

**TECHNICAL REPORT ON THE  
NEAL PROJECT  
ELMORE COUNTY, IDAHO USA**

**National Instrument 43-101 Technical Report**

**Report Date: May 28, 2019**

**Effective Date: May 15, 2019**

**Property Location: Latitude 43° 31' N and Longitude 115° 55' W**

**Prepared for:**



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**Important Notice**

This report was prepared to meet National Instrument 43-101 Technical Report compliance standards for Pure Nickel, Inc. (“NIC”) by Thomas H. Chadwick, CP Geo (“the Author”). The quality of information and conclusions contained in this report are consistent with the scope of the Author’s services and professional experience based on: 1) information available at the time of the property visit and report preparation, 2) data supplied by NIC technical personnel and other sources, and 3) the assumptions, conditions and qualifications set forth in this report. This report is intended for use by NIC for compliance with Canadian Securities Regulations pursuant to NI 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes allowed under provincial securities law, any other use of this report by any third party is at that party’s sole risk.

**Date and Signature Page**

I, Thomas H. Chadwick, do hereby certify that:

1. I am an independent consulting economic geologist based in Big Fork, Montana, USA.
2. I graduated from the University of Arizona with a BSc in Geosciences in 1978.
3. I have practiced my profession as an economic geologist specializing in field evaluations of grass roots to producing mining operations, with experience in base and precious metals as well as industrial minerals, domestically and internationally. My field work has primarily focused on geologic mapping, stratigraphic section construction, and drillhole geology, while managing exploration and development projects at all levels. In over 35 years of experience, I have been involved in multiple mineral deposit discoveries in the western US and around the world. Since 2007, I have served on multiple Canadian junior explorer Boards and as VP Exploration.
4. I am a Certified Professional Geologist (CPG #11026) in good standing with the American Institute of Professional Geologists).
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 NI43-101) and work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I visited the property on April 27, 2019 and reviewed data at the Atlanta Gold warehouse in Boise, Idaho on April 28, 2019.
7. I am responsible for the preparation of the report titled “National Instrument 43-101 Technical Report, Exploration Level, Neal Project, Elmore County, Idaho, USA”, dated May 28, 2019 and with an effective date of May 15, 2019
8. I have had no prior involvement with the property that is the subject of this Technical Report.
9. As of the date of this certificate and as of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information required to be disclosed to avoid making the report misleading.
10. I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1, and this Technical Report has been prepared in accordance and compliance with that instrument and form.

Dated this 28th day of May 2019.

“Signed” Thomas H. Chadwick



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Signature of Qualified Person

Thomas H. Chadwick, CPG

Printed name of Qualified Person

## TABLE OF CONTENTS

### Contents

Important Notice .....	2
Date and Signature Page .....	3
List of Acronyms .....	10
1. EXECUTIVE SUMMARY .....	11
1.0 Introduction.....	11
1.1 Property Description and Ownership.....	11
1.2 Geology and Mineralization.....	11
1.3 Status of Exploration.....	12
1.5 Conclusions.....	12
1.6 Recommendations.....	13
1.6.1 General Recommendations .....	13
1.6.2 Metallurgy.....	14
1.6.3 Recommended Budget and Work Plan .....	14
2. INTRODUCTION .....	15
2.1 Issuer and Terms of Reference.....	15
2.2 Sources of Information.....	15
2.3 Units of Measure and Other Abbreviations .....	16
2.4 Qualified Persons and Personal Inspection.....	16
3. RELIANCE ON OTHER EXPERTS .....	17
4. PROPERTY DESCRIPTION AND LOCATION .....	18
4.1 Project Location and Ownership.....	18
4.1.1 Location .....	18
4.1.2 Patented Claims.....	18
4.1.3 Unpatented Claims.....	19
4.1.4 Pure Nickel (Nevada Star) Ownership in Neal .....	21
4.2 Permitting and Environmental Liabilities .....	21
5. ACCESS, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY .....	23
5.1 Access .....	23
5.2 Climate.....	23
5.3 Local Resources.....	23
5.4 Infrastructure.....	23

5.5	Physiography.....	23
6.	HISTORY .....	26
6.1	The Neal Mining District .....	26
6.2	Neal Project: History of the Daisy and Homestake-Hidden Treasure Mines.....	26
6.2.1	1889-1941 Early underground production history (Bennett, 2001).....	26
6.2.2	Modern Exploration, Development and Non-Compliant Historic Resources (1981-2019).....	29
7.	GEOLOGICAL SETTING AND MINERALIZATION .....	31
7.1	Regional Geology .....	31
7.1.1	Cretaceous Idaho Batholith and Tectonic Setting-.....	31
7.1.2	Regional Rock Types-.....	31
7.1.3	Regional Structural Geology- .....	31
7.1.4	Regional Mines and Prospects-.....	31
7.2	Ore Deposit Geology of the Neal Mining District and Neal Project .....	34
7.2.1	Host Rock Geology.....	34
7.2.2	Non-Vein Faults.....	35
7.2.3	Deposit Controls and Morphology.....	35
7.2.4	Vein Mineralogy, Alteration and Paragenesis .....	37
7.3	Supergene Effects and Oxidation Boundaries.....	39
8.	DEPOSIT TYPES.....	45
9.	EXPLORATION.....	47
9.1	Historic Exploration and Development.....	47
9.2	NIC (Nevada Star) Exploration at Neal .....	48
9.2.1	Field Surveying.....	48
9.2.2	Field Mapping.....	48
9.2.3	Digital Data Compilation.....	48
9.2.4	GIS Compilation and Claim Validation.....	48
9.3	Open Cut Stockpile Exploration Program of 2016-2017.....	48
9.4	Unknown Exploration Data .....	50
10.	DRILLING.....	51
11.	SAMPLE PREPARATION, ANALYSIS AND SECURITY .....	53
11.1	Historic Drilling, Channel Sampling of Trenches, Soil Samples, Selective Rock Sampling .....	53
11.2	Original Stockpile Truck Sampling During Mine Operation.....	53
11.3	Smaller 3-Sample Trench Sample Evaluation of Stockpile.....	53

11.4	Combined Pulps from Original Truck Assay Program .....	53
11.5	Stockpile Assay Comparison Between 3 Programs .....	53
11.6	Opinion on Adequacy .....	54
12.	DATA VERIFICATION.....	56
12.1	Field Verification .....	56
12.2	Database Audit.....	56
12.3	Adequacy of Data .....	56
13.	MINERAL PROCESSING AND METALLURGICAL TESTING.....	57
13.1	1989 Centennial Mines Heap Leach Study by Kappes Cassidy .....	57
13.2	Existing Neal Stockpile Material from Open Cut Bulk Sampling .....	58
13.3	Underground Mining of Pyritic Vein Material .....	59
13.4	Processing Factors, Deleterious Elements and Impact on Extraction.....	59
14.	MINERAL RESOURCE ESTIMATES.....	60
15.	MINERAL RESERVE ESTIMATES.....	61
16.	MINING METHODS .....	62
17.	RECOVERY METHODS.....	63
17.1	Metallurgical Summary.....	63
17.2	Processing Plant Options .....	63
17.3	Requirements for Water, Energy and Process Materials .....	63
18.	PROJECT INFRASTRUCTURE .....	64
19.	MARKET STUDIES AND CONTRACTS .....	65
20.	ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL OR COMMUNITY IMPACT .....	66
20.1	Environmental Studies and Issues.....	66
20.2	Waste and Tailings Disposal, Site Monitoring and Water Management .....	66
20.3	Permitting Requirements and Status, Bonding .....	66
20.4	Social or Community Related Requirements and Plans for any Community Meetings .....	67
20.5	Mine Closure.....	67
21.	CAPITAL AND OPERATING COSTS .....	68
22.	ECONOMIC ANALYSIS.....	69
23.	ADJACENT PROPERTIES .....	70
23.1	Historic Information on the Golden Eagle.....	70
23.2	Modern Golden Eagle Gold Mine.....	70
24.	OTHER RELEVANT DATA AND INFORMATION.....	72

25. INTERPRETATION AND CONCLUSIONS ..... 73

    25.1 Risks and Uncertainties..... 73

26. RECOMMENDATIONS ..... 74

    26.1 General Recommendations ..... 74

    26.2 Metallurgy..... 74

    26.3 Recommended Budget and Work Plan ..... 76

27. REFERENCES ..... 77

**LIST OF FIGURES**

Figure 4-1 Neal Project Area Location Map- .....	18
Figure 4-3 Neal Claim & Land Status Map-.....	20
Figure 4-5 Neal Area Land Ownership Map- .....	22
Figure 5-1 Neal Project Access Map-.....	24
Figure 5-2 Neal Project Site Photo (2016)- .....	25
Figure 6-1 Mining Districts .....	27
Figure 6-2 Historic Mines of the Neal Project-.....	28
Figure 6-3 Mineral Point, LLC Bulk Sampling Open Cut Pit at Neal (2015-2016)-.....	30
Figure 6-4 Open Cut Mineralized Stockpile-.....	30
Figure 7-1 Generalized Geologic Provinces of Idaho- .....	32
Figure 7-2 General Geology of the Hailey Quad-.....	33
Figure 7-3 Level Plan Map of the Neal Vein Zones-.....	39
Figure 7-4 Neal: A-A' Cross Sectional View of Vein Envelopes (looking S70W)- .....	40
Figure 7-5 Lamprophyre Dike .....	41
Figure 7-6 Pegmatitic Textured Phase of Granodiorite .....	41
Figure 7-7 Heavy FeOx after Pyrite on Main Neal Vein System .....	42
Figure 7-8 Later Cross-cutting N30E Small Fault .....	42
Figure 7-9 Clear to White Quartz Veinlets .....	42
Figure 7-10 Sheeted Quartz-Pyrite Veinlets .....	42
Figure 7-11a Earthy Massive Clay – White Mica – FeOx.....	43
Figure 7-11b Hard Flinty White Silicification.....	43
Figure 7-12a Pink Potassic (?) Alteration.....	43
Figure 7-12b Light Gray to Clear Potassium Feldspar .....	43
Figure 7-13 NIC Reference Map .....	44
Figure 23-1 Map of Adjacent Properties.....	71



**LIST OF TABLES**

Table 1-1 Executive Summary: recommended work program & budget .....	14
Table 4-1 Neal Project Patented Claim List.....	19
Table 4-2 Neal Project Unpatented Claims List .....	20
Table 7-1 Gold and Multi-element Assay of 2016 Stockpile Ore.....	38
Table 9-1 Original Truck Sample Gold Assays of Neal Stockpile .....	49
Table 10-1 Select RC Drillhole Intercepts from Historic Centennial Mines 1989 Program .....	52
Table 11-1 3-Sample Stockpile Trench Results.....	55
Table 11-2 Comparison Between 3 Assay Programs on the Neal Stockpile .....	55
Table 13-1 2017 Atlanta Gold Bottle Roll Test on Neal Stockpile .....	58
Table 26-1 Recommended Scope of Work and Budget.....	76

List of Acronyms			
Acronym	Description	Acronym	Description
\$ or US\$	United States Dollars	ID	Idaho
%	percent	IDEQ	Idaho Department of Environmental Quality
ABA	Acid Base Accounting	IDL	Idaho Department of Lands
Ag	silver	kg	kilograms or kilos; 1 kg = 2.2046 lbs
AIPG	American Institute of Professional Geologists	K <sub>2</sub> O	Potassium Oxide (rock forming component)
AQ	Agua Regia	lbs	pounds; 1 lbs = 0.4536 kg
ARD	Acid Rock Drainage	m	meters
As	arsenic	ma or Ma	million years
Au	gold	Mo	molybdenum
Author	refers to report author Thomas H. Chadwick	MWMP	Meteoritic Water Mobility Procedure
Ba	barium	MPL	Mineral Point, LLC
BC	British Columbia	NAD83	North American Datum 1983
Bi	bismuth	NIC	Stock Symbol for Pure Nickel, Inc.
BLM	Bureau of Land Management	NOME	Notice of Motorized Exploration (IDL)
BSc	Bachelor of Science	NPR	Net Potential Ratio
Cd	cadmium	NSI	Nevada Star Inc.
CE	Categorical Exclusion	NV	Nevada
CM	Centennial Mines, Inc.	oz/t or opt	troy ounces per short ton
CN	cyanide	Pb	lead
CP	Certified Professional	pH	used to signify relative acidity or alkalinity
Cu	copper	POO	Plan of Operations
EPA	Environmental Protection Agency	ppm	parts per million
FA	Fire Assay	PQ	drill core with a diameter of 3.35 inches
ft	feet	QA/QC	Quality assurance and quality control
g/T	grams per metric tonne	QP	Qualified Person
Geo	Geologist	RC	Reverse Circulation (type of drilling)
GIS	Geographic Information System	SiO <sub>2</sub>	Silicon Dioxide (rock forming component)
K-spar	Potassium Feldspar	t	short tons (2,000 pounds)
ha	hectare (2.47 acres)	tpd	tons per day
Hg	Mercury	US	United States
HQ	drill core with a diameter of 2.50 inches	USFS	United States Forest Service
IBMG	Idaho Bureau of Mines and Geology	Zn	zinc

## **1. EXECUTIVE SUMMARY**

### **1.0 Introduction**

Pure Nickel Inc. (“NIC” or the “Company”) is a publicly traded Canadian company focused on the discovery and acquisition of precious metal exploration and development properties in the western US, Canada and Mexico. On May 13, 2019 NIC announced the signing of a definitive agreement with Sprott Mining to become the 51% controlling and operating partner in the Neal Project. The Company has retained Thomas H. Chadwick, a Montana-based US consulting geologist and Qualified Person, to prepare an exploration-level NI 43-101 technical report on the Neal Mine Property (“Neal” or the “Project”) in Elmore County, Idaho, USA. Neal is a past-producing underground gold mine property that has also seen limited stockpile bulk sampling from a recent large open cut near the middle of the vein system.

This report presents work obtained from historic exploration and development files held by Neal Development dating from 1983-2016. This report has been prepared in accordance with requirements and guidelines set forth under Canadian National Instrument 43-101 (“NI 43-101”) Standards of Disclosure for Mineral Projects, its Companion Policy 43-101CP, and Form 43-101F1. Only data and information available prior to the report’s effective date of May 15, 2019 was used.

### **1.1 Property Description and Ownership**

The Neal Project is located in southern Idaho’s Elmore County just 17 air miles southeast of Boise, Idaho. The center of the recent Neal open cut test mine is located at latitude 43°, 31’ north and longitude 115°, 55’ west. In the project’s NAD83 Idaho State Plane (West) survey feet base, the center of the open cut is located at: 2578959E and 671411N.

The Neal property consists of 5 patented lode claims covering 55.38 acres (22.4 ha) and 7 unpatented lode claims covering approximately 124 acres (50.2 ha): Tables 4-1 and 4-2 respectively. The claim block as shown in Figure 4-3, encompasses portions of Sections 13 and 24, Township 2 North, Range 4 East and Sections 18 and 19, Township 2 North, Range 5 East, Boise E. Meridian, with a total land package covering 179.38 acres (72.6 ha).

Pure Nickel Inc., through their Nevada Star US subsidiary, signed a definitive agreement on April 29, 2019 with Sprott Mining as announced by the Company on May 13, 2019, whereby NIC has become a 51% operating and controlling partner in the Neal Development Limited Partnership (“Neal LP”). The Neal LP holds a lease to operate the Neal Project as outlined in the Company’s April 30, 2019 news release. According to the terms of the agreement, the Company also has an earn-in option to acquire an additional 27% interest in the Neal LP and the seven unpatented claims by raising between US\$1.0-1.5 million for Neal exploration. Once the financing is complete, NIC can complete the 27% earn-in by paying Sprott Mining \$87,706. Should Pure Nickel complete the final earn-in, the Company will hold 78% of Neal, while Sprott Mining will hold 20% and a separate private party the final 2%.

The underlying patented lode claims at Neal are owned by Daisy Mining and Land, LLP and cover all of the known workings and main vein exposures. On May 12, 2019 Pure Nickel signed a new lease agreement with Daisy Mining for a 5-year term expiring on May 12, 2024, but extendable for a 1-year term under the same terms and conditions. The lease can be extended indefinitely as long as mining, development or processing is being conducted; operations are considered continuous until a shutdown period exceeds 1 year.

### **1.2 Geology and Mineralization**

The bedrock geology of the Neal Project area and Neal District overall (Figure 7-1) is fairly simple in that it consists mainly of plutonic igneous rocks of the Idaho Batholith (Atlanta Lobe) and younger Tertiary-aged intrusive stocks, dikes and sills. All District gold deposits are hosted in Cretaceous-aged biotite granodiorite

intrusive rocks of the Idaho Batholith and many are intimately associated with the younger Tertiary-aged dikes that have intruded favorable ore-related structures. Rhyolite and lamprophyre dikes appear to be among the most commonly associated with gold mineralization and often occupy the same structures, while being very close in age as determined by cross-cutting relationships and alteration. Rhyolitic dikes are the most common overall in the Neal District. Most dikes also conform to the common N70E vein orientation and display steep dips.

A persistent series of lamprophyre dikes intrudes the heart of the N70E Neal Project area vein trend from the Confidence Mine in the southwest to beyond the Homestake Mine to the northeast (Bennett, 2001). The dike is a dark green to black color with obvious coarse crystals of biotite. This dike and enclosing biotite granodiorite are sheared and hydrothermally altered.

A series of veins cut the granodiorite host rocks with associated quartz – white mica – clay alteration. Possible pink to gray potassium feldspar (potassic alteration) was tentatively identified during the field visit. Quartz veins appear to be multi-stage as in other parts of the District, with clear to white coloration and locally a flinty white appearance in the open cut area. Late northerly-trending faults were observed offsetting the veins by up to several feet in the open cut and have reported offsets that can range up to a hundred feet or more according to historic records. Most veins strike N70-83E with 30-60 degree south dips. Vein widths commonly vary from 2-13 feet. Within the vein zone and using an average grade of around 0.50 oz/t gold, shoots in the Homestake area varied from 75-125 ft in strike length and were mined historically to about 350 ft down-dip. Along trend to the east, the Hidden Treasure Mine was mined along strike for about 450 ft with 165 ft of dip developed.

Vein sulfide mineralogy consists of mostly pyrite, with much lesser galena and very minor sphalerite. Occasionally, gold particles can be visible to the naked eye, but most of the gold is fine and closely associated with the pyrite or its oxidation products. Minor arsenic is present in the system, but no arsenic minerals are noted. Manganese oxides are present and manganese carbonate (rhodochrosite) has been reported.

### **1.3 Status of Exploration**

The most extensive period of drilling was conducted by Centennial Mines (CM) in a relatively brief 1-year time frame from 1989-1990. As noted in section 6.2.2, Centennial completed 208 RC holes and a reported 47,000 ft of drilling, along with metallurgical and resource studies as part of a feasibility for an on-site heap leach operation. The study concluded that the operation economics for open pit heap leach at that time were not favorable and the company moved on.

The next significant exploration initiative at Neal was begun in July of 2015, when Atlanta Gold leased Neal from the Fisher family. In 2015-2016, Atlanta Gold/Mineral Point permitted and carried out a large bulk sample operation from the Neal open cut. The original NOME permit was converted to a full mining permit under a Plan of Operations after completion of the bulk sampling in 2017. No drilling was conducted during this exploration phase.

NIC has very recently completed the transaction to become operator at Neal. No significant exploration has been completed by the Company to date.

### **1.5 Conclusions**

Although NIC is new to the Neal Project, the property and surrounding district have a long mining history. This historic mine work provides significant documented information on geology, mining processing that should be helpful for any future work. Both roadcut and pit exposures at Neal provide ready access for mapping and sampling in the near term. A review of the property and historic work suggests that significant

potential exists to find both dip and strike extensions to the known vein systems – particularly for exploration pursuing underground vein style targets.

The Neal Project bonding is up to date, claim fees are paid and current, and there are no known additional environmental liabilities. The Project's vein exposures and workings are all located on private patented lode claims, and therefore permitting and environmental aspects are regulated in a straightforward manner by the Idaho Department of Lands. Neal is currently permitted for open cut bulk sampling with any further bulk sampling is likely to be underground with adit portal or shaft locations taking advantage of the existing disturbance footprint.

Favorable current Neal Project characteristics, include: 1) existing permits for further surface work, pending additional bonding, 2) easy access and proximity to Boise, 3) private land base to work from, 4) a known and previously exploited vein system, 5) a currently operating neighboring mine on the same vein trend – potentially providing informational and strategic advantages, and 6) various options for gold processing.

## **1.6 Recommendations**

### **1.6.1 General Recommendations**

Although there was very limited historic data and virtually no database to review, the recommendations here are intended to help provide a framework for any future exploration on the Neal Project:

- Mapping with enough detail and accuracy to allow direct input into cross sections and 3-D modeling. The mapping should be consistent and under the supervision of an expert in this area. Scanned copies of the maps should be made and stored in several locations.
- Detailed RC and core logs for any drilling should be under the supervision of a single experienced geologist and constant communication with the mapper is important. Logging should be constantly monitored for consistency. Copies of the logs should be made and stored in several locations. Logging data should be copied into a database on a regular basis and this database organized by someone experienced in database management and resource analysis.
- A carefully considered program of quality control for all geochemistry is important, with special care and monitoring on a regular basis. Drill samples should have standards, blanks and duplicates inserted on a consistent basis. As the vein zones are readily identifiable in the field, appropriate checks should be made for sample quality during drilling. Chain of custody and a careful documentation trail should be implemented for any drill work, with timely attention paid to assays outside of acceptable tolerance levels while the sample pulps and rejects are still at the lab. Constantly review lab work and use sample checks at another lab for higher grade samples.
- Assuming a drill sample batch of 40 samples, the following quality control is recommended:
  - Two standards, with one high and one low grade relative to the expected grade of the batch (5% of the total sample number)
  - Two pulp duplicates (5% of the total sample number)
  - Two sand blanks (5% of the total sample number); of these, one coarse blank should be inserted for every 4<sup>th</sup> sand blank
  - Two coarse duplicates (5% of the total sample number); the coarse duplicates are an attempt to quantify assay variance at the sample preparation stage
- Continue the current NIC GPS-based survey in NAD83 Idaho State Plane (West) survey feet for consistency with drilling in feet and ease of use in popular GIS programs. More confirmation work to establish the correct adjustments to the old mine grid may be needed – especially if additional drillhole data is located.
- Review the current gold mining operation at the nearby Golden Eagle property.

### 1.6.2 Metallurgy

Because NIC expects to target veins that will be largely sulfide dominant, the focus of any future metallurgical work should reflect this style of mineralization. Based on historic mining and the known metallurgy of the granitic-hosted quartz – white mica – pyrite veining in the area, the following studies are recommended at the earliest opportunity once drilling has confirmed the discovery of additional veining:

- quantify coarse gold and sulfide recoveries in a gravity circuit
- combine gravity and flotation
- further test whole-ore cyanidation via bottle roll testing
- continue to quantify silver amounts and recovery
- monitor deleterious element levels with additional multi-element geochemistry
- If mixed oxide/sulfide veining becomes significant in future exploration, the existing metallurgical studies should be supplemented with additional work on that material.

### 1.6.3 Recommended Budget and Work Plan

The recommended work plan builds on initial mapping and sampling work to support the vein targeting at depth. Reverse circulation drilling may initially provide a lower cost means of identifying favorable down-dip extensions of the known veins and follow mapped vein zones along strike. Significant intercepts could then be followed-up by core holes with the goal of producing better samples and assays, while better defining vein limits and geology.

Metallurgical testing is also recommended once vein intercepts are documented with high grade gold assays. A work program covering the first round of exploration is presented in Table 1-1.

Recommended Scope of Work	Expected Cost (US\$)
Mapping and Sampling	35,000
Exploration Drilling: reverse circulation	320,000
Exploration Drilling: core	350,000
Geochemistry	40,000
Data Work and Organization	40,000
Metallurgical Testing	35,000
Equipment	40,000
Admin/Permitting/Legal/Land/Safety	50,000
<b>Contingency (10%)</b>	<b>91,000</b>
<b>Total Budget</b>	<b>1,001,000</b>

**Table 1-1 Executive Summary:** recommended work program & budget

## 2. INTRODUCTION

### 2.1 Issuer and Terms of Reference

Pure Nickel Inc. (“NIC”) is a publicly traded Canadian company focused on the discovery and acquisition of precious metal exploration and development properties in the western US, Canada and Mexico. On May 13, 2019 NIC announced the signing of the definitive agreement with Sprott Mining to become the 51% controlling and operating partner in the Neal Project. The Company has retained Thomas H. Chadwick, a Montana-based US consulting geologist and Qualified Person, to prepare an exploration-level NI 43-101 technical report on the Neal Mine Property (“Neal” or the “Project”) in Elmore County, Idaho, USA. Neal is a past-producing underground gold mine property that has also seen limited stockpile bulk sampling from a recent open cut near the middle of the vein system.

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### 2.2 Sources of Information

Limited published reference material is available for the Neal Mine exploration area. Earl Bennett’s 2001 USGS publication on the geology covering of a portion of the western half of the Hailey Quad provides good regional context and reports on the Neal Mining District and Neal Mine itself. Much of the information for this technical report was generated by several companies during their exploration programs between 1983 and 2016; all of which produced data on drilling, surface and underground sampling, resource estimation, open cut test mining, metallurgy, and vein geology. In addition, government studies in the area provided good source data for geology and mining history. The more important information was found in the following documents and online resources:

Bennett, Earl H., 2001. *The Geology and Mineral Deposits of Part of the Western Half of the Hailey 1° x 2° Quadrangle, Idaho*, USGS Bulletin 2064-W, prepared with Idaho Geological Survey, Idaho State University and the University of Idaho: *with a section on the Neal Mining District by Thor H. Kiilsgaard and Earl H. Bennet (pp 24-29)*.

Russell, R. David & Nanna, Richard F., Jan 12, 2017. *Geological, Mining & Environmental Review Report, Atlanta & Neal Projects, Elmore County, Idaho, USA*; prepared for Jipangu International, 31 pp. (internal report).

Lindgren, Waldemar, 1898. *The Mining Districts of the Idaho Basin and the Boise Ridge, Idaho*; Department of the Interior, US Geological Society; Extract from the 18<sup>th</sup> Annual Report of the Survey 1896-1897, Part III, Economic Geology; Washington, Government Print Office (pp 609-703).

Anderson, Alfred L., 1947. *Geology and Ore Deposits of Boise Basin, Idaho*, Bulletin 944-C, US Department of the Interior, Geologic Survey, prepared with Idaho Bureau of Mines and Geology.

Online Resources: *Regional Geology of the Idaho Batholith*; from Digital Geology of Idaho, Mesozoic Idaho Batholith, DeGray, Miller and Link, Idaho State University (undated).

*Neal Mine Production 2012 Business Plan*; prepared by E. Utush, President of Aquasolum Consultants, Inc. and General Partner of TEMU, LP -and- T. Manz, President TM & Associates and General Partner of TEMU, LP.; Feb 9, 2013 (internal report).

*Reclamation and Operating Plans for Neal Project, Elmore County, Idaho*; prepared by Mineral Point, LLC for the Idaho Department of Lands; Feb 16, 2017.

### **2.3 Units of Measure and Other Abbreviations**

Unless otherwise stated all measurements used for this report are Imperial units and currencies are US dollars (“\$ or US\$”). Gold, silver and other elements are reported in either parts per million (“PPM”) or percent unless otherwise stated. Gold and silver may also be reported in troy ounces per short ton (“opt or oz/t”). Tonnage figures are reported as short tons (“t”) equivalent to 2,000 pounds. All units of length used for the Neal Project are feet (ft). Tons per day may be shown as (“tpd”).

### **2.4 Qualified Persons and Personal Inspection**

This report has been prepared and endorsed by Thomas H. Chadwick (the “Author”); a qualified person as defined by NI 43-101 with the help of information organized and supplied by NIC’s consulting geologist Nathan A. Tewalt and CEO R. David Russel. Mr. Chadwick, CP Geo, AIPG, has over 35 years of professional experience as a consulting economic geologist with detailed field experience throughout the western US and in various foreign countries. Mr. Chadwick is responsible for oversight on all sections of this report, but has relied on NIC consultants to compile data and create the various figures and tables found in the report.

The Author conducted an on-site inspection of the Project on April 27, 2019, with a data review and warehouse data search on April 28, 2019. While onsite, particular attention and time were spent on: the recent open cut exposure in the middle of the historic mining area for geologic context, the mineralized stockpile and reclamation from this test mining work, sites of historic underground access for the Daisy – Homestake – Hidden Treasure mines (Neal Project), and road access. The Author worked onsite with NIC consultants to complete GPS checks on a few claim corner locations on both patented and unpatented claims using the Idaho State Plane (West) NAD83 (survey feet) system currently used by Company consultants.



### 3. RELIANCE ON OTHER EXPERTS

The Author has fully relied on and disclaims responsibility for information provided by NIC regarding property ownership, mineral tenure, and permitting and environmental aspects of the Neal Project. Property title and mineral tenure, as presented in current report Section 4, was provided through personal communication with Nathan A. Tewalt, consulting geologist to NIC and R. David Russell, Chairman of NIC, and in written format via the following documents and news releases:

#### Reclamation-

- *Reclamation and Operating Plans for Neal Project, Elmore County, Idaho*; prepared by Mineral Point, LLC for the Idaho Department of Lands; Feb 16, 2017.
- *Neal Reclamation Plan Approval for Mineral Point, LLC*; Idaho Department of Lands, Derek Kraft, Senior Lands Resource Specialist; April 20, 2017.
- *Establishing Grandfather Rights for mining of mineralized material: case #ADD-2014-08*, Elmore County Land Use and Building Department, Alan Christy, Director; dated June 26, 2014.
- *NOME Permit Commencement of Operations Summary*; for Neal Limited Partnership (LP), internal document; November 2016.
- Foulk, Cary L., October 26, 2016. *Environmental Testing of Rock Samples from the Atlanta Gold Corporation, Neal Prospect, Elmore County, Idaho*, report from Integrated GeoSolutions Inc. of Steamboat Springs, CO, 69 pages.

#### Pure Nickel and US subsidiary Nevada Star Agreements to Acquire interest in Neal Project-

- *Nevada Star Inc. NOI with Neal Development Company*; letter of intent to propose terms of transaction; dated March 25, 2018.
- *Nevada Star Inc. MOU with Neal Development Company*; memorandum of understanding outlines terms agreed upon; dated April 2, 2019.
- *Pure Nickel Inc. (Nevada Star Inc.) Final Purchase Agreement with Neal Development Company*; this is the final agreement; dated April 29, 2019.
- *Pure Nickel Inc. Closes Transaction – Becomes Eric Sprott’s 51% Partner on the Neal Project*; this is the final signing of the Definitive Agreement on May 13, 2019; announced in Company News Release dated May 13, 2019.

#### Underlying Property Lease Agreement for Neal Patented Lode Claims-

- *Lease Agreement between Daisy Mining and Land, LLP and Atlanta Gold Corporation (Proposed Amendment)*; lays out terms of former agreement with owner of core patented claim group; dated July 2, 2015.
- *Lease Agreement between Daisy Mining and Land, LLP and Pure Nickel, Inc.*; lays out terms of current agreement with owner of core patented claim group; dated May 12, 2019.

#### Patented and Unpatented Claim Filings and Tax Records-

- *Patent Records for the Daisy Claim and Homestake Group*; BLM Office of Land Records Boise, Idaho, online summaries available.
- *Lease Agreement between Daisy Mining and Land, LLP and Atlanta Gold Corporation (Proposed Amendment)*; land description at back of document details patents information; dated July 2, 2015.
- *BLM LR-2000*; online access for up to date status on unpatented lode claims.

## 4. PROPERTY DESCRIPTION AND LOCATION

### 4.1 Project Location and Ownership

#### 4.1.1 Location

The Neal Project, consisting of the historic Daisy, Homestake and Hidden Treasure underground mines, is located in the Neal Mining District in Elmore County, Idaho. Neal is located in southern Idaho's Elmore County approximately 16 air miles southeast of downtown Boise, Idaho on a bearing of 117°; about 6.6 miles southeast of the dam at Lucky Peak Reservoir. The project's mine site is centrally located within the claim block at latitude 43° 30' 34" N and longitude of 115° 55' W (Figure 4-1). NIC technical personnel expect to convert the mine grid coordinate system previously used at Neal to a GPS compatible Idaho State Plane (West) NAD83 (survey feet) grid system; in Idaho State Plane, the center of the recent open pit cut is located at: 2578959E and 671411N.

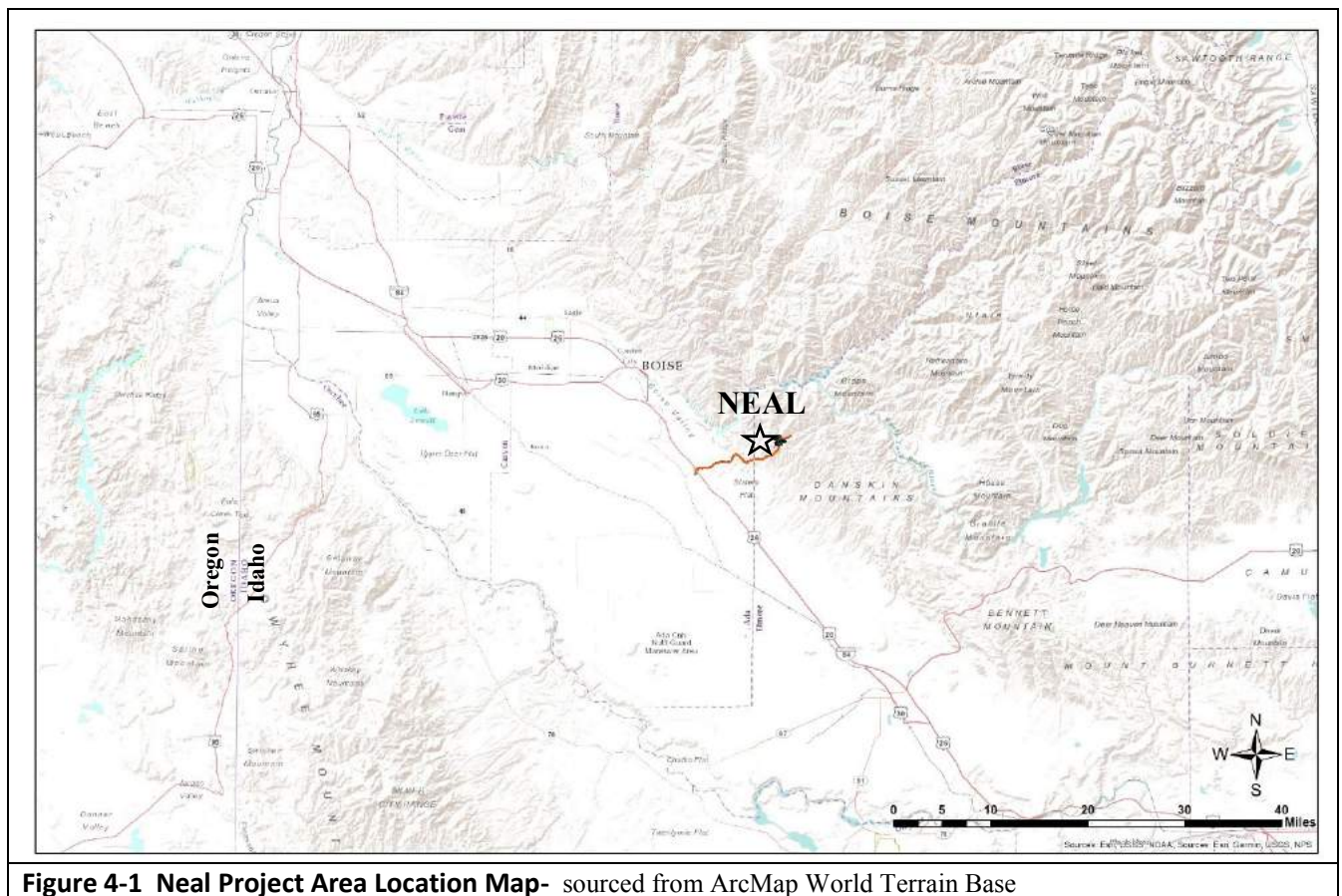


Figure 4-1 Neal Project Area Location Map- sourced from ArcMap World Terrain Base

#### 4.1.2 Patented Claims

The Neal property consists of 5 patented lode claims covering 55.38 acres (22.4 ha) and 7 unpatented lode claims covering approximately 124 acres (50.2 ha): Tables 4-1 and 4-2 respectively. The claim block as shown in Figure 4-3, encompasses portions of Section 13, Township 2 North, Range 4 East and Section 18, Township 2 North, Range 5 East, Boise E. Meridian, with a total land package covering approximately 179.38 acres (72.6 ha).

Patented mining claims offer considerable advantages to any future exploration and mining as they represent private land with full ownership of the land and mineral rights. Virtually all of the existing disturbance, including historic underground, recent open pit, drill pads and roads are located on the patents. Permitting is greatly simplified when working on patented lode claims as the state of Idaho is the primary regulatory agency with oversight over private ground. Property taxes are paid to Elmore County on an annual basis by Daisy Mining as per the agreement. All 5 patented claims are owned by Daisy Mining and Land, LLP (“DML”) and as of May 12, 2019, held by lease to Pure Nickel, Inc. (“NIC”) according to the following terms:

- **Term-** On May 12, 2019 Pure Nickel (Nevada Star) signed a new lease agreement with Daisy Mining and Land, LLP for a 5-year term expiring on May 12, 2024, but extendable for a 1-year term under the same terms and conditions. The lease can be extended indefinitely as long as mining, development or processing is being conducted; operations are considered continuous until a shutdown period exceeds 1 year.
- **Production Payments-** Lessee is required to pay a \$3/ton fee for all material removed from the property on a monthly basis.
- **Annual Payments-** Lessee must pay DML at least \$10,000 per year net of any production royalties. For example, if \$5,000 in royalties is paid during the year an additional \$5,000 in cash would be needed to meet the annual requirement. All cash payments are considered advanced payments against the NSR Royalty and/or Production payments. Lessee must keep the annual property taxes current.
- **Royalty Payments-** A 3% NSR royalty applies to all gold and silver mined from the property; the royalty is paid on a quarterly basis.

#### 4.1.3 Unpatented Claims

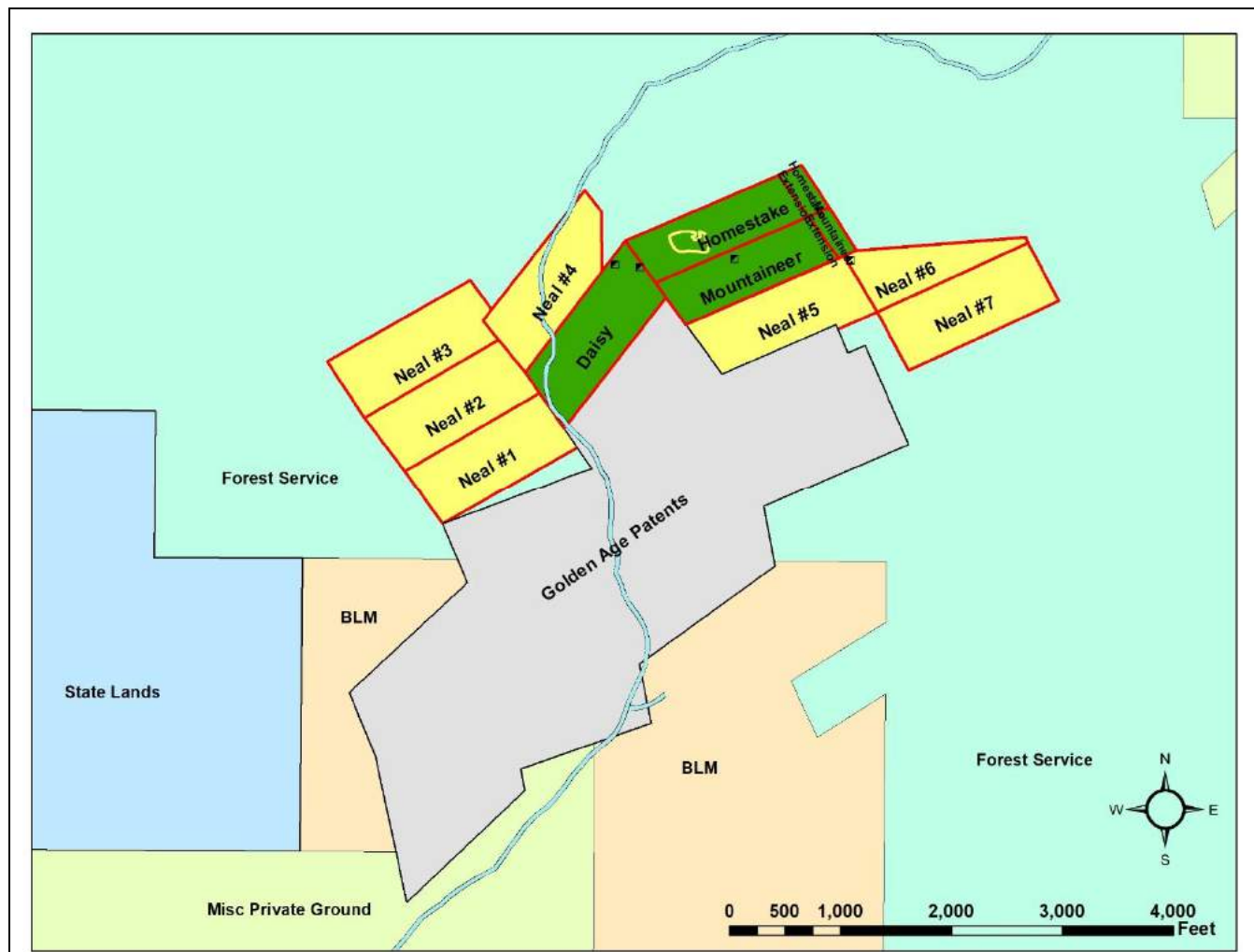
As shown in Table 4-2, there are currently 7 unpatented lode claims (Neal 1-7) located on Federal ground administered by the US Forest Service. The claim block is very close to the boundary between Forest Service and Bureau of Land Management (“BLM”) administered lands (Figure 4-5). Annual payments on the Neal claims are filed prior to September 1 and require payment of \$155/claim. Further, nominal annual filing fees are paid to Elmore County around the same time. A review of the online claim records at the BLM via LR-2000 shows that annual payments were made on all 7 claims from 2014 to the most recent filing in 2018 (for the 2019 claim year); receipt numbers confirm that both BLM and County payments were made.

Table 4-1 Neal Project, <b>Patented</b> Mining Claims Meridian 08 (Boise)- Elmore County, Idaho								
Doc #	MS #	Acreage	Claim Name	Sec	T	R	Date	Underlying Ownership, BLM#
30379	1235	20.66	Daisey Lode	13	2N	4E	1/5/1899	Daisey Mining & Land Company- BLM Serial # IDIDAA 037182
33711	1236	34.72	Homestake	13	2N	4E	4/6/1909	Daisey Mining & Land Company- BLM Serial # IDIDAA 037183; Homestake Patented Claim Group
			Mountaineer					
			Homestake Extension					
			Mountaineer Extension					

Table 4-1 Neal Project Patented Claim List

Table 4-2 Neal Project, <b>Unpatented</b> Mining Claims Meridian 08 (Boise)- Elmore County							
Claim IMC#	Claim Name	Section	Township	Range	Loc. Date	Active	Ownership
IMC213797	Neal #1	13	2N	4E	5/22/2014	yes	Atlanta Gold Corp
IMC213798	Neal #2	13	2N	4E	5/22/2014	yes	Atlanta Gold Corp
IMC213799	Neal #3	13	2N	4E	5/22/2014	yes	Atlanta Gold Corp
IMC213800	Neal #4	13	2N	4E	5/22/2014	yes	Atlanta Gold Corp
IMC213801	Neal #5	13	2N	4E	5/22/2014	yes	Atlanta Gold Corp
IMC213802	Neal #6	13-18	2N	4E-5E	5/22/2014	yes	Atlanta Gold Corp
IMC213803	Neal #7	13-19	2N	4E-5E	5/22/2014	yes	Atlanta Gold Corp

**Table 4-2 Neal Project Unpatented Claims List**



**Figure 4-3 Neal Claim & Land Status Map-** dark green indicates 5 patented lode claims (Daisy and Homestake Group); yellow indicates 7 unpatented Neal Claims

#### 4.1.4 Pure Nickel (Nevada Star) Ownership in Neal

Pure Nickel Inc., through its Nevada Star US subsidiary, signed a definitive agreement on April 29, 2019 with Sprott Mining as announced by the Company on April 30, 2019, with the final closure of the transaction announced on May 13, 2019, whereby NIC has become a 51% operating and controlling partner in the Neal Development Limited Partnership (“Neal LP”). The Neal LP holds a lease to operate the Neal Project as outlined in the Company’s May 13, 2019 news release. According to the terms of the agreement, the Company also has an earn-in option to acquire an additional 27% interest in the Neal LP and the seven unpatented claims by raising between \$1.0-1.5 million for Neal exploration. Once the financing is complete, NIC can complete the 27% earn-in by paying Sprott Mining \$87,706. Should Pure Nickel complete the final earn-in, the Company will hold 78% of Neal, while Sprott Mining will hold 20% and a separate private party the final 2%.

Under the terms of the transaction with Sprott Mining, NIC does not have any ownership rights to the recent (2015-2016) stockpiled “ores” from the Neal bulk sampling operation.

#### 4.2 Permitting and Environmental Liabilities

The Neal Project consists of 55.38 acres of private ground surrounded on three sides by federal Forest Service ground, although the access road coming into the area from the southwest traverses State and Private lands. The existing private property at Neal and other private property in the area offer ample sites to base exploration and processing facilities in the future (Figure 4-5).

A very recent open cut test mining and bulk sampling operation was conducted on the patented ground in the 2015-2016 time period and required full permitting approvals for the mining and reclamation work with the Idaho Department of lands (“IDL”). A review of the Mineral Point, LLC documents provided by NIC, shows that:

- Permitting on private land in Idaho is conducted through the Idaho Department of Lands (IDL) with offices in Boise, Idaho. The original exploration work was done under a Notice of Motorized Exploration (NOME) permit.
- A reclamation plan is required for a full mining permit on private lands. A full Plan of Operations (“POO”) and Reclamation Plan was submitted in 2016. On April 24, 2017 a fully operating POO and reclamation plan permit was issued by IDL. This POO actually allows mining to take place on the Neal Project, subject to bonding, and is currently active.
- Bonding was set at \$175,000. In 2018, a negotiated agreement between Mineral Point and IDL set the first part of the bond at \$87,500. This part of the bond covers all surface excavation and stockpiled ores to date. The remaining \$87,500 balance is required to be posted if and when additional surface mining and stockpiling occurs.
- Approximately 80% of the disturbed land has been reclaimed during the test mining operations. Additional reclamation will be required when the site is in closure.
- NIC management notes that future mining is likely to be underground-only and that could allow back-filling of the test mining pit with waste rock from that future production.

No significant environmental liabilities remain on the property until it goes into final closure. At that time, the balance of the bond (\$87,500) will need to be posted as the final contouring of the stockpiled topsoil and planting is completed. To start the planned exploration program later in 2019, the Company (NIC) will not be required to post the balance of the bond as long as no significant earth moving is required for road or pad building. Some Forest Service ATV and motorcycle trail closures are common in the area, but do not impact the Neal Project. For year-around work on the Property, the Company will have to make an arrangement to keep the Blacks Creek road open with periodic snowplow work. According to land ownership maps of the

area, the main access road is mostly on private land. No significant risk factors impeding future exploration and development are known at this time.

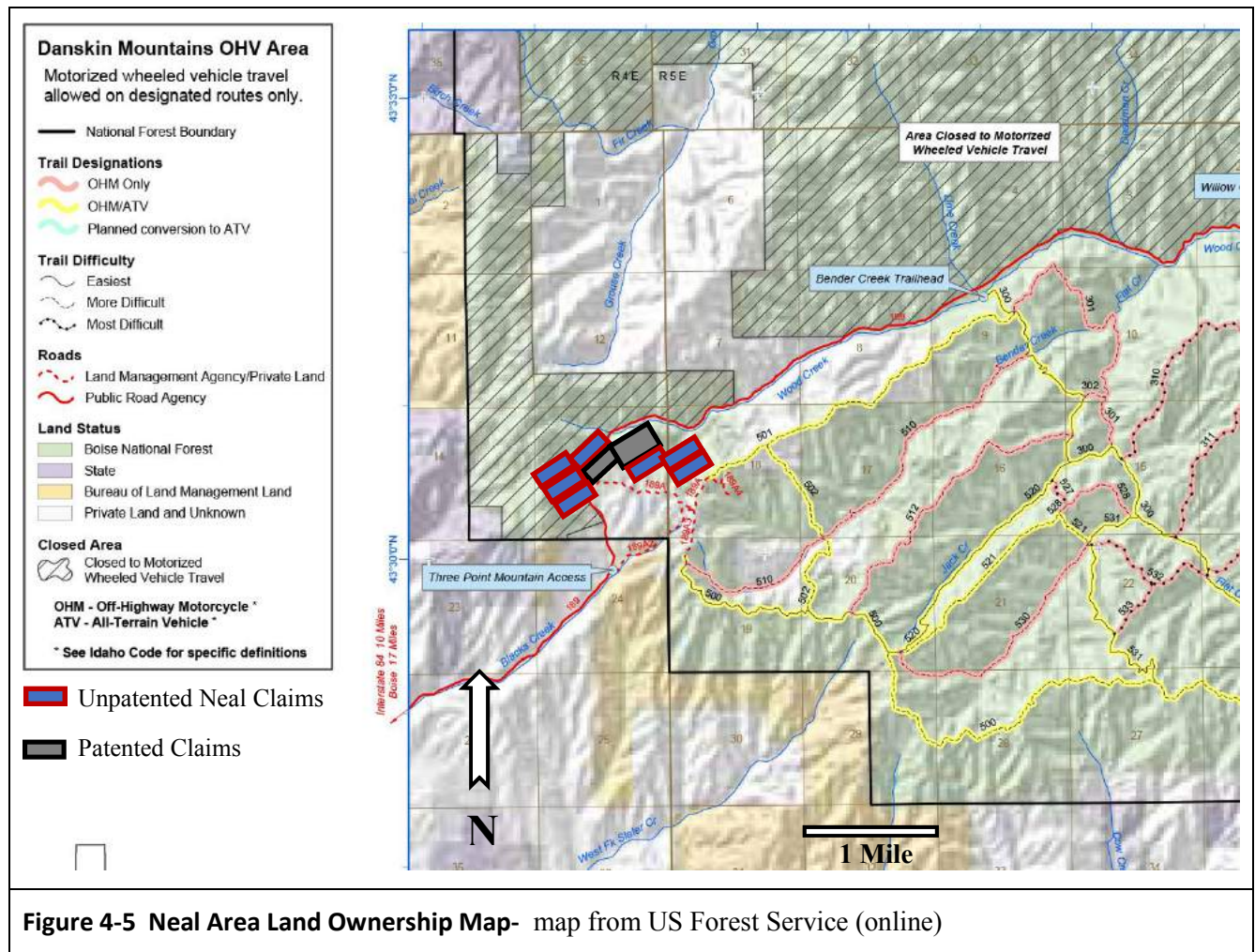


Figure 4-5 Neal Area Land Ownership Map- map from US Forest Service (online)

## **5. ACCESS, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY**

### **5.1 Access**

The project site is accessible year-round: 1) drive east from the Boise Airport exit (Vista and I-84) for 10 miles on Interstate 1-84 to exit-64 (Blacks Creek Rd), 2) turn left on Blacks Creek Rd and go under the I-84 overpass for 5.7 miles, 3) turn left at intersection and continue on Blacks Creek Rd for 3.8 miles, 4) from the road fork, stay left on Blacks Creek Rd for 0.6 miles, and 5) find the large parking area at the top of the hill on the right and main entrance (Figure 5-1) to the Neal Property. In all, the drive takes about 25 minutes.

The drive from Boise is on freeway and then highway until the driver is about 3.5 miles from the entrance gate at Neal - the last 3.5 miles of road are on well-maintained decomposed granite (DG sand and gravel) with locally oiled surfaces. Local traffic is substantial at times as the Black Knife sand and gravel quarry located 0.8 miles from I-84 is very active; in addition, the operating Golden Eagle gold mine is located 5.6 miles from I-84 near the left hand turn up Blacks Creek. The Blacks Creek road also serves at the primary access from Boise to the small settlements of Mayfield and Prairie, while providing access to a number of ATV, motorcycle and walking trails in the area.

### **5.2 Climate**

The Property sits within an elevation range of about 4,400 to 5,400 ft above sea level at an elevation significantly higher than nearby Boise, Idaho. Although the property sits within the Danskin Mountains on the eastern flank of Three Point Mountain, the hills are rounded enough to allow trails for hiking and motorized vehicles. Winter snowpack is generally light, although heavier snow has occurred in recent years. Interstate highway I-84 is always open, but the last 7 miles of Blacks Road requires snow removal at times in the winter. Roughly  $\frac{3}{4}$  of a mile of Forest Service road is not normally maintained in the winter and can have snow cover into mid-April – arrangements will need to be made for winter work.

The US climate data for Boise at an elevation of 2,800 ft shows average annual low temperatures of 41.3 ° F, highs of 63.7 ° F and precipitation at an arid 12 inches. However, lows at or around zero are not uncommon in the winter, while summer highs can approach 100° F.

### **5.3 Local Resources**

The Neal Mine is located in Elmore County with the county seat located 28 miles to the southeast in Mountain Home, Idaho. The close proximity of Boise to the west provides a large service population for the Neal Mine. In addition, Boise is the capital of Idaho and most major private and government offices are located there. Boise has a population of 216,000 people according to the 2016 estimated census, while the Boise Metropolitan Statistical Area (MSA) population was 709,845 as of the 2017 census. The larger employers are Micron Technology, the Regional Medical Centers, US Airforce and Boise State University. General labor is available for small operations, but specialized underground miners and exploration personnel would be sourced regionally in Boise, Coeur d' Alene, Spokane, Salt Lake or Reno.

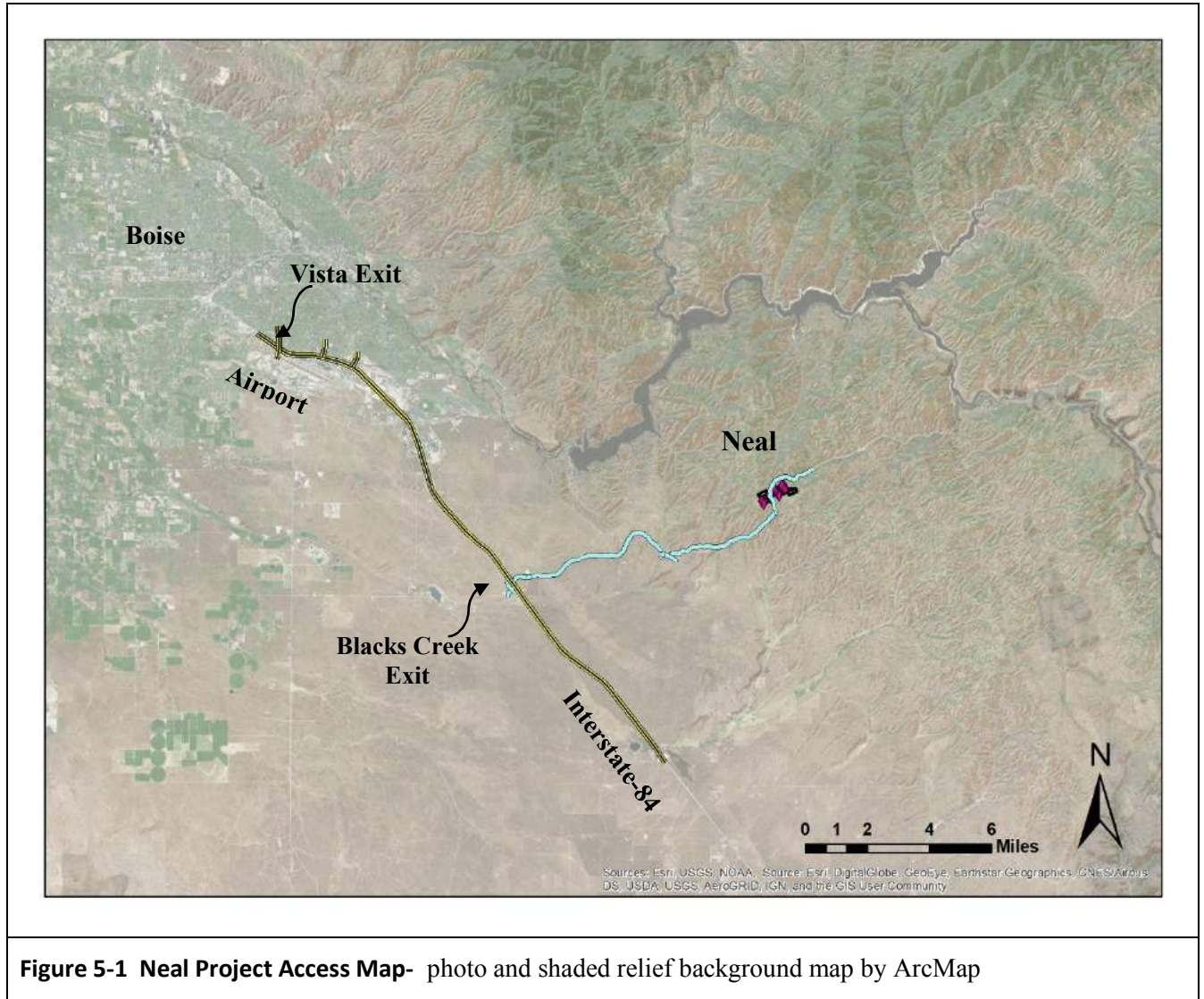
### **5.4 Infrastructure**

No useable structures remain on the Property. During the exploration phase, Boise will be used as a base of operations due to the short 25 minute commute. Near term electrical needs would have to be supplied by generators. Full-scale mine production could tap the Idaho Power grid 3.5 miles to the southwest. Water could be supplied by wells drilled on patented private ground.

### **5.5 Physiography**

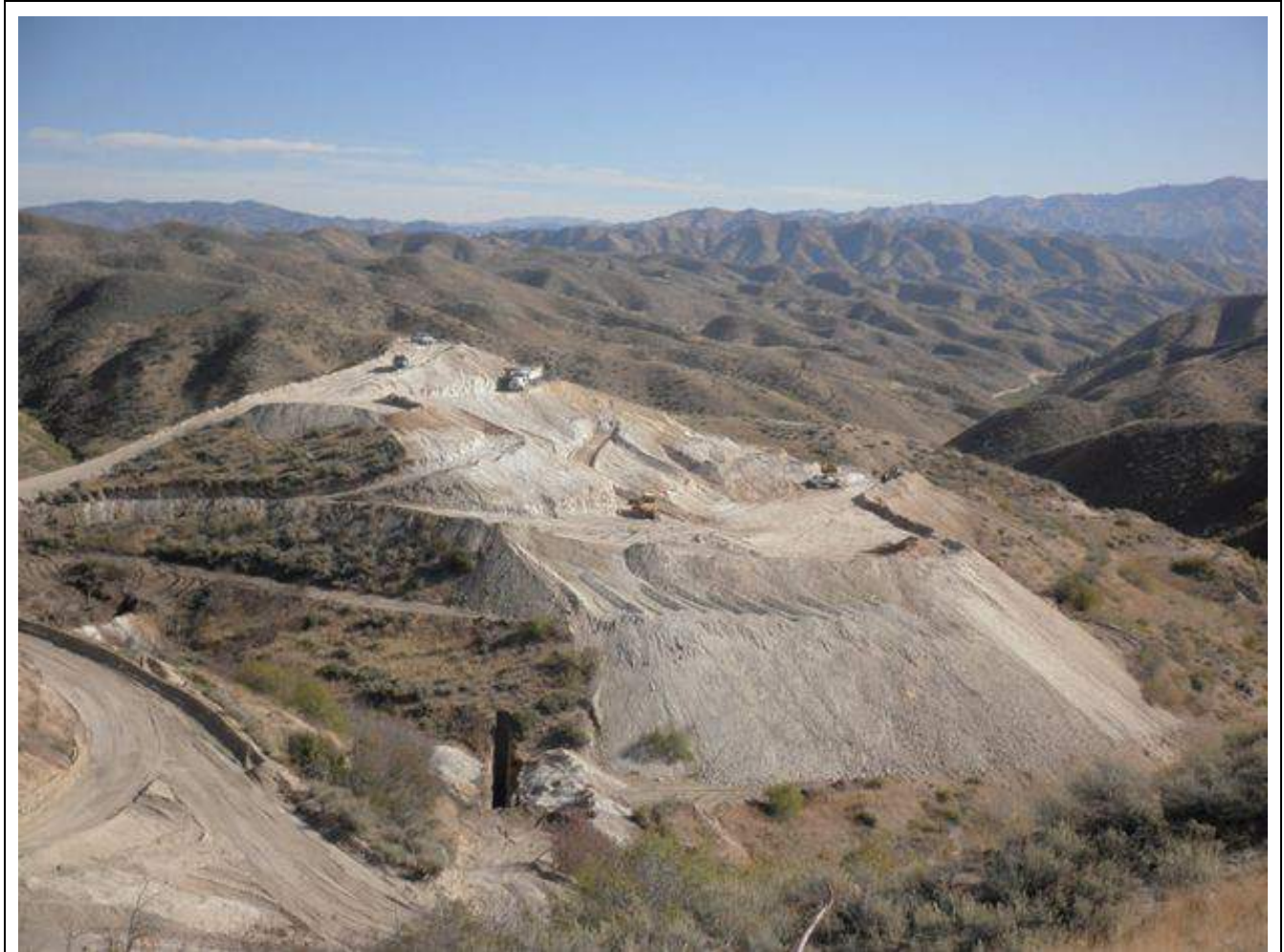
The general topographic setting at Neal is rolling hills of the Danskin Range with Neal situated 3.7 miles from the range front to the southwest. Much of the land in the area is used for ranching and is covered by mixed

grasses, sage and scrub brush. The Neal Property area sits at the local elevation transition where small patches of trees can survive the arid conditions. In the Figure 5-2 photo below, note the rolling hills and sparse vegetation; with this view looking northeasterly along trend at test mining work conducted by Mineral Point in 2016.



**Figure 5-1 Neal Project Access Map-** photo and shaded relief background map by ArcMap





**Figure 5-2 Neal Project Site Photo (2016)-** NE view of test mining/bulk sampling work by MPL – Atlanta Gold in 2015-2016

## 6. HISTORY

### 6.1 The Neal Mining District

The Neal Mining District as shown in Figure 6-1 below (from Bennett, 2001), is somewhat understated on the map figure as historic mining extended along trend another 4.5 miles to the southwest and included the Golden Eagle Mine, the second largest gold producer in the District. Virtually all historic gold production has been from lode mines, although minor placer gold production is mentioned in the literature. The current Neal Project consists of three prominent historic gold mines arrayed from southwest to the northeast: 1) Sunshine, 2) Homestake, and 3) Hidden Treasure as shown in Figure 6-2 (from Bennett, 2001). All sources indicate the approximate N70E vein trend as dominant for most of the District production, although minor veining described as “gash veins” by Bennett also occur in places and display the N60W trend found locally in portions of the well-known Boise Basin that starts 21 miles to the north of the Neal Project area.

The following historic production estimates for the overall Neal District are summarized from Bennett, 2001:

- Arthur Neal in-route to Boise with his pack string discovered mineralized float in December 1888. He found the lode source in 1889 and started mining with his partner George House. Both water and capital were lacking, but later funding from eastern financiers built the needed facilities to develop the Neal Project mines noted above, as well as the Golden Eagle and other small mines in the District.
- In 1898, Lindgren estimated a \$200,000 value for gold production that equated to 9,675 troy ounces of gold at \$20.67/oz prices. Unpublished US Bureau of Mines data (from Bennett, 2001) for the 1901-1991 time period, lists production of 20,135 troy ounces of gold. Bennett notes that not all years are accounted for, but the Neal District likely produced over 30,000 oz of gold through 1991 with most of this from the Neal Project mines (Figure 6-2).

A small underground gold mine is currently operating at the site of the historic Golden Eagle Mine. Production figures are unknown as the mine is operated by a private company (Greyhound Mining & Milling, Inc.) based in Boise.

### 6.2 Neal Project: History of the Daisy and Homestake-Hidden Treasure Mines

#### 6.2.1 1889-1941 Early underground production history (Bennett, 2001)

- Most of the 9,675 oz of gold produced during the 1889-1898 time period, as reported by Lindgren, likely came from the Neal Project mines as production is not reported for the Golden Eagle Mine until 1902.
- In 1902, the old Balbach Mill was replaced at the Hidden Treasure Mine. The Daisy Mine was sold by G. Bredhoeft to a Chicago-Wisconsin based group for \$225,000.
- Hidden Treasure and Homestake were both operating in 1903.
- In 1904 significant work was completed at the Homestake Mine and “good ore” was discovered at Daisy.
- In 1907, the Daisy and Homestake mines were operated by the George F. Roth Company of Rochester, New York. Twenty men operated the mine and newly constructed 10-stamp mill. At that point, mine workings included a 2,000 ft adit and two shafts – 200 and 400 ft deep. Roth completed another 1,500 ft of development.
- In 1908, a 30-ton cyanide plant was added and another 2,000 ft of development completed.
- In 1910, a new 10-stamp mill and 60 ton per day cyanide plant were installed. At this point, the main shaft was 600 ft deep.

- In 1911, the Neal Project mines were then referred to by the US Bureau of Mines as the Roth property and all 3 mines were connected underground. A 3,000 ft adit connected the workings with the mill located on the Hidden Treasure property. Veins were noted to be persistent to 500 ft and gold was reportedly associated with pyrite and lesser galena-sphalerite. Sixty-five men worked in the mine and mill. An upgrade to the mill added Pachuca tanks. The 1911 production year was the all-time record holder with 17,292 tons mined and processed.
- The mill burned in May of 1913, but was rebuilt and production continued until 1915.
- Very limited production was achieved in 1923-1925.
- In 1936, Cordova Mining did 500 ft of development at Homestake-Hidden Treasure with a crew of six. They followed with another 192 ft of development the following year.
- In 1938, Cordova leased the property to H. D. Languille, but no further work was reported.

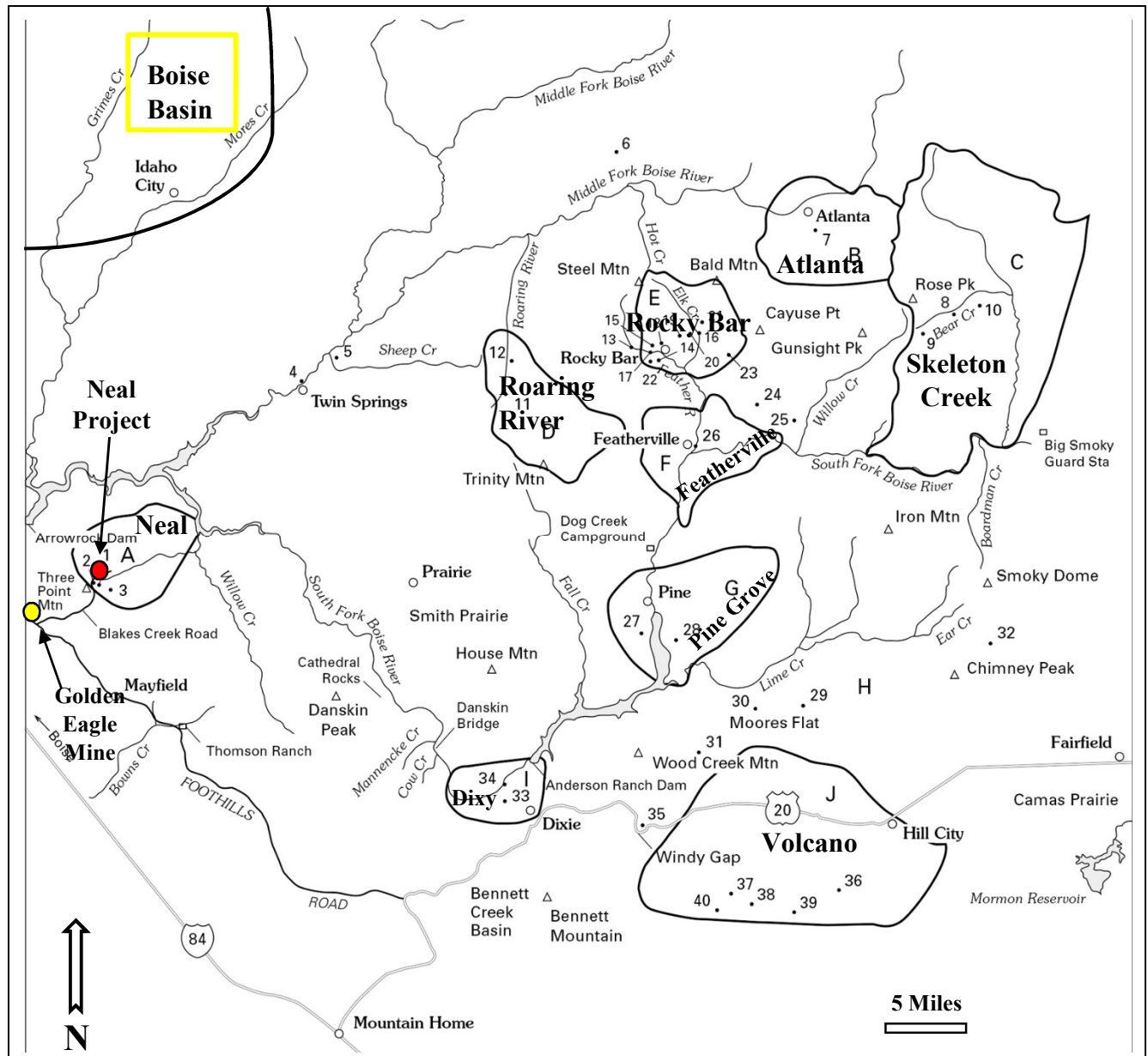


Figure 6-1 Mining Districts- western Hailey Quad Mining Districts (modified from Bennett, 2001)

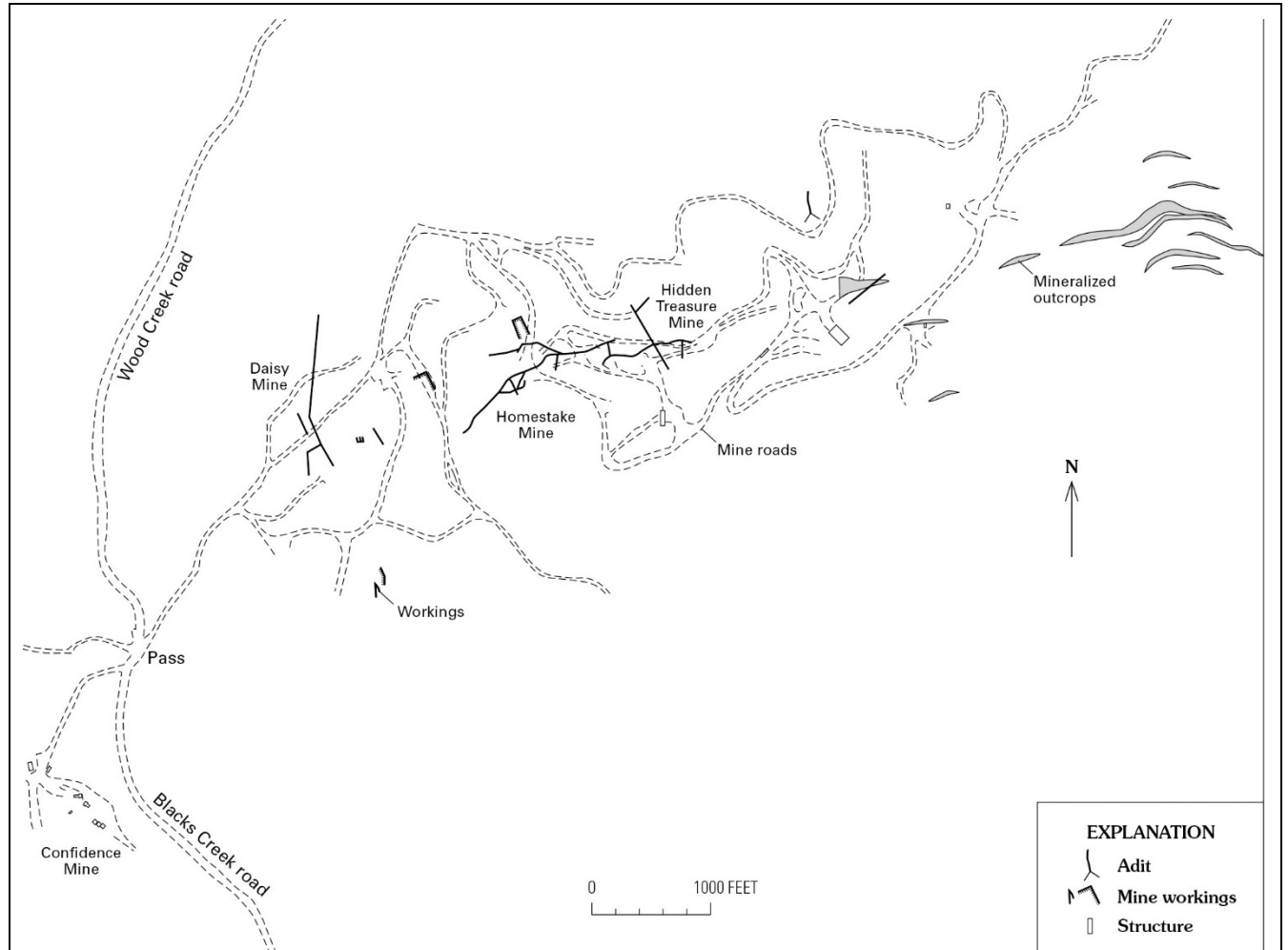


Figure 6-2 Historic Mines of the Neal Project- from Bennett, 2001

## 6.2.2 Modern Exploration, Development and Non-Compliant Historic Resources (1981-2019)

*(Note- much of this section through 2015 is sourced from documents produced by Aquasolum Consultants)*

- In 1981, Candelaria Metals Inc. (“CMI”) investigated the Neal Property (then referred to as the Fisher Property due to ownership) with drilling and surface sampling work designed to test the upper 100 ft of the vein zone for a contemplated heap leach operation that would include the old mine dumps. They concluded that gold prices of \$600-700 per ounce were needed to make the project attractive.
- Between March 1989 and February 1990, Centennial Mines (“CM”) completed 208 reverse circulation drillholes and a feasibility study that included an on-site heap leach. They drilled a reported 47,000 ft (all reverse circulation) with 190 vertical holes and 18 angle holes. CM also produced a resource estimate using MDA of Reno, Nevada, with a primary focus on near-surface mixed oxide-sulfide mineralization (within 60-75 ft); however, the Author does not have access to those source documents and that resource work is not considered relevant to current NIC exploration planning.
- In 2007-2008, Aquasolum Consultants leased the Neal Property, via their TEMU, LP, from Daisy Mining and Land (current underlying owner of the patents). They excavated a 200 ft long by 50 ft wide trench along the main vein zone for sampling and mapping. This work was combined with the earlier Centennial drilling to form the basis for their future work.
- In 2012, TEMU completes their feasibility study on Neal.
- In 2013, Aquasolum Consultants produced a Business Plan presenting results of their metallurgical work with two labs, where flotation and gravity recover about 90% of the gold. This group also produced a resource estimate using their own in-house consultants that appears to have focused on the same very near surface mixed oxide-sulfide material previously drilled by CM in 1989. Again, the Author does not have access to those source documents and that resource work is not considered relevant to current NIC exploration planning. Reportedly, all mining and milling equipment was purchased for a 200 ton-per-day operation scheduled for 2013. TEMU also completed around 1,000 ft of trenching along the 1,900 ft strike of the vein zone confirming some of the earlier CM studies. No cyanide or chemicals were to be used in the milling and recovery process.
- In July of 2015, the Atlanta Gold Corporation (Idaho company), under the operating parent Mineral Point, LLC (“MPL”), leased Neal from the Fisher family LLP (Daisy Mining & Land, LLP). They immediately applied for and then commenced operations under an approved Notice of Motorized Exploration (“NOME”) permit at the Neal project site; the exploration activity and concurrent reclamation were completed in September of 2016. This work included the excavation of a large bulk sample of approximately 13,900 tons averaging 0.132 opt gold (Figures 6-3 and 6-4). *(Note- this stockpiled material is not part of the current NIC deal)*
- In 2016, the Neal patents lease with Daisy Mining was amended to reflect a change in ownership, where Sprott Mining interests now controlled the Neal Property lease.
- A final reclamation plan and permit were approved and issued on April 24, 2017.
- Pure Nickel Inc., through its Nevada Star US subsidiary, signed a definitive agreement on April 29, 2019 with Sprott Mining as announced by the Company on April 30, 2019, with the final closure of the transaction announced on May 13, 2019, whereby NIC has become a 51% operating and controlling partner in the Neal LP. Pure Nickel has already started limited field and office work on Neal, and expects to be active there for the balance of 2019.



**Figure 6-3 Mineral Point, LLC Bulk Sampling Open Cut Pit at Neal (2015-2016)-** Author completing open cut examination on April 27, 2019; vein remnants with notable silicification, quartz veining and iron oxide after pyrite (red-brown material) on right (yellow arrow); hangingwall fault zone with associated clay – white mica alteration (white arrows)



**Figure 6-4 Open Cut Mineralized Stockpile-** estimated 13,900 tons at 0.132 opt gold

## 7. GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Regional Geology

#### 7.1.1 Cretaceous Idaho Batholith and Tectonic Setting- DeGray, Miller and Link, Idaho State University

The bedrock geology of the Neal Project area and Neal District overall (Figure 7-1) is fairly simple in that it consists mainly of plutonic igneous rocks of the Idaho Batholith (Atlanta Lobe) and younger Tertiary-aged intrusive stocks, dikes and sills. On a plate tectonic scale, the denser oceanic Farallon Plate subducted under the lighter, more buoyant North American Plate in the late Cretaceous, with the Atlanta Lobe of the Batholith forming between 100-75 million years ago (ma). The Atlanta Lobe would have likely intruded much older Proterozoic-aged Belt Series metamorphosed sediments commonly found today east and northeast of the Batholith. None of these older rocks survived subsequent uplift of the area during a postulated isostatic rebound event at 60-65 ma that eroded kilometers of roof pendent material to expose the two-mica granites and biotite granodiorites of the Batholith, while locally preserving remnants of the 50 ma Challis volcanics. An Idaho state map of the generalized geologic “provinces” is shown in Figure 7-1.

#### 7.1.2 Regional Rock Types- the following lithologic summary is taken directly from Bennett, 2001

*“Rocks in the western half of the Hailey 1 ° × 2 ° quadrangle of south-central Idaho, include various units of the Atlanta lobe of the Idaho batholith (biotite granodiorite to two-mica granite) of Cretaceous age and plutons and dikes of Tertiary (Eocene to Miocene) age that intrude the batholith. Eocene plutonic rocks consist of a bimodal suite of anorogenic granite and tonalite-granodiorite and hypabyssal rhyolite and rhyodacite dikes. Rocks of the Eocene Challis Volcanics are scarce in the map area, but are widespread to the east. Rhyolite ash flows of the Miocene Idavada Volcanics and basalt of the Snake River Plain crop out in the southern part of the area. Lacustrine rocks of probable Eocene to Holocene age are present in the vicinity of Anderson Ranch Reservoir. Quaternary basalts and gravels are widespread on the South Fork of the Boise River, and alluvial deposits are common along active drainages. Metasedimentary rocks of unknown age crop out on House Mountain, Chimney Peak, and on the ridges east of Anderson Ranch Reservoir.”*

#### 7.1.3 Regional Structural Geology- the following description is taken directly from Bennett, 2001

*“Older structures in the Idaho batholith include a major fault beneath House Mountain that may be a decollement for one of the large thrust sheets in eastern Idaho or part of an extensional core complex. The southern part of the Atlanta lobe of the Idaho batholith is cut by northeast-striking faults (parallel with the Trans-Challis fault system) that are related to Eocene extension and by northwest-oriented faults that formed during basin and range extension in the Miocene. The basin and range faults have prominent scarps typical of basin and range topography. The combination of northeast and northwest faults has broken the batholith into a series of rhomboid blocks. Some of these northeast and northwest faults are older structures that were reactivated in the Eocene or Miocene, as indicated by Ar40/Ar39 dates on mineralized rock contained in some of the structures.”*

#### 7.1.4 Regional Mines and Prospects- the following description is taken directly from Bennett, 2001

*“The Idaho batholith and associated rocks in the map area host several hundred mines and prospects in 18 mining districts. The deposits range in age from Cretaceous to Eocene, and many were developed for precious metals. Most of the deposits are in quartz veins in shear zones in granitic rocks of the batholith. Several districts were actively being explored for low-grade, bulk-minable, precious-metal deposits in the late 1980s and early 1990s.”* Note the mines and districts shown in Figure 6-1 above.

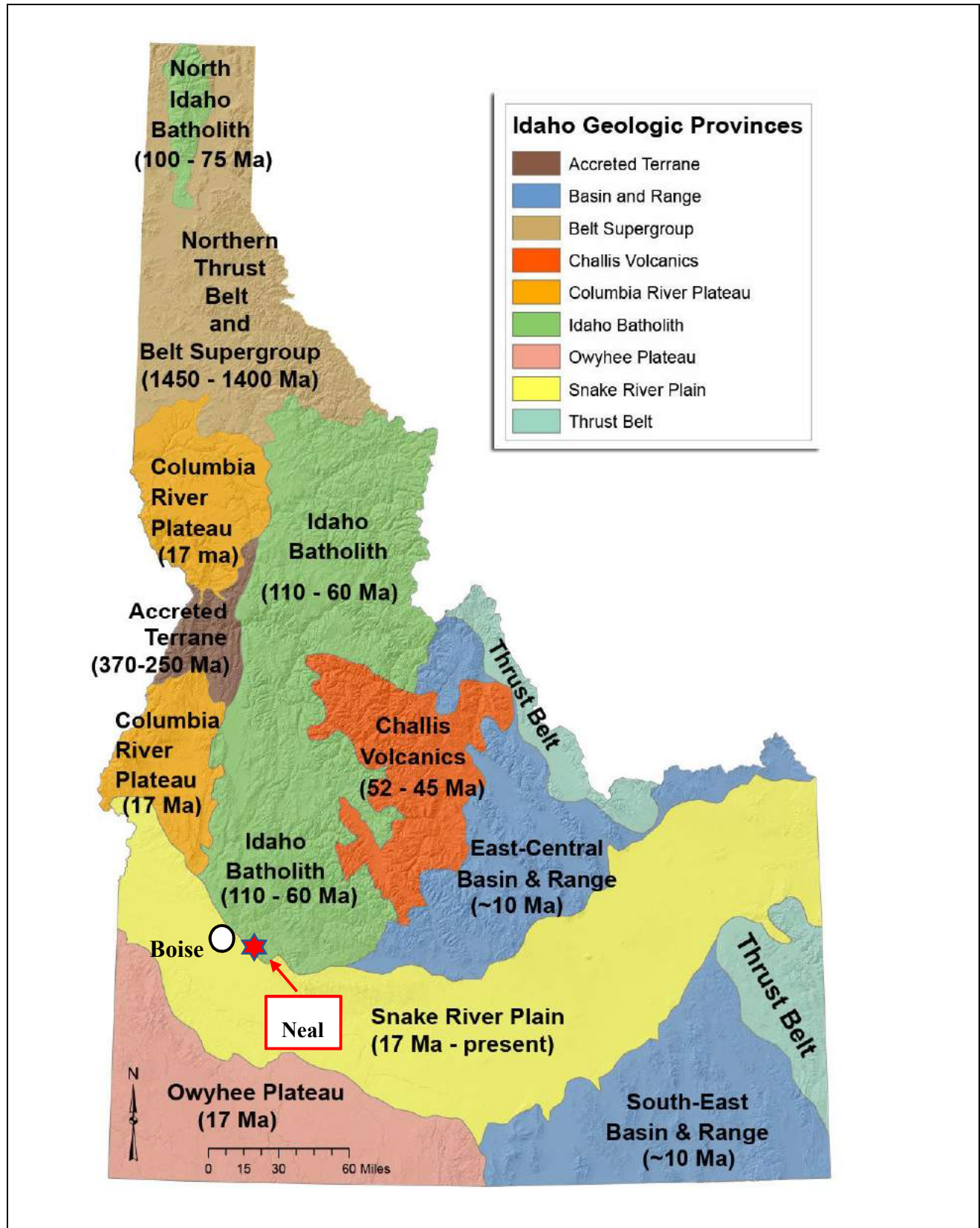


Figure 7-1 Generalized Geologic Provinces of Idaho- sourced online from Idaho State University



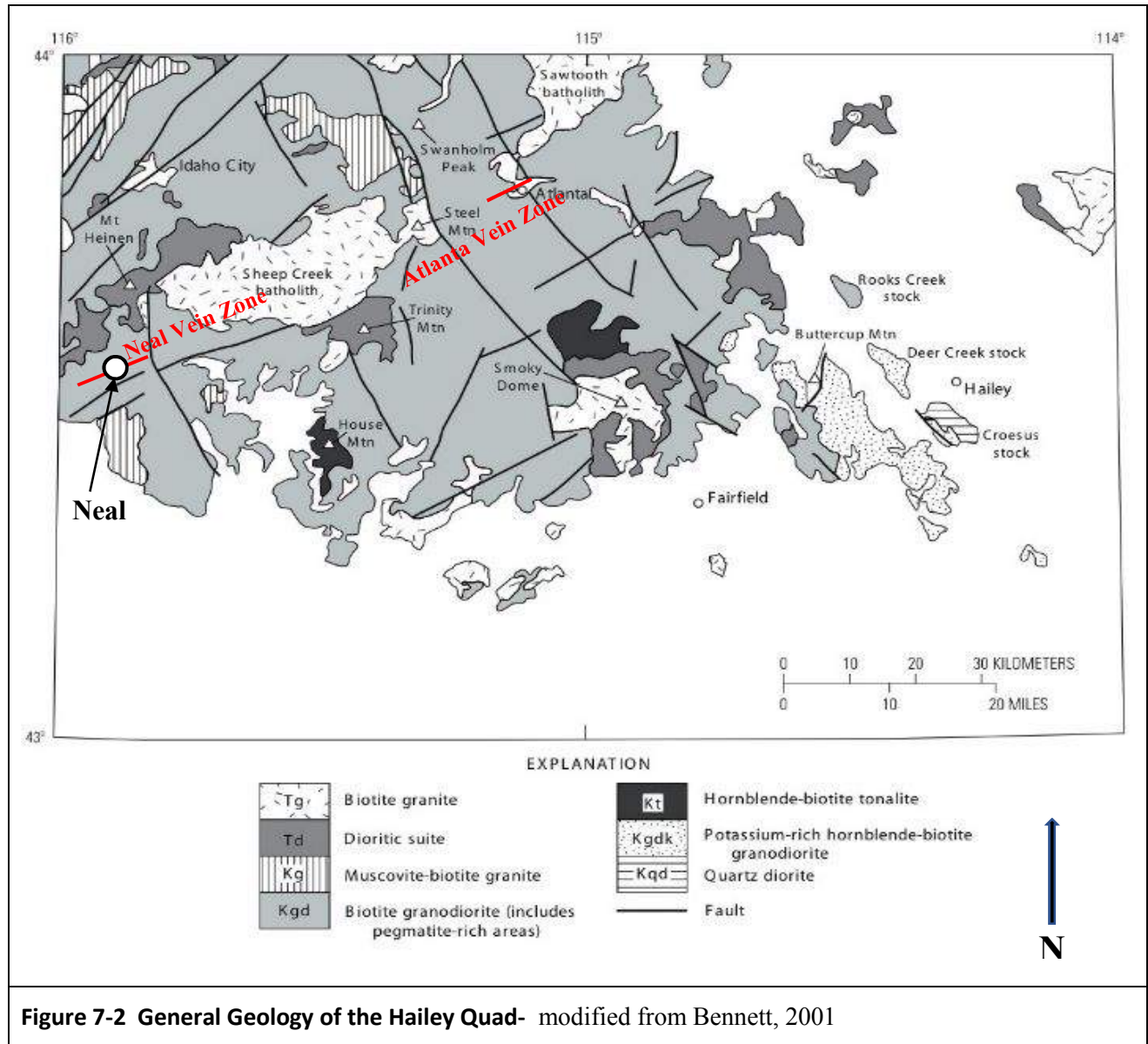


Figure 7-2 General Geology of the Hailey Quad- modified from Bennett, 2001

## 7.2 Ore Deposit Geology of the Neal Mining District and Neal Project

### 7.2.1 Host Rock Geology

Since no real geologic map of any kind has been found for the Neal Project area, other than a simplified vein map, the Author has relied on the Bennett report for details on host rock and structure not directly observed during the late April field visit. All District gold deposits are hosted in biotite granodiorite intrusive rocks of the Idaho Batholith and many are intimately associated with the younger Tertiary-aged dikes that have intruded favorable ore-related structures. Rhyolites and lamprophyres appear to be among the most commonly associated with gold mineralization and often occupy the same structures, while being very close in age as determined by cross-cutting relationships. According to Bennett's 2001 published work in the Hailey Quad, rhyolitic dikes are the most common later intrusive type in the Neal District. Most dikes also conform to the common N70E vein orientation and display steep dips. Associated gouge and veining are frequently observed and suggest that the intruded fault zones were active over a time period prior to the mineralizing events and clearly beyond the later intrusive events.

A persistent series of lamprophyric dikes intrudes the heart of the N70E Neal Project area vein trend from the Confidence Mine in the southwest to beyond the Homestake Mine to the northeast (Bennett). The dike is a dark green to black color with obvious coarse crystals of biotite. This dike and enclosing biotite granodiorite are sheared and hydrothermally altered. Bennett (2001) reports:

*“at most exposures, the dikes range from a few inches to 3-4 ft in thickness; however, about 250 ft north of the Daisy shaft, several strands of lamprophyric dike make up an aggregate thickness of 25 ft. At that location, small pods of mineralized quartz in the lamprophyre dike indicate that the dike is pre-ore, similar to a lamprophyre dike observed by Lindgren (1898) in the middle of a 4 ft vein at the Homestake Mine. There is no age data for these dikes.”*

Lindgren (1898) provided some petrographic analysis of the lamprophyres in and around the Hidden Treasure Mine: *“.....the lamprophyres are 18-30 inches thick and consist of brown hornblende, augite, plagioclase and orthoclase. The dikes are often in the hangingwall of the vein zone and may be unaltered to wholly replaced by ore”.*

In the vicinity of the Daisy Mine at Neal, Bennett reports distinctive brownish dikes approximately 2.5 miles southwest of Daisy that strike roughly N-S. Visually, the rock looks like a hornblende rhyolite that Lindgren in 1898 classed it as a syenite porphyry. Whole rock work on 3 samples of this dike returned analytical values of 65% SiO<sub>2</sub> and K<sub>2</sub>O values averaging 4.86%; Bennett classifies this as quartz-trachyte. Well-developed soil profiles can make the identification of the smaller intrusive bodies very difficult at the surface. Similar associations are common in Nevada's gold deposits.

**Author's Observations from Field Visit:** Lamprophyric dikes were observed in two locations in the field. A moderately altered scab of dark brown lamprophyre was found in the large open cut mine area attached to the hangingwall side of what appears to be one of the main Homestake-Hidden Treasure veins. This lamprophyre was vein parallel, at least a foot thick, and altered at the vein contact with significant iron oxide – clay – white mica (Figure 7-5). A second lamprophyre is easily found in the roadcut on the way into the open cut where it forms a 3-4 ft thick, structurally controlled irregular mass with no observed alteration. Both lamprophyre locations are shown in the NIC Reference Map (Figure 7-13). Another phase of the regional granodiorite host displays a coarse pegmatitic texture and was found in and around the main vein mineralized area in the open cut (Figure 7-6): this “pegmatite” was not studied in any detail, but appears to be dike-like and conformable with the main vein's N70-85E strike.

### 7.2.2 Non-Vein Faults

Bennett reports that two high angle northeast-striking faults bound the more mineralized northern part of the Neal District and that one of these faults, the Blacks Creek Fault, has been traced for several miles along strike. Whether or not these larger faults that form topographic linear features are potential hosts for vein mineralization is uncertain.

Author's Observations from Field Visit: Regionally, air photos and topographic maps suggest that other large northeasterly-striking faults may be present in the area as well. There is no current indication that these faults are mineralized or how they may relate to veining at Neal. The Figure 7-13 NIC Reference Map shows some initial observations of structure as documented by the Author and other NIC technical personnel; notably, a number of weakly to non-mineralized fault zones easily mapped in road cut exposures, and in and around the large open cut.

### 7.2.3 Deposit Controls and Morphology

Neal Project Mines- Bennett's report notes that the *"principal veins of the Neal mining district strike N 65°–85° E and dip 40°–45° SE. In places no quartz is visible, but in other places the mineralized shoots are as thick as several feet. Much of the vein material is altered, sheared biotite granodiorite with several inches and gouge and little to no quartz."* Prospects along strike to the northeast of the Daisy – Homestake – Hidden Treasure trend trace the vein zones for several thousand feet (Figure 6-2). This also appears to be true to the southwest as the veins can be projected along strike to the southwest through the historic Confidence Mine works and beyond.

A copy of a plan-view level map of the 4740 elevation by W. L. Josey in 2016, designed to show a planned grid drilling program (Figure 7-3), uses a 0.040 opt gold cutoff grade to project mineralized vein envelopes (in red). This map was based on historic drilling and was used to build a series of cross sections; one example of which is shown in Figure 7-4. It is notable, that in using the 0.040 opt Au cutoff, the mineralized vein segments for the "main" Homestake – Hidden Treasure mines area appear to vary from less than 50 ft to over 150 ft, while a series of sympathetic veins show up on this level map supporting the contention that five or more separate veins are present in the mine area. The plan map has a series of proposed drillholes laid out on a 100 ft grid, with all holes planned at a -45° angle and directed N20W. This program was never implemented, but was designed to evaluate the potential of the other veins and identify unmined portions of the main vein zone.

#### Select Observations from Lindgren's (1898) Report on the Neal District (October 1896) Visit-

- Most veins of the District have the common N70 to 83E Strike and same general dip to the south.
- There are 3 classes of veins: 1) veins filling larger fault fissures, 2) irregular veins along the minor shear planes in the granite, often adjacent to the larger faults and carrying high-grade material locally, and 3) veins of hard white quartz referred to by the miners as "bull quartz" and carrying little to no values.
- The veins are often offset by later (roughly) N-S faults that are sometimes marked at the surface by gulches.
- Productive Veins dip to the south at 30-54° and are steeper than adjacent footwall foliation.
- Hangingwall foliation is vein parallel.
- Vein widths vary from 2-13 feet.
- Veins of the second class are sub-parallel to the main veins, irregular, have only locally produced significant gold mineralization – mainly where they are associated with dike contacts.
- Veins of the third class can have local small streaks of mineralization where pyrite (or iron oxides) are present on the vein margins, but are usually nearly barren.

- At the Homestake Mine; one ore-shoot varied in length from 75-125 ft and in width from 4-12 ft and was mined down dip to 350 ft. On its west end, this shoot was cut by a fault oriented N19W and 60E – this later cross fault reportedly offsets the vein 100 ft to the south. About 400 ft to the east of this shoot, another fault has offset the vein 200 to the north – this shoot is about 250 ft long.
- Ore shoots at this time were comprised of material grading 0.50 oz/ton gold or greater. If a lower cutoff grade of 0.25 opt gold could have been used, Lindgren notes that the veins would have been mined nearly continuously along strike.

**Hidden Treasure Mine:** the vein mined there is the eastern extension of the Homestake and has been “opened” along strike for 450 ft and mined to a depth of 165 ft with widths of 1-13 ft. Several small N-S cross-faults have displaced the vein 4-12 ft, with one larger fault displacing the vein up to 60 ft. A nearly flat fault (dipping 6-80 NE) displaces the top of the Hidden Treasure Vein by 60-100 ft and is mineralized.

**Author’s Observations from Field Visit-** Cursory vein mapping in the “open cut” area during the April field visit provided several observations: 1) vein orientations, alteration style and the lamprophyre association with the main zone veining were confirmed, 2) other intrusive phases may be present in the northeasterly Neal fault/vein zone, 3) Northerly to N30E steep faults were mapped that offset the Vein Zone up to several feet Figure 7-8 and 4) sheeted stockwork quartz-pyrite veining was observed (Figures 7-9 and 7-10). Some of these features are shown in the NIC Reference Map (Figure 7-13). The open cut area provides an excellent look at a small portion of the main Neal Vein Zone that sat directly under the Homestake Mine area. It is notable that the width of clay – white mica alteration spanned at least the width of the pit, with a true width of 50 feet or more. When approaching the Neal Vein Zone from the north on the footwall side, a sudden increase in “Main Vein” parallel fracturing marks the start of the structural domain. This footwall-side structural zone is roughly 15 ft or so thick. Within the main vein zone itself, the first vein surfaces are the steepest (60°) and subsequent mineralized veining hangingwall to this surface are lower angle – in the 45° range (Figure 7-7).

**Boise Basin Deposits-** Very little information is available in the historic literature for the Neal District that describes the shapes, dimensions or controls for the higher grade portions of the veins that were mined underground. The Author relied on a comprehensive report by Anderson, 1947 for the nearby Boise Basin districts, where similar deposits occur to provide some regional context for individual shoot morphology. Within the Boise Basin area, seven districts were recognized based on groupings of lode mines and Anderson was able to provide some deposit generalities common to all seven districts. Many of the better mineralized zones are in the classic “shoot” configuration and are best developed in flexures along the productive fault where the vein has flattened down dip or formed bends along strike. It was noted that some of the better orebodies in the Basin developed on the flatter portions of the vein zones and became thinner as the vein steepened down dip. Strike and dip lengths vary greatly from 40 feet to hundreds of feet on strike and can have dip extents that are similar - or considerably longer. Vein widths were commonly 5-12 feet, but could be 20 feet or more in places. Some veins were relatively intact along simple structures, where neighboring mines produced from parallel vein systems that might display broad fault zones with dismembered vein zones throughout. Some Boise Basin veins had thick sections of associated gangue material in the form of gouge or early-stage barren quartz vein material. The localization of higher grade orebodies at structural intersections, a feature common to the Nevada gold deposits, has not been noted in any literature to date for the Boise Basin or Neal District deposits.

**Golden Eagle Mine-** located 4.2 miles southeast and on trend with the Neal Project deposits, Bennett reported gold shoots mined in the 1902-1915 time period were generally 45-105 ft in strike length and 5-20 ft wide. These veins averaged 0.50 to 0.75 ounces per ton gold. As noted previously, this mine is in small scale intermittent production today as an underground shaft-accessed gold operation.

#### 7.2.4 Vein Mineralogy, Alteration and Paragenesis

**Neal-** Bennett notes that where quartz veining is present in the mineralized vein zones and is commonly clear vitreous quartz with iron oxide staining and casts after pyrite. Lindgren (1898) noted that in the deeper levels of the Neal mines gold was associated with pyrite. In the open cut at the present day Neal Project site, excellent local exposures of some of the veining show this iron stained quartz locally along strike in the veins, but giving way along strike to white mica – clay altered and iron stained granitics.

Multi-element geochemistry on a composite of all the pulps generated from the batch assay work on the 2016 Neal open cut stockpile (Table 7-1) clearly shows that galena and sphalerite were the most abundant accessory sulfides after pyrite in the unoxidized vein zones. It also suggests that for this particular lower grade vein material in the stockpile, the original pyrite content must have been close to 3%.

#### Select Observations from Lindgren’s (1898) Report on Neal District October 1896 Visit-

- Footwall alteration is marked by brown garnets (locally) and white mica (sericite) alteration that is very fine and clay-like.
- Hangingwall alteration has associated manganese oxides.
- Veining consists of quartz – sulfides – replaced country rock; at the hangingwall side, the quartz is clear and somewhat honeycombed (with voids?) and iron oxide stained; while the footwall side of the vein is often replacement style silicification of the country rock or dike material and has strong pyrite and other sulfides
- Pyrite often occurs in the dikes as detached kidneys or partial replacements.
- Gold is free in the quartz, but only partially free in the pyrite; varying from microscopic to shot sized, although in rich pockets the oxidation of pyrite has left semi-crystalline gold
- Sulfides consist of 3-10% pyrite, less than 1% galena and trace sphalerite; pyrite concentrates can contain up to 21 opt gold, while sphalerite concentrates can contain 1.4 opt gold. One galena concentrate assayed 0.7 opt gold and 44.0 opt silver.
- The mills at the time produced a concentrate that carried 2.5-4.0 opt gold and 5-6 opt silver.

**Boise Basin Deposits-** Pure Nickel consultants note that this very subtle style of quartz – white mica – clay alteration with commonly weak amounts of iron oxide is common in the Boise Basin deposits and in the Gabrinus District in particular. In fresh exposures the vein can be subtle with shear texture visually dominant over the alteration-related bleaching. Veining throughout the greater Boise Basin, displays dominant open-space filling with lesser silicification of the wallrocks. The following descriptions are taken wholly or in part from Anderson’s 1947 paper on the Boise Basin:

*“the veins can be very quartz dominant at one end of the spectrum to having very little quartz. Alteration directly associated with veining is classic quartz-sericite-pyrite (“QSP”). It was noted that stronger white mica (sericite) alteration is commonly found around the better orebodies regionally and it could be a useful indicator when drifting along a structure underground.*

*Vein sulfides in general paragenetic order: pyrite, arsenopyrite, sphalerite, tetrahedrite, chalcopyrite, and galena, with bismuthinite and stibnite being later minerals in some deposits. Carbonates such as calcite are very late in the vein depositional sequence. Deposits associated with the NE trending “porphyry belt” districts at Quartzburg and Grimes Pass tend to have gold associated with bismuth or quartz – arsenopyrite – pyrite, whereas silver tends to be associated with antimony minerals and galena. Gold is reported as always being observed very late in the paragenetic sequence.”*

Quartz veining has been documented in 3-stages with the latest associated with the gold events and commonly displaying finer textures that are chalcedonic. This later quartz can also be a gray color due to the inclusion of

fine grained sulfides. Stage-3 quartz veining is considered the most important as it contains most of the gold and sulfides, with the sulfides/oxides being the best visual indicator.

**Author's Observations from Field Visit:** Due to reclamation efforts at Neal, the best remaining exposures of Neal Veining and vein related alteration are found in the open cut area. Abundant vein samples can also be found in the open pit stockpile, with all of this material coming from the area of the historic Homestake Mine. As all of this material essentially comes from the Homestake vein system, very little opportunity to observe the vein system along strike is available with the current exposures. Historic descriptions of the veining as clear to white quartz with occasional open space vuggy areas and some stockwork veining were confirmed during the site visit, but the amount of moderate to strong silicification in and around the veining was a surprise. This silicification ranged from passive and clear with preserved protolith textures, to massive flinty white silica with iron oxide mottling (Figure 7-11b).

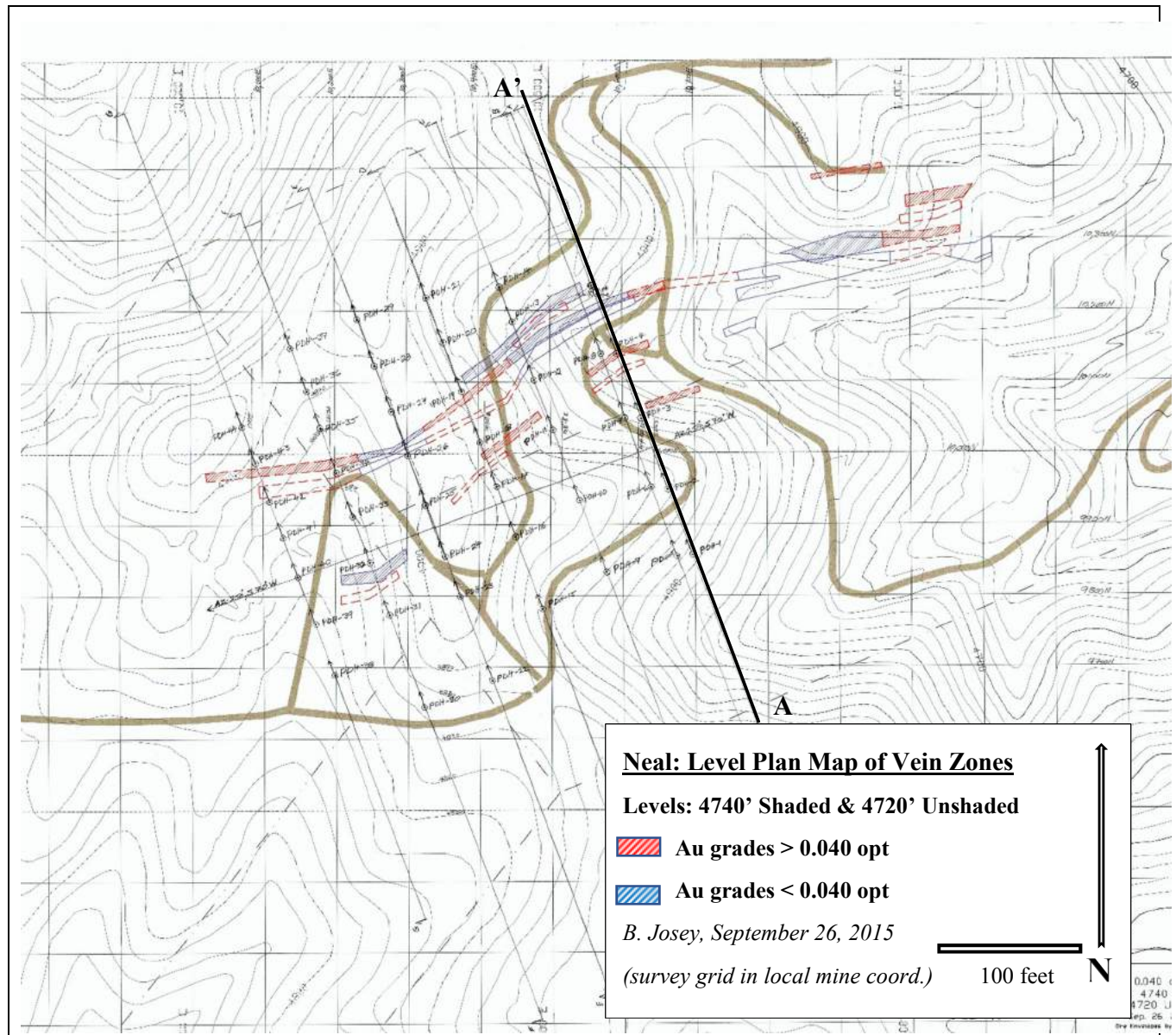
The persistence of widespread clay – white mica; both directly associated with the veining, but persisting for up to 50 feet or more into the wallrocks and associated with parallel structure, was impressive and reminiscent of porphyry-style alteration (Figures 6-4 and 7-11a). This impression was enhanced with the tentative macroscopic identification of a fairly bright pink potassium feldspar (K-spar) – quartz zone (Figure 7-12a); with further work this could establish a porphyry link. A more passive style of quartz – (K-spar?) alteration can be seen in Figure 7-12b, where the granodiorite texture is still visible.

<b>Neal Stockpile Composite: all pulps from original battery of assays (13,900 tons)</b>									
Method	FA430	AQ400	AQ250	AQ250	AQ250	AQ250	MA300	AQ250	AQ250
Element	<b>Au</b>	<b>Ag</b>	<b>Ag</b>	<b>As</b>	<b>Ba</b>	<b>Bi</b>	<b>Cu</b>	<b>Cu</b>	<b>Cd</b>
Units	PPM	PPM	PPB	PPM	PPM	PPM	PPM	PPM	PPM
Assay	6.661	5.9	4827	33.7	58.1	8.6	5	1.45	1.22
Method	AQ250	CV400	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	
Element	<b>Fe</b>	<b>Hg</b>	<b>Hg</b>	<b>Mn</b>	<b>Mo</b>	<b>Pb</b>	<b>Sb</b>	<b>Zn</b>	
Units	%	PPM	PPB	PPM	PPM	PPM	PPM	PPM	
Assay	1.58	0.06	24	150	0.22	980.33	0.24	273.1	

**Table 7-1 Gold and Multi-element Assay of 2016 Stockpile Ore-** 2017 Assays from a single pulp composite made from 593 of the original pulps: the original pulps sourced from truck sampling during mining. Lab work by Bureau Veritas (Inspectorate Labs, Sparks, NV); gold analyzed by FA430 with 5 ppb to 10 ppm range (30 gram fire assay with AA finish); AQ250 is an ultra-trace aqua regia digestion with ICP/MS finish; AQ400 for silver (0.1 to 100.0 ppm) with aqua regia digestion and AA finish ; CV400 is cold vapor trace AA analysis for mercury (Hg)

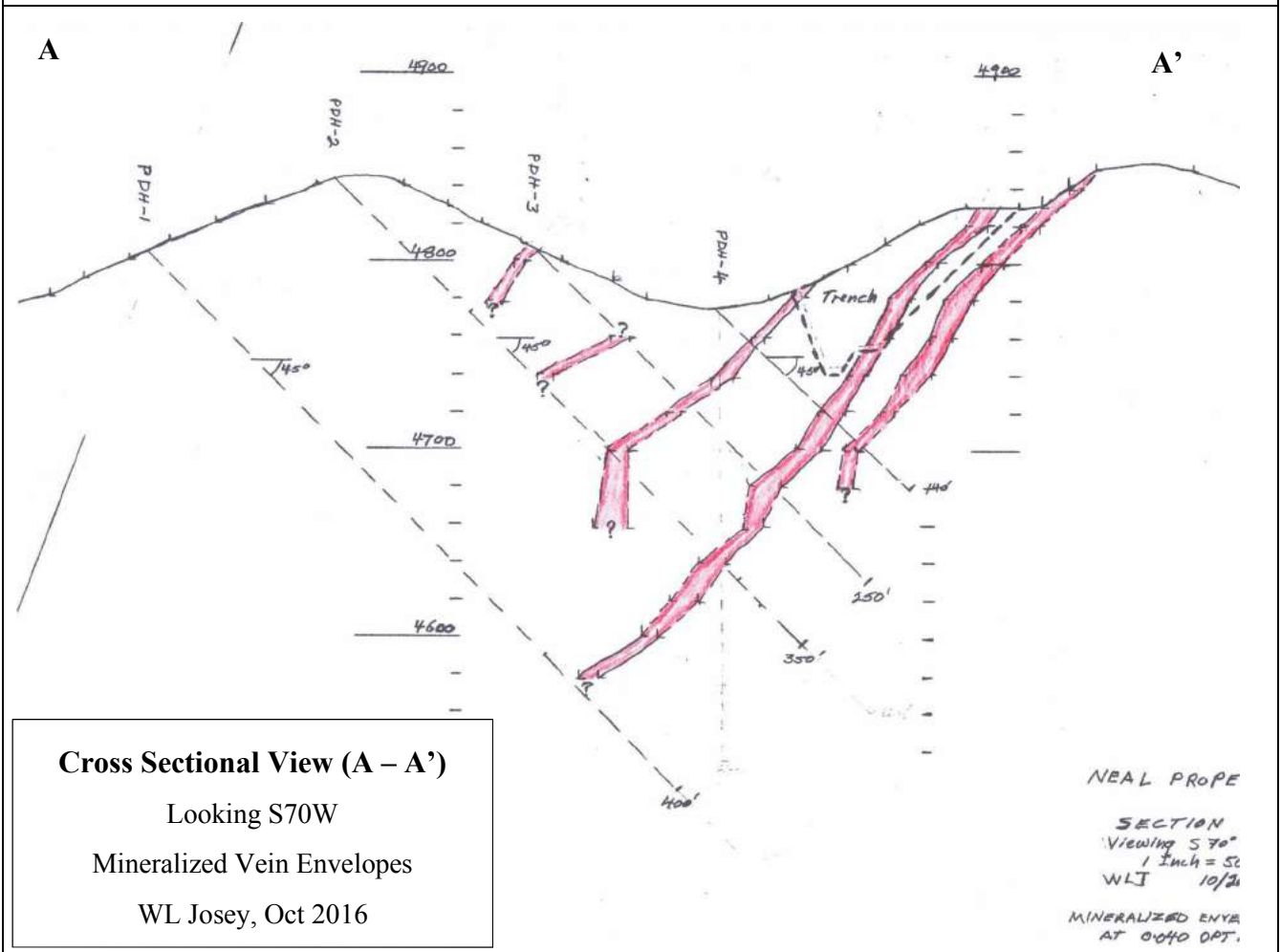
### 7.3 Supergene Effects and Oxidation Boundaries

As of the date of this study, the vertical extent of oxidation is difficult to determine from the available data. Lindgren observed pyritic ores in what were the lower levels of the Neal Project mines in 1898, when the deepest shaft was less than 200 inclined feet. Some survey work during the site visit, suggests an elevation differential from the open cut bottom to the original surface of 150-200 feet; at that vertical depth the sulfides appear to be dominant within the quartz veins, while iron oxides dominate all mineralization outside of the quartz veins. By comparison, the mines of the Boise Basin often have oxidation levels extending only several tens of feet below surface and rarely over 100 feet. Although no comments on oxidation levels or supergene enrichment were made in the Bennett paper on the Neal District or other Hailey Quad gold districts, Anderson’s paper on the Boise Basin states that no surface enrichment or depletion of gold grades has been noted.



**Figure 7-3 Level Plan Map of the Neal Vein Zones-** Plan View (Level) Map by W. L. Josey (2015) based on

Centennial Mines drill data; veins projected to 4,740 and 4,720 ft elevations (0.040 opt Au Cutoff)



**Figure 7-4 Neal: A-A' Cross Sectional View of Vein Envelopes (looking S70W)-** from W. L. Josey, 2016; this is one of a series of cross sections created for a planned drill program and accompanies the plan view level map of Figure 7-3 above





**Figure 7-5 Lamprophyre Dike:** partially altered in main vein zone of open cut; macroscopically, the dike appears to be pyroxene dominant



**Figure 7-6 Pegmatitic Textured Phase of Granodiorite:** note banded quartz – k-spar(?) veining and minor white mica alteration of feldspars



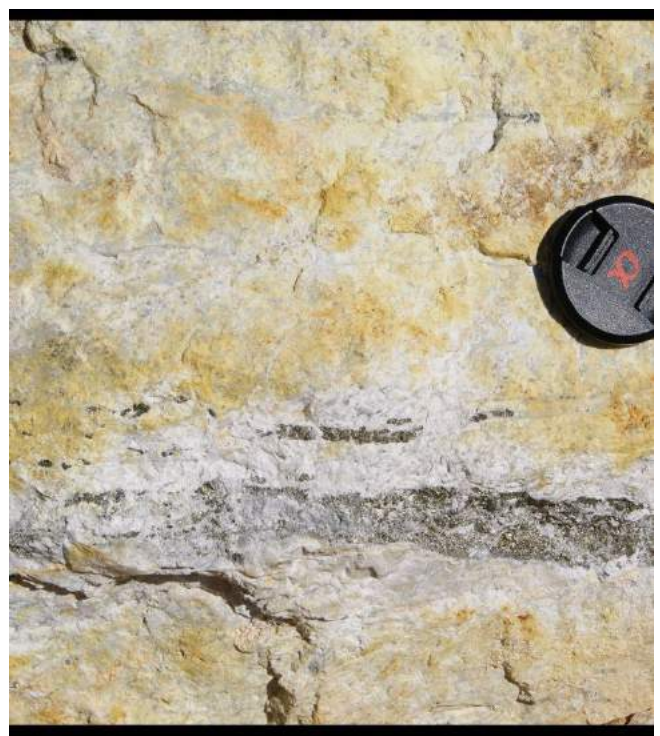
**Figure 7-7 Heavy FeOx after Pyrite on Main Neal Vein System- veins at N70-80E 45-50°S**



**Figure 7-8 Later Cross-cutting N30E Small Fault- arrow at N30E 80°E cross fault**



**Figure 7-9 Clear to White Quartz Veinlets-**



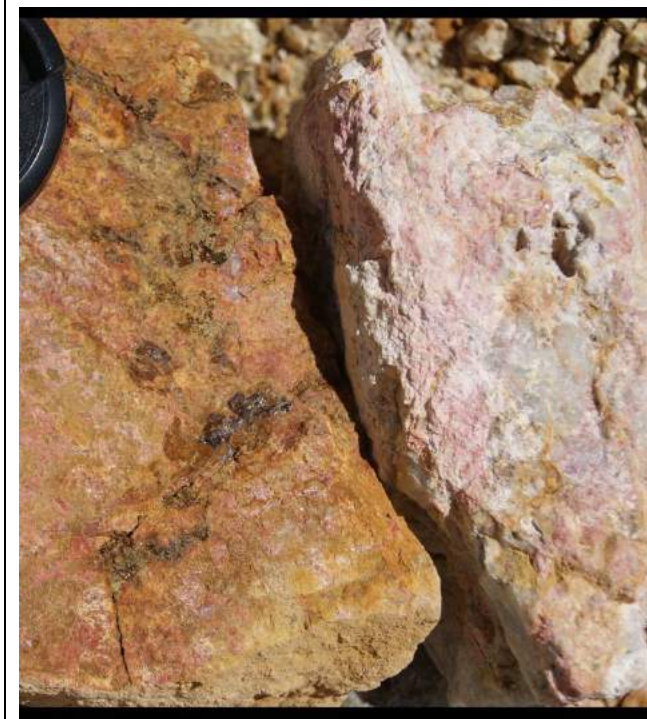
**Figure 7-10 Sheeted Quartz-Pyrite Veinlets-**



**Figure 7-11a Earthy Massive Clay – White Mica – FeOx-** immediately adjacent to main veining



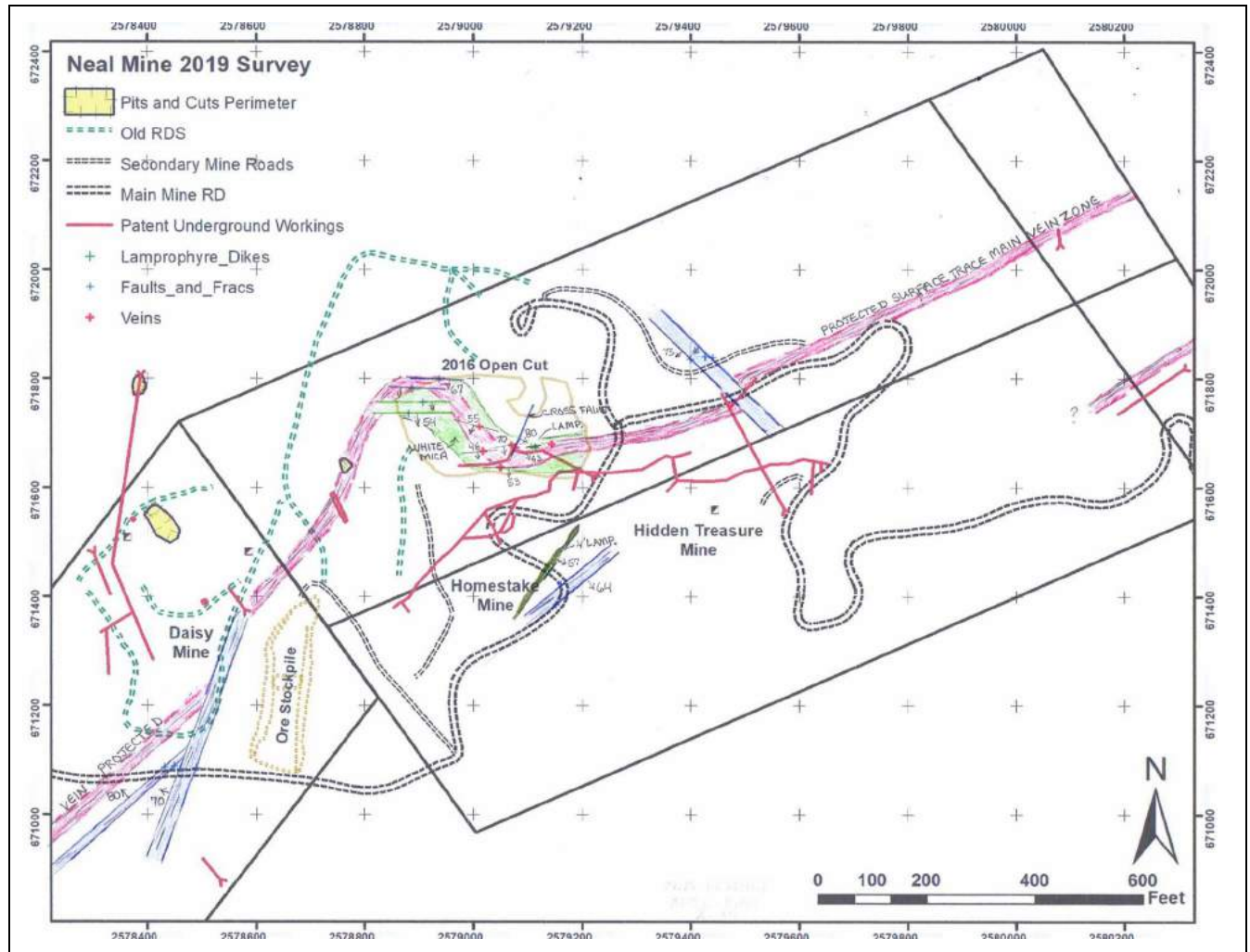
**Figure 7-11b Hard Flinty White Silicification-** main vein strong silicification of granodiorite protolith



**Figure 7-12a Pink Potassic (?) Alteration-** main vein K-Spar – quartz replacement of granodiorite



**Figure 7-12b Light Gray to Clear Potassium Feldspar(?)** at pegmatite – granodiorite transition



**Figure 7-13 NIC Reference Map-** summary geologic features noted during property visit in late April, 2019; late unmineralized faults shown in blue; main vein zones in red; green in open cut is white mica alteration envelope around vein zone; dark green denotes lamprophyre dikes in 2 locations; note that Fig. 7-8 cross fault shown in open cut; survey grid based on NAD83 Idaho State Plane (West Zone) Survey Feet

## 8. DEPOSIT TYPES

In order to characterize the deposit type at Neal, we can reference the recent work of Bennett (and others) on the mines of the Neal District and other mines of the Hailey Quad, and the historic Anderson study (1947) on the districts of the Boise Basin. In comparing the two regions, the similarities in nearly all characteristics of deposit geology are remarkable. Some of these characteristics include:

- The host rocks are uniformly Cretaceous-aged plutonic rocks of the Idaho Batholith associated with Tertiary-aged intrusive rocks that can vary in texture and composition. At Neal, the vein zone is hosted in batholithic biotite-granodiorites with closely associated lamprophyre dikes. North-easterly structures nearby in the Three Points Peak area are reportedly intruded by a series of rhyolite dikes (Bennett 2001). Very similar dikes are reported throughout the other Hailey Quad and Boise Basin gold deposits. The uniform composition of the granodiorites suggests that veining will not be limited by favored host rock horizons as commonly seen elsewhere in sediment or volcanic hosted gold deposits.
- The veins show alteration and mineralogy consistent with the “phyllitic” zone white micas (sericite) commonly associated with intrusive hosted porphyry copper deposits, with the likely timing and source of the hydrothermal fluids linked to the emplacement of the slightly younger Tertiary dikes and stocks. The Boise Basin deposits are basically porphyry copper/moly related hydrothermal systems with the gold zoned about the higher temperature porphyry copper/moly centers. The large “CuMo” (pronounced Kū Mō) porphyry deposit (Mo-Cu-Ag), currently in the pre-production stage, is located in the northern portion of the Boise Basin and is an example of this link. A similar style of alteration between the Neal District and other Hailey Quad districts, and the notable Mo occurrence between Neal and Atlanta in the Roaring River District, are again suggestive of this porphyry link. Gambrinus District (Boise Basin) deposits typically have a strong Pb/Zn/As association with the gold systems (Anderson 1947). Other Boise Basin districts are similar with Bi also important locally. Neal vein ores also show a strong Pb/Zn association, although As and Bi are more muted than in some of the Boise Basin deposits. Higher temperature copper and molybdenum near the centers of the porphyry will typically zone outward to lower temperature lead and zinc zones with overlapping gold-silver.
- During the site visit, the tentative identification of significant potassium feldspar – quartz alteration may further support the idea of a porphyry link at Neal. Further work is needed though to confirm this.
- Neal Property veining is dominated by the N70E direction, although minor NW trending veining is reported in the immediate area (Bennett 2001). This NE vein trend is also noted for many of the other mines in the Hailey Quad; most notably the large gold system at Atlanta. It is probably not a coincidence that the N60-80E veining at Atlanta is on trend to the NE of Neal. Boise Basin gold districts have two dominant structural directions that control veining: 1) NE, with the N70E direction preferred, and 2) NW with consistent strikes around N60W (Anderson 1947). These patterned faults/vein sets are typical of Nevada gold deposits. Roughly N-S striking faults tend to be later and frequently offset mineralization; in the Neal open cut, a N30E high angle fault was found to offset the older N70E direction veining, while also hosting strong iron oxides – especially at the intersection. Future mapping should attempt to determine if the later northerly striking faults might play a significant role in vein development and localization of the higher grade orebodies.
- Multiple phases of quartz veining are reported for both regions, with the younger phase typically correlating best with higher gold grades. Quartz textures can show some open space locally, with coloring varying from clear to white. At Neal, the Hailey Quad deposits and Boise Basin deposits, pyrite is the dominant sulfide associated with gold; secondary base metal mineralogy (galena, sphalerite, arsenopyrite, bismuthinite, chalcopyrite, etc.) are also important, but there is a notable lack

of the volatile elements Hg and Sb. The nature of the quartz and multi-element assemblage is also indicative of higher temperature vein systems.

- The best gold zones (as shoots) of the Boise Basin reportedly (Anderson, 1947) developed at bends in the strike and dip of the fault/vein zone. It is also noted that these shoots can display a periodicity along strike. Anderson states that steepening of the vein zone down dip appears to have resulted in the loss of the mineable portions of the deposit in some mines. Although Neal area and Hailey Quad vein descriptions don't really discuss this issue, visual observations of the vein zones in the Neal open cut and limited mapping of these veins indicates that a similar principle likely exists at Neal and throughout the Hailey Quad. This style of shoot formation in "dilated" open space flexures during fault movement is common in many other vertically extensive vein systems such as the Mother Lode in California and the Canadian Shield deposits. Personal communication with NIC personnel familiar with the Atlanta gold mine note that historic underground mining and modern deep drilling have shown that system to extend over a vertical range in excess of 3,500 feet.

**Deposit Model-** a reasonable deposit model for Neal suggests that the better mineralized gold zones are not limited by host rock geology, vein mineralogy, or structure, and that the intrusive host and porphyry (moly-copper) relationship could suggest extensive depths in some cases for higher grade gold mineralization – especially marginal to the porphyry heat centers. This model would be consistent with a "mesothermal" classification for the gold deposits or the currently popular "orogenic" classification.

## 9. EXPLORATION

### 9.1 Historic Exploration and Development

The Neal Mining District was discovered by pack train driver Arthur Neal in late 1888 when he found mineralized float while heading to Boise; he made the lode source discovery the following year. Mr. Neal started limited lode mining in 1889 with his partner George House, although difficult conditions limited mining to the wetter and warmer months of the year. This seasonal mining was apparently the norm up to and beyond Lindgren's visit in 1896, with more sustained mining beginning several years later, in 1902-1903. Lindgren notes that in 1896, a 10-stamp mill was operating at the Homestake Mine and was considered the oldest in the state.

The 1902-1941 time period was dominated by mining with exploration largely carried out underground by drifting and crosscut. As noted previously, the main shaft was sunk to 600 ft (inclined depth?) and vein ores were noted to persist to 500 ft – there is no mention of ores being found in the 500-600 ft range in the available literature.

In 1981, Candelaria Metals apparently completed some limited surface sampling and drilling at Neal, although the results of this work led the company to conclude that \$600-700 per ounce gold prices were needed and they dropped the property. The results of this work may be included in historic files warehoused in Boise, but the Author and NIC personnel were not able to locate them during a hard copy data search on April 28th, 2019. Considering the amount of drilling, trenching and open cut bulk sampling conducted in later years, this data is not considered high priority.

The most extensive period of drilling was conducted by Centennial Mines (CM) in a relatively brief 1-year time frame from 1989-1990. As noted in section 6.2.2, Centennial completed 208 RC holes and a reported 47,000 ft of drilling, along with metallurgical and resource studies as part of a feasibility for an on-site heap leach operation. The study concluded that the operation economics for open pit heap leach at that time were not favorable and the company moved on. *Note- this database was used by Mines Development Associates (MDA) in Reno, Nevada to produce resource estimates at the time, but due to a reported data hi-jacking (and subsequent data deletion) of Atlanta Gold computers in or around 2017, all drill data has been lost. It is not known at this time if other consultants had digital or hard copies of the Centennial drill data.*

Studies by Aquasolum and TEMU from 2007 to 2012 were based on the earlier Centennial work, but added a 200 ft long by 50 ft wide trench to provide better access to the main vein zone at Homestake. Up to 1,000 ft of trenching was eventually completed by TEMU along the 1,900 ft strike of the main vein zone. This trenching allowed bulk sampling and was used to confirm the earlier CM work. Aquasolum's 2013 business plan combined gravity and flotation work from separate labs that indicated that gold recoveries of up to 90% were achievable without cyanide use. Although TEMU is reported to have purchased mine and processing equipment, the downturn in the price of gold starting in 2012 delayed a final commitment to mine the shallow near surface mineralization. No record was available as to when TEMU dropped or sold the Property.

The next recorded exploration initiative at Neal was begun in July of 2015, when Atlanta Gold leased Neal from the Fisher family. In 2015-2016, Atlanta Gold/Mineral Point permitted and carried out a large bulk sample operation from the open cut outlined in yellow in Figure 7-13 above. The NOME permit was converted to a full mining permit through the completion of a Plan of Operations after completion of the bulk sampling in 2016-2017. No drilling was conducted during this exploration phase.

## **9.2 NIC (Nevada Star) Exploration at Neal**

### **9.2.1 Field Surveying**

As part of the due diligence process in March-April of 2019, NIC personnel completed some very basic first steps in field verification in and around the Neal Project for: 1) patented and unpatented claim corner posts and survey markers, 2) surveys of previous mine grid survey markers, 3) surveys of any obvious historic mine workings, 4) surveys of modern and historic roads, 5) location surveys of Forest Service boundary markers and control points, 6) bench and perimeter surveys of the recent open cut and 7) stockpile perimeter surveys. All surveying was conducted with an Ashtech Promark 100 handheld GPS using a NAD83 Idaho State Plane (West) base (survey feet) with accuracies typically within 3 ft for the northings and eastings. As all historic drilling and planned future drill work will be carried out in footage-based intervals, it is recommended that all future work remain in the NIC Idaho State Plane (West) survey feet projection. Several tie-in control points to the old Neal Property Mine Grid were found and surveyed allowing for an easy conversion to the historic work.

### **9.2.2 Field Mapping**

During the Author's Property visit, additional surveying of significant geological features was conducted to provide further checks against the historic literature and to initiate a base for future work on the property. Some of these features are shown graphically in the Figure 7-13 Reference Map, including: 1) non-mineralized and post-mineral faults, 2) veins zones in the open cut area, and 3) lamprophyre dikes. Future mapping at Neal, particularly in the open cut area would greatly benefit from having updated Lidar-based topography to combine with recent imagery for the project area. Portions of the project could be mapped adequately at 1:1,200 (1 inch = 100 ft), while important vein areas should be mapped at 1:600 or larger scales to provide adequate detail.

### **9.2.3 Digital Data Compilation**

A significant number of online and company files have been combined for the Neal Project and surrounding area, including: 1) geologic reports and maps on Neal, the Neal District, Hailey Quad and Boise Basin Mining Region, 2) internal company business plans and mine studies for Neal, 3) some drillhole database remnants from the Centennial Program, 4) scans of the original patent plats with detailed surveys of claim corners and historic mine workings, and 5) permitting and reclamation records, including those relating to the currently permitted mine plan. In addition, limited claim and land status information has also been compiled on nearby properties to provide regional context.

### **9.2.4 GIS Compilation and Claim Validation**

NIC geologists have started a GIS digital compilation of the available data in ArcMap to provide maps for reports, presentations, and permitting. The GIS also allows a check of patented and unpatented claim locations once an adequate number of claim corners have been located and surveyed. The recent survey work by NIC personnel, including work conducted during the field visit, appears to verify that the claim corners are properly located in the field with respect to the public records. Limited time did not allow all corners to be located and surveyed, but claim positions were re-constructed based on historic patent survey work combined with the recent GPS survey. All data layers noted in sections 9.2.1 and 9.2.2 above (and more) are currently compiled in ArcMap.

## **9.3 Open Cut Stockpile Exploration Program of 2016-2017**

The 13,900 ton bulk sample taken from the open cut area during 2016-2017 provides one of the best possible tests for the open pit grade of the gold zone in the historically underground mined Homestake area (R. D. Russell, 2017-2018). Although the original operators of this program were not available, it appears that the



selective vein “mining” was largely visually constrained and the progression of continuously better truck sample assays as this sampling progressed suggests that either the vein material became higher grade or the selective ‘mining’ improved. At least 741 truck samples were assayed during this work (Table 9-1) and a new composite was created from the old pulps using 593 pulps found in storage and assayed recently as well (Figure 7-1 above).

The original truck assay work produced gold assays that compare well, regardless of how the sample weighting was done. Samples varied from <0.001 oz/t (below detection) to 1.971 oz/t gold. It is interesting to see that the gold values in the more recent pulp composite work of Figure 7-1 assayed significantly higher at 6.661 ppm Au (0.194 oz/t Au) – possibly indicating some nugget effect and/or sampling bias with the different number of pulps found and assayed. All quality control sampling for the lab work for both the historic and recent lab work was within acceptable ranges.

Again, the stockpile material is not part of the NIC (Nevada Star) deal, but will remain with the Sprott Group.

<b>Neal Open Cut Stockpile Original Truck Sampling Program Gold Assay Summary</b>					
<b>Batch #</b>	<b># Samples</b>	<b># Loads</b>	<b>Au Ave (opt)</b>	<b>#loads/Assay</b>	<b>#Samples/Assay</b>
				<b>(weighted)</b>	<b>(weighted)</b>
A	22	44	0.137	6.02	3.011
B	18	36	0.074	2.67	1.335
C	50	50	0.109	5.46	5.464
DE	42	82	0.112	9.15	4.685
F	39	78	0.115	8.97	4.484
G	72	146	0.181	26.48	13.057
H	55	110	0.132	14.57	7.285
<b>Total</b>	<b>298</b>	<b>546</b>		<b>73.32</b>	<b>39.321</b>
<b>Average Assay: Direct opt Au</b>			<b>0.123</b>		
<b>Average Assay: #loads weighted assay opt Au</b>				<b>0.134</b>	
<b>Average Assay: #Samples weighted assays opt Au</b>					<b>0.132</b>

**Table 9-1 Original Truck Sample Gold Assays of Neal Stockpile-** based of 741 original assays in 2015-2016 provided by Bureau Veritas (Inspectorate Labs in Sparks, NV); gold assays initially assayed with FA430 (30 gram fire assay), but over 10 ppm using FA530; silver assayed with AQ400 (aqua regia), but not reported here.

#### **9.4 Unknown Exploration Data**

Reports from past exploration at Neal reference limited to extensive exploration data sets that were created at the time, but have not been found as of the date of this report. Some of this data, at least in its digital form, was lost during the Atlanta Gold computer breach in 2017. This is reported to be the case for the Centennial drillhole database as noted previously. However, the original assays and drill logs were certainly in hard copy form, but have not been found to date. Additional channel sample data likely exists on the extensive trenching that was done in several stages by past operators, but this was not located during a data search by the Author and NIC personnel in late April. No records of soil sampling or geophysical programs have been found.

## 10. DRILLING

The only significant Neal drill program was conducted in 1989, by Centennial Mines. As previously noted in section 6.2.2 above, this 208-hole reverse circulation program was near surface oriented. Approximately 47,000 ft of drilling was completed with 190 of these drilled vertically 18 holes drilled at an angle. Although no digital or hardcopy data has been located from this program, select assays are shown in Table 10-1 below. Recently, NIC has been able to locate hard copy maps with Centennial drillhole locations.

The value of this drill data is limited as much of the system tested by the historic drilling has been removed by the open cut bulk sampling and future NIC work is likely to be focused on higher grade portions of the system. In fact, NIC personnel have noted that their focus going forward will be on locating the higher grade portion of the vein system at depth and along strike; there is little to no interest in the lower grade remaining portions of the vein system at this time.

No historic assessment of the drill sample quality from the Centennial reverse circulation program is available. In determining drill methods for a 2019 program, some factors to consider might include: 1) groundwater levels and amounts are currently unknown, 2) the quartz - white mica – clay alteration of the intrusive host rocks produces soft areas in and around the veins, 3) the gold occurs with iron oxides near surface and pyrite at depth, and 4) there is a significant component of free gold in the Neal vein zones. The ideal drill sample through the vein would combine the most sample volume with the best recovery within a cost effective program allowing the maximum number of vein penetrations. It is likely that recoveries are excellent in the unaltered portions of the system, but less favorable in the altered vein zones with even less favorable sample quality below the water table. Larger diameter core may have some advantages – particularly in deeper vein zones, but drill costs with core will limit the number of drillholes.

Neal Project: Centennial Mines 1989 Key Drillhole Intercepts						
RC Drill Hole	Depth to Top Interval (ft)	Depth to Top Interval (m)	Intercept (ft)	Intercept (m)	Gold (opt)	Au (g/t)
DH 89-47	140	42.7	5.0	1.5	0.117	4.01
DH # 89-43	265	80.8	5.0	1.5	0.972	33.32
DH # 89-104	50	15.2	5.0	1.5	0.813	27.88
DH # 89-166	60	18.3	5.0	1.5	0.664	22.78
DH # 90-87	75	22.9	5.0	1.5	0.615	21.08
DH # 89-116 N	140	42.7	5.0	1.5	0.605	20.74
DH # 89-117	150	45.7	5.0	1.5	0.555	19.04
DH # 89-20	80	24.4	5.0	1.5	0.417	14.28
DH # 89-154	25	7.6	5.0	1.5	0.397	13.6
DH # 89-170	265	80.8	5.0	1.5	0.377	12.92
DH # 89-116N	135	41.2	5.0	1.5	0.357	12.24
DH # 90-27	145	44.2	5.0	1.5	0.228	7.82
DH # 89-36	90	27.4	5.0	1.5	0.218	7.48
DH # 89-115N	105	32	5.0	1.5	0.198	6.8
DH # 89-23	145	44.2	5.0	1.5	0.188	6.46
DH # 89-68	125	38.1	5.0	1.5	0.179	6.12
<b>* Not true width of vein - intercept length in reverse circulation only</b>						

**Table 10-1 Select RC Drillhole Intercepts from Historic Centennial Mines 1989 Program-** this table sourced from the April 30, 2019 Pure Nickel news release.

## **11. SAMPLE PREPARATION, ANALYSIS AND SECURITY**

### **11.1 Historic Drilling, Channel Sampling of Trenches, Soil Samples, Selective Rock Sampling**

It is unknown if any of the historic assay work from the drilling or trench channel sampling will be found in a reliable and useful form. Further, this work largely applied to the now “mined out” open cut area where the stockpiled mineralized material is not part of the NIC interest in the Neal Property. Because no information is available, a reliable opinion cannot be rendered on the chain of custody, sample acquisition, or lab work associated with this early work.

Some indication of historic soil and selective surface/underground rock sampling was indicated on hard copy maps during the warehouse data search in April 2019. No detailed sample data was found to the extent required to make any use of the scattered map data found, but further warehouse work may reveal a useable compilation of the assays associated with this work.

### **11.2 Original Stockpile Truck Sampling During Mine Operation**

The stockpiled material was sampled onsite by Atlanta Gold personnel. It is unknown how this work was completed in detail, but the sampling was likely adequate considering the number of samples taken and the experienced mine personnel in charge of the operation. Results from this study were compiled to create Table 9-1 above. Of the 3 gold assays provided in the table, the most representative assay should be the 0.132 opt result for Au as it considers the number of samples in the relative weighting of each assay batch.

### **11.3 Smaller 3-Sample Trench Sample Evaluation of Stockpile**

A more recent evaluation of the stockpile processing economics by Atlanta Gold consultants involved shallow hand trenching in three areas of the stockpile to provide a check of the earlier truck sampling program (Figure 11-1). The average gold value for the 3 samples was 4.56 ppm or 0.132 oz/ton. This small work order of 3 samples used standards and blanks that performed well.

### **11.4 Combined Pulps from Original Truck Assay Program**

A third assay evaluation of the stockpile material was undertaken in late 2017 using most of the original pulps (593 of 741) from the original truck sampling program and combining a small sample from each pulp to create a larger final blended pulp for analysis. Again, this lab work was completed by Bureau Veritas (Inspectorate Labs) in Sparks, Nevada. This assay program produced a fire assay gold result, a comprehensive multi-element analysis, and a bottle-roll study for gold and silver.

### **11.5 Stockpile Assay Comparison between 3 Programs**

The gold and multi-element work is reported in Table 7-1 above and shows a significantly higher gold result at 6.661 ppm (0.192 oz/t) than the 4.56 ppm (0.132 oz/t) produced in the first two studies as shown in Table 11-2. A comparison of the silver values in all three studies is within the expected range considering the digestion and assay techniques used for Ag grades in the 4-6 ppm range. All other elements are represented in only the most recent sampling of the stockpile, where the trenching study (based on only 3 samples) compares favorably to the pulp composite study.

In comparing the assays in the three studies, gold is the only element showing an outlier value. If the outlier was the relatively small three sample program that could be explained as inadequate sampling, but instead, the pulp composite study actually produced the anomalously high value at 6.66 ppm Au. Further, the 6.66 ppm value makes sense when you review the bottle roll test work completed on the composited pulp (Table 13-1) and the reference sample results are acceptable: these factors suggest the assay itself is reasonable. The most likely reason for this significant difference is some combination of nugget effect and sample bias based on assays of 593 of the original 741 samples (not all pulps could be found). Although NIC is unlikely to directly

pursue an answer to these variable gold results since they have no ownership interest in the stockpile, it is recommended that they monitor any further stockpile assay work or processing by Sprott.

### **11.6 Opinion on Adequacy**

Because no original lab assay reports are currently available for the historic drilling, no opinion is rendered here as to the adequacy of the sample acquisition, handling or assay work. This is also true of the early trench sampling, surface and underground rock sampling, and soil work. Since the present open cut has removed most of the material studied in this earlier work and NIC is unlikely to pursue the remaining near surface gold mineralization, the value of this early work is fairly minor.

The stockpile assay work has been well controlled by the use of standards, blanks and duplicates. The check sampling of the more recent trench sample and pulp composite programs provides further support for the original truck sampling program conducted during the bulk sampling/mining in 2015-2016. However, as noted above, the gold values were significantly higher in the pulp composite program and from a quality control standpoint (and processing study standpoint) the true value of the stockpile needs to be determined with further work. Because the Company has no ownership interest, they will most likely be passive participants in any future stockpile evaluation work.

<b>Assay Results: Stockpile Trench Sampling Program (November 2017)</b>												
<b>Sample</b>	<b>Method</b>	WGHT	FA430	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	<b>Analyte</b>	Wgt	Au	Cu	Pb	Zn	Ag	Mn	Fe	As	Sb	Bi
	<b>Unit</b>	KG	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM
	<b>MDL</b>	0.01	0.005	1	3	1	0.3	2	0.01	2	3	3
<b>Type</b>												
1420717	Rock Chip	5.0	5.43	2	1167	333	6.2	203	1.8	29	<3	11
1420718	Rock Chip	4.6	6.41	<1	750	199	5.7	156	1.6	41	<3	19
1420719	Rock Chip	5.0	1.84	<1	317	206	1.9	113	1.2	13	<3	8
<b>Averages:</b>			<b>4.56</b>	<b>nil</b>	<b>745</b>	<b>246</b>	<b>4.6</b>	<b>157</b>	<b>1.5</b>	<b>28</b>	<b>nil</b>	<b>13</b>

**Table 11-1 3-Sample Stockpile Trench Results-** Samples assayed by Bureau Veritas (Inspectorate Labs); FA430 for Gold (Au) uses a 30 gram sample for fire assay with an AA finish; AQ300 is an aqua regia digestion with ICP analysis

<b>Sampling Program</b>	<b>Au</b>	<b>Ag</b>	<b>As</b>	<b>Ba</b>	<b>Bi</b>	<b>Cu</b>	<b>Fe</b>	<b>Mn</b>	<b>Mo</b>	<b>Pb</b>	<b>Zn</b>
	<b>PPM</b>	<b>PPM</b>	<b>PPM</b>	<b>PPM</b>	<b>PPM</b>	<b>PPM</b>	<b>%</b>	<b>PPM</b>	<b>PPM</b>	<b>PPM</b>	<b>PPM</b>
Original Truck Assay Sampling Program	4.54	6.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trench Sampling of Stockpile: 3 samples	4.56	4.6	28	65	13	nil	1.5	157	nil	745	246
Pulp Composite Assay of Original Pulps	6.66	5.9	34	58	9	1	1.6	150	nil	980	273

**Table 11-2 Comparison Between 3 Assay Programs on the Neal Stockpile-** all samples assayed at Bureau Veritas (Inspectorate Labs);

## **12. DATA VERIFICATION**

### **12.1 Field Verification**

The Author was met in Boise by NIC's CEO R. David Russell and consultant Nate Tewalt on the morning of April 27, 2019. Mr. Russell is a mining engineer and Mr. Tewalt is an economic geologist; both were involved in the day-long field tour at Neal.

Neal Project access is easy and a quick 25-minute commute from Boise, Idaho. Once through the locked gate, the project is laced with roads accessible by field vehicle, while others are best traveled by ATV. The Author was able to traverse virtually all roads during the site visit and navigated the entire property by ATV. Particular attention was paid to open cut pit geology in terms of vein morphology, mineralogy and continuity. A number of hand samples were collected and the locations of many of the veins and larger fault zones were surveyed during the visit. Although no samples were collected for lab analysis due to the extensive historic and recent mining in the open cut area, the hand samples were used for report photos and are available for future petrographic study.

Another area of focus was claim corner discovery and survey – especially for the patents. Virtually all of the older shafts and adits are now caved or have been covered by more recent earth moving work to the extent that no underground mapping or sampling appears to be possible at present. This places a heavier emphasis on current pit and roadcut exposures, and suggests future trenching may be important as well. Although the visit was a relatively short 1 full day in the field with an additional day of data and warehouse review, it was possible to confirm much of the geologic details of the report in terms of past work and recommendations for future work on and around the Property. Some checks on property boundaries were possible and appear to match the available Company and government records.

### **12.2 Database Audit**

On April 28, 2019, the Author reviewed reports and the initial NIC GIS compilation effort with consultant Nate Tewalt in Boise, Idaho. Later that afternoon a nearby warehouse data search was conducted with both Mr. Tewalt and Mr. Russell. The hardcopy data search suggests at least some useable information may be gleaned from the old physical files once NIC is able to take possession.

There is no known digital database for Neal as of the date of this report due to the hi-jacking of the entire Neal Project database from Atlanta Gold as noted previously. NIC personnel will continue to look for third-party copies of that database.

### **12.3 Adequacy of Data**

As the scope of this report is exploration based, the lack of a historic database is not likely a large problem moving forward for the contemplated NIC work. It appears that adequate vein exposure and historic context is available to provide a good geologic base for future mapping and sampling work for targeting underground higher grade vein-style gold mineralization at the exploration level.



### 13. MINERAL PROCESSING AND METALLURGICAL TESTING

The most detailed metallurgical study of the Neal vein material was produced by Kappes, Cassidy and Associates (Sparks, NV) in a report dated November 21, 1989 for Centennial Mines. This test was designed to target the mixed oxide-sulfide mineralization in near surface portions of the main vein zones for gold/silver recoveries in a heap leach environment. The bulk samples came from the current open cut area, although exact locations were not documented in any available survey.

Recent open cut bulk sampling by Atlanta Gold in 2015-2016, produced a large test sample of approximately 13,900 tons. As discussed in section 11 above, repeated assay testing of this stockpile suggests the range in gold values lies somewhere between 0.132 and 0.192 opt gold. This open cut should include a significant portion of the “oxide” material contemplated in the 1989 Kappes study, but may include additional sulfidic material judging by visual observation of the stockpile material and outcropping veins of quartz-pyrite. Processing of this material by the Sprott Group will likely use the Jerritt Canyon mill in northern Nevada. Jerritt Canyon achieves an average recovery of their refractory ores of 88% - any custom milling will receive the same credit regardless of the fact that the Neal material will likely achieve higher recoveries in that circuit.

Aquasolum Consultants (TEMU) 2012 Business Plan for Neal notes that their own “Step-Grind and Flotation” study indicated overall gold recoveries of 90% on their surface trench sample vein material that consisted of mixed sulfides and oxides. Although their detailed study is not available, Aquasolum noted that no cyanide was used in the planned circuit.

As most of the future mining at Neal is likely to be underground and designed to target higher grade veins, most of this vein material will be pyrite-dominant sulfide material. This is the case at the nearby, intermittently operated Golden Eagle gold mine – a mine reportedly producing from ores with nearly identical vein mineralogy located on a WSW extension of the same vein system (NIC personal communication with D. Yanke, mine owner).

#### 13.1 1989 Centennial Mines Heap Leach Study by Kappes Cassidy

Although heap leaching of any future mineralized material at Neal is considered unlikely due to depletion of limited near surface gold zones from historic underground mining and recent open cut bulk sampling, the results from a detailed Kappes, Cassidy (1989) study provide some metallurgical context. Highlights from the Kappes study, include:

- Ten samples were sent to the Sparks, Nevada lab in 55-gallon drums with nominal 250 kg sample weights, while nine samples were actually used - one sample assaying less than 0.020 opt Au was discarded. Gold content of the samples used ranged from 0.048 – 0.433 opt Au, while the bulk samples averaged 0.080 opt Au and 0.100 opt Ag according to independent third-party assay work.
- Seven of the nine samples were used to make two composites; one each of a low and high grade manganese mineralized material judged visually by color. The two remaining samples were tested individually: sample 10844A was tested individually due to grade, while sample 10844B was tested separately due to high clay content.
- Run-of-mine gold recoveries on sample 10844A were 82.4% at 88 days and 91.9% from the minus 1.5 inch crush after 89 days of leaching. Due to high clay, sample 10844B was only tested at minus 1.5 inch crush and agglomerated prior to leaching, yielding a 72.5% gold recovery after 88 days.
- Sample 10874, the low manganese composite, showed Au recoveries of 92.8% on run-of-mine material after 89 days, but only 86.4% recovery on the minus 1.5 inch crush at 89 days. Sample 10875, the high manganese composite, recovered 52.2% Au on run-of-mine at 88 days, with 64.8% recovery from the minus 1.5 inch crush at 89 days of leaching.
- Not surprisingly, gold recoveries were higher for samples with smaller gold grain sizes.

- Further sampling and column leach testing of the high manganese composite showed a very large jump (averaging 45%) in recoveries as the plus 0.5 inch fractions were tested against the minus 0.5 inch fraction – with the higher recoveries achieved in the finer crush.
- In the overall sampling, the finer minus 0.5 inch crush size increased Au recoveries by 25%. In going to the minus 0.5 inch fraction, agglomeration was deemed necessary and it was noted that cement used during the agglomeration process would be sufficient to ensure proper pH so that the addition of lime would not be required in the heap leach.
- Silver recovery was estimate at 50%, while copper content of the “ores” is very low and not considered a factor.
- Agitated cyanide bottle roll tests on pulverized portions of 4 samples showed gold recoveries averaging 97% in 48 hours of leaching with a range of 93.9 to 98.8%. These results were considered the best approximation for expected recoveries in a conventional mill.

### 13.2 Existing Neal Stockpile Mineralized Material from Open Cut Bulk Sampling

In late 2017, a bottle roll test on the Neal stockpile material was completed at the same lab and on the same pulp composite shown in Table 7-1 by Bureau Veritas (Inspectorate Labs) in Sparks, Nevada. Results from this work are reported here in Table 13-1. Gold recoveries are relatively maximized after only 12 hours with little increase in recovery at 36 hours.

Silver recovery figures show a problem – most likely with the original assay, as 100% of the silver was recovered at 36 hours. Expected silver recoveries should be lower than the gold as determined by the 1989 Kappes work above. As with the gold, the silver recoveries are mostly maximized within the 12 hour time frame with only minor additional recovery at 36 hours. Silver is not considered important to the overall economics.

Copper was also included in the bottle roll work, but initial assay values were very low and only a maximum of 0.13 ppm Cu was recovered at 36 hours – copper will not be a factor in any gold recovery circuit. Table 13-1 results on the stockpile should not be considered a definitive test of the sulfide-only pyritic vein material that will characterize the bulk of any likely future underground production in the area. Sulfide-only tests are needed.

2017 Inspectorate Bottle Roll Results for Gold					2017 Inspectorate Bottle Roll Results for Silver				
Fire Assay	CN Leach Times (Hours)				AQ400	CN Leach Times (Hours)			
Au ppm	0	12	24	36	Ag ppm	0	12	24	36
6.661	0.14	5.72	5.81	5.82	5.90	0.49	5.71	5.81	5.90
Recovery		85.9%	87.2%	87.4%	Recovery		96.8%	98.5%	100.0%

**Table 13-1 2017 Atlanta Gold Bottle Roll Test on Neal Stockpile-** assays and bottle roll work by Bureau Veritas (Inspectorate Labs) in Sparks, Nevada on 13,900 ton pulp composite

### **13.3 Underground Mining of Pyritic Vein Material**

An excellent opportunity to study many of the aspects of mining and processing deeper sulfide-only vein material at Neal is provided by the nearby Golden Eagle gold operation. A mine visit has been tentatively scheduled for early June 2019, but any new information acquired on that tour is unlikely to be included in this technical report. The Golden Eagle mill combines gravity and flotation to maximize gold recovery from sulfide-only pyrite dominant ores without the use of cyanide. The chemical-free circuit reportedly uses pine oil in the flotation stage to recover the sulfides, but further detailed information was not available at the time of this report.

### **13.4 Processing Factors, Deleterious Elements and Impact on Extraction**

The mineralogy, recovery and associated geochemistry are fairly well understood and consistent with other current and historic district mines. Deeper sulfide vein ores are likely to have the same 3-6% pyrite – quartz – white mica mineralogy with minor galena and trace sphalerite. In reviewing the multi-element geochemistry, trace amounts of arsenical pyrite or arsenopyrite are likely present, but Neal appears to be similar to Golden Eagle in that overall arsenic values are very low at around 34 ppm based on the pulp composite assay work. Cadmium values are also very low at around 1.2 ppm. Anyone processing whole-ore or a concentrate will have to be able to either deal with the elevated lead values at around 980 ppm or recover the lead and zinc separately.

Depending on the size and grade of any contemplated operation, Neal sulfide ores could be shipped to: 1) mills in Nevada for processing, 2) a company-owned gravity and flotation mill constructed on private property, or 3) shipped to the Golden Eagle mill for low tonnage processing.

#### **14. MINERAL RESOURCE ESTIMATES**

Mineral resources have not yet been estimated for the Neal Project.

**15. MINERAL RESERVE ESTIMATES**

Mineral reserves have not yet been estimated for the Neal Project.

## 16. MINING METHODS

At this time, the Neal Project is not considered an advanced property as defined by NI 43-101 Part 1, Definitions and Interpretations and this report section is not required. However, some general observations can be made based on current exposures in the open cut area and experience garnered at the nearby Golden Eagle mine operation:

- The vein-like geometries at the Neal Project suggest that high grade selective underground mining to minimize dilution will be important. Although exposures of the wallrock encompassing the vein are limited to the portals area, initial impressions indicate that the softer friable vein material is surrounded by far more competent granitic wallrocks. This should help to minimize dilution and ground support costs.
- Underground mining at the nearby Golden Eagle gold mine has extended the shaft to about 430 feet this year and the mine now has approximately 100 feet of “backs” above this lowest level from which the mine plans to extract their mineable gold mineralization later this year or early next year. Mining there will likely continue to use cut-and-fill techniques to take advantage of this selective method in minimizing dilution. Although Neal does not yet have a mineralized deposit identified at depth, a study of current mining methods used at Golden Eagle should provide future benefits.

## **17. RECOVERY METHODS**

### **17.1 Metallurgical Summary**

At this time, the Project is not considered an advanced property as defined by NI 43-101 Part 1, Definitions and Interpretations, and this report section is not required. However, some basic observations include:

- Initial indications based on metallurgical studies and mill experience at the nearby Golden Eagle gold mine, suggest primary pyrite-dominant sulfide vein material is non-refractory and amenable to whole-ore cyanidation as well as gravity concentration of the free gold, with a sulfide concentrate produced in a flotation circuit. Studies by Aquasolum on the Neal vein trench samples of mixed oxide-sulfide material reportedly recovered approximately 90% of the gold in lab studies that combined gravity and flotation with no cyanide used in the circuit. Recoveries at Golden Eagle using gravity and flotation are unknown.
- Direct whole-ore conventional milling with extended vat leach times similar to those used at many gold operations in the Canadian Shield should also produce high recoveries of over 90% based on the various bottle roll studies to date. However, a more thorough study with one of the metallurgical labs or by direct shipping bulk samples to an existing mill is required to properly quantify the gold recovery.

### **17.2 Processing Plant Options**

- A typical first choice for processing is to own a custom mill, on or offsite, with the preference to be in control of the gold process output for doré and final cleanup of concentrates. Should NIC decide to mine and process the vein material at one of the nearby private properties in the area, the Company could accelerate permitting and lower capital costs by building a crushing operation that feeds a gravity circuit to produce free gold and a gold-silver-pyrite dominant concentrate.
- The Golden Eagle Mine is only 3.8 miles by a well maintained gravel road that becomes paved near the Golden Eagle property. Limited power there currently feeds the mill and underground operation and the operator has expressed an interest in expanding his power capacity by upgrading the grid connection (NIC personal communication with D. Yanke, 2019). Because this mill is currently geared to process identical pyrite-dominant vein material in a combined gravity – flotation circuit, it provides an obvious, although currently limited processing possibility.
- There are a significant number of conventional and refractory milling operations in Nevada that have various levels of excess capacity today. For a faster path to bulk sample processing or full-scale mining, these mills could provide a potentially viable third option for future processing needs.

### **17.3 Requirements for Water, Energy and Process Materials**

Water levels on the Neal Property are presently unknown to NIC personnel, although monitor wells are present in the area and local ranches could also provide a water source. Power is not present at Neal, but high voltage lines cross Blacks Creek Road approximately 3.5 miles to the south; a sub-station would need to be added there. Construction materials and personnel are readily available in nearby Boise, Idaho.

**18. PROJECT INFRASTRUCTURE**

At this time, the Project is not considered an advanced property as defined by NI 43-101 Part 1, Definitions and Interpretations, and this report section is not required.



**19. MARKET STUDIES AND CONTRACTS**

At this time, the Project is not considered an advanced property as defined by NI 43-101 Part 1, Definitions and Interpretations, and this report section is not required.

## **20. ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL OR COMMUNITY IMPACT**

### **20.1 Environmental Studies and Issues**

Environmental studies were completed for the bulk sample test production of 2015-2016 in 2016-2017 and were submitted for approval with the Idaho Department of Lands (IDL). The reclamation plan was submitted in late 2016 as a Plan of Operations, with final approval and bonding set as of April 24, 2017.

### **20.2 Waste and Tailings Disposal, Site Monitoring and Water Management**

To complete the Plan, waste rock characterization studies were completed by sending 21 samples to Integrated GeoSolutions, Inc. (“IGI”) in Steamboat Springs, Colorado (Foulk, 2016). The IGI report was completed on October 26, 2016 with the following facts and conclusions:

- The 21 samples were selected to represent rock that would be stockpiled on the proposed mine site.
- Samples were submitted for Acid-Base Accounting (ABA), including Paste pH testing to assess their potential for Acid-Rock Drainage (ARD) generation.
- Samples were split into two groups for assay analysis at separate labs: nine were sent to Maxxam Analytics in Burnaby, BC, while 12 were sent to Silver State Analytical Labs in Reno, Nevada.
- Ten samples were analyzed using the Meteoric Water Mobility Procedure (MWMP) at Silver State Labs to assess their potential to leach metals and other inorganics.
- Two of the 21 samples were potentially acid neutralizing, with the remainders falling in the uncertain category.
- Using the Neutralization Potential Ratio (NPR) classification, 12 samples had no potential ARD generation capability, 3 had low or possible ARD potential and 3 had likely ARD potential. NPR for 3 samples could not be calculated because of zero or negative values. It was concluded that some samples had ARD potential. However, sulfide concentration is also considered in this classification; it was concluded that sulfide numbers were low enough that the rock could be classified as “inert”.
- It was concluded that ARD generation would not be expected from a blended stockpile of this rock.
- According to Foulk: “The MWMP analyses for the majority of the samples produced very low, often not detected, concentrations of metals and other inorganics in the leachate.” Several samples of mineralized material (not much of which is likely to make it to a waste stockpile) showed excess aluminum, arsenic and lead relative to the reference values.
- The report concludes that any ARD potential would be very minor and more than offset by the acid neutralizing capability of the stockpile. For the MWMP results, bulk leachate values from blended samples will likely be below the reference values and should not pose a problem.

In discussing any future underground mining on the Neal Project with NIC personnel, they note that waste disposal will ultimately be from an underground ramp and /or shaft system. A water management plan will be developed when water is encountered in the exploration and development work.

### **20.3 Permitting Requirements and Status, Bonding**

An approved Plan of Operations (POO) dated April 24, 2017 is in place with the Idaho department of lands. The initial Bonding for \$87,500 was put into place in the first quarter of 2019. No additional Bonding is required until rock movement takes place – for example, if and when future underground waste rock is put into stockpiles. Should future drilling define an adequate underground vein target worthy of test mining and/or drilling from underground cutouts, a decline or shaft would be needed to access this work; prior to ground-breaking for this underground access, the second part of the existing bond will be required to be posted in the amount of \$87,500.

**20.4 Social or Community Related Requirements and Plans for any Community Meetings**

There is no small local community near Neal so no community meetings are contemplated, but one or two meetings in Boise could be tied to local hiring.

**20.5 Mine Closure**

Mine closure would be defined in the future as exploration and development proceeds through the Idaho Department of Lands (IDL). Permitting will be defined through the reclamation plan. The reclamation plan and bonding will be set through the IDL and Elmore County.

**21. CAPITAL AND OPERATING COSTS**

At this time, the Project is not considered an advanced property as defined by NI 43-101 Part 1, Definitions and Interpretations, and this report section is not required.

**22. ECONOMIC ANALYSIS**

At this time, the Project is not considered an advanced property as defined by NI 43-101 Part 1, Definitions and Interpretations, and this report section is not required.

## **23. ADJACENT PROPERTIES**

### **23.1 Historic Information on the Golden Eagle**

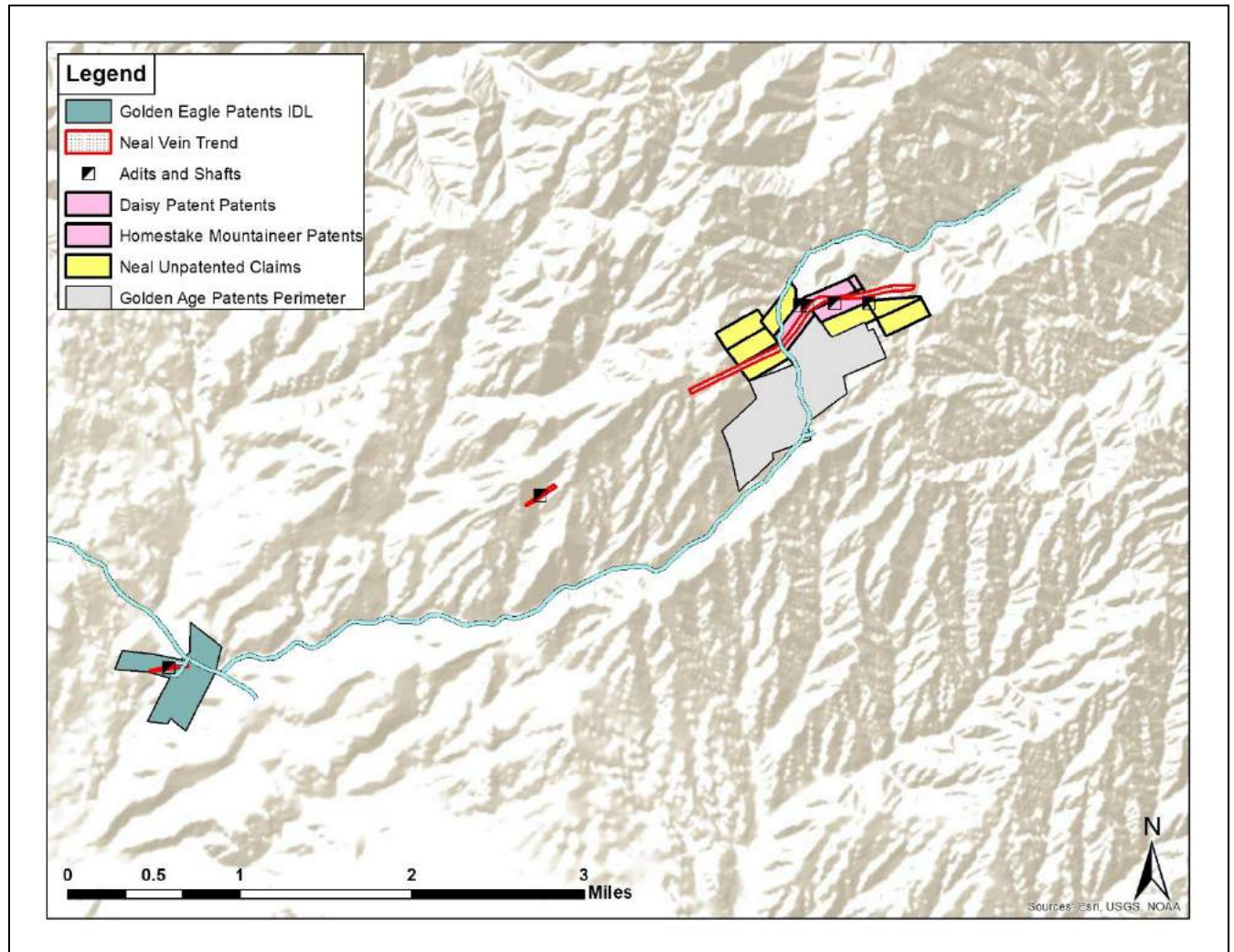
Although several patented properties lie adjacent to the Neal Project Patented claim group to the south and northeast, these properties are not currently considered significant from an exploration standpoint. The most significant adjacent property is the patented Golden Eagle gold mine located about 4.25 miles on trend to the southwest. The best written summary of the Golden Eagle is found in the Bennett report (2001), with the following section taken directly from that report:

The Golden Eagle vein crops out about 5 mi southwest of the Daisy shaft. The vein strikes N. 70° E., dips about 45° SE, and has been traced along the outcrop for more than 1,000 ft. Country rock of the vein is biotite granodiorite of the Idaho batholith, that is intensively hydrothermally altered as far as 15 ft from the vein. Feldspar in the granodiorite has been altered to sericite or various clay minerals. Drill holes through the vein indicate that as much as 4 ft of clay extends along the vein hanging wall. According the Idaho State Mine Inspector's report for 1904, the gold-bearing width of the vein zone ranged from 5 to 25 ft and had average gold values of \$10 to \$15 per ton (price of gold \$20.67 per ounce).

### **23.2 Modern Golden Eagle Gold Mine**

As previously discussed in this report, the Golden Eagle mine is an excellent source of comparative information on the geology of the Neal District vein systems. NIC personnel have had recent personal communication with Golden Eagle Mine owner Dan Yanke and his mine staff; some of this conversation is summarized here:

- The mill is a crush/grind circuit with gravity and flotation; most gold recovery is offsite at a third party facility. The mill can process 3 tons/hour or about 70 tons/day and uses no chemicals. Mill capacity is mostly limited by power and an upgraded powerline is being considered.
- The shaft is vertical and currently at about 430 feet with plans to go to 600 feet.
- Mine grades average about 0.5 oz/t Au. As at Neal, the silver to gold ratio is roughly 1:1.
- The ores have virtually no deleterious elements and the Arsenic levels are similar to Neal and very low overall.
- The actual strike of the main vein is a little different than reported historically: the vein averages within 50 of E-W and has a consistent 550 south dip. Three additional veins have been found in the footwall that have a steeper dip, but about the same strike.
- Locally, galena provides a strong visual indicator of "good ore". Lead to zinc ratios average about 2:1 at the Golden Eagle, where they are about 3.5:1 at Neal.



**Figure 23-1 Map of Adjacent Properties-** Golden Eagle gold mine; the only operating mine in the Neal District is a modern underground shaft accessed operation with on-site processing; operates intermittently; map provided by NIC and made using ArcMap

**24. OTHER RELEVANT DATA AND INFORMATION**

As of the effective date, there was no other relevant information or data available that can make this report more understandable or less misleading. Further work by NIC personnel will likely uncover additional files and the Golden Eagle Mine visit should also provide additional near-term information.



## 25. INTERPRETATION AND CONCLUSIONS

Although Neal is a historic producer with recent open cut test mine production, very little higher grade unmined vein material is known on the Property at present. The geology is fairly straight forward, but detailed mapping with some select rock channel sampling will help Company geologists further define the location of the best veins. Select trenching along strike could also track the vein structural corridor and possibly identify other near surface veining underexplored in the past. Selective petrographic work could be useful in confirming or modifying the exploration model. If cost effective Lidar can be obtained, the Company should consider having this work done as the excellent topographic base could be useful for exploration and mine planning. Heavy surface disturbance may preclude access to older workings, with all known adits and shafts currently blocked off.

Once the initial surface work has been adequately compiled, follow-up drilling will be required to find new veins, and follow the down-dip and strike extensions of existing veins. Careful attention to costs and recoveries, both above and below the water table, will be important in ongoing decisions of using reverse circulation versus core drilling. One possible early scenario might be to use cheaper RC drilling to identify vein zones, with follow-up drilling using larger diameter HQ to PQ core to get better samples for logging and assay.

If additional veining of significance is found during the first or second phase of drilling, the vein material should be evaluated for gold recovery optimization. Assuming the vein material is similar to that already found on the property and throughout the Neal District, an early option to further explore the system underground should be considered as this could minimize drill costs, take advantage of existing permits and provide excellent bulk samples for further study.

Although there may be limited gain from resurrecting the historic drillhole database and trench sample work, it is worth pursuing as that data could be useful in determining vein and shoot locations and morphology. A better security plan for data storage is also recommended.

The Neal Project bonding is up to date, claim fees are paid and current, and there are no known additional environmental liabilities. The Project's vein exposures and workings are all located on private patented lode claims, and therefore permitting and environmental aspects are regulated in a straightforward manner by the Idaho Department of Lands and Elmore County. Neal is currently permitted for open cut bulk sampling, while any further bulk sampling is likely to be underground with adit portal or shaft locations taking advantage of the existing disturbance footprint.

Favorable current Neal Project characteristics, include: 1) existing permits for further surface work, pending additional bonding, 2) easy access and proximity to Boise, 3) private land base to work from, 4) a known and previously exploited vein system, 5) a currently operating neighboring mine on the same vein trend – potentially providing informational and strategic advantages, and 6) various options for gold processing due to favorable grade and metallurgy.

### 25.1 Risks and Uncertainties

At this early stage in the exploration process, the risks and uncertainties common to all North American gold mine exploration and development projects applies in varying extents to the Neal project as well: 1) a new high grade gold vein discovery is needed, 2) cost efficient, but effective drilling is critical to vein discovery and characterization, 3) success in underground development and ground conditions, 3) unknown factors in mineralized zone continuity, 4) mining and labor costs, and 5) gold price.

The Author knows of no other significant existing risks or uncertainties that could reasonably affect the reliability or confidence in exploration information, permitting or future economics of the project.

## 26. RECOMMENDATIONS

### 26.1 General Recommendations

Although there was somewhat limited historic data and virtually no database to review, the recommendations here are intended to help provide a framework for any future exploration on the Neal Project:

- Mapping with enough detail and accuracy to allow direct input into cross sections and 3-D modeling. The mapping should be consistent and under the supervision of an expert in this area. Scanned copies of the maps should be made and stored in several locations.
- Detailed RC and core logs for any drilling should be under the supervision of a single experienced geologist and constant communication with the mapper is important. Logging should be constantly monitored for consistency. Copies of the logs should be made and stored in several locations. Logging data should be copied into a database on a regular basis and this database organized by someone experienced in database management and resource analysis.
- A carefully considered program of quality control for all geochemistry is important, with monitoring required on a regular basis. Drill samples should have standards, blanks and duplicates inserted on a consistent basis. As the vein zones are readily identifiable in the field, appropriate checks should be made for sample quality during drilling. Chain of custody and a careful documentation trail should be implemented for any drill work, with timely attention paid to assays outside of acceptable tolerance levels while the sample pulps and rejects are still at the lab. Constantly review lab work and use sample checks at another lab for higher grade samples.
- Assuming a drill sample batch of 40 samples, the following quality control is recommended:
  - Two standards, with one high and one low grade relative to the expected grade of the batch (5% of the total sample number).
  - Two pulp duplicates (5% of the total sample number).
  - Two sand blanks (5% of the total sample number); of these, one coarse blank should be inserted for every 4th sand blank.
  - Two coarse duplicates (5% of the total sample number); the coarse duplicates are an attempt to quantify assay variance at the sample preparation stage.
- Continue the current NIC GPS-based survey in NAD83 Idaho State Plane West (survey feet) for consistency with drilling in feet and ease of use in popular GIS programs. More confirmation work to establish the correct adjustments to the old mine grid may be needed – especially if additional historic drillhole data is located.
- Review the current gold mining operation at the nearby Golden Eagle property.

### 26.2 Metallurgy

Because NIC expects to target veins that will be largely sulfide dominant, the focus of any future metallurgical work should reflect this style of mineralization. Based on historic mining and the known metallurgy of the granitic-hosted quartz – white mica – pyrite veining in the area, the following studies are recommended at the earliest opportunity - once drilling has confirmed the discovery of additional veining:

- quantify coarse gold and sulfide recoveries in a gravity circuit
- combined gravity and flotation studies
- further test whole-ore cyanidation via bottle roll testing of sulfide-only samples
- continue to quantify silver amounts and recovery
- monitor deleterious element levels with additional multi-element geochemistry

If mixed oxide/sulfide veining becomes significant in future exploration, the existing metallurgical studies should be supplemented with additional work on that material.

### 26.3 Recommended Budget and Work Plan

The recommended work plan builds on initial mapping and sampling work to support the vein targeting at depth. Reverse circulation drilling may initially provide a lower cost means of identifying favorable down-dip extensions of the known veins and follow mapped vein zones along strike. Significant intercepts could then be followed by core holes with the goal of producing better samples and assays, while better defining vein limits and geology.

Metallurgical testing is also recommended once vein intercepts are documented with high grade gold assays. This work is recommended for the first round of exploration. The recommended work program and budget is presented in Table 26-1.

<b>Recommended Scope of Work</b>	<b>Expected Cost (US\$)</b>
Mapping and Sampling	35,000
Exploration Drilling: reverse circulation	320,000
Exploration Drilling: core	350,000
Geochemistry	40,000
Data Work and Organization	40,000
Metallurgical Testing	35,000
Equipment	40,000
Admin/Permitting/Legal/Land/Safety	50,000
<b>Contingency (10%)</b>	91,000
<b>Total Budget</b>	<b>1,001,000</b>

**Table 26-1 Recommended Scope of Work and Budget- First Program**

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