	97764	6610	215	127	-66
SURDH#3	98132	97764	6610	228	185	-47
SURDH#4	98068	97889	6570	233	141	-56
SURDH#5	98068	97889	6570	272	139	-79
SURDH#6	98068	97889	6570	218	163	-65
SURDH#7	98068	97889	6570	362	315	-86
SURDH#8	98068	97889	6570	228	150	-46
SURDH#9	98068	97889	6570	244	161	-80
SURDH#10	98068	97889	6570	333	084	-65
SURDH#11	98068	97889	6570	627	095	-81
SURDH#12	97900	98214	6480	772	077	-56
SURDH#13	97900	98214	6480	450	170	-89
SURDH#14	97900	98214	6480	250	154	-52

Geologic logging was done on paper log forms as this was done high quality photos were taken of all core. The log form contains columns which record: interval drill depths, core recovery, carbonate alteration, sulfide alteration, vein intensity, lithology, and color. After logging the zones of alteration, the sample intervals were determined and marked on the core and the core

boxes. Most samples represent core intervals of 1.0 to 3.0 ft; about 10% of the sampling is of intervals from 3.0 to 4.3 ft in length. Intervals were chosen on the basis of visual determinations of grade in an attempt to break out separate sample material that varied from adjacent material by orders of magnitude. The sample intervals are recorded in three places: the sample log sheet, the sample tag booklets and by the placement of cards or flagging delimiting each interval in the boxes. A brief description of the sample was noted on the sample sheet which is kept with the drill log. Data from paper logs was tabulated to include in the drill hole database. A core photo of one sample is shown in Figure 10.2.

Figure 10.2 Core photo of Surface Drill Hole #1 – US Grant Vein
(Source: TCO)

After logging, whole core samples deemed worthy of sampling were placed into a pre-labeled polyethylene bag along with a sample identification tag with a blind sample number. Each bag was closed with a zip-tie. A digital database is maintained, which records the drill hole identification and from-to intervals of all sample tags. Assay results were added to the database after quality assurance review. QAQC for the assaying was conducted. Blanks, and gold/silver standards were issued to the lab by TCO with the drill samples at a rate of 5% per samples transmitted. In addition American Analytical ran duplicates as a check on its assays and blanks. Analysis of results of all of these checks confirmed no material issues in assay procedures or results.

The individual sample bags containing the whole HQ core samples were stored within the locked core building until transported by TCO staff to American Analytical in Osburn Idaho, approximately 315 miles from the core logging facility. Commercial blanks and standards or

coarse reject duplicates were inserted into the series, and a submittal form filled out. Part of the submittal form includes Chain of Custody documentation. The assay lab returned a copy of each signed Chain of Custody form to the mine. Once the assay process was completed at the lab (1 AT Fire for Gold and Silver), the coarse rejects from the whole core samples and the residual pulps from the fire assay were picked up by a TCO representative under chain of custody and returned to the US Grant mine and stored in a locked, secured facility in the US Grant Mill.

Several factors could affect the accuracy and reliability of the location surveys and analytical data. Drill hole collar location survey methods appear consistent with the underground workings, and comparison to current mine underground and surface models, but the precision of these measurements could vary plus or minus 10 ft. Another noted potential risk to the reliability of the results is less than full recovery in mineralized zones, although the average core recovery for all sampled zones is 91%. It is suspected that most 'lost' core was gold/silver bearing material in the margins to the prominent vein target.

Table 10.4 provides significant assay results (> 3 g/t Au Eq) from this drilling and are depicted in Figure 10.3. Figure 10.4 presents the US Grant Vein at cross section. Assay certificates are included as Appendix C. The results of the 2016 exploration drilling data support the historic data and geological interpretations and will be used for predicting further exploration potential of the US Grant Mine Property.

Table 10.4 Significant Assay Results (>3 g/t Au Eq) from Phase 1 Surface Drilling

Hole #	from (ft)	to (ft)	true width (ft)	Au opt	Ag opt	Au Eq opt	Au g/t	Ag g/t	Au Eq g/t
SURDH#1	159	167.7	5.9	0.286	5.3	0.357	9.8	181.5	12.24
Includes			**4.4**						**14.2**
SURDH#3	122	128	3.5	0.093	1.8	0.116	3.19	60.0	3.99
SURDH#4	198	205	6.7	0.083	3.1	0.124	2.86	105.0	4.24
SURDH#5	201	207.6	6.4	0.172	2.3	0.203	5.9	78.9	7.33
Includes			**2.1**						**16.9**
SURDH#6	177.4	186.7	8.9	0.522	3.1	0.564	17.91	106.4	19.35
Includes			**2.8**						**36.8**
SURDH#8	191.5	195	3.3	0.195	3.1	0.237	6.68	107.3	8.09
SURDH#9	178.5	187.5	6.8	0.068	2.2	0.097	2.33	76.0	3.33
SURDH#10	268	276.5	6.1	0.133	1.4	0.152	4.55	48.7	5.19
Includes			**2.0**						**10.2**

SURDH#12	682 690	683 691	1.0 1.0	0.087 0.368	3.35 13.90	0.131 0.551	2.98 12.62	114.9 476.6	4.50 18.89
SURDH#13	215	221	4.3	0.100	2.35	0.131	3.43	80.57	4.49
SURDH#14	159.7	166.5	6.7	0.152	3.88	0.203	5.21	132.92	6.96
Includes			**1.5**						**21.1**

Equivalent Au (Au Eq) is based on US $1200/ounce Au, US $15.80/ounce Ag
Downhole length is represented by 'from-to' followed by the estimate of true width

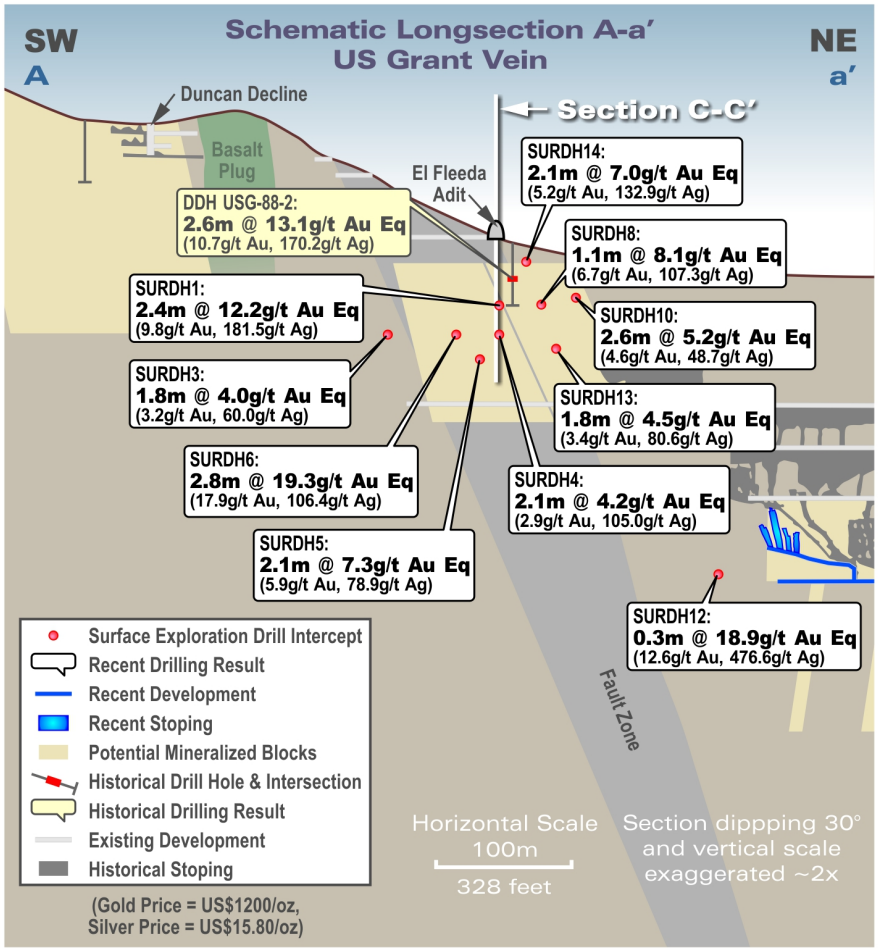


Figure 10.3 US Grant Schematic Long Section with Assay Results (Inset of Figure 10.1)
(Source: TCO)

**Mine development in the absence of mineral resources and reserves, historically, have increased risks of technical and/or economic failure.*

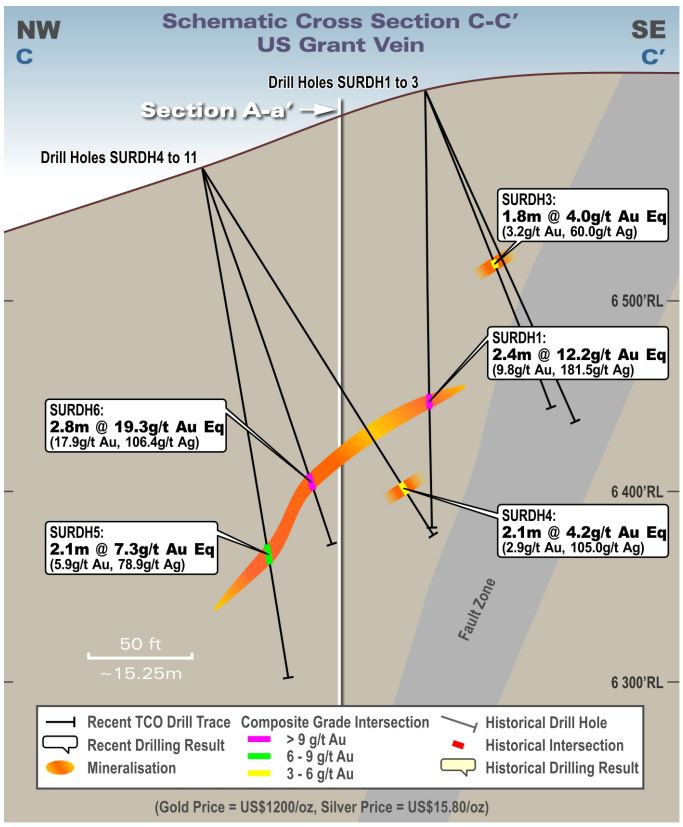


Figure 10.4 US Grant Vein Schematic Cross Section with Assay Results
(Source: TCO)

Exploratory mine drifting has also continued below the #3 level. Table 10.5 outlines sample results of US Grant vein quartz on the #4 Level confirming that mineralization continues below hole DDH 1125-13 (Figure 10.1). While the 2016 TCO phase 1 drilling confirms the historic data reported above Level 1 of the US Grant and deeper on Level 3, this sampling indicates that the mineralization is not closed off at depth with samples intersecting mineralization below drill hole DDH1125-13 and Level 3 as well as increased drilling confidence with mineralization around historic hole USG-88-2 (Figure 10.1).

Table 10.5 Individual Samples of US Grant Vein Quartz below the #3 Level

Sample #	Width (m)	Au (g/t)	Ag (g/t)	Au Eq (g/t)	Location
1109	0.8	13.0	522.5	19.9	4-Level
1109-1	0.8	3.5	662.7	12.2	4-Level
1109-2	0.8	3.4	881.1	15.0	4-Level
1110	0.6	7.6	545.5	14.8	4-Level
1111	0.6	12.1	539.6	19.2	4-Level
5 samples	**0.7**	**7.9**	**630.3**	**16.2**	

Equivalent Au (Au Eq) is based on US $1200/ounce Au, US $15.80/ounce Ag

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Channel Samples

All TCO mine samples were taken at #3 level and workings accessible from that level. The samples were taken using either geology picks or hammers and chisels. Samples were collected directly into 11 inch by 17 inch sample bags when using geology picks and on to a tarp spread out below the sample sites. Samples were generally 3 to 7 pounds. No splitting to reduce sample size was done. QAQC samples were inserted into the sample stream approximately every tenth sample. These include assay standards, blanks and duplicate pulp samples. If samples were not delivered to the assay lab the same day, they were kept in secure storage in the US Grant mill building. Chain of Custody forms document sample delivery to both of the assay labs used by TCO.

11.2 Analytical Facilities

TCO utilized two assay laboratories. Samples collected from the #3 level from approximately 900 to 1400 feet from the portal were assayed by American Analytical Services (AAS) of Osburn, Idaho, an ISO-17025 accredited laboratory (similar to ISO-9000, but with an added level of quality management). AAS is also accredited by the State of Washington Department of Ecology, with registry number WA09-0799, for analytical capabilities in nonpotable water. The AAS assay flow chart is provided in Appendix D.

Norris Labs of Norris, Montana has assayed all additional samples collected from the US Grant Mine since the initial sampling program in October 2015. All samples were analyzed for gold and silver by standard fire assay with an atomic absorption finish. All assays were done using a 1/2 assay ton (15 gram) charge. About 10% of the samples were analyzed for base and trace metals by AA at American Analytical Services. The Norris Lab assay flow chart is provided in Appendix D.

Neither assay lab has any relationship with TCO.

11.3 QAQC Procedures

The TCO QAQC program consists of assay standards, assay blanks and duplicate assay pulps inserted into the sample stream at a rate of approximately 13%. The general QAQC assay procedure TCO uses is illustrated in Figure 11.1.

A total of 53 check assays was analyzed. AAS assayed 49 of the Norris Lab pulps. The Norris Lab assayed 4 of the AAS pulps and 4 of its own pulps as check assays. Two gold and silver standards were used on this project. For the initial sampling program conducted in October 2015, the gold, silver, and copper standard used was from WCM Minerals of Burnaby, BC, Canada. Since the initial sampling program, the gold and silver standard and assay prep blanks used were from Shea Clark Smith MEG Labs.

Appendix E contains detailed QAQC results. AAS Lab accuracy was acceptable for both Au and Ag and blank results and did not suggest any contamination from lab sample preparation. The Norris lab yielded acceptable accurate values for Ag in standard assays. However, standard assay results were fair given that 50% of the standard assays fell outside acceptable ±2 standard deviation and also show a low bias.

Duplicate data plot results indicate that there were no significant bias in the sampling even though there are few outliers that suggest bias in sample splitting.

See Appendix E for detailed QAQC results.

11.4 Adequacy of sample preparation, security and analytical procedures.

It is the author's opinion that the sample preparation, security and analytical procedures followed by TCO are adequate. A review of the QAQC assay procedure that TCO has in place in Figure 11.1 satisfies industry standards.

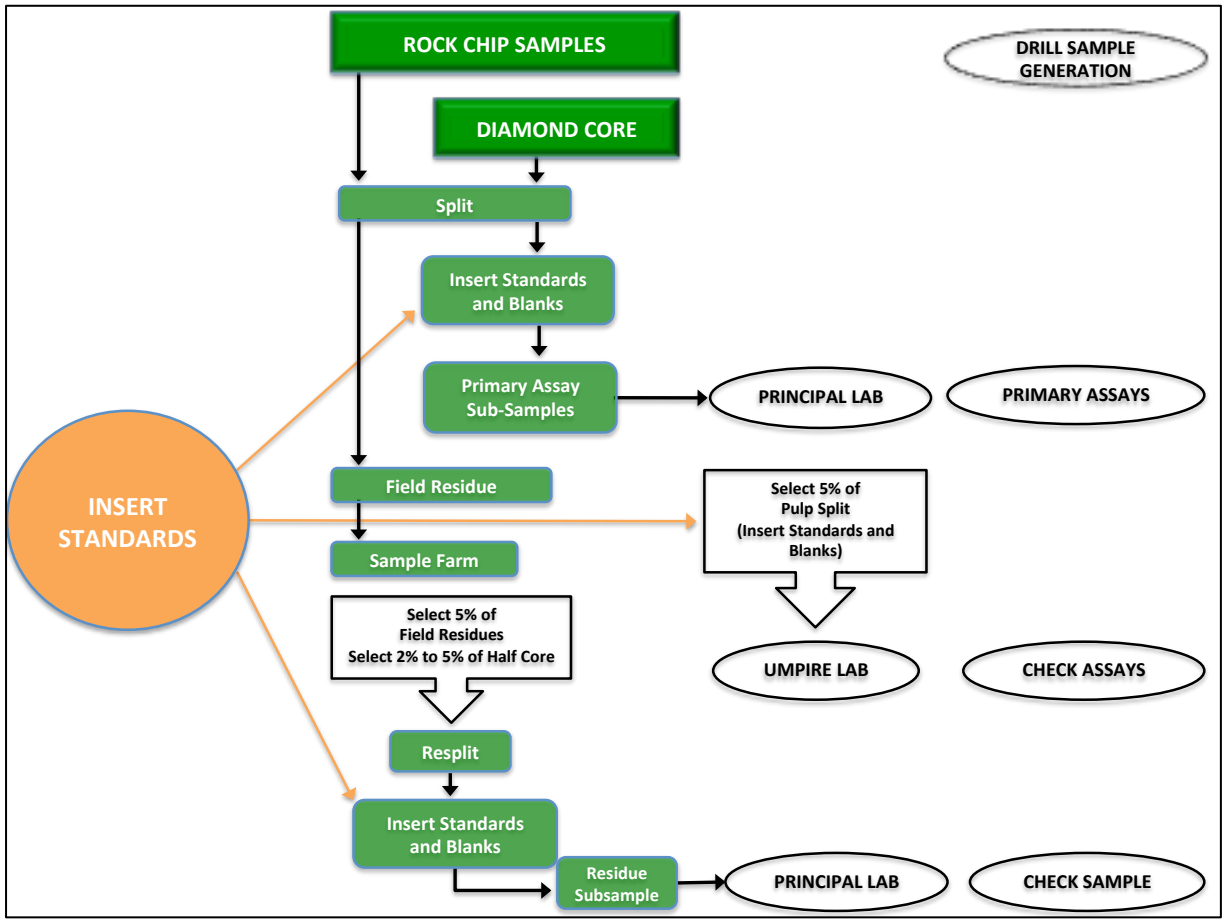


Figure 11.1 QAQC assay procedure used by TCO.
(Source: TCO)

12 DATA VERIFICATION

The sources of data and the steps taken by the section authors to verify the data and sources of information provided by TCO for this report are outlined.

12.1 Site Visit

A detailed site visit was performed by J Chris Pfahl with a metallurgist in February 2016, at which time the mine, mill and infrastructure were inspected, site personnel were interviewed and data and documentation were reviewed and verified to the extent possible.

The other authors did not conduct site verification. However, pre-TCO historic data, mapping and original reports along with TCO sampling information were provided for review and discussed with TCO representatives. Where possible, data was verified against original documents. Approximately 20% of historic assay data and TCO channel sample data were verified against original assay lab reports with no inconsistencies found. Given the absence of physical drill hole core at the US Grant property as well as the incompleteness in original MMC data and files, the authors consider the opinions formulated for this technical report, based on all information provided, to not be significantly altered without physical site verification.

12.2 Sample Data Verification

TCO conducted the sampling programs on the US Grant Mine #3 level and accessible workings above the level to verify channel sample data from two previous investigations. Geologic maps in MMC files were used by TCO geologists as the base maps for the TCO sampling programs. The author compared new assay data generated by TCO with the assay data generated in the two historic sampling investigations. The new TCO data was consistent with the historic data and therefore it is the author's opinion that the data is reliable.

Sample locations for the program conducted by RX Exploration in 2012 were verified and reviewed by the author. Verification involved locating the flagged sample sites and checking their locations on the #3 level plan maps. No discrepancies of sample locations were noted. Locations for the samples taken by the Kemmerer Coal Corporation in 1980 could not be verified as there were no sample tags or flagging left in place from this program. However, TCO sampling results support and agree with the Kemmerer Coal Corporation values for the section from 950 to 1,350 feet from the portal. As a result, it is the opinion of the author that the TCO sampling results are reasonably acceptable. After undertaking a basic review and check of the data for potential errors, the review suggests no significant flaws in the sampling data.

Assay certificates from 1979 and 1980 were also reviewed by the author and compared to some of the maps and longitudinal sections that document some of the production from that time period. Numbered samples with gold and silver values as plotted on the maps were found to correspond with sample numbers and gold/silver values on the assay certificates. Most of the samples reported on the assay certificates do not have a width assigned to them. Plan maps of the samples can be used to ascertain a sample width but the samples plotted on the longitudinal sections only showed the gold and silver values while Appendix B highlights the width.

It is the author's opinion that proper sampling and assay procedures were followed historically and by TCO, and that the recent TCO channel sample and drill hole assays are consistent with the historic channel sample and drill hole assays and as such, all assays are considered reliable.

12.3 Geologic Data Verification

Geological information, mapping and available data records were provided by TCO. A sample of approximately 20% of the assay data was checked by the author and verified against the original lab assay data with no inconsistencies observed. Regional geological setting background is well documented in various published and unpublished reports on the Virginia City Mining District. Original MMC reports, plan maps as well as general published reports of the district were provided by TCO and were reviewed and used to describe the regional setting and geographical information on the US Grant property.

A site visit to verify the various geologic features and information provided was not completed. Property geology and mineralization are well documented in original MMC files and reports and were reviewed. The reported shallow narrow quartz veins hosting the Au-Ag mineralization and associated sulfide assemblages within the described granite-volcanic terrains is typical of epithermal to mesothermal lode type deposit systems described in the geologic setting. TCO representatives indicated that geologic contacts were field checked using the Kemmerer Coal Corporation geological maps and the location and orientation of various geologic features such as dikes, faults, foliation and lithologic contacts support and agree with the established geological maps.

Although, the author did not conduct a site visit to verify the geological features contained in mapping, it is the author's opinion that any alternative interpretations of the geology and vein mineralization are unlikely to significantly change the conceptual exploration targets location. There is, however, potential for increase in tonnages given that the targets presented have an open-ended depth. After reviewing reports on regional geology and the information, data and reports provided by TCO for the US Grant property, it is the opinion that the features of deposits and conceptual target ranges presented are sufficiently captured. The size of mapped of mineralized veins and other features tie in well with drill intercepts and sample information.

12.4 Drill Data Verification

Historic drilling at the US Grant Mine property by previous owners was available in report form. Drilling data, including lithology, assays, core recovery, core size, collar location and drill hole azimuth and dip were placed into digital spreadsheets by TCO and this data was reviewed by the author. No physical core was at the US Grant property to be verified. TCO representatives indicated that no down hole surveys were found for any of the holes but are considered short with little deviancy expected on mineralized intersection; no records of logging or sampling procedures for the historic drilling at the US Grant Mine property have been found in the MMC files as complete records. Paper copies of the drill logs exist but the author did not carry out verification given the simple nature of the vein in outcrop and reported intersections of the veins.

Historic drill data documented in previous owners' reports have been reviewed to identify the holes were drilled in plan at these locations.

Historic drilling has been further supported by TCO initial surface exploration drilling (October/November 2016). Core photos for the TCO drilling were viewed and assay results verified against the TCO drilling database with no inconsistencies found. The author is of the opinion that the data from this recent TCO drilling provides a reasonable sample and verification of the existing of mineralization depicted by the historic data at USG-88-2 and that more recent exploratory mine drifting channel samples indicate mineralization below the #3 level. There appears no reason to suspect that the mineralized vein structure does not continue down dip below the #3 level.

12.5 QAQC Procedures

QAQC procedures used by TCO in their sampling and assaying were thoroughly reviewed by the author and compared against minimum industry standard requirements. A sample of approximately 20% of the QAQC samples was rechecked for performance with results consistent with what is reported.

12.6 Limitations or failure to conduct data verification

Some historic pre-TCO data provided could not be verified against its original source due to absence of original data or incomplete records in the MMC files. No down hole surveys were found for any of the historic drill holes and no physical core was present at the US Grant property to verify.

A site visit was conducted by one author who verified TCO-verified sample locations against MMC recorded locations. However, because access is limited to the first 150 feet of the US Grant Mine #1 level and both the US Grant Mine #2 level and the El Fleeda #4 level are caved at the portal and inaccessible, historic data in MMC records could not be adequately verified.

TCO compiled the drill hole database encompassing all available drilling data provided by MMC. No records of logging or sampling procedures for the historic drilling at the US Grant Mine property have been found in the MMC files as complete records.

12.7 Adequacy of data

The authors' review of the material provided by TCO, and their communications and discussions with TCO representatives, found that the data provided are adequate for the purposes of this technical report and appropriate to be used.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Very little testing has been conducted on material from the US Grant mine. A preliminary study, using gravity and flotation methods, was conducted by Dawson Metallurgical Laboratories (DML) in 1987 but the sources of the samples tested were not documented so it is not known if they were representative of mineralized material available for mining at the time. The samples cannot be said to be representative of mineralized material currently in place. The DML test results and calculated recoveries cannot be said to be representative of material currently in place.

Portions of the report are presented in Appendix F, including a tabulation of test results. The Summary and Discussion sections of this report are reproduced as Figure 13.1.

The DML program was conducted on three samples described as “oxide” (from Mine Level 1), “mixed” (from Mine Level 2) and “sulfide” (from Mine Level 3). Testing of each sample consisted of a gravity step using panning followed by froth flotation. For details refer to Figure 13.1 and Appendix F.

The 1987 DML Summary and Discussion reported recoveries for combined recoveries of the gravity and rougher flotation concentrates ranging from 73% to 91% for gold and 66% to 91% for silver. However, results from such a limited preliminary testing program, on samples not known to be representative of the currently available mineralized material, cannot be used to accurately predict performance of an actual mill treating such material.

In addition to their gravity-flotation test work, DML also conducted preliminary cyanide leach testing on the US Grant samples.

II. Summary

Test results are summarized on the following page, and are presented in detailed test data sheets attached to the end of this report.

Test results indicate that the majority of the gold and silver are removed from the ore by a combination of gravity concentration and bulk sulfide flotation, while rejecting about 90% of the ore weight into the tailings fraction. The gravity plus rougher concentrate fractions contained 83%, 84%, and 91% of the gold, 80%, 84%, and 91% of the silver for the oxide, mixed, and sulfide ores respectively.

Cyanide leach test results indicate good gold and silver recovery when the ore is ground to 90% -100 mesh and followed by leaching in a 10 lb NaCN/ ton solution for 72 hours. The gold recovery ranged from 90 to 96%, and the silver recovery ranged from 82 to 88%.

The cyanide consumptions were relatively high, ranging from 4 to 5 lb NaCN per ton of ore.

V. Discussion

The results of the testing indicate relatively good extraction of gold and silver from the three ores submitted by both flotation and direct cyanidation of the ores. All three of the ore samples, the oxide, mixed, and sulfide ores, reacted similarly to the gravity-flotation and cyanide leach tests. The rougher tails assayed 0.017, 0.018, and 0.024 oz/ton Au, 1.12, 1.63, and 1.22 oz Ag/ton respectively, while the cyanide leach residues assayed 0.010, 0.008, and 0.010 oz/ton Au, and 0.60, 1.78, and 1.41 oz Ag/ton for the 3 ore types.

The similarity of the flotation and leaching results for the 3 types of ores indicates that no significant differentiantion due to ore type needs to be made while mining or processing the ores. The operating conditions of the plant will probably not need to be altered as the ore type changes in the mill feed.

Test results indicate that a significant (35-52%) amount of the gold could be collected into a gravity concentrate. Although gravity concentration collected the values well, it is not certain that it is required in this circuit. The gold and silver will probably be collected in the flotation section. If appreciable free gold is projected to be present in the ore, then gravity concentration prior to flotation may be of value.

In evaluating these preliminary results it should be emphasized that no attempts were made to optimize conditions such as grind and reagent conditions. Further grinding of the ore may improve slightly the separation during flotation and also the leach recovery. It is doubtful however, that a marked improvement would be anticipated as the recovery of both gold and silver are currently relatively high.

Figure 13.1 Summary and Discussion of DML Metallurgical Test Results
(Source: DML, 1987)

14 MINERAL RESOURCE ESTIMATES

There is no current National Instrument 43-101 compliant resource estimate for any of the mineralized areas on the US Grant Property.

15 MINERAL RESERVE ESTIMATES

There is no current National Instrument 43-101 compliant reserve estimate for any of the mineralized areas on the US Grant Property.

16 MINING METHODS

Not applicable for this technical report.

17 RECOVERY METHODS

Not applicable for this technical report.

18 PROJECT INFRASTRUCTURE

Not applicable for this technical report.

19 MARKET STUDIES AND CONTRACTS

Not applicable for this technical report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL/COMMUNITY IMPACT

Not applicable for this technical report.

21 CAPITAL AND OPERATING COSTS

Not applicable for this technical report.

22 ECONOMIC ANALYSIS

Not applicable for this technical report.

23 ADJACENT PROPERTIES

Madison County is a district of historic mines that have been active and dormant through the last 150 years due to modifying conditions on external factors.

Mining in Madison County and more local to the mine was the gold placer operations discovered in 1864 with the monument to the initial discovery only 500 feet approximately from the US Grant Mine (Figure 23.1).

Figure 23.1 Monument to Original Gold Placer Discovery
(Source: TCO)

24 OTHER RELEVANT DATA AND INFORMATION

As the US Grant Mine has been intermittently operated in the past, the facilities are already laid out with a majority still in place and accessible. As such, additional infrastructure is not required at this time. Existing facilities include an office building, a mill and crushing plant, underground development, electric power, and a tailings disposal facility. Figure 24.1 shows an aerial view of the existing project infrastructure.

A mill is in place at the US Grant property, as described by a February, 2016 report by W.C. Rust and D.H. Rust (Rust and Rust). Please see Appendix G. This section is based on the February 2016 report. The mill was described as "nearly ready to process" as of late January, 2016. Figure 24.2 is a flow chart for the existing mill showing the equipment that is in place.

A jaw crusher followed by a former rod mill used as a ball mill serves as the comminution circuit, with a cyclone following the ball mill. Cyclone overflow is sent to the flotation circuit. The mill can utilize both gravity spirals and froth flotation. As only a single filter circuit is in place, a mixed gravity-flotation concentrate would be produced for shipment offsite for further processing if both methods were utilized.

Tailings can be sent to a tailings pond but as noted in the Rust and Rust report, no water reclaim system is in place to return water to the mill circuit. The size of the tailings pond, including storage capacity, was not measured but only estimated in the report.

Figure 24.1 Mine and Mill Layout - Major Infrastructure (North Up)
(Source: TCO)

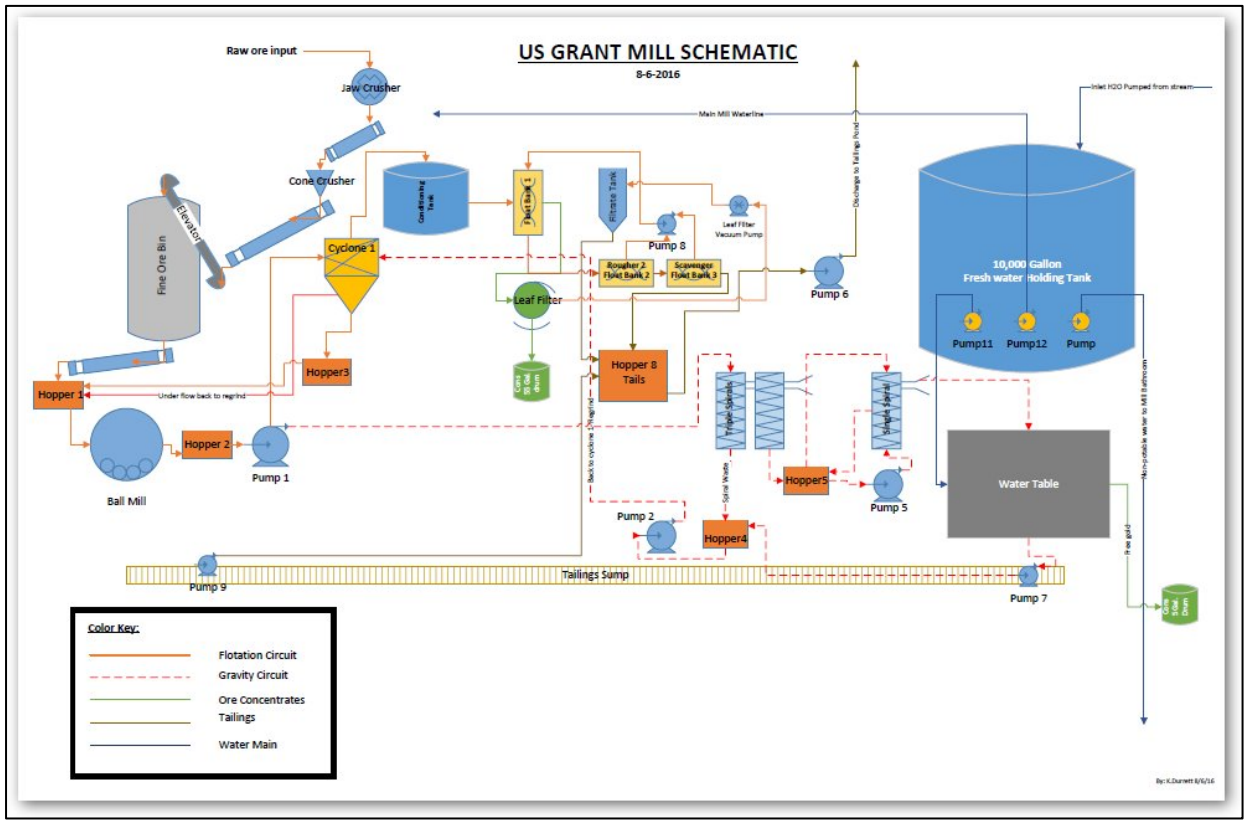


Figure 24.2 US Grant Mine Mill Schematic
(Source: TCO)

25 INTERPRETATION AND CONCLUSIONS

The US Grant Mine property benefits from previous mining and test work which provides essential information about the nature of mineralization, mining methods and processing. The US Grant Mine property has had only a limited amount of exploration drilling during its history. TCO has designed conceptual drill programs over the US Grant Mine property and there is strong potential to extend areas of known mineralization. Surface drilling targeted the vein system to less than 300 feet below the surface from three locations. Underground drilling targeted the vein system less than 100 feet below the US Grant Mine #3 level and only provided a cursory look for additional vein systems in the hanging wall and foot wall of the US Grant vein.

The initial exploration drilling of 14 holes was completed by TCO in late 2016 and reported in January 2017 (TCO, 2017). The 2016 surface exploration drilling results support the historic drill hole (USG-88-2) data reported above the Level 1 of the US Grant. This further supports the geological interpretations and the historic resource estimate of the US Grant Mine Property. Additionally, exploratory mine drifting and sampling below Level 3 shows that mineralization is not closed off at depth.

Further exploration, rehabilitation and explorative mining along with processing of mineralized rock and testing capabilities of the plant are warranted to support the future position of purchasing the asset on election to do so.

Mineral resources and/or reserves compliant to NI 43-101 have not yet been stated for the US Grant Mine and economic viability has not been demonstrated. Historically, mine development in the absence of mineral resources and reserves have increased risks of technical and/or economic failure.

Table 25.1 provides a summary of the risks and opportunities associated with US Grant Mine property at the current level of understanding.

Table 25.1 Relevant Risks and Opportunities

Project Element	Risk Level	Comment
MINERALIZATION		
Exploration data sufficiency/adequacy	Moderate	Vein mineralization in the Virginia City Mining District is located along continuous fault zones. Additional drilling recommended to confirm untested areas of the US Grant and El Fleeda veins
Assaying	Low	Recent sampling and drilling programs have documented QA/QC and support historic results.
Surveying	Moderate	Collar surveys are potentially inaccurate due to survey methods. Down hole surveys were not conducted by the previous operators
Geology	Moderate	Geology is sufficiently understood to direct drilling and future expansion of mineralization.
ENVIRONMENTAL & PERMITTING		
Status of statutory permits for current activities.	Low to Moderate	Mine is on patented claim. All permits are in place.
Compliance of current activity with existing permits	Low	Currently in compliance.
Risks of future compliance with permits	Low	If future surface disturbance exceeds 5 acre limit, additional permits will be applied for.
Identification of environmental and social risks	Low	Mine is in a historic mining district with local support. No known environmental issues to date.
INFRASTRUCTURE		

Power	Low	In place and adequate.
Water Supply	Low	In place and adequate.
Access	Low	In place and adequate.
Transportation	Low	In place and adequate.
Surface Facilities	Low	In place and adequate.

26 RECOMMENDATIONS

The authors make the following recommendations:

1. Continue planned staged exploration program including drilling down dip extensions at the US Grant and El Fleeda veins to further refine geological data and extent of mineralization. The cost of drilling additional mineralized targets with a planned drilling program is estimated at $1,950,000 which equates to approximately 32,000 feet of drilling at (Table 26.1).
2. Develop and establish a mineral resource estimate compliant to NI43-101 using the applicable historic data, recent TCO exploration drilling and channel sample data, and recent TCO exploratory mine drifting data. The estimated cost of this work is $60,000.
3. Continue exploratory mining and rehabilitation of mine workings and equipment along with rehabilitation and testing of the mill. *It is cautioned that mine development in the absence of mineral resources and reserves, historically, have increased risks of technical and/or economic failure.* The estimated cost of this work is approximately $310,000 per month (Table 26.2).

Table 26.1 Exploration Target Drill Program Costs

	US$ / ft
Contractor Cost	44.60
Geologists	8.90
Environmental	0.75
Services	2.25
Assay	2.06
Bond	1.75
Report	0.75
TOTAL	**$61.06 / ft**
TOTAL PROGRAM ~32,000 ft	**$1,953,920**

Table 26.2 Exploratory Mining/Milling and Rehabilitation of Mine Costs

Mine Costs	US$ / Month
Staff	45,000
Hourly	180,000
Power	16,000
Equipment	7,500
Powder	20,000
Fuel	9,500
Other Consumables	32,000
TOTAL	**$310,000**

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28 GLOSSARY / DEFINITION OF TERMS

TERM	TERM / DEFINITION
AAS	American Analytical Services
Adit	A horizontal passage leading into a mine for the purposes of access or drainage.
Ag	Silver
Assay	The chemical analysis of mineral samples to determine the metal content.
At	Assay ton
Au	Gold
Au Eq	Gold equivalent grade is based on $1200/ounce Au and $15.80/ounce Ag contained unless otherwise stated.
BLM	Bureau of Land Management, US Department of Interior
Capital expenditure	All other expenditures not classified as operating costs.
CDN	Canadian dollars
Cfm	Cubic foot per minute
Cfs	Cubic feet per second
Composite	Combining more than one sample result to give an average result over a larger distance.
Concentrate	A metal-rich product resulting from a mineral enrichment process such as gravity concentration or flotation, in which most of the desired mineral has been separated from the waste material in the mill feed.
Crushing	Initial process of reducing mill feed particle size to render it more amenable for further processing.
DEQ	Department of Environmental Quality (State of Montana)
Dilution	Waste, which is unavoidably mined with mill feed.
Dip	Angle of inclination of a geological feature/rock from the horizontal.
DML	Dawson Metallurgical Laboratories
Dmt	Dry metric tonne
Drift	A near-horizontal passageway in a mine, following the vein of mineralization
°F	Degrees Fahrenheit
Fault	The surface of a fracture along which movement has occurred.
Foot wall	The underlying side of a mill feed area or stope.

Ft	Foot (feet)
G&A	General and administration
Gangue	Non-valuable components of the mill feed.
Gpm	Gallons per minute
Gpt	Grams per metric tonne (equivalency 1 metric tonne = 1.10231 short tons)
Grade	The measure of concentration of gold within mineralized rock.
Hanging wall	The overlying side of a mill feed area or slope.
Haulage	A horizontal underground excavation which is used to transport mined mill feed.
Igneous	Primary crystalline rock formed by the solidification of magma.
IRR	Internal Rate of Return
Lb	Imperial unit pound, equivalent to 2.205 metric kilograms.
Level	Horizontal tunnel the primary purpose is the transportation of personnel and materials.
LOM	Life-of-Mine
M	Millions
MAX	Maximum
Milling	A general term used to describe the process in which the mill feed is crushed and ground and subjected to physical or chemical treatment to extract the valuable metals to a concentrate or finished product.
MIN	Minimum
Mineral/Mining Lease	A lease area for which mineral rights are held.
MMC	Madison Mining Corporation
Msl	Mean sea level
Muck	Rock that has been broken by blasting
NI 43-101	Canadian National Instrument 43-101 *Standards of Disclosure for Mineral Projects*
NPV	Net Present Value
NSR	Net Smelter Return
NW, SW, NE, SE	Northwest, Southwest, Northeast, Southeast
Opt	Ounce per ton
Oz	Ounce (1 ounce = 0.911 troy ounces)
%	Percent
Pillar	Rock left behind to help support the excavations in an underground

	mine.
Ppm	Parts per million
QAQC	Quality Assurance/Quality Control
RC	Reverse circulation
ROM	Run-of-Mine
SD	Standard deviation
SEC	Securities and Exchange Commission (United States)
Shaft	An opening cut downwards from the surface for transporting personnel, equipment, supplies, mill feed and waste.
Smelting	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from the gangue components that accumulate in a less dense molten slag phase.
SMES	Small Miner's Exclusion Statement
Sh ton	Short ton (ton)
Stope	Underground void created by mining.
Strike	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Tailings	Finely ground waste rock from which valuable minerals or metals have been extracted.
TCO	Transatlantic Mining Corporation
Ton	Short ton
Tonne	Metric tonne = 1.10231 short ton
Total Expenditure	All expenditures including those of an operating and capital nature.
Tpd	Short ton per day
Tr oz / oz tr	Troy ounce (1 troy ounce = 1.097 ounces)
TSX-V	Toronto Stock Exchange – Venture
USD	United States dollars
VCMD	Virginia City Mining District
VLF-EM	Very Low Frequency – Electromagnetic

29 APPENDICES

Appendix A: Option and Joint Venture Agreement between TCO and Madison Mining Company and Elite Properties (TCO News Release, January 22, 2016)

TRANSATLANTIC MINING

TRANSATLANTIC MINING ANNOUNCES LEASE AND OPTION AGREEMENT AND APPOINTMENT OF NEW DIRECTOR

January 22nd 2016

TSX Venture Exchange

Trading Symbol: TCO

Vancouver, British Columbia

Transatlantic Mining Corp (TSX.V: TCO) (the "Company") is pleased to announce the following:

Lease and Option of US Grant Mine

The Company has entered into a lease and exclusive option agreement to operate and potentially purchase the US Grant Mine at Virginia City, Montana.

Under the transaction the Company:

- Pays $50,000 USD to lease the property for 4 months. During this time, the Company will conduct appropriate due diligence to determine the potential of the property.
- After 4 months, the Company may elect to either purchase the property on the terms below, or elect to lease the property for up to an additional 12 months at the rate of $25,000 USD per month. The Company is entitled to any of the production or toll treating from the project during the lease period.
- After the initial four-month lease or at any time during the subsequent 12-month lease, if the Company exercises that right, the Company may exercise the option to purchase the mine, mill and all of the associated equipment, permits and rights comprising the US Grant Mine. Under the purchase, the Company will pay a total of $6,000,000 USD over three years, or earlier at the Company's election. Payments are due and payable with reference to the date that the property is conveyed to the Company following the Company giving notice of exercise to the vendor (the "Closing Date"), as follows:
  - $2,000,000 USD less all lease payments on the Closing Date
  - $2,000,000 USD on or before the first anniversary of the Closing Date
  - $2,000,000 USD on or before the second anniversary of the Closing Date.

The US Grant Mine is an historical mining site with the original discovery of gold in Montana occurring May 22 1863 on the site, and is named after President Ulysses S. Grant who signed into law the General Ming Act of 1872. The original mining licence for the property was signed by President Benjamin Harrison in 1889.

The US Grant Mine property includes the fully permitted and grandfathered mill. The property includes several known high grade gold and silver veins which the Company intends to evaluate in the coming months.

Transatlantic Mining Corp. | Suite 800 | 1199 West Hastings Street | Vancouver | Canada V6E 3T5
T 604-424 8257 | F 604-357 1139| www.transatlanticminingcorp.com

CEO Rob Tindall said 'We are very excited to be commencing work on what is a truly historical mining project with significant exploration and mining potential. We see this project adding significant synergies to our nearby Monitor / Richmond project and look forward to further evaluating both projects in the coming year'.

The transaction is subject to TSX Venture Exchange approval.

Appointment of New Director

Michael Hulmes was appointed to the Company's Board of Directors at the Annual General Meeting held December 8, 2015. Mr. Hulmes is a mining executive with over 30 years' experience in international underground and open pit mining operations. Until 2014 he was the Managing Director, Iberian Operations, for Lundin Mining Corporation, a position that he held from 2012. From 2009 to 2012 he served as the General Manager, Operations, for OK Tedi Mining Limited, operating the OK Tedi Mine in Papua New Guinea. Mr. Hulmes has also been appointed to the Company's Audit Committee.

About Transatlantic Mining Corp.
Transatlantic Mining Corp. is a mineral exploration company focused on becoming the next high grade metal producer. The Company's holdings include an option to earn an 80% interest in AMCOR's Monitor Copper, Gold and Silver project in the Coeur D'Alene Mining District in Idaho.

For further information contact Rob Tindall at (+61 457 999 094).

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

Appendix B: US Grant Mine #3 Level Sampling

US Grant Mine #3 level channel sampling: 950 to 1,350 feet in from portal

Sample #	Distance from Portal (ft)	width (ft)	Au_opt	Ag_opt	Au Eq_opt
P474172	950	2.5	0.01	10.9	0.15
P474173	956	2.5	0.02	3.2	0.06
P474174	970	3	0.04	13.6	0.22
P474175	980	3	0.02	19.0	0.27
P474176	990	2	0.02	19.4	0.28
P474177	1000	1	0.39	51.0	1.06
P474178	1010	2	0.30	11.8	0.46
P474179	1020	1.5	0.15	31.9	0.57
P474180	1030	1.3	0.23	31.5	0.64
P474182	1043	3	0.09	5.7	0.16
P474183	1050	1.5	0.27	17.0	0.49
P474184	1060	1.5	0.48	21.3	0.76
P474185	1070	2	0.21	16.5	0.42
P474186	1080	2.2	0.21	13.9	0.39
P474187	1090	3	0.08	9.5	0.20
P474188	1100	2.5	0.50	14.7	0.69
P474189	1110	1.5	0.17	6.4	0.26
P474190	1120	2.2	0.11	27.9	0.47
P474192	1120	3.3	0.18	8.8	0.30
P474193	1150	2.5	0.26	19.1	0.51
P474194	1160	2.3	0.06	5.1	0.13
P474195	1170	2.3	0.16	12.1	0.31
P474196	1180	5	0.24	8.5	0.35
P474197	1190	3.8	0.28	19.6	0.53
P474198	1200	4	0.31	12.6	0.47
P474199	1220	4	0.18	8.8	0.29
P474200	1230	3.3	0.29	10.9	0.43
101728	1243	1.8	0.90	31.5	1.32
178945	1260	1.8	0.15	2.6	0.18
178946	1270	1.5	0.04	1.2	0.05
178947	1280	1	0.11	26.8	0.46
178948	1290	2	0.17	34.6	0.62
178949	1300	0.7	0.18	18.3	0.42
178950	1310	1.2	0.19	5.8	0.27

23581	1320	0.5	0.13	4.7	0.19
23582	1334	3	0.36	18.8	0.61
23583	1340	1	0.09	6.7	0.18
23584	1350	1	0.09	10.4	0.23

Equivalent Au is based on US $1200/ounce Au, US $15.80/ounce Ag

US Grant Mine #3 level channel sampling: 1600 to 2,320 feet in from portal

Sample #	Distance from Portal (ft)	width (ft)	Au_opt	Ag_opt	Au Eq_opt
470732	1600	1	0.15	2.5	0.18
470731	1620	1.3	0.06	2.9	0.10
470730	1660	1.3	0.05	2.9	0.09
470729	1680	1	0.46	28.4	0.83
470726	1700	3	0.07	4.0	0.13
470725	1720	2	0.11	12.3	0.27
470724	1740	2.3	0.01	2.4	0.04
470723	1800	2	0.05	3.4	0.09
470722	1810	2.7	0.03	0.9	0.04
470721	1820	3	0.02	0.0	0.02
470720	1830	2.4	1.29	31.3	1.71
470719	1840	2.9	0.18	6.4	0.27
470718	1850	3.7	0.13	2.6	0.16
470717	1860	2.7	0.17	6.6	0.26
470716	1870	3	0.11	4.1	0.16
470715	1880	2.6	0.11	3.6	0.16
470714	1890	2.4	0.05	0.5	0.06
470713	1900	4.5	0.14	0.3	0.14
470712	1910	6	0.06	1.8	0.08
470711	1920	4.5	0.04	0.4	0.04
470710	1930	4	0.02	0.0	0.02
470709	1940	5.5	0.05	0.3	0.05
470708	1950	4.9	0.02	0.0	0.02
470707	1960	2.4	1.11	15.0	1.30
470706	1970	3.5	0.22	4.1	0.28
470705	1980	1.9	0.06	1.3	0.08
470704	1990	3.5	0.04	2.1	0.06

470703	2000	4	0.16	1.8	0.18
470702	2010	3.5	0.07	2.0	0.10
470701	2025	5	0.02	0.5	0.02
307500	2035	4	0.25	3.4	0.29
307499	2045	5	0.08	1.2	0.10
307498	2055	3.5	0.17	2.9	0.21
307497	2065	1.4	0.03	1.7	0.05
307496	2085	3.3	0.06	0.9	0.07
307495	2130	2	0.02	2.2	0.04
1429901	2170	4.4	0.02	0.8	0.03
1429902	2180	3.1	0.20	4.4	0.26
1429903	2180	3.8	0.05	6.5	0.13
470739	2188	1.5	0.13	7.5	0.22
307494	2200	1	0.15	2.7	0.18
1429905	2200	3.2	0.04	2.0	0.07
470740	2201	1.8	0.29	32.9	0.72
1429906	2217	3	0.02	0.5	0.02
1429907	2228	3.3	0.07	5.3	0.14
1429908	2236	2.6	0.14	3.5	0.18
1429910	2246	4.4	0.15	9.5	0.28
470741	2250	6	0.04	0.9	0.05
1429911	2255	4	0.05	2.3	0.08
470742	2262	2.3	0.09	2.0	0.12
1429912	2265	5.1	0.29	3.6	0.33
1429913	2273	3.5	0.07	1.7	0.10
1429914	2283	5.2	0.09	2.5	0.12
1429916	2288	5.3	0.21	2.8	0.24
1429917	2300	4.8	0.35	14.1	0.54
1429918	2310	5.5	0.06	2.3	0.09
1429919	2320	4.4	0.03	0.6	0.04

Equivalent Au is based on US $1200/ounce Au, US $15.80/ounce Ag

CERTIFICATE OF ANALYSIS

American Analytical Services Inc.
59148 Silver Valley Road / PO Box 748
Osburn, ID 83849
Phone No. (208) 752-1034
Fax No. (208) 752-6151
aaslab@usamedia.tv

Client: TransAtlantic Idaho
Address: PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881
Attn: Ron Krusemark
ron.krusemark@gmail.com

Job # TAM_101915-F
Date Received: 10/19/2015
Date Reported: 10/26/2015
Total Samples: 40

Date Sampled: 10/19/2015
Date Analyzed: 10/26/2015

Samples were received in the lab on the date stated above without any additions or deletions from the submittal form, except for corrections to the Chain of Custody and were tested in the usual manner without deviation from the test methods and in compliance with all requirements and specifications. These results relate only to the samples tested.

The laboratory will keep these records confidential and on file for 3 years from the report date.

X _____

Certification Signature
Quality Manager
*Signature on file

PJLA Testing
Accreditation# 66670

American Analytical Services
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TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

Job No: TAM_101915-F
Test Results
10/26/2015

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: Rock

#	Sample ID	Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
1	P474172	0.007	10.9	1 AT
2	P474173	0.015	3.15	1 AT
3	P474174	0.038	13.6	1 AT
4	P474175	0.015	19.0	1 AT
5	P474176	0.020	19.4	1 AT
6	P474177	0.386	51.0	1 AT
7	P474178	0.303	11.8	1 AT
8	P474179	0.147	31.9	1 AT
9	P474180	0.226	31.5	1 AT
10	P474181 P	0.035	4.02	1 AT
11	P474182	0.085	5.65	1 AT
12	P474183	0.265	17.0	1 AT
13	P474184	0.477	21.3	1 AT
14	P474185	0.205	16.5	1 AT
15	P474186	0.209	13.9	1 AT
16	P474187	0.077	9.46	1 AT
17	P474188	0.499	14.7	1 AT
18	P474189	0.171	6.40	1 AT
19	P474190	0.107	27.9	1 AT
20	P474191 P	0.334	10.3	1 AT
21	P474192	0.184	8.76	1 AT
22	P474193	0.256	19.1	1 AT
23	P474194	0.061	5.05	1 AT
24	P474195	0.155	12.1	1 AT
25	P474196	0.238	8.50	1 AT

AAS Form FA_Ag_Au Revision 1:2 05/15

*Silver and Gold results are uncorrected unless otherwise specified.

PJLA Testing
Accreditation# 66670

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TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

Job No: TAM_101915-F
Test Results
10/26/2015

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: Rock

#	Sample ID	Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
26	P474197	0.275	19.6	1 AT
27	P474198	0.305	12.6	1 AT
28	P474199	0.176	8.76	1 AT
29	P474200	0.286	10.9	1 AT
30	178945	0.145	2.63	1 AT
31	178946	0.038	1.19	1 AT
32	178947	0.109	26.8	1 AT
33	178948	0.166	34.6	1 AT
34	178949	0.175	18.3	1 AT
35	178950	0.191	5.80	1 AT
36	23581	0.127	4.66	1 AT
37	23582	0.364	18.8	1 AT
38	23583	0.091	6.68	1 AT
39	23584	0.093	10.4	1 AT
40	23585	0.008	<0.100	1 AT

AAS Form FA_Ag_Au Revision 1:2 05/15

*Silver and Gold results are uncorrected unless otherwise specified.

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Phone No.: (208) 682-3881

Job No: TAM_101915-F
Test Results
10/26/2015

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: Rock

#	Sample ID	Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
QC REPORT				
	Barren	<0.002	<0.100	1 AT
	P474179 Dup	0.144	32.1	1 AT
	P474189 BC	0.195	6.98	1 AT
	P474199 Dup	0.177	9.01	1 AT
	23583 BC	0.083	6.58	1 AT

QC Key:
Barren: Rock w/out Precious Metals
BC: Bucking Room (Prep) Check (2nd split from cone crusher)
Dup: Duplicate sample assay

AAS Form FA_Ag_Au Revision 1:2 05/15

***Silver and Gold results are uncorrected unless otherwise specified.**

PJLA Testing
Accreditation# 66670

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May 25, 2016 20141226 TAM

Transatlantic Mining Corp.
Art Campo

	Au (oz/t)	Ag (oz/t)
307487	0.072	3.35
307497	0.028	1.73
470705	0.058\	1.34
470715	0.114	3.62
470716	0.111	4.07
470717	0.168	6.64
470719	0.183	6.43
470720	1.293	31.31
470723	0.046	3.35
470724	0.006	2.37
470725	0.084	4.36
470727	0.033	1.28
470733	0.143	15.16
470734	0.459	10.45
470735	0.033	3.056
470736	0.137	2.76
470737	0.023	0.83
470738	0.054	8.43

Robert W. Prather
Analytical Chemist

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May 24, 2016 TAM 20141225

Transatlantic Mining Corp.
Art Campo

	Au (oz/t)	Ag (oz/t)
307493	**0.202**	**2.57**
307494	**0.147**	**2.72**
307495	**0.016**	**2.20**
307496	**0.058**	**0.88**
307498	**0.169**	**2.90**
307499	**0.081**	**1.19**
307500	**0.248**	**3.42**
470701	**0.017**	**0.45**
470702	**0.073**	**1.96**
470703	**0.156**	**1.82**
470704	**0.036**	**2.05**
470706	**0.222**	**4.05**

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May 26, 2016 20141227

Transatlantic Mining Corp.
Art Campo

	Au (oz/t)	Ag (oz/t)
470707	**1.105**	**14.95**
470708	**0.023**	**0.01**
470709	**0.047**	**0.27**
470710	**0.023**	**0.01**
470711	**0.037**	**0.39**
470712	**0.057**	**1.75**
470713	**0.135**	**0.26**
470714	**0.051**	**0.48**
470718	**0.129**	**2.64**
470721	**0.019**	**0.01**
470722	**0.032**	**0.88**
470725	**0.111**	**12.25**
470728	**0.091**	**3.30**
470729	**0.461**	**28.37**
470730	**0.053**	**2.90**
470731	**0.058**	**2.85**
470732	**0.152**	**2.47**
30442	**0.031**	**0.21**

_____
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June 9, 2016 20141238

Transatlantic Mining Corp.
Kyle Durrett

	Au (oz/t)	Ag (oz/t)
470726	0.073	3.96
1429901	0.019	0.76
1429902	0.202	4.42
1429903	0.049	6.47
1429904	Rerun	Rerun
1429905	0.040	2.03
1429906	0.015	0.54
1429907	0.065	5.33
1429908	0.138	3.47
1429909	0.095	1.50
1429910	0.154	9.47
1429911	0.053	2.32
1429912	0.286	3.61
1429913	0.074	1.73
1429914	0.088	2.50
1429915	0.004	0.01
1429916	0.205	2.78
1429917	0.350	14.07
1429918	0.059	2.27
1429919	0.029	0.60
470743	0.014	0.44
470744	0.053	2.96

Robert W. Prather
Analytical Chemist

Appendix C: US Grant Mine Phase 1 Drilling Assay Results (October/November 2016)

CERTIFICATE OF ANALYSIS

American Analytical Services Inc.
59148 Silver Valley Road / PO Box 748
Osburn, ID 83849
Phone No. (208) 752-1034
Fax No. (208) 752-6151
lab@aaslab.net

Client: TransAtlantic Idaho
Address: PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881
Attn: Ron Krusemark
ron.krusemark@gmail.com

Job # TAM_102616-F
Date Received: 10/26/2016
Date Reported: 10/28/2016
Total Samples: 10

Date Sampled: 10/26/2016
Date Analyzed: 10/28/2016
Page 1 of 2

Samples were received in the lab on the date stated above without any additions or deletions from the submittal form, except for corrections to the Chain of Custody and were tested in the usual manner without deviation from the test methods and in compliance with all requirements and specifications. These results relate only to the samples tested.

This Certificate of Analysis shall not be reproduced except in full, without written approval of the laboratory. This Certificate of Analysis contains all the results requested in the job number stated above, and are the property of the client.

The laboratory will keep these records confidential and on file for 3 years from the report date.

X _____ or X _____

Alicia Fink
Quality Manager
*Signature on file
Certification Signature

Larry Gillette
Technical Director
*Signature on file
Certification Signature

American Analytical Services
59148 Silver Valley Rd * PO Box 748
Osburn, ID 83849
(208) 752-1034
lab@aaslab.net

Attn: Ron Krusemark
ron.krusemark@gmail.com

TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

Job No: TAM_102616-F
Test Results
10/28/2016

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: ROCK

#	Sample ID		Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
1	1430101		0.003	0.459	1 AT
2	1430102		<0.002	0.720	1 AT
3	1430103	SURDH#1 1430103 1430104	0.255	1.96	1 AT
4	1430104		0.311	7.83	1 AT
5	1430105		<0.002	0.144	1 AT
6	1430106		0.004	0.552	1 AT
7	1430107		0.005	0.333	1 AT
8	1430108		0.006	0.350	1 AT
9	1430109		0.005	0.372	1 AT
10	1430110 P		0.103	1.58	1 AT

QC Report

Barren	<0.002	<0.100	1 AT
1430103 BC	0.267	2.07	1 AT
1430107 Dup	0.004	0.356	1 AT

QC Key:
Barren: Rock w/out Precious Metals
BC: Bucking Room (Prep) Check (2nd split from cone crusher)
Dup: Duplicate sample assay

Job No: TAM_111416-F1
Test Results
11/16/2016

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: ROCK

TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

#	Sample ID	Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
1	1430136	<0.002	<0.100	1 AT
2	1430137	<0.002	0.166	1 AT
3	1430138	0.040	0.635	1 AT
4	1430139	0.127	2.21	1 AT
5	1430140	0.026	1.15	1 AT
6	1430141	0.127	1.88	1 AT
7	1430142	<0.002	<0.100	1 AT
8	1430143	0.013	0.431	1 AT
9	1430144	0.004	0.292	1 AT
10	1430145	0.003	0.218	1 AT
11	1430146	0.011	0.354	1 AT
12	1430147	0.004	0.186	1 AT
13	1430148 P	0.105	1.29	1 AT
14	1430149	<0.002	<0.100	1 AT
15	1430150	0.005	<0.100	1 AT
16	1430151	0.004	0.372	1 AT
17	1430152	0.004	0.536	1 AT
18	1430153	<0.002	<0.100	1 AT
19	1430154	<0.002	0.165	1 AT
20	1430155	<0.002	0.480	1 AT
21	1430156	0.043	0.987	1 AT
22	1430157	0.060	4.58	1 AT
23	1430158	0.296	2.04	1 AT
24	1430159	<0.002	<0.100	1 AT
25	1430160	<0.002	0.582	1 AT

SURDH#3
1430139
1430140
1430141

SURDH#8
1430157
1430158

Job No: TAM_110116-F
Test Results - Reissue
11/08/2016

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: ROCK

TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

#	Sample ID		Au* 0.002 (Tr.Oz/Ton)	Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
1	1430111		<0.002	<0.002	0.120	1 AT
2	1430112		<0.002	<0.002	0.380	1 AT
3	1430113		0.004	0.005	0.265	1 AT
4	1430114		0.040	0.044	3.16	1 AT
5	1430115	SURDH#4 1430114 1430115 1430117	0.144	0.140	3.60	1 AT
	1430116 P		0.108	INS	INS	1 AT
6	1430117		0.062	0.058	2.43	1 AT
7	1430118		<0.002	<0.002	0.320	1/2 AT
8	1430119		0.005	<0.002	0.670	1 AT
9	1430120		<0.002	<0.002	0.400	1 AT
10	1430121		0.023	0.019	0.291	1 AT
11	1430122		0.003	<0.002	0.380	1 AT
12	1430123		<0.002	<0.002	0.740	1 AT
13	1430124	SURDH#5 1430124 1430125 1430127	0.047	0.040	2.93	1 AT
14	1430125		0.466	0.459	2.54	1 AT
15	1430126 P		0.060	0.069	1.44	1 AT
16	1430127		0.074	0.077	1.27	1 AT
17	1430128		<0.002	<0.002	0.760	1 AT
18	1430129	SURDH#6 1430129 1430130 1430131 1430132	0.176	0.170	2.55	1 AT
19	1430130		0.383	0.499	3.38	1 AT
20	1430131		0.979	1.01	4.79	1 AT
21	1430132		0.261	0.248	1.48	1 AT
22	1430133		0.014	0.010	0.505	1 AT
23	1430134		<0.002	<0.002	0.110	1 AT
24	1430135		<0.002	<0.002	0.360	1 AT

Job No: TAM_111416-F1
Test Results
11/16/2016

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: ROCK

TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

#	Sample ID		Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
26	1430161		<0.002	0.497	1 AT
27	1430162		<0.002	0.509	1 AT
28	1430163		<0.002	0.496	1 AT
29	1430164		0.033	1.62	1 AT
30	1430165	SURDH#9 1430165 1430166 1430167	0.063	1.98	1 AT
31	1430166		0.062	2.21	1 AT
32	1430167		0.102	3.27	1 AT
33	1430168		0.039	1.81	1 AT
34	1430169		0.007	1.21	1 AT
35	1430170		<0.002	0.939	1 AT
36	1430172		<0.002	0.980	1 AT
37	1430173		<0.002	1.63	1 AT
38	1430174		<0.002	1.01	1 AT
39	1430175		<0.002	0.755	1 AT
40	1430176		0.005	0.648	1 AT
41	1430177		0.011	0.469	1 AT
42	1430178		0.010	0.993	1 AT
43	1430179 P		0.167	13.0	1 AT
44	1430180		<0.002	0.606	1 AT
45	1430181		<0.002	0.634	1 AT
46	1430182		0.031	0.924	1 AT
47	1430183	SURDH#10 1430183 1430184 1430185	0.081	1.84	1 AT
48	1430184		0.280	1.34	1 AT
49	1430185		0.093	1.11	1 AT
50	1430186		<0.002	<0.100	1 AT

Job No: TAM_011217-F
Test Results
01/19/2017

Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: ROCK

TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

#	Sample ID		Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
1	1430189		0.007	0.230	1 AT
2	1430190		0.015	0.444	1 AT
3	1430191	**SURDH#12-1 1430191**	0.087	3.35	1 AT
4	1430192		0.023	1.24	1 AT
5	1430193 P		0.106	1.42	1 AT
6	1430194		0.006	0.378	1 AT
7	1430195		0.004	0.352	1 AT
8	1430196		0.011	0.402	1 AT
9	1430197	**SURDH#12-2 1430197**	0.368	13.9	1 AT
10	1430198		0.004	0.272	1 AT
11	1430199		<0.002	0.235	1 AT
12	1430200		0.005	0.343	1 AT
13	1430201		<0.002	<0.100	1 AT
14	1430202		<0.002	0.123	1 AT
15	1430203		<0.002	0.317	1 AT
16	1430204 P		0.102	1.47	1 AT
17	1430205		0.007	0.545	1 AT
18	1430206	**SURDH#13 1430206 1430207 1430208**	0.020	1.23	1 AT
19	1430207		0.226	3.23	1 AT
20	1430208		0.089	3.94	1 AT
21	1430209 P		0.235	2.67	1 AT
22	1430210		0.031	1.49	1 AT
23	1430211		0.067	2.52	1 AT
24	1430212		<0.002	<0.100	1 AT
25	1430213		<0.002	0.370	1 AT

TransAtlantic Idaho
PO Box 285
Pinehurst, ID 83850
Phone No.: (208) 682-3881

Job No: TAM_011217-F
Test Results
01/19/2017

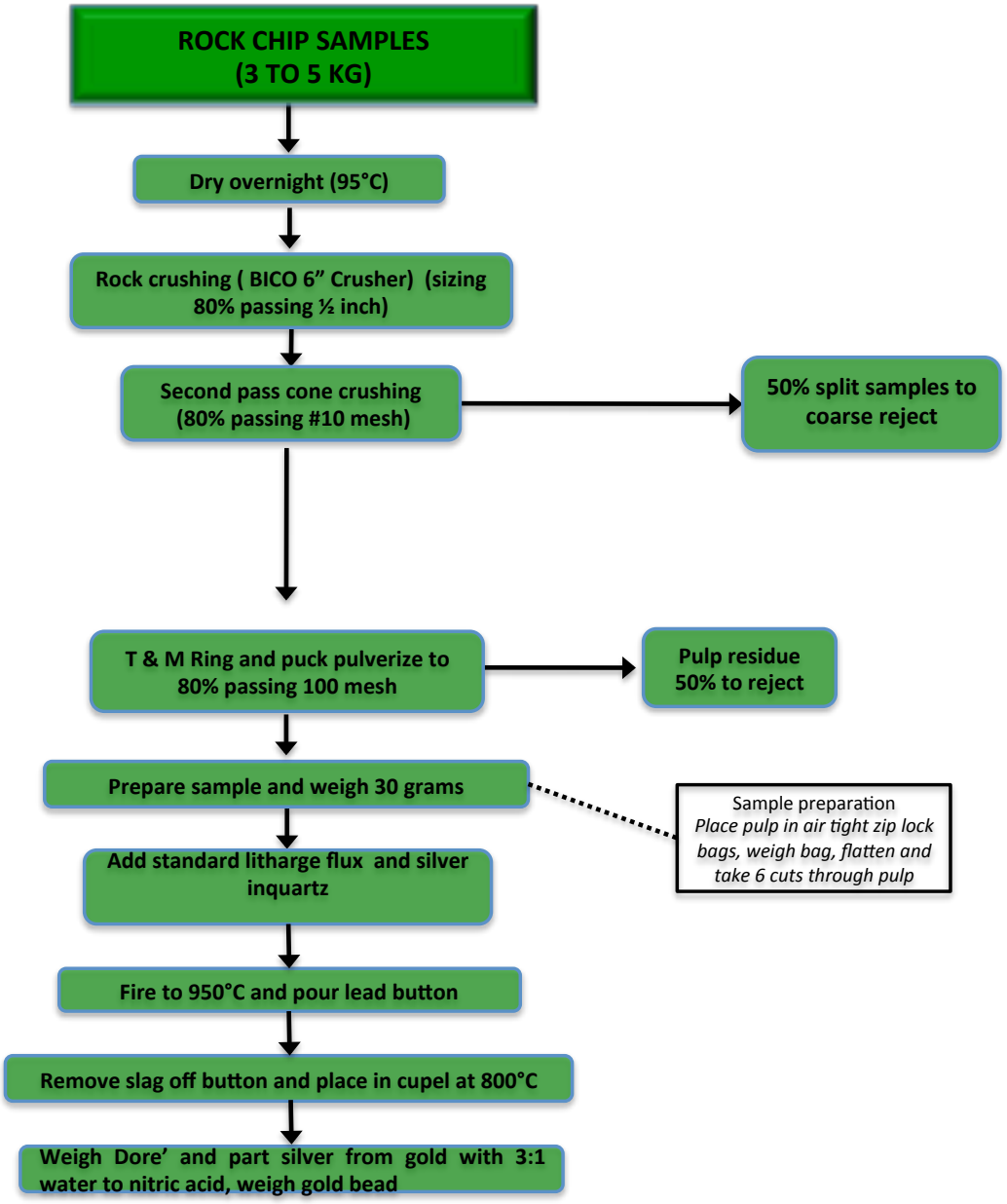
Analysis: Fire Assay
Analysis code: FA-Ag/Au
Sample Type: ROCK

#	Sample ID	Au* 0.002 (Tr.Oz/Ton)	Ag* 0.100 (Tr.Oz/Ton)	Assay Weight
26	1430214	<0.002	0.257	1 AT
27	1430215	0.023	1.18	1 AT
28	1430216	0.060	2.20	1 AT
29	1430217	0.028	2.02	1 AT
30	1430218	0.030	1.59	1 AT
31	1430219	0.495	9.16	1 AT
32	1430220	0.106	4.01	1 AT
33	1430221	<0.002	0.169	1 AT
34	1430222	<0.002	0.671	1 AT
35	1430223	<0.002	0.107	1 AT
36	1430224	<0.002	0.265	1 AT
37	1430255	<0.002	0.345	1 AT
38	1430256	0.005	0.611	1 AT
39	1430257 P	0.106	1.55	1 AT
40	1430258	<0.002	0.561	1 AT
41	1430259	<0.002	0.795	1 AT
42	1430260	0.002	0.907	1 AT
43	1430261	0.003	0.870	1 AT
44	1430262	0.041	1.85	1 AT
45	1430263	<0.002	0.132	1 AT
46	1430264	<0.002	0.747	1 AT
47	1430265	0.382	3.59	1 AT
48	1081	0.066	2.64	1 AT
49	1083	0.041	1.69	1 AT
50	1084	0.115	2.87	1 AT

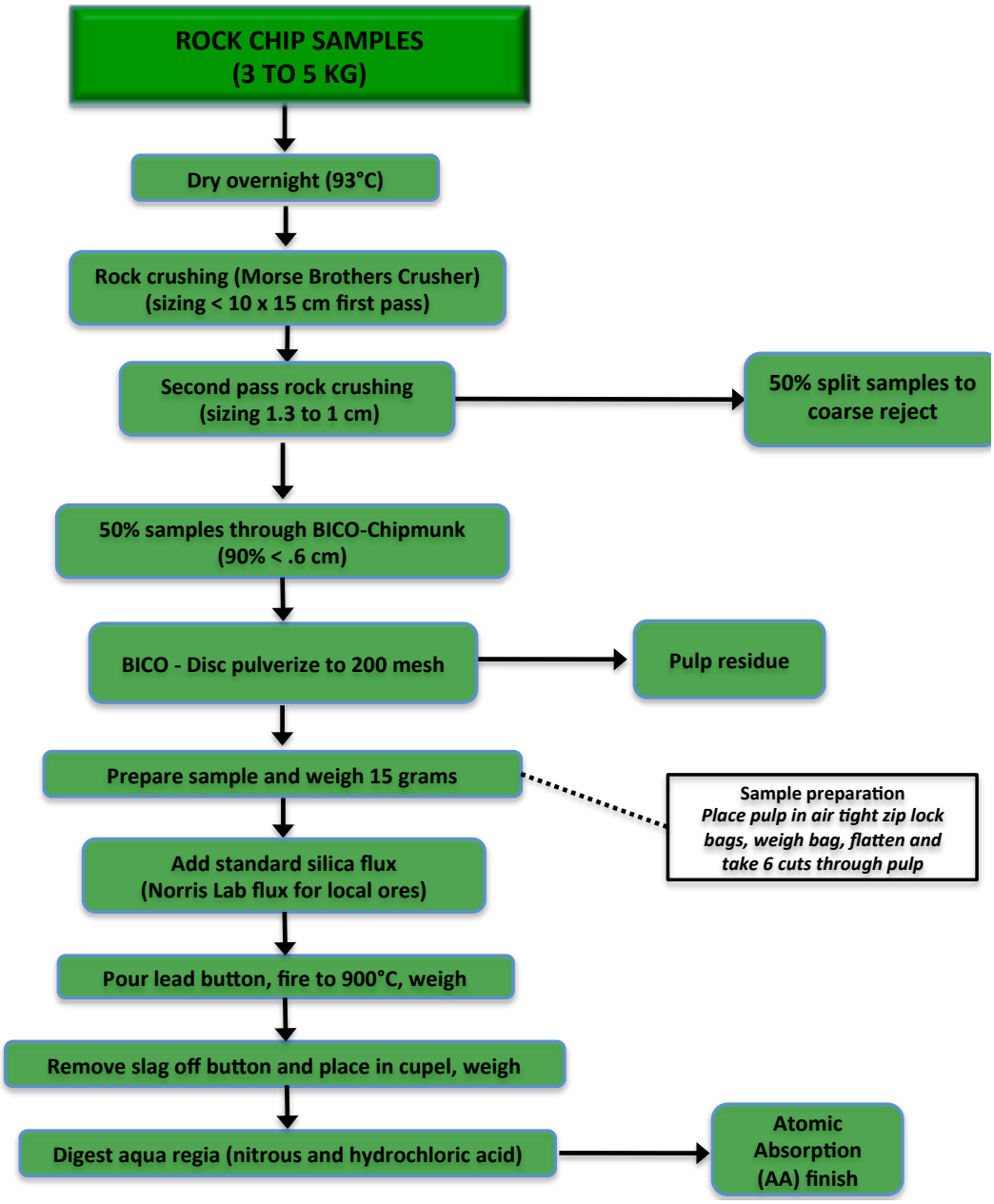
SURDH#14
1430216
1430217
1430218
1430219
1430220

Appendix D: Assay Flow Charts

American Analytic Services (AAS)



Norris Laboratories



Appendix E: Certified Standards and Assay Prep Blanks

Table E1 shows the data for WCM Minerals gold, silver and copper standard: PM 1120. The acceptable range is the certified mean plus or minus two standard deviations.

Table E1 WCM Minerals Gold and Silver Standard

Standard	Au ppm	Ag ppm
PM 1120: Au & Ag		
Certified Value	12.2	372
95% Confidence	11.1 to 13.3	337.4 to 406.6

Figures E1 and E2 show the control charts for AAS from October 2015 for gold and silver, respectively. The one analysis performed by AAS lies within the acceptable range of ±2 standard deviations for both gold and silver.

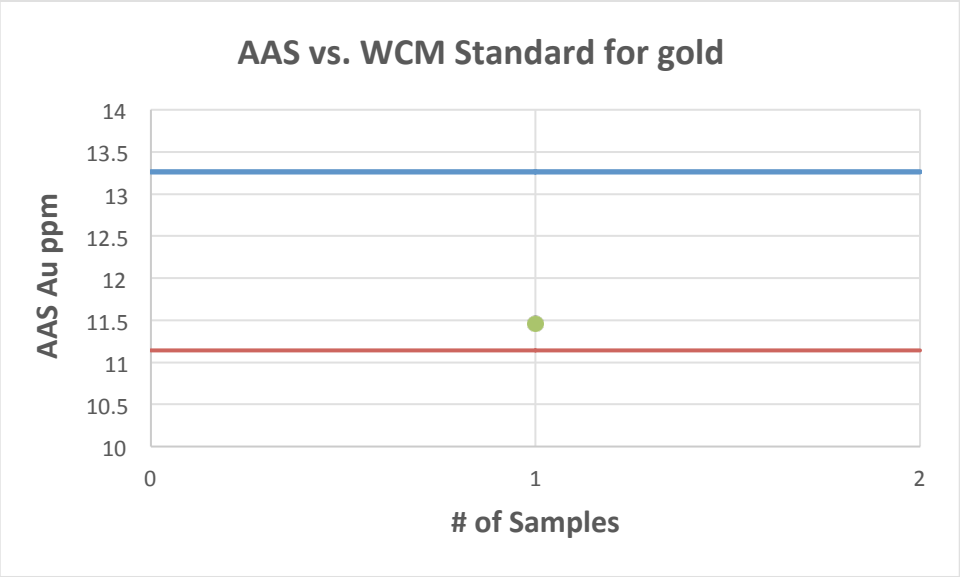


Figure E1 Results of AAS vs. WCM Minerals standard for gold

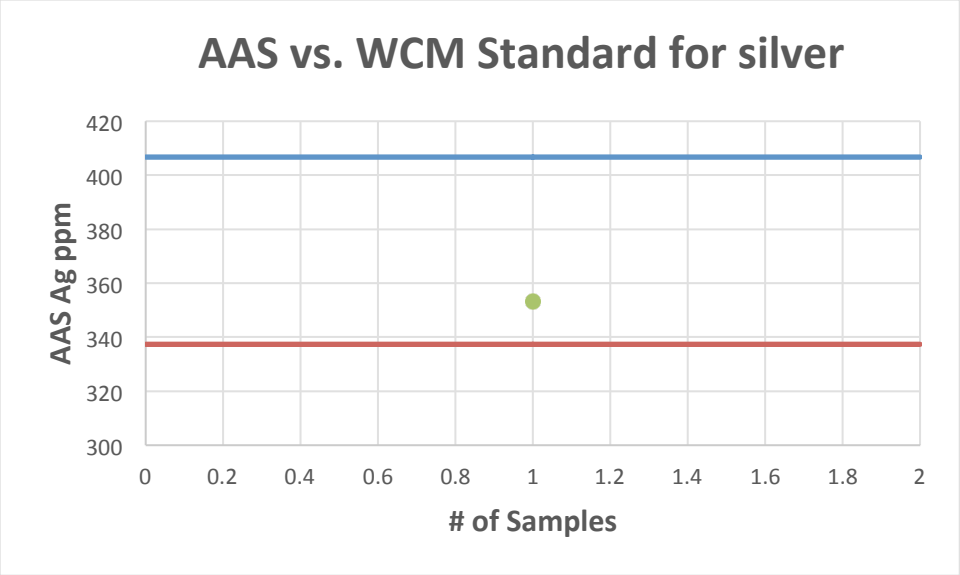


Figure E2 Results of AAS vs. WCM Minerals standard for silver

Table E2 shows the data for the Shea Clark Smith gold and silver standard: MEG-AU.11.15. The acceptable range is the certified mean plus or minus two standard deviations.

Table E2 MEG Labs Gold and Silver Standard

Standard	Au ppm	Ag ppm
MEG-AU.11.15: Au & Ag		
Certified Value	3.445	52.15
95% Confidence	3.179 to 3.711	45.31 to 58.99

There are ten analyses of the MEG-AU.11.15 standard, eight by the Norris Lab and two by AAS. Figures E3 through E6 are the control charts for both labs from May – August 2016.

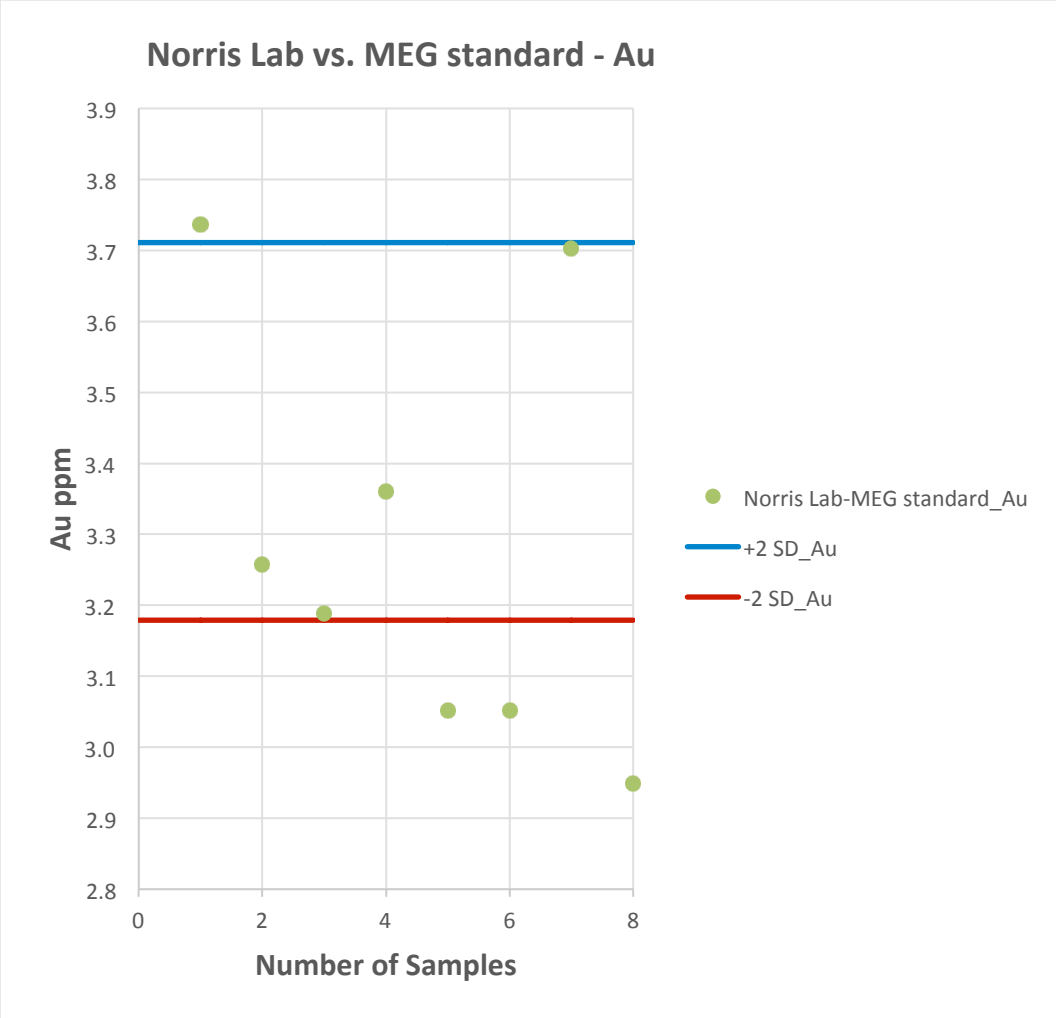


Figure E3 Results of Norris Lab vs. MEG standard for gold

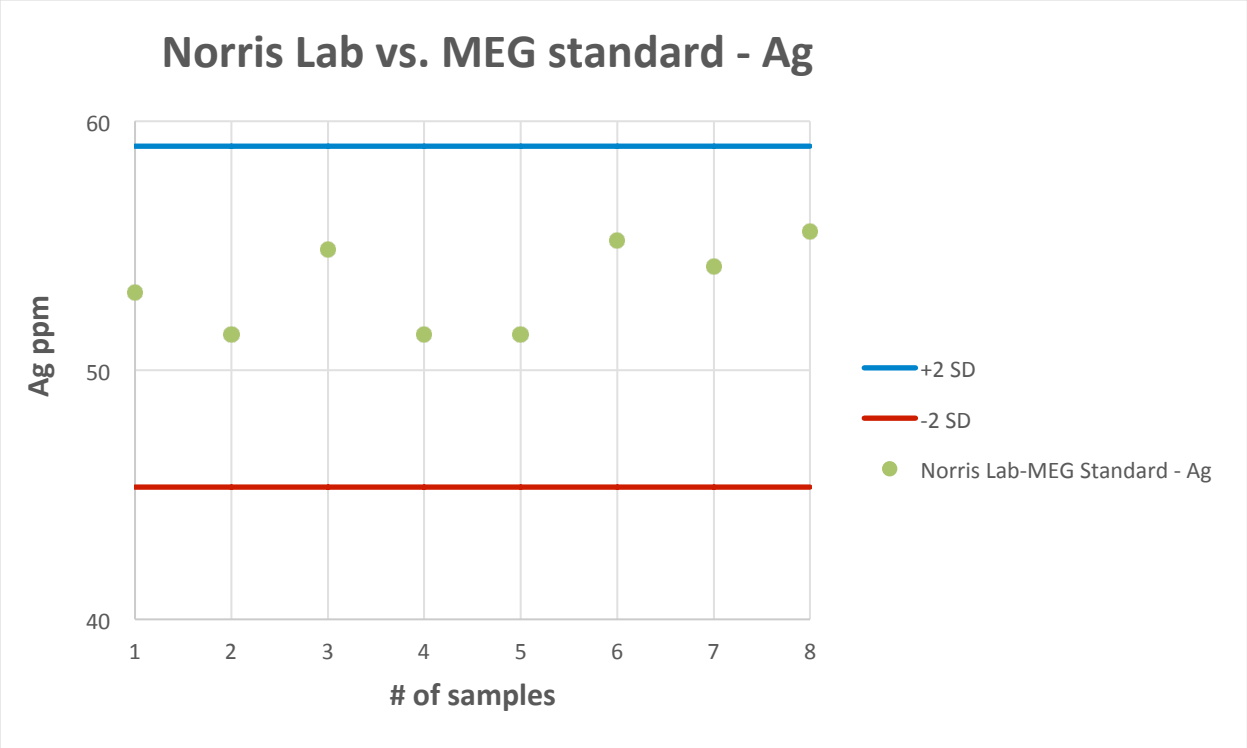


Figure E4 Results of Norris Lab vs. MEG standard for silver

The correlation of the Norris Lab results for the gold-silver standard is acceptable. Fifty percent of the gold values are within the acceptable range of the certified mean ± 2 standard deviations. However, the gold values appear to have a low bias.

All of the Norris Lab silver results are within the acceptable range and are clustered near the mean.

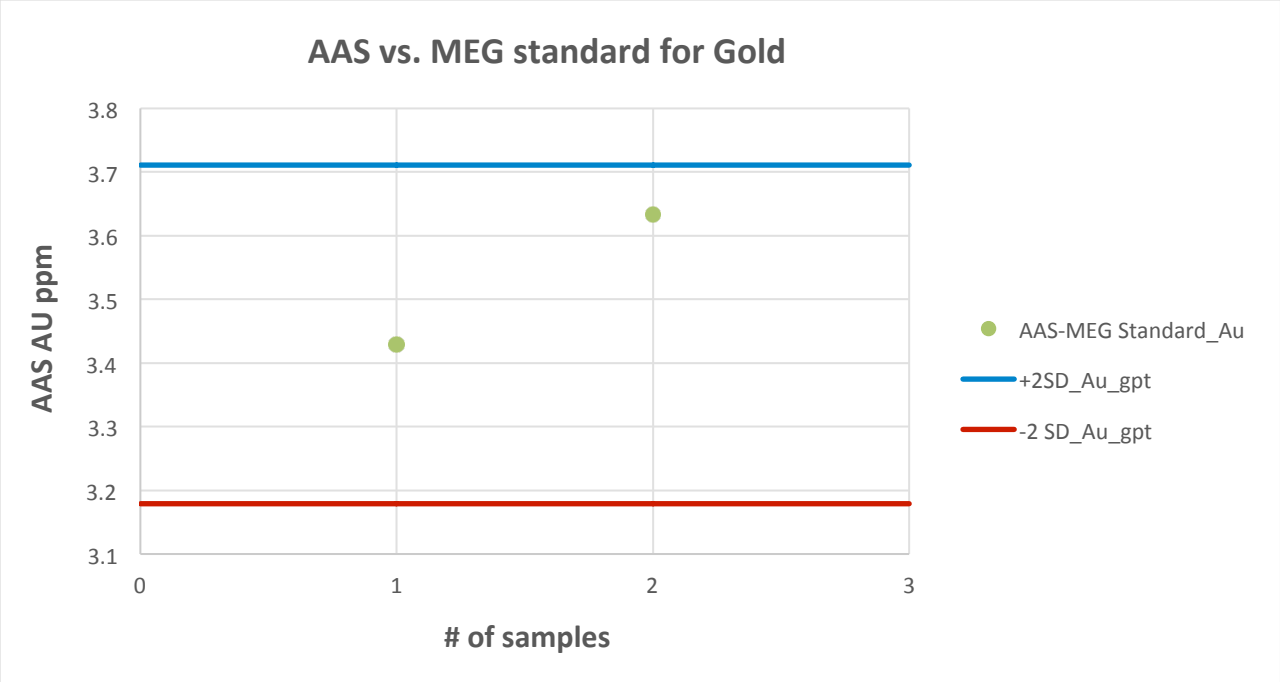


Figure E5 Results of AAS vs. MEG standard for gold

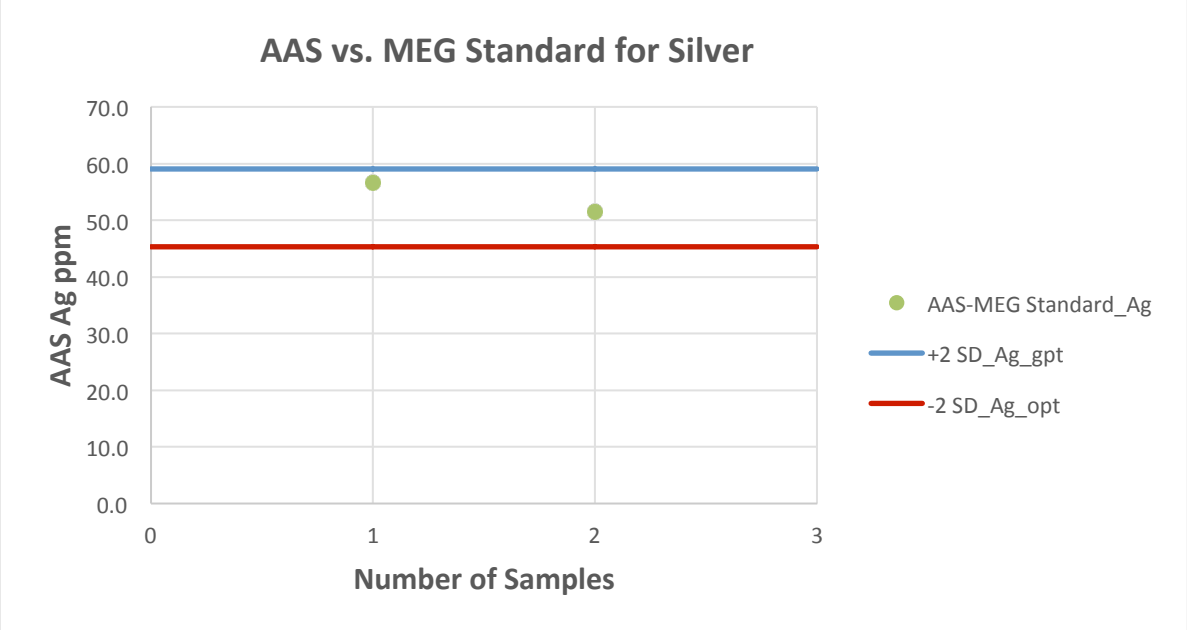


Figure E6 Results of AAS vs. MEG standard for silver

The correlation of the AAS results for the gold-silver standard is acceptable. Both samples are within the ± 2 SD of the mean.

Certified blank assay material is inserted into the sample stream at a rate of about 5%.

Four blanks have been assayed at the Norris Lab. Table E3 shows the range of gold and silver values for the MEG Labs carbonate prep blank.

Table E3 MEG Labs Carbonate Prep Blank

CARBONATE PREP BLANK	Au opt	Ag opt
	Au-ICP21	ME-MS61
Max	0.002	0.490
Mean + 1 SD	0.002	0.288
Mean	0.001	0.145
Mean - 1 SD	0.000	0.001
MIN	0	0.060
SD	0.001	0.144

Figure E7 shows the Norris Lab results for gold vs. the MEG carbonate prep blank. All 4 samples exceed the mean +1 Standard deviation. The gold analyses of the blank were done by the ICP assay method whereas the Norris Lab analyses were standard, 0.5 assay ton (0.5 AT) fire assays. The difference of assay methods and detection limits may account for the Norris Lab results. AAS report detection limits for gold and silver 1 AT fire assays as 0.002 opt Au and 0.100 opt Ag. The Norris Lab report detection limits for gold and silver 0.5 AT fire assays as 0.002 opt Au and 0.100 opt Ag. The mean gold value of the MEG carbonate prep blank is below the detection limit of both labs.

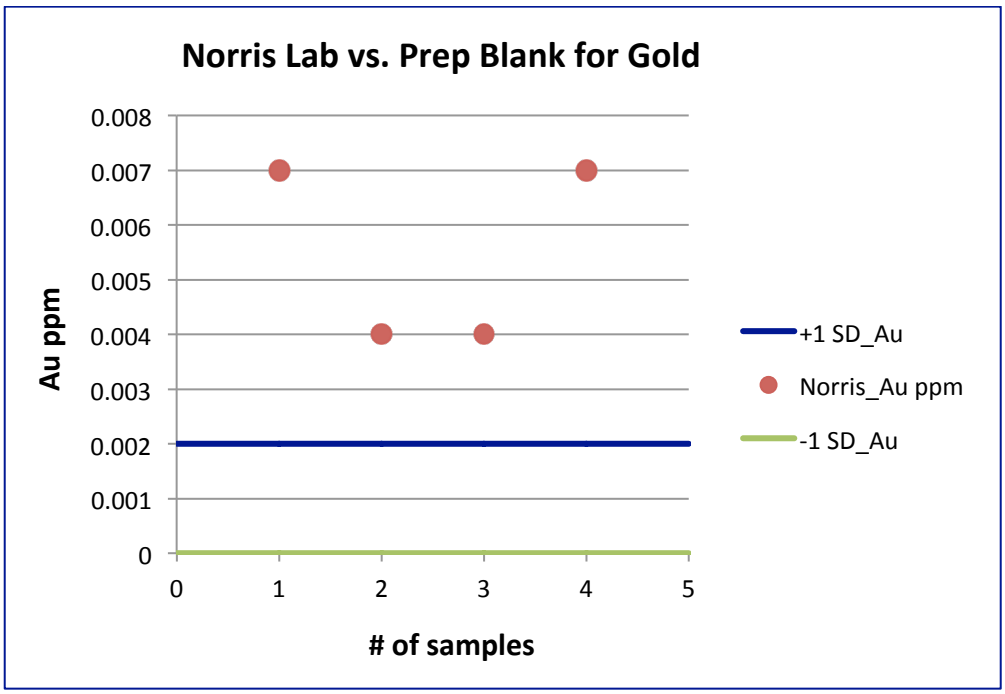


Figure E7 Norris Lab gold values for carbonate prep blank

Figure E8 shows the Norris Lab results for silver vs. the MEG carbonate prep blank. All 4 samples lie within the accepted range.

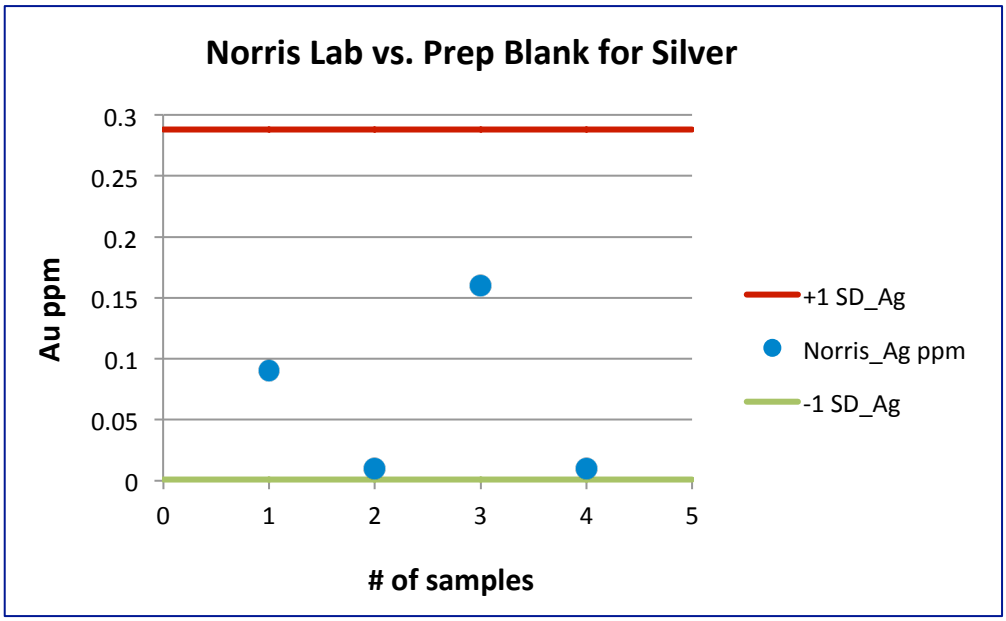


Figure E8 Norris Lab silver values for carbonate prep blank

Check Assays

A total of 53 check assays was done as part of the QAQC program. Most of the analyses were done by AAS on the residual pulps from the Norris Lab. The check assays were from a wide grade range and comprised mine face samples, car grab samples and mill test samples. Figure E9 is a scatter plot showing and comparing AAS gold analyses versus Norris Lab residual pulps. Most of the check assays cluster near the 1:1 trend line. The outliers are high grade flotation concentrate samples. Figure E10 is a scatter plot showing comparing AAS silver analyses of Norris Lab residual pulps. All the samples cluster the 1:1 trend line with the exception of one high grade mill sample. The AAS silver analyses show a low bias relative the Norris Lab results.

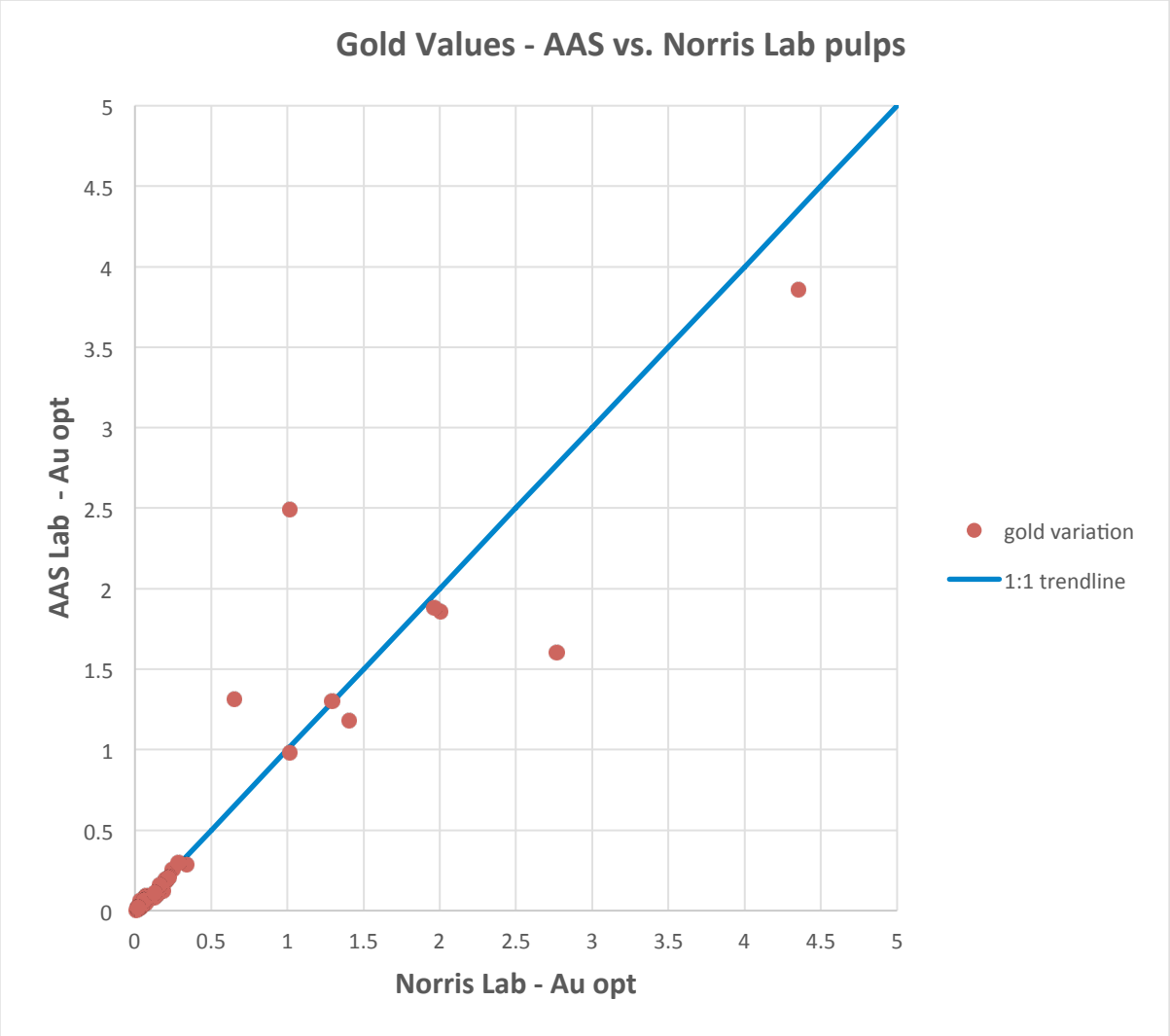


Figure E9 Check assays for gold – AAS vs. Norris Lab pulps

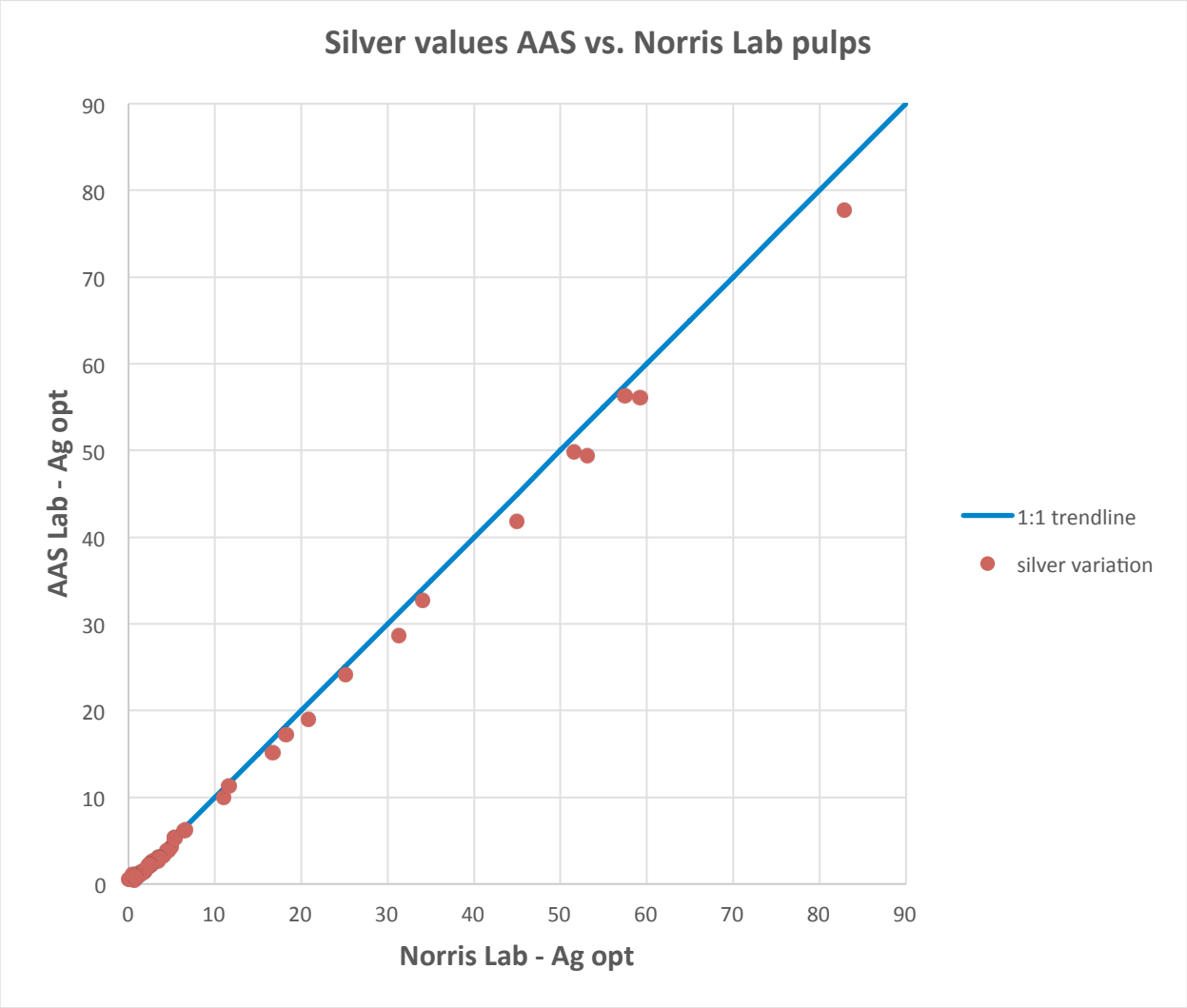


Figure E10 Check assays for silver – AAS vs. Norris Lab pulps

The Norris Lab analyzed a total of 8 check samples. Four were residual pulps from samples assayed by AAS and four were check assays of Norris Labs pulps. Figures E11 and E12 show the variation of the Norris Lab assays of AAS pulps for gold and silver, respectively.

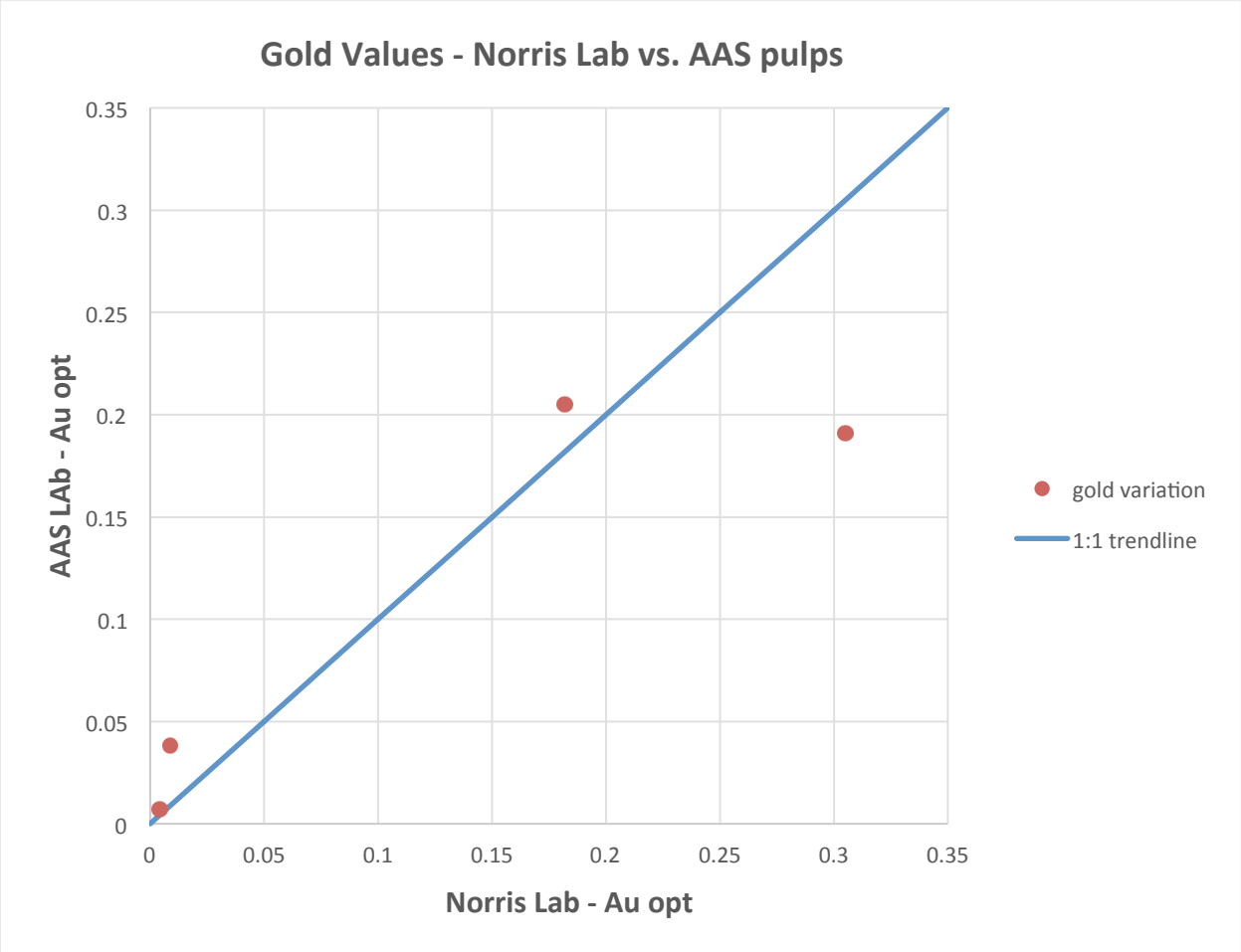


Figure E11 Check assays for gold – Norris Lab vs. AAS pulps

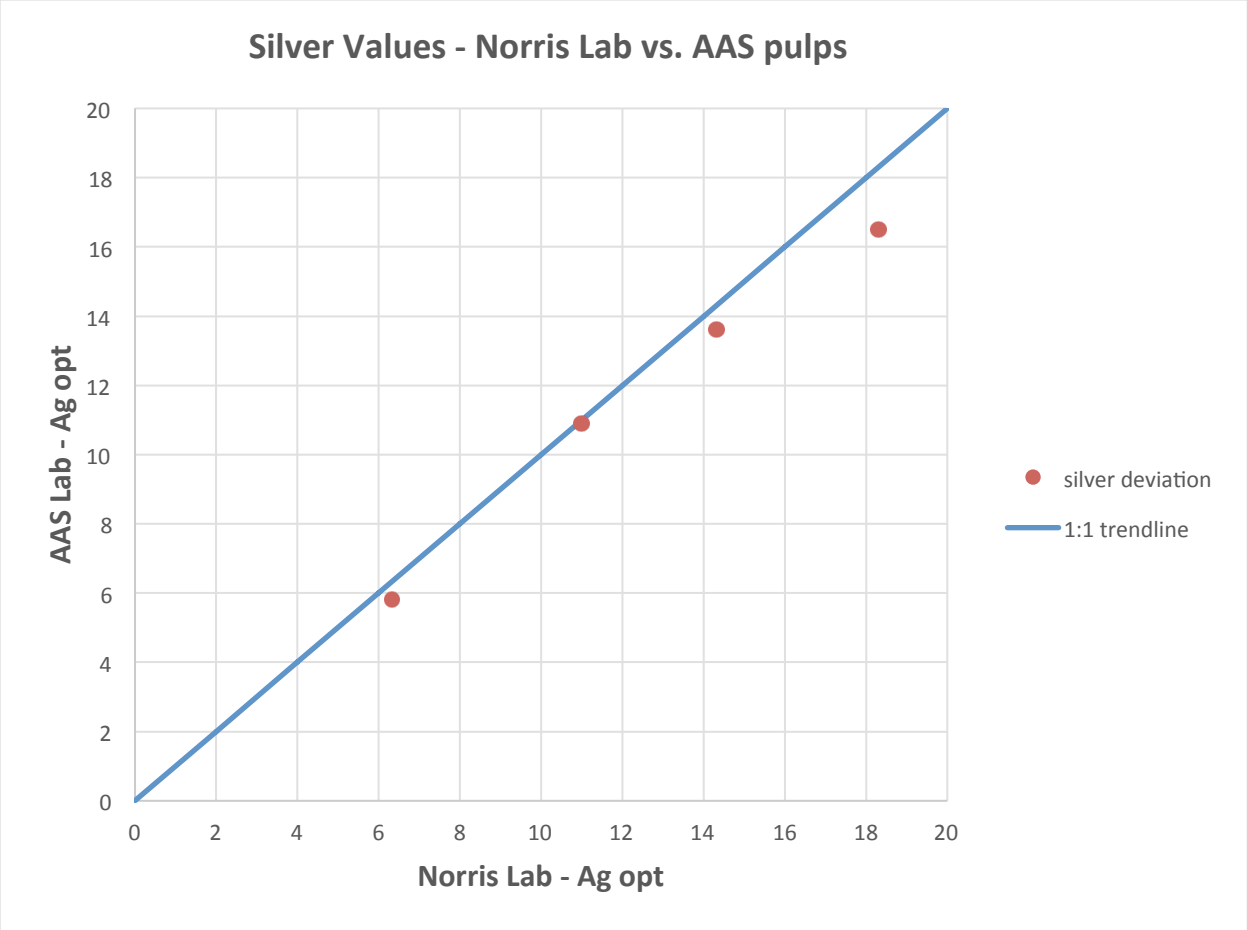


Figure E12 Check assays for silver – Norris Lab vs. AAS pulps

Figures E13 and E14 show the variation of the Norris Lab check assays for gold and silver, respectively.

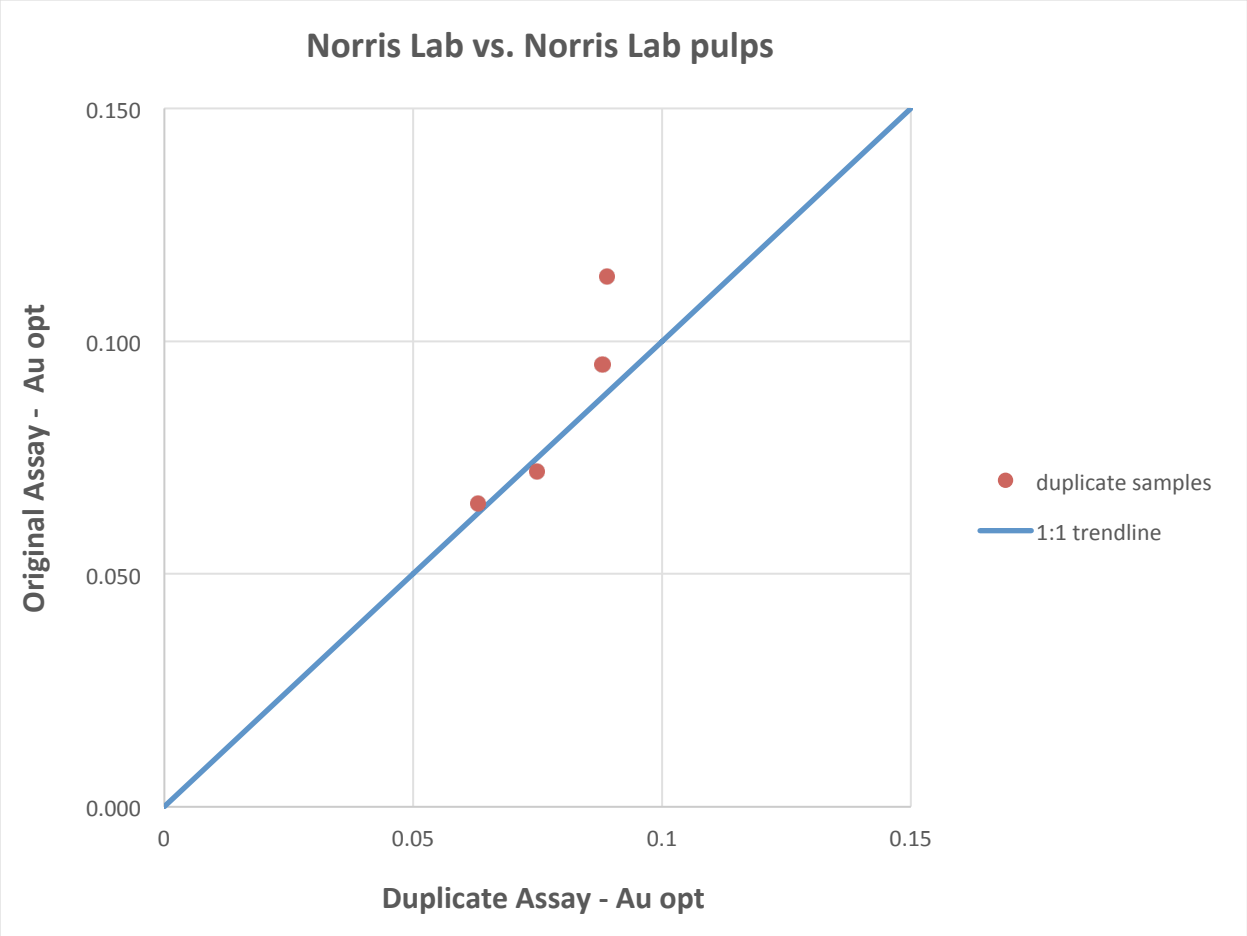


Figure E13 Check assays for gold – Norris Lab vs. Norris Lab pulps

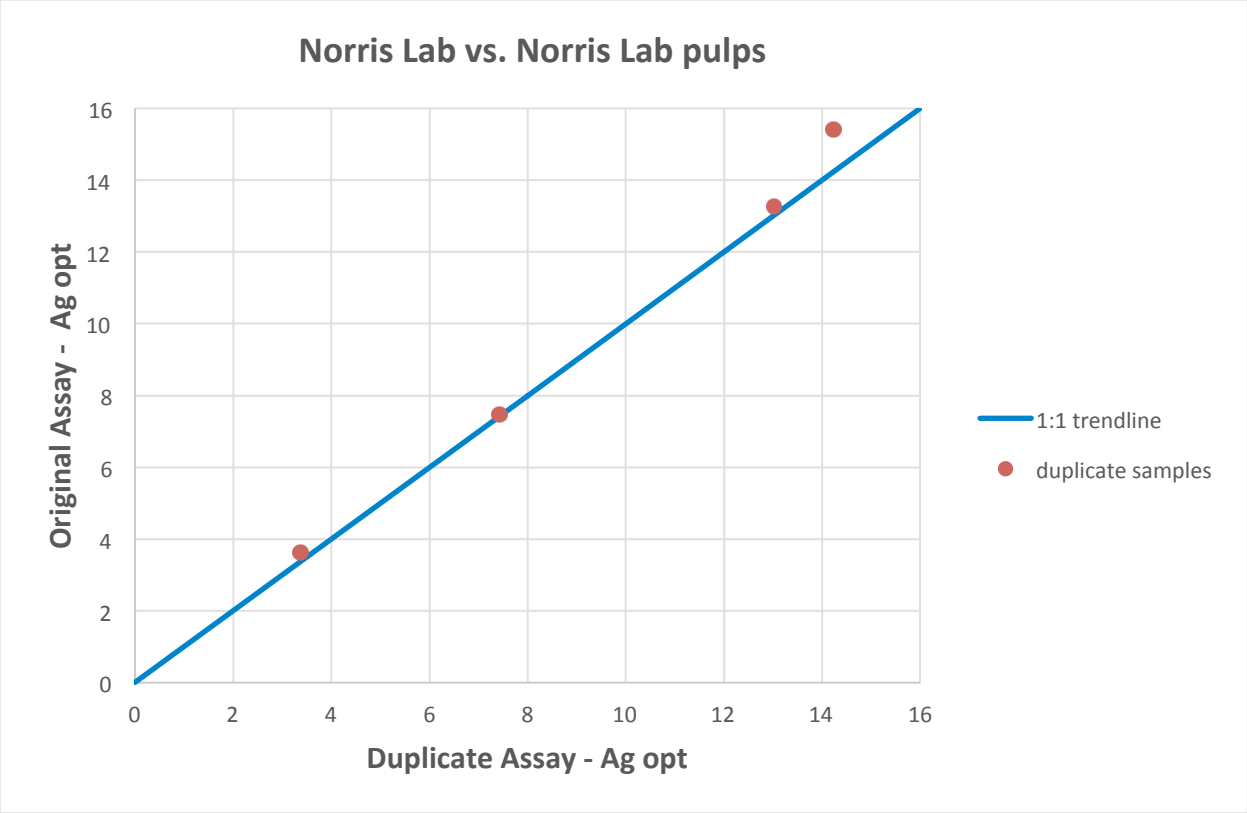
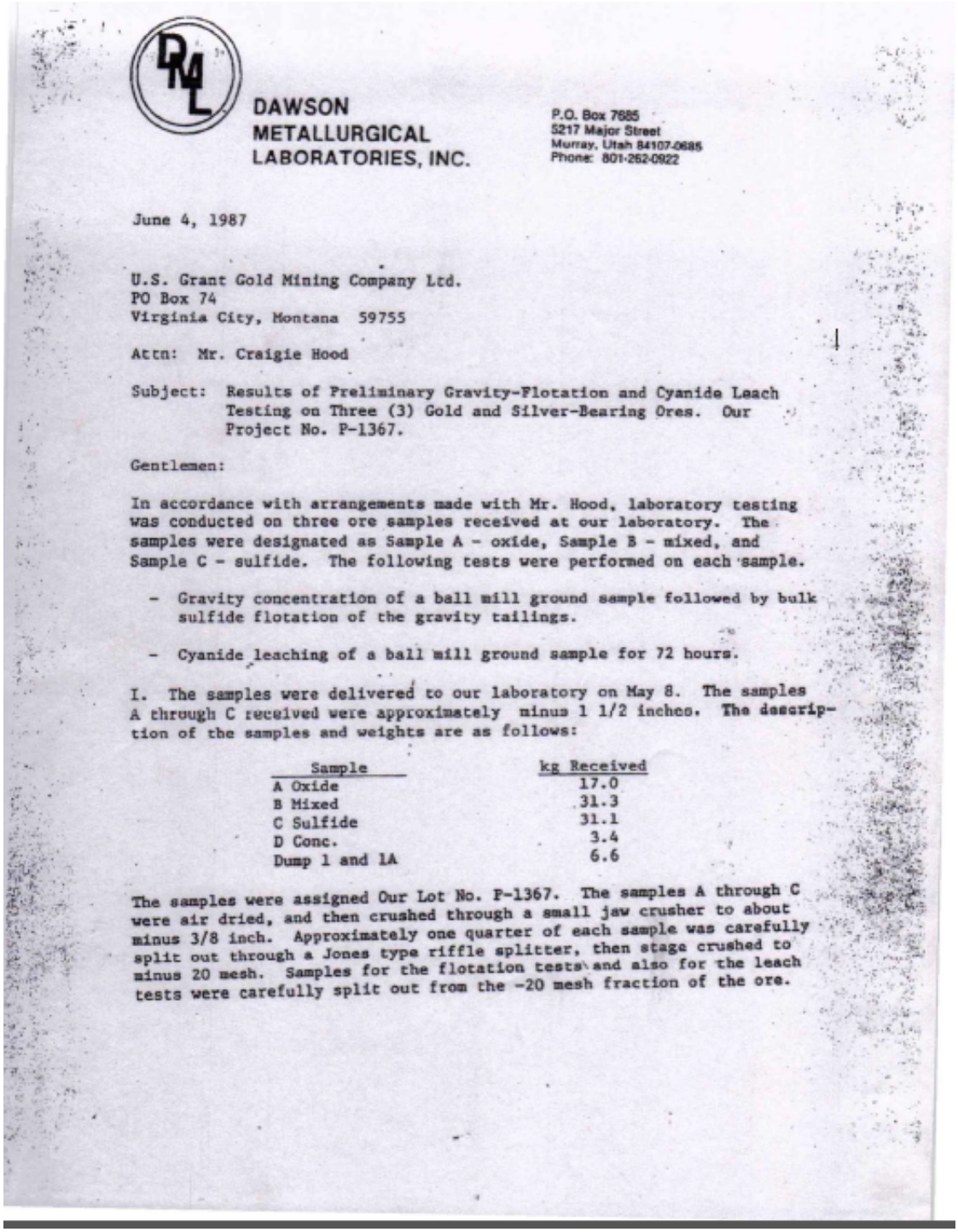


Figure E14 Check assays for silver – Norris Lab vs. Norris Lab pulps

Appendix F: Dawson Metallurgical Laboratories – Metallurgical Testing 1987



DAWSON
METALLURGICAL
LABORATORIES, INC.

P.O. Box 7685
5217 Major Street
Murray, Utah 84107-0685
Phone: 801-262-0922

June 4, 1987

U.S. Grant Gold Mining Company Ltd.
PO Box 74
Virginia City, Montana 59755

Attn: Mr. Craigie Hood

Subject: Results of Preliminary Gravity-Flotation and Cyanide Leach Testing on Three (3) Gold and Silver-Bearing Ores. Our Project No. P-1367.

Gentlemen:

In accordance with arrangements made with Mr. Hood, laboratory testing was conducted on three ore samples received at our laboratory. The samples were designated as Sample A - oxide, Sample B - mixed, and Sample C - sulfide. The following tests were performed on each sample.

- Gravity concentration of a ball mill ground sample followed by bulk sulfide flotation of the gravity tailings.
- Cyanide leaching of a ball mill ground sample for 72 hours.

I. The samples were delivered to our laboratory on May 8. The samples A through C received were approximately minus 1 1/2 inches. The description of the samples and weights are as follows:

Sample	kg Received
A Oxide	17.0
B Mixed	31.3
C Sulfide	31.1
D Conc.	3.4
Dump 1 and 1A	6.6

The samples were assigned Our Lot No. P-1367. The samples A through C were air dried, and then crushed through a small jaw crusher to about minus 3/8 inch. Approximately one quarter of each sample was carefully split out through a Jones type riffle splitter, then stage crushed to minus 20 mesh. Samples for the flotation tests and also for the leach tests were carefully split out from the -20 mesh fraction of the ore.

A head sample was split from the -20 mesh material and pulverized for assay. The head assay results are shown below, along with heads back-calculated from the testwork results.

P-1367 U.S. Grant Mining Company
Head Assay Results

	Gold oz/Ton			Silver oz/Ton		
Sample	Assay	Calc*	Calc**	Assay	Calc*	Calc**
A-Oxide	0.070	0.091	0.099	4.68	5.01	4.67
B-Mixed	0.157	0.101	0.118	9.04	8.84	10.07
C-Sulfide	0.229	0.247	0.238	11.57	12.14	11.86

* Back Calculated From Flotation Test Assays
** Back Calculated From Leach Test Assays

II. Summary

Test results are summarized on the following page, and are presented in detailed test data sheets attached to the end of this report.

Test results indicate that the majority of the gold and silver are removed from the ore by a combination of gravity concentration and bulk sulfide flotation, while rejecting about 90% of the ore weight into the tailings fraction. The gravity plus rougher concentrate fractions contained 83%, 84%, and 91% of the gold, 80%, 84%, and 91% of the silver for the oxide, mixed, and sulfide ores respectively.

Cyanide leach test results indicate good gold and silver recovery when the ore is ground to 90% -100 mesh and followed by leaching in a 10 lb NaCN/ton solution for 72 hours. The gold recovery ranged from 90 to 96%, and the silver recovery ranged from 82 to 88%.

The cyanide consumptions were relatively high, ranging from 4 to 5 lb NaCN per ton of ore.

III. Test Results

A. Oxide Ore

The oxide ore sample responded well to gravity concentration followed by bulk sulfide flotation. The gravity concentrate consisted mainly of pyrite and other mixed sulfides, with locked sulfides also present. Four to five pieces of tarnished gold were observed in the 100 to 250 mesh size range, indicating free gold in the ore and accounting for large variations in the sample head assays and back calculated head assays.

The gravity concentrate and cleaner concentrate combined, as can be determined from the Test Summary Sheet, contained 4.1% of the weight and 73% of the gold and 66% of the silver. The average assay in this combined concentrate would be 1.607 oz Au/ton and 81.01 oz/ton Ag. The combination of gravity plus rougher concentrates would have a calculated assay of 0.839 Au/ton, 44.60 oz Ag/ton, and would contain 9% of the ore weight.

Cyanide leach testing of the ore indicated good gold and silver extractions as shown in the chart below. The ore was ground to 91.7% -100 mesh before leaching in a rolling bottle with 10 lb NaCN/ton solution for 72 hours.

Cyanide Leach on Oxide Ore Test Results (Test 4)

	Assay oz/Ton		Dist. (%)		Consumption	
Product	Au	Ag	Au	Ag		lb/Ton
Leach Solution	0.090	4.12	89.9	87.2	NaCN	4.0
Leach Residue	0.010	0.60	10.1	12.8	Lime	1.7
Head (calculated)	0.099	4.67				
Head (assay)	0.070	4.68				

B. Mixed Ore

The mixed sulfide and oxide ore sample responded well to gravity concentration followed by bulk sulfide concentration.
As noted in the accompanying test summary sheet, over half of the gold (52%) and 38% of the silver were concentrated into the gravity concentrate which contained only 3.8% of the weight of the ore. The pan concentrate consisted mainly of pyrite with some mixed sulfides. One piece of gold at about 48 mesh, was observed in the pan concentrate under the binocular microscope.

The flotation cleaner concentrate also consisted mainly of pyrite and mixed sulfides, with an amount of locked sulfides. One piece of 100 mesh gold was observed in the cleaner concentrate. The cleaner tails gold assay duplicates were reported as 0.276 and 0.162 oz Au/ton. This variability in the assay result may possibly be due to free gold present in the cleaner tails.

The gravity concentrate plus rougher concentrate combined account for 84.1% of the gold and 83.6% of the silver, with a combined assay of 0.769 oz/ton Au and 67.05 oz/ton Ag. As shown below, a cyanide leach of the mixed ore indicated good gold and silver recoveries at 93% and 82% respectively on ore ground to 91% minus 100 mesh in 10 lb/ton NaCN solution. The cyanide consumption was relatively high at 4.6 lb NaCN/ton of ore.

Cyanide Leach on Mixed Ore Test Results (Test #5)

	Assay - oz/Ton		Dist. (%)		Consumption	
Product	Au	Ag	Au	Ag		lb/Ton
Leach Solution	0.110	8.29	93.2	82.4	NaCN	4.6
Leach Residue	0.008	1.78	6.8	17.6	Lime	1.7
Head (calculated)	0.118	10.07				
Head (assay)	0.157	9.04				

C. Sulfide Ore

The test results shown on the Test Summary Sheet indicate that good gold and silver concentration and recoveries were obtained when the sulfide ore was gravity concentrated by panning, followed by bulk sulfide flotation of the gravity tails. About 44% of the gold and 32% of the silver were removed from the ore by panning into a concentrate that contained only 60% of the total ore weight. The combination of panning and rougher flotation gave a product assaying about 2.220 oz Au/ton and 108.6 oz Ag/ton, containing 91.3% of the gold, 91.0% of the silver, and 10.2% of the weight of the ore. The test indicated the rougher tails would be about 0.024 oz Au/ton and 1.22 oz Ag/ton.

A cyanide leach of the ore with 10 lb/ton NaCN solution gave gold and silver residues of 0.010 and 1.41 oz/ton gold and silver, respectively, the cyanide consumption was relatively high at 4.8 lb/ton.

Cyanide Leach on Sulfide Ore - Test #6 Results

	Assay - oz/Ton		Dist. (%)		Consumption	
Product	Au	Ag	Au	Ag		lb/Ton
Leach Solution	0.226	10.37	95.8	88.2	NaCN	4.8
Leach Residue	0.010	1.41	4.2	11.8	Lime	1.7
Head (calculated)	0.238	11.86				
Head (assay)	0.229	11.57				

IV. Procedure

The cyanide leach procedure began with a ball mill grind of 1000 grams of the minus 20 mesh ore to about 91% minus 100 mesh at 50% solids. The ore was ground 20 minutes. The ground slurry was rinsed from the ball mill, transferred to a beaker, and decanted to 50% solids. Lime was added as required to about 11.0 pH, and 10 lb/ton solution NaCN was added. The slurry was agitated with a mechanical stirrer. After 24 and 48 hours a sample of the slurry was taken and titrated for NaCN.

After 72 hours the slurry was filtered and washed. Assays for gold and silver were obtained by fire assay procedures on the residue and filtrate. The solution was titrated for NaCN and CaO and a screen analysis done on the residue.

The gravity-flotation test procedure consisted of ball mill grinding 1000 grams of the minus 20 mesh ore samples at 50% solids. The ore was ground 20 minutes to about 91% minus 100 mesh. The ground slurry was hand panned using a small gold pan followed by a vanning plaque to produce a gravity concentrate.

The ground slurry was transferred to a 1000 gram "Agitair" flotation cell and conditioned 5 minutes with 0.05 lb/ton potassium amly xanthate (KAX) collector and 0.12 lb/ton of promotor A-208. A frother mixture of 3 parts MIBC to 1 part F65 was added as required to maintain a stable froth, and a rougher concentrate collected for 5 minutes. Promotor A-208, KAX, and frother F65 are American Cyanamid products.

A second rougher concentrate was produced after the addition of 0.5 lb/ton $CuSO_4$, an additional 0.05 lb/ton KAX, and conditioning for 5 minutes. This second concentrate was collected for 4 minutes and added to the first rougher concentrate, to produce a combined "sulfide rougher" concentrate.

The "sulfide rougher" concentrate was transferred to a 500 gram flotation cell and cleaned by flotation without the addition of any reagents for 5 minutes to produce a sulfide cleaner concentrate.

The flotation products were then dried and sent for gold and silver analysis.

V. Discussion

The results of the testing indicate relatively good extraction of gold and silver from the three ores submitted by both flotation and direct cyanidation of the ores. All three of the ore samples, the oxide, mixed, and sulfide ores, reacted similarly to the gravity-flotation and cyanide leach tests. The rougher tails assayed 0.017, 0.018, and 0.024 oz/ton Au, 1.12, 1.63, and 1.22 oz Ag/ton respectively, while the cyanide leach residues assayed 0.010, 0.008, and 0.010 oz/ton Au, and 0.60, 1.78, and 1.41 oz Ag/ton for the 3 ore types.

The similarity of the flotation and leaching results for the 3 types of ores indicates that no significant differentiantion due to ore type needs to be made while mining or processing the ores. The operating conditions of the plant will probably not need to be altered as the ore type changes in the mill feed.

Test results indicate that a significant (35-52%) amount of the gold could be collected into a gravity concentrate. Although gravity concentration collected the values well, it is not certain that it is required in this circuit. The gold and silver will probably be collected in the flotation section. If appreciable free gold is projected to be present in the ore, then gravity concentration prior to flotation may be of value.

In evaluating these preliminary results it should be emphasized that no attempts were made to optimize conditions such as grind and reagent conditions. Further grinding of the ore may improve slightly the separation during flotation and also the leach recovery. It is doubtful however, that a marked improvement would be anticipated as the recovery of both gold and silver are currently relatively high.

The present testwork suggests that a flowsheet consisting of bulk sulfide flotation followed by cyanide leaching of the concentrate holds promise for good gold and silver extraction. Testwork should be done to verify the response of the ore to that treatment.

We appreciate the opportunity of conducting this investigation for you. If there are any questions or we can be of further service, please contact us.

Very truly yours,
DAWSON METALLURGICAL LABORATORIES, INC.

Perry Allen

Perry Allen,
Consulting Metallurgist

PA-cac

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UNLESS OTHERWISE REPORTED

9 ROCK SAMPLES RECEIVED JUNE 13, 1990

SCRIPTION	AG	AL(%)	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	TI(%)	V	W	Y	ZN
07201	>30.0	1.26	75	<5	.52	34	4	258	108	2.27	1.10	.20	130	437	.70	18	120	4922	61	<.01	32	<10	1	2874
07204	>30.0	1.41	255	<5	.04	2	6	272	190	4.38	1.75	.02	39	101	.75	25	200	1572	15	.01	58	10	2	601

S THAN

Jutta Jealouse

ECO-TECH LABORATORIES LTD.
JUTTA JEALOUSE
B.C. CERTIFIED ASSAYER

Appendix G: Independent Assessment of US Grant Mill

U.S. Grant Mill Assessment

Prepared for:

Silver Valley Engineering
Wallace, ID 83873

Prepared by:

W. C. Rust & D. H. Rust
Wallace, Idaho

W Rust 2/24/2016
Donald Rust 2/24/2016

Summary

On January 21, 2016 the authors visited the U. S. Grant Mill located about 0.5 miles south of Virginia City, Montana. A location map is attached. The purpose of the visit was to assess the operability and capacity for processing ore from the U. S. Grant mine through the mill. We were shown the mill by Ralph Johnsrud who has been involved with the property for quite some time.

The mill was constructed from 1975 to 1977 by Ed Scheitlin and W. C. Rust visited it on August 24, 1977 when it was operating. A report of the visit describing the mill flowsheet and operating parameters was produced and a copy is attached as Section 2.

Also included in Section 2 is a copy of a report by Denver Equipment Company dated October 3, 1949 which describes metallurgical test work done on ore from the U. S. Grant mine that Mr. Scheitlin used as a basis to design the mill. At the time of the 1977 visit the mill was processing approximately 4 tons per hour of ore from the U. S. Grant mine through a flotation section followed by a cyanidation section. Reported recoveries for gold and silver were about 88% from flotation with an additional 11% from the cyanidation section.

In summary the mill is nearly ready to process approximately 4 tons per hour by froth flotation to produce a bulk concentrate. The equipment appears to be in reasonably good condition and it should not be too difficult to modify the plant to process development ore from the U. S. Grant Mine. Specific major items to be addressed are:

- Optimizing the grinding circuit by replacing the DlOB cyclone with a D6B cyclone adjusted to produce cyclone oversize that is about 55% minus 200-mesh and 5% plus 65-mesh. The ball charge in the primary mill should be checked to see that it is about 20,000 pounds of balls with about 1/3 plus 3-inch balls and 1/3 between 2 and 3-inch.
- Installing a barge mounted water reclaim pump in the tailings pond and a pipeline back to the mill water tank.
- Setting up the existing filter press to dewater the flotation concentrate so it is dry enough for overseas shipment.
- Hiring experienced operators *I*mechanics that are capable of operating and maintaining the mill equipment.

Other than these items the rest of getting the mill ready to run is normal operating and maintenance activities such as repairing any equipment that proves to be inoperable during startup, lubricating mill equipment, obtaining operating supplies and small tools needed to run the mill.

Section 1

Detailed Description of the Differences between the 1977 Mill and The Present Mill

Because the visual inspection was brief, many of the dimensions of machines etc. were estimated by eye. Before relying on them you should check to verify my accuracy or lack thereof.

Crushing Plant

The crushing plant is essentially the same as it was in 1977. We did not see any obvious reason why the crushing plant will not crush the development ore. The equipment and conveyor belts appear to be in reasonably good condition. The plant should be able to crush about 50 to 100 tons per hour if the vibrating screen or the bucket elevator are not bottlenecks.

Fine Ore Bin

The ball mill feed conveyor is driven by a constant speed geannotor. The amount of ore fed to the ball mill is controlled by adjusting the height of the slot in the front of the feed chute by moving a steel plate up or down. We were told that there are occasional plugging problems with the bin discharge arrangement. Slowing down the belt and widening the opening may help this.

Grinding Circuit

The ball mill feed belt discharges into a 5 foot by 8-foot inch rod mill being used as a ball mill. There is a partially installed 8 foot by 60 inch Hardinge ball mill adjacent to the primary mill that is not presently being used but could be set up for additional grinding capacity. The 5 foot by 8-foot ball mill has the capacity to grind about 4 dry tons per hour to about 55% passing 200 mesh. It should be running about 24 to 26 rpm. It should have a 20,000-pound ball charge. The mill discharges into a steel pump sump. A slurry pump presently feeds a Krebs DlOB hydrocyclone located over the mill feed end. The cyclone underflow goes to the mill feed and the overflow goes to a 7 foot by 7 foot conditioner which presently feeds the back of the middle cell of the 5-cell bank of Denver Float cells. This is probably not the proper cyclone to process 4 tons per hour.
We recommend replacing it with a D6B cyclone. This cyclone should have about a 2-inch vortex finder and a 1.5-inch apex. At 4 tons per hour of feed about 11 gpm of water must be added to the mill feed end to maintain the ball mill discharge at 74% solids and about 32 gpm must be added to the mill discharge sump to get about 30% solids in the cyclone overflow going to the floats.

In the longer term, if additional grinding capacity is desired, the drive motor with its electric supply and a discharge sump and cyclone feed pump would have to be installed for the larger Hardinge ball mill. It would be best to convert the primary 5-foot by 8-foot mill back to a rod mill and use it for single stage grinding of the mill feed. The discharge

of this mill would either gravity flow or be pumped into the Hardinge mill pump sump. The DIO B cyclone should be installed above the feed end of the Hardinge mill with the underflow feeding the mill through a spout feeder and the overflow going to the flotation conditioner. These two mills should grind about 12 to 15 tons per hour of U. S. Grant ore to 55% minus 200-mesh. Permit issues should be investigated before doing this as increasing the throughput may result in losing the 100 ton per day small miner exclusion.

Flotation Circuit

The present cyclone overflow feeds a 7-foot by 7-foot flotation conditioner. The conditioner discharge goes to the back of the middle cell of a 5 cell bank of Denver No. 18 special Sub A Flotation cells. The three cells on the left end (looking at the front) are roughers and the other two are cleaner cells. In the original mill there were two stages of cleaning. We were told that the two cells are now used for one stage cleaning. Ifso the plumbing should be modified back to two stages of cleaning. Rougher tailings exit the left end of the bank. Since 1977 two additional banks of 5-cell Denver No. 18 Special have been installed for additional roughing capacity. Denver 18 Special flotation cells have a volume capacity of 24 cubic feet per cell for a total rougher capacity of 312 cubic feet. With 4 tons per hour of feed exiting the cells at 25% solids the cells provide about 43 minutes of flotation time which is a lot more than the usual 10 minutes. At 15 tons per hour the retention time would be about 11.5 minutes which should still be adequate. The cleaner concentrate presently flows to the filter. The tailings from the Denver cells presently can flow to a gravity circuit or a pump sump to be pumped to the tailings pond.

Gravity Circuit

Since 1977 a gravity circuit has been installed consisting of 2 three start roughing spirals and 1cleaner spiral followed by a large Deister table. We were told that it is set up so that it can be fed flotation tailings or ball mill discharge. The test work from 1949 indicates that a gravity circuit is not justified for U. S. Grant ore. We recommend that circuit not be used unless sampling and assaying of the grinding circuit cyclone underflow shows high levels of free gold.

Filter

Final concentrate flows an Eimco 4-foot diameter four disc vacuum filter. This filter will dewater the concentrate but it probably will not get it dry enough to meet the transportable moisture limit for overseas shipment to reach the best markets. We reccommend that the filter press located in the mill be set up to filter the concentrate. A good arrangement for that can be seen in the New Jersey Mill near Kellogg, Idaho. A small (approximately 8-foot diameter) concentrate thickener would be needed with a small double diaphragm air powered pump on the underflow to feed the filter press. The press should be located above a hopper so the concentrate can fall into I-tonne bags for shipment.

Carbon in Pulp Circuit

A circuit to perform a cyanide leach on the flotation tails was installed and operating in 1977. All of that equipment has been removed. If it is necessary to leach the tailings to get acceptable recoveries, then equivalent equipment might be reinstalled to be able to leach about 4 tons per hour. However, after that circuit was built and then removed the State promulgated regulations requiring a cyanidization permit for such facilities. The permitting requirements should be investigated before planning to use cyanide.

Water Supply

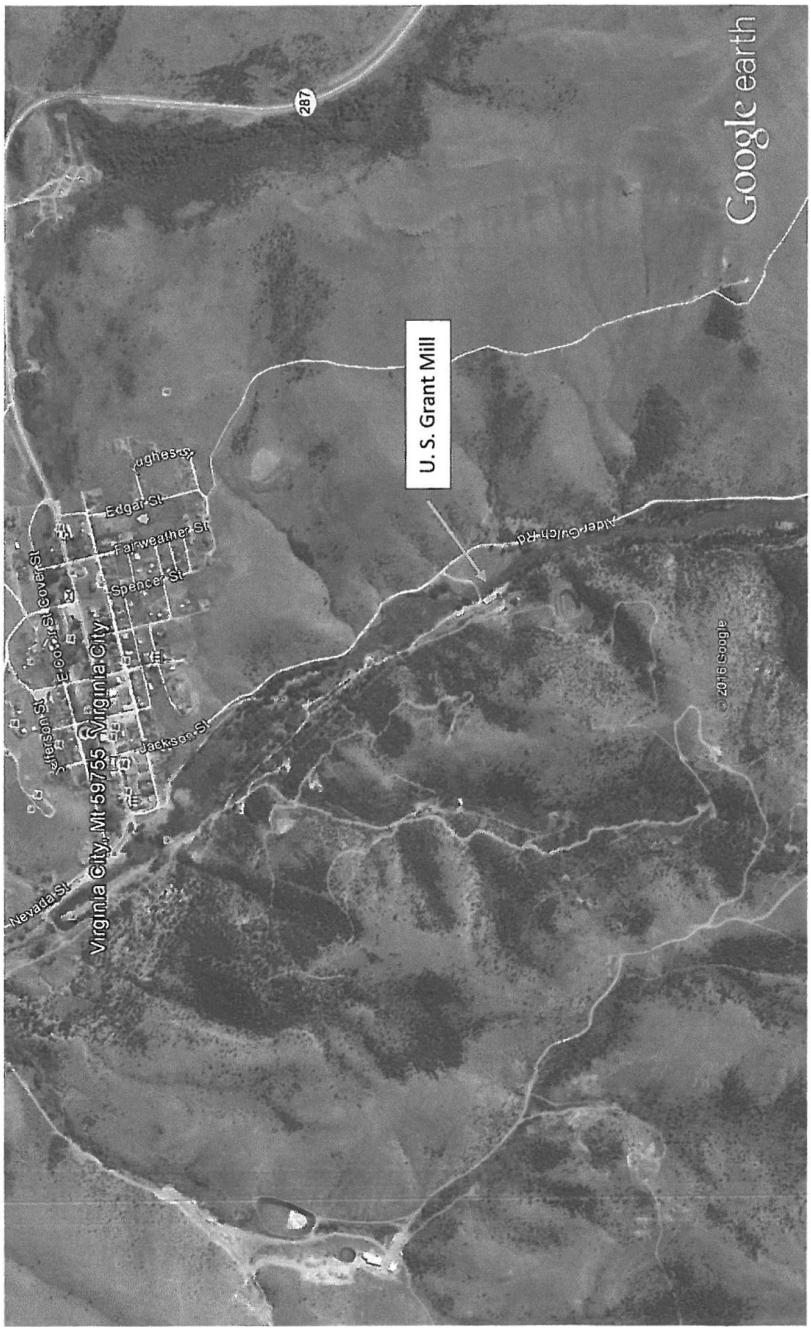
Ore will enter the mill with a few percent moisture and go to the tailings ponds as a slurry at 20% to 25% solids. You will need 48 to 64 gpm of water supplied to the mill to do this. In the pond the tailings will settle to about 75 pounds per cubic foot of dry solids. The actual solids have a density of about 168 pounds per cubic foot so there is a 55.4% void space filled with water. The water to fill the void space is about 7.4 gpm for 4 tons per hour of tailings. In a lined pond the rest of the water collects on top of the settled solids and all of it that doesn't evaporate is available for recycle. That 48 to 56 gpm of water will fill the pond up in 60 days of milling about 6,000 tons if it is not recycled. We recommend that a small submersible pump be mounted on a floating platform to pump the excess water back to the mill water tank.

Tailings Disposal

Tailings is presently pumped plastic lined tailings pond located southeast of the mill. The pond area appears to be about 38,000 square feet and it is about 30 feet deep with a volume of about 627,000 cubic feet. At 75 pounds per cubic foot of tailings the capacity is about 23,000 tons if filled clear to the top. The tailings should be discharged from all along the three sides of the pond away from the hillside. A small barge mounted recycle pump should be installed along the hillside side of the pond to pump water back to the mill water tank. This would give you a water storage reservoir to start. There will be about 111,000 gallons of interstitial water per 1,000 tons of tailings placed in the pond. You would need about 3 feet of water in the pond to float a small barge mounted decant pump. You would only need about 8 gpm of make up water during the operating days of milling 100 tons per day ore to maintain pond depth. In 1977 Mr. Scheitlin was installing a 12-foot by 14-foot drum filter to dewater the final tailings so that they could be hauled elsewhere for disposal. A 10-foot by 24-foot thickener would have to be installed to feed this filter with flotation tailings.

Laboratory

Since 1977 laboratory facilities have been installed in the mill. It looked like all the necessary equipment was present to prepare samples and perform fire assays except for a pulp balance and a microbalance for weighing fire assay beads. Mr. Johnsrud said those had been loaned to another mill but they would be returned in order to do assaying at the U. S. Grant mill.


U. S. Grant Mill
Virginia City, MT 59755
Virginia City
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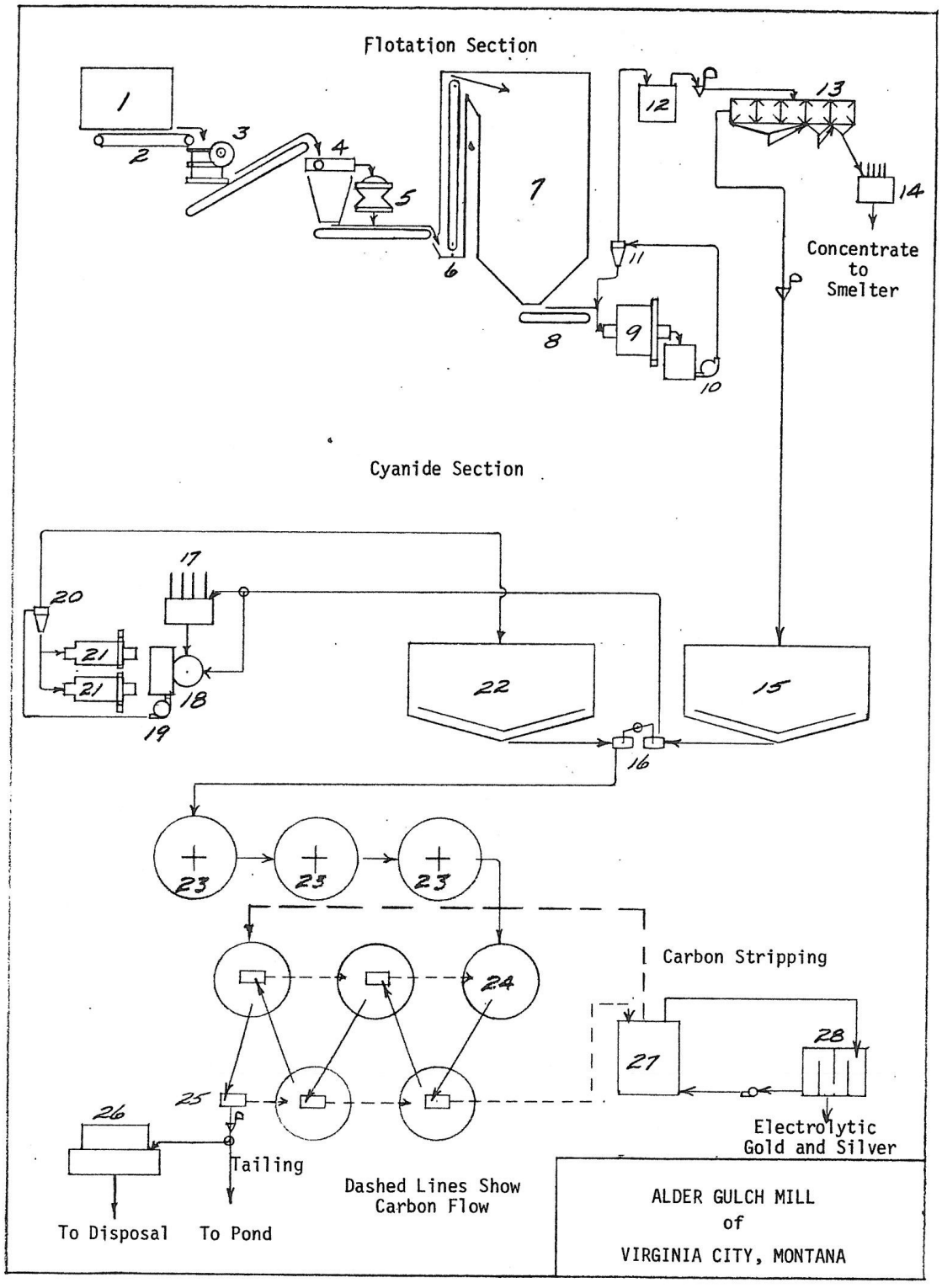
Section 2


Flotation Section
Concentrate to Smelter
Cyanide Section
Carbon Stripping
Electrolytic Gold and Silver
Tailing
To Disposal
To Pond
Dashed Lines Show Carbon Flow
ALDER GULCH MILL
of
VIRGINIA CITY, MONTANA

ALDER GULCH MILL
of
VIRGINIA CITY, MONTANA

1. 50 Ton Coarse Ore Bin
2. Pan Feeder
3. 15"x 27"Traylor Jaw Crusher
4. Vibrating Screen
5. 3'Kue Ken Cone Crusher
6. Bucket Elevator
7. 300-Ton Fine Ore Bin
8. Merrick Feeder-Jeightometer
9. Marcy 6' x 4 1/2' Grate Discharge Ball Mill
10. 2 1/2" x 3" Galigher Vacseal Pump
11. Krebs D6B Cyclone
12. Galigher 7' x 7' Conditioner
13. Denver #18 "Sub A" Flotation Cells
14. Eimco 4' x 4' Disc Filter
15. 10' x 24' Thickener
16. Dorrco 8"Double Diaphragm Pump
17. Eimco 6' x 4' Disc Filter
18. Repulper
19. 2 1/2"x 3" Galigher Vacseal Pump
20. Krebs 06B Cyclone
21. 4'Dia. x 8'Long Kennedy Von Saun Regrind Ball Mills
22. 10' x 24' Agitator
23. 14' x 14'Agitator Tanks
24. 10' x 12' Agitator Tanks
25. 4'x 18"Vibrating Screens
26. 12' x 14' Drum Filter
27. Carbon Stripping Tank
28. Electrolytic Cell

File No. 1-450-49

THE FLOWSHEET OF THE ALDER GULCH MILL

Mine ore is fed by front-end loader or dump truck into a fifty ton coarse ore bin. A three-foot pan feeder in the bottom of the bin feeds the ore into a 15" x 27" Traylor jaw crusher. The jaw crusher product is elevated by belt to feed a vibrating screen. The screen oversize feeds a three-foot Kue Ken cone crusher. The cone crusher product combined with the screen undersize is conveyed to a bucket elevator which discharges into a three-hundred ton fine ore bin.

From the bin the ore is fed by a Merrick feeder-weightometer into the scoopbox of. a Marcy 64-1/2 Grate ball mill. The ball mill discharge is pumped by one of two 2-1/2" x 3" Galigher vacseal pumps to a Krebs D6B cyclone. The cyclone overflow goes to the flotation conditioner and the underflow goes to the scoopbox closing the grinding circuit. The circuit is presently operating at four tons per hour feed, sixty-three percent solids ball mill discharge and a forty percent solids cyclone overflow. The grind is 54% -200 mesh and 5.9% +65 mesh.

The cyclone overflow feeds a 7' x 7' Galigher conditioner. Reagents fed to the conditioner are American Cyanmid 404 and Dow Z-11 Xanthate each at about 0.02 lbs./ton ore. The conditioner overflows through an automatic head sampler into the center cell of a 5-cell bank of Denver No. 18 "Sub A" flotation cells. About 3 C.C. per minute of MIBC frother are added to this launder. Numbering from the tailing discharge end , cells 1, 2 and 3 are the roughers, the concentrate of which feeds cell 4, the first cleaner, whose concentrate feeds cell 5, the second cleaner. The final concentrate from cell 5 runs by gravity to an Eimco 4' x 4 disc filter. The filtered concentrate falls onto a concrete floor from which it is loaded into barrels or a truck for shipment. The flotation tailing flows through an automatic sampler and down a launder into the thickener.

The thickener overflow goes to a sump where it is pumped back to the float section water tank . The thickener underflow is pumped by one side of a Dorrco 8" double diaphragm pump to an Eimco 6' x 4 disc filter. The filtrate goes to the same sump as the thickener overflow. The filtered material drops into a repulper which overflows into the regrind mill discharge sump. This filter is currently being by-passed with the thickener underflow going directly to the repulper. The repulper overflow, combined with the discharge from two Kennedy Von Saun 4' diameter x 8' long regrind mills, is pumped by a 2-1/2" x 3" Galigher vacseal pump to a Krebs D6B cyclone. The cyclone underflow is split to feed the regrind mills and the overflow at 45% solids goes to the first agitator of the cyanide section.

The first agitator is a 10' x 24' thickener which has been converted to an agitator. It is also equipped with several aerating pipes which help to agitate the pulp and furnish oxygen for the cyanidization reactions. Sodium cyanide at about 2 lbs/ton and lime to

maintain pH II are added to this agitator. The pulp is pumped by the other half of the Dorree diaphragm pump to the next agitator. The next three agitators are 14' x 14'tanks equipped with Lightning mixers and low pressure air dispersion pipes. The pulp is transferred from one tank to the next by 4" airlift pumps. An air lift is also used to transfer the carbon in pulp section.

The absorption stage of the carbon in pulp section consists of five 10' x 12 ' tanks and five 4¹ x 18" vibrating screens fitted with 20 mesh stainless steel cloth. In this stage -12 mesh + 18 mesh granular activated charcoal absorbs the dissolved gold and silver from the pulp . The pulp and carbon is pumped from one tank to the next via an air lift pump, passing through a 20 mesh screen on the way. The screened out carbon is advanced countercurrently to the pulp with barren carbon being added to the last tank and loaded carbon removed from the pulp stream between the first and second tanks. The carbon, loaded to about 32 ozs./ton of gold and 300 oz./ ton of silver, goes through a small Sweco separater screen where it is washed on its way to the stripping tank.

Carbon stripping is operated as a batch process running about a ton of loaded carbon at a time. When a ton of carbon has accumulated the tank is sealed and the gold and silver is removed from the carbon with a solution of 15% denatured ethanol, 5% caustic and 2% sodium cyanide at a temperature of 185° F. and a pressure of 20 p.s.i. As the solution comes out of the stripper it goes through a cooler and into an electrolytic cell. The electrolytic cell is made up of four compartments each containing two plastic trays packed with steel wool. The gold and silver are electroplated onto .the steel wool at about 4.75 volts giving a product about 80% gold and silver. The cell uses about 600 amps depending on the amount of steel wool in the trays. The spent solution then goes to. a holding tank and then back to the stripper. When the carbon is stripped to about 2 ozs./ton gold and ozs./ton silver the solution is pumped out, the pressure is removed and a vacuum is applied to the tank until it is cool. So far this step has been sufficient to regenerate the carbon and no separate regeneration kiln has been required. The barren carbon is then moved by water euductor to a holding tank.

The tailing from the carbon in pulp absoprtion section now flows by gravity to a two acre tailing pond.The pond has about a 10-foot high dam and is fully lined with a foot of compacted bentonite. There is a 12' x 14' drum filter partially installed to filter the tailing . When this is operational the tailing will be filtered and hauled by truck to a tailing disposal area. Filtering the tailing will recycle the cyanide and permit the mill the zero water discharge environmental restrictions.

The mill building is a 45' x 160' steel frame building with a 24' x 30' crusher building addition. It is heated by a fuel oil boiler. The water supply is from the U. S. Grant tunnel, the portal of which is immediately above the mill. Compressed air for the mine and mill is supplied by a 1,200 CFM Ingersoll-Rand compressor.