Independent Technical Report and Mineral Resource Estimate for the Kilgore Project Kilgore Project Clark County, Idaho, U.S.A.

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Otis Gold Corp.





Rowearth, LLC.

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Kilgore Project Otis Gold

APPENDICES

Appendix A Variography for Gold Composite Samples

1.0 SUMMARY

Otis Gold Corp. (Otis Gold) engaged consulting geologist David Rowe, CPG, of Rowearth LLC, and Global Resource Engineering, Ltd. (GRE), the "Authors", to perform a new resource estimate of the Kilgore deposit, part of Otis Gold's Kilgore Project ("Kilgore Project" or the "project"), Clark County, Idaho, U.S.A. A previous estimate of mineral resources was described in a National Instrument 43-101 Technical Report by Don Cameron entitled Technical Report on the Kilgore Project, dated July 20, 2012.

This report documents the Authors' independent estimation of the mineral resources of the Kilgore deposit as of August 14, 2018 The resource estimate and this report were prepared according to the, guidelines of Form 43-101F1, and Companion Policy 43-101CP, as amended by the Canadian Securities Administrators (CSA) and enacted on June 30, 2011.

David Rowe, Terre Lane, Jeffrey Todd Harvey and JJ Brown are Qualified Persons under the Instrument. Mr. Rowe and JJ Brown conducted independent site visits to the Kilgore property on August 9th through 14th, 2017 and August 4th through 5th, 2018 respectively. The conclusions and recommendations in this report are based on information available as of July 1, 2018.

1.1 Location and Property History

The Kilgore deposit is part of Otis Gold's Kilgore Project, a volcanic-hosted epithermal gold property located on the northern margin of the eastern Snake River Plain, approximately 5 miles west-northwest of the small rural hamlet of Kilgore, Clark County, Idaho (Figure 4-1). Otis Gold has a 100% undivided interest in 614 unpatented Federal lode claims totaling 12,150 acres (4,917 hectares) on U.S. Forest Service lands. The area is mountainous; relief on the Kilgore property is 2,000 feet (610 m) at elevations above 6,400 feet (1950 m).

The property's initial discovery and earliest known gold exploration and production work was reported to have been in the 1930's by the Blue Ledge Mining Company. Evidence of Blue Ledge's activity remains as several collapsed underground adits, prospect pits, a tram car and a mill foundation, though there is no record of gold production from this period. Six different companies have explored the Kilgore property in modern times, beginning with Bear Creek Mining in 1983, followed by Placer Dome U.S., Pegasus, Echo Bay Exploration (EBX), Latitude Minerals, Kilgore Minerals Ltd., and Otis Gold. Each of the companies conducted one or more campaigns of drilling that presently total 296,246 feet. An NI 43-101 Technical Report by Donald E. Cameron (2012) reviewed historic work and with the addition of Otis' exploration programs from 2008 through 2011 produced an estimate of mineral resources (Table 1-1):

Resource Category	Metric Tons (T)	Au (g/T)	Au Ounces (Troy)	Short Tons (t)	Au (opt)
Measured	-	-	-	-	-
Indicated	27,352,000	0.59	520,000	30,130,000	0.017
Total Measured and Indicated	27,352,000	0.59	520,000	30,130,000	0.017
Inferred	20,230,000	0.46	300,000	22,290,000	0.014

Table 1-1 Historical Mineral Resources for Kilgore Property (Cameron, 2012)

 $^{\rm 1}$ Mineral resources are at a gold cut-off grade of 0.24 g/T (0.007 opt).

² Items are rounded off to reflect the precision of the estimate, thus metal quantity varies slightly from the product of tons and grade.

The information in Table 1-1 is presented as historical information and does not represent the current estimate. The Authors did not rely upon the 2012 estimate in any way in their preparation of the mineral resource estimate presented herein. The Authors used information included in previous reports but relied solely on their independent review and judgment to make their estimates of mineral resources. The estimate presented in later sections of this report is the only one to be considered current and reliable.

1.2 Geology and Mineralization

The Kilgore Project is located in the northeastern portion of the Eastern Snake River Plain ("ESRP"), locally situated on southern flank of the Centennial Mountains and regionally along the northern margin of the Miocene-Pliocene Heise volcanic field.

The Project is situated in an area of Miocene to Pliocene rhyolite flow-dome complexes and associated pyroclastic sequences along the northern margin of the Eastern Snake River Plain, coincident with the northern margin of the Heise volcanic field and specifically within the interpreted north-eastern rim of the Kilgore caldera complex. The rhyolitic rocks unconformably overlie folded Cretaceous to early Tertiary clastic sedimentary rocks. Toward the Project perimeter to both the north and south, the volcanic rocks are locally blanketed by the tuff of Kilgore, a relatively distinct welded ash flow tuff thought to represent the last major eruptive event of the Kilgore caldera.

The Kilgore deposit is a low sulfidation (LS) epithermal deposit associated with caldera-related volcanic and intrusive activity. The current known resource area is a zone of mineralization with a length of approximately 800 m long, 600 m wide, and 325 m deep from ground surface to the maximum inferred mineral resource depth. Mineralized intercepts generally average 40 m (130 feet) and range up to 100 m (330 feet) in thickness in the Mine Ridge core and North Target areas. Near surface gold mineralization occurs primarily in rocks of volcanic or subvolcanic origin, including the Tertiary lithic tuff (Tlt) and the sub-vertical granitic dikes, dike swarms, and granodioritic bodies that intrude it. Underlying the Tlt are the sedimentary rocks of the Aspen Formation comprise a secondary host of mineralization, one which is characterized by sediment-hosted, low-grade, bulk-mineable type distribution in contrast to the higher grade, locally concentrated mineralization known to occur within the Tlt in association with sub-vertical fissures and fault zones, and along lithologic contacts of dikes and sills within the Tlt, and between the Tlt and the Aspen Formation.

Gold mineralization in the volcanic and related intrusive rocks is generally higher grade as a result of weak to moderate vein development and open space fracture-fill, together within a broad, low grade halo of disseminated gold within variably silicified and argillically altered rocks. Gold content appears to decrease rapidly to lower grades (<50-100 ppb Au) with corresponding decrease in quartz or quartz adularia as silicification and increase in argillic alteration. Exceptions occur in strongly oxidized rock near the topographic surface where strong to pervasive iron-oxide, yellow-orange to brown staining is accompanied by high gold grades. Mineralization in the volcanic and associated intrusive rocks accounts for an estimated 85% of the known mineral resource, with the remaining 15% occurring in the underlying Aspen Formation.

1.3 Exploration and Drilling

The NI 43-101 technical report by Cameron (2012) summarized exploration activities through 2012 and should be read in conjunction with this report.

Drilling exploration carried out by Otis from 2012 through 2017 consists of 45 reverse circulation (RC) holes and 45 diamond core holes (DCH) (one of which was drilled for metallurgical testing) for a total of 22,536 meters drilled. In November 2016, Otis contracted Justin Modroo, P.G., to conduct a ground based geophysical magnetic survey in the vicinity of the primary Kilgore resource area (Modroo, 2017). The survey was designed to test magnetic signatures surrounding the known deposit in order to better define local structural characteristics and potentially identify future drilling exploration targets.

Seven companies since 1983 have explored Kilgore with drilling comprising 152 RC holes and 229 core holes totaling 306,541 feet (93,434 m). One of the drill holes is PQ-size for metallurgical tests. Otis Gold drilling has been completed during the period of 2008 – 2018. Quality assurance Quality Control (QA/QC) information is not available for drilling campaigns before EBX in 1994, but drill hole logs and assay certificates are available in Otis Gold's offices, and all assays were performed at commercial laboratories. EBX conducted studies of metallic screen assays, included in-house standards in its sample submissions, and obtained check assay information from a second laboratory. Otis Gold included standards and blanks with its submissions, collected core half pair data, and submitted pulps prepared at the primary laboratory for check assays to secondary commercial laboratories. The programs point to some bias in the primary lab, ALS Global, versus the check labs, but the commercial standards analyzed display no variation of concern from the certified values.

1.4 Metallurgical Testing

Early test work commissioned by Echo Bay Mines (EBX) was performed by Hazen Research, Inc., of Golden, CO. Gold recoveries obtained in the heap leach column tests at a crush size of a P_{80} of 1/2" (12.5 mm) after 60 days were 94.0%, 81.0% and 64.0% for materials identified as oxide, mixed and unoxidized, respectively. A coarser crushed material at a P_{80} of 1" (25 mm) achieved a gold recovery of 86.9% after

75 days. Bottle roll leach test of RC drill cuttings show that gold in the Kilgore samples tested was easily extracted with direct cyanide leaching. The extractions ranged from 82.9% to 94.8%.

In 2010, Otis Gold investigated the heap leach characteristics of each host rock separately to provide information for mine design and to confirm the heap leach scenario. This material composed the feed for separate column leach tests of the three main host rock types identified at the time; Ka, Tlt, and Tpr (Ka=Aspen Sandstone, Tpr=Felsic Dike, Tlt = Lithic tuff), collected from four holes in the deposit area. The column tests were performed at a P₈₀ of 1/2'' (12.5 mm) feed size.

Tlt and Tpr lithologies host most of the gold mineralization in the Kilgore deposit. For the composites of these rocks, the tests show that approximately 77% of the gold extracted occurs in the first 30 days of leaching. The leach curves for Tpr and Ka flattened after about 90 days, whereas the leach curve for Tlt was still positive and climbing after 109 days, suggesting slightly more than 81% can be expected with a longer leach time. The Aspen ore also leached at a good rate achieving almost 70% gold extraction in 109 days. Recovery results generally agree with the earlier EBX tests.

As a result of these positive column leach results, Otis Gold decided to perform leach tests on material from new drill holes and at a coarser size fraction. Otis Gold segregated the samples by rock type to comprise three new composites: MTF-1 - oxidized bulk sample of Tlt, MDO-2 - oxidized bulk sample of Tpr, MDS-3 - unoxidized bulk sample of Tpr.

Column leach test were conducted at a P_{80} of 12.5 mm and 38 mm crush size on all three samples. The MTF-1 sample achieved similar recoveries of 84.9% and 85.5% after 91 days for the 38mm and 12.5 mm crush sizes respectively. The MDO-2 sample exhibited a lower recovery for the coarse size fraction of 71.2% compared to 83.3% for the 12.5 mm crush size both after 78 days of leaching. It appears that these recoveries would have equalized with the extension of the leaching time. The MDS-3 sample achieved similar recoveries of 78.5% and 74.5% after 78 days for the 38mm and 12.5 mm crush sizes respectively.

In mid-2018 Otis Gold delivered a set of new drill core intercepts to Research Development Inc. (RDI) for analysis. The core was derived from drill hole DDH 2018-169 and categorized into three lithologies: Aspen Top, Aspen Bottom, and Aspen Sill.

Initial diagnostic bottle roll tests designed to provide heap leach amenability information ranged from 7.5% to 56.9% gold extraction for the Aspen Bottom lithology, the Aspen Top lithology ranged from 20.2% to 68.0% and the Aspen Sill ranged from 84.9% to 87.8%. Based on this initial analysis it was evident that the Aspen Top and Bottom formations were different than the lithologies previously encountered in prior testing. A series of additional tests were undertaken including a ground leach test at a P_{80} of 75 um, a series of CIL tests at a P_{80} of 75um and mineralogical investigations.

The ground cyanide leach tests confirmed the recalcitrant nature of the Aspen Top and Bottom lithologies providing extractions as follows: the Bottom samples had a wide range of gold extractions, varying from 7.5% to 50.0%, with an average of 27%. Similarly, the gold extraction of the Top samples ranged from 20.2% to 68.0%, with an average of 38%. Hot cyanide leaches also showed highly variable gold extractions, both of these tests indicated the possible presence of "preg-robbing" materials. A series of CIL tests were

conducted that confirmed this theory with the Aspen Top and two Bottom samples achieving 87.9%, 87.2%, 85.7% gold recovery with the presence of activated carbon in leach system, respectively after 96 hours. The CIL system differs from direct cyanide leaching in that gold is simultaneously extracted from the ore by cyanide while being adsorbed by the added activated carbon. The presence of activated carbon prevents active carbon in the ore matrix from "robbing" the gold from the leach solution making it unavailable to recover.

The mineralogy of these Aspen samples showed the presence of up to 1% carbon in various veins within the Aspen Top and Bottom lithologies. No appreciable locked gold was identified, and only minimal non-gold bearing sulfides were seen.

The test work conducted to date on the Kilgore Project has indicated that there are two distinct mineral hosts in the deposit; direct-leachable gold and a mineral host that is finer grained and contains active carbon. The direct-leachable gold has been shown to respond well to heap leach testing across a wide variety of crush sizes. The finer grained gold materials have responded well to CIL leaching achieving greater than 85% gold extraction without any optimization.

1.5 Mineral Resources

CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) defines a mineral resource as: "a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling." The mineral resources may be impacted by further infill and exploration drilling that may result in increase or decrease in future resource evaluations. The mineral resources may also be affected by subsequent assessment of mining, environmental, processing, permitting, taxation, socio-economic viability. Mineral reserves can only be estimated based on the results of an economic evaluation as part of a Preliminary Feasibility Study or Feasibility Study. As such, no mineral resources will be converted into a mineral reserve.

The requirement of "reasonable prospects for eventual economic extraction" generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at a cut-off grade considering appropriate extraction scenarios and processing recoveries. David Rowe of Rowearth LLC modeled the geology using Leapfrog Geo 3D modeling software and then created the resource block model using Leapfrog EDGE. Rowearth considered that major portions of the Kilgore deposit are amenable for open pit extraction.

To determine the quantities of material offering "reasonable prospects for economic extraction" by an open pit, Global Resource Engineering, Ltd of Denver, Colorado ("GRE") constructed open pit scenarios developed from the resource block model estimate using Vulcan's Lerchs Grosman miner "Pit Optimizer"

software. Reasonable mining assumptions were applied to evaluate the portions of the block model (Indicated and Inferred blocks) that could be "reasonably expected" to be mined from an open pit. The optimization parameters presented in Table 1-2 were selected based on experience and benchmarking against similar projects. The results are used as a guide to assist in the preparation of a mineral resource statement and to select an appropriate resource reporting cut-off grade. Rowearth considers that the blocks located within the resulting conceptual pit envelope show "reasonable prospects for economic extraction" and can be reported as a mineral resource.

Parameter	Unit	Values
Metal Price	US\$/oz gold	\$1,300.00
Selling cost	US\$/oz gold	\$2.20
Gold Recovery	%	80.00%
Mining cost	US\$/short ton	\$2.00
Process cost	US\$/short ton includes \$1.00 G&A	\$4.00
Pit slope	degrees	50

Table 1-2: Kilgore resource	parameters for conceptual	open pit optimization

The reader is cautioned that the results from the pit optimization are used solely for testing the "reasonable prospects for eventual economic extraction" by an open pit and do not represent an attempt to estimate mineral reserves. There are presently no mineral reserves on the project.

The Kilgore gold resources are reported in Table 1-3.

Table 1-3: Mineral Resource Statement for the Kilgore Deposit

Kilgore Indicated Mineral Resources^(1,2,3,4)

		Imperial Units			Metric Units			
Project	Category	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces
Kilaana	Indicated	0.006	49,106,000	0.017	0.21	44,556,000	0.58	825,000
Kilgore	Total Indicated	0.006	49,106,000	0.017	0.21	44,556,000	0.58	825,000

Kilgore Inferred Mineral Resources^(1,2,3,4)

		Imperial Units			Metric Units			
Project	Category	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces
Kileene	Inferred	0.006	10,354,700	0.013	0.21	9,399,000	0.45	136,000
Kilgore	Total Inferred	0.006	10,354,700	0.013	0.21	9,399,000	0.45	136,000

(1) Mineral resources have been classified in accordance with the CIM Definition Standards on Mineral Resources

(2) Gold resources are reported above a 0.21 g/t Au cut-off

(3) Mineral resources reported here are constrained within an optimized pit shell.

(4) Pit shell input parameters: Gold price \$1,300, Selling price \$2.20/oz, Recovery 80%, Mining cost \$2/ton, Process cost + G&A \$4/ton, Pit slope 50°

1.6 Environmental Studies and Permitting

A Golder Associates Preliminary Environmental Report (2010) prepared for Otis Gold provided an overview of studies and permits that will be required to develop the Kilgore Project. The report stated that issues may arise during studies and permitting, but the information available at the time of the report did not identify a fatal flaw. Work on the Kilgore Project is subject to annual USFS Plans of Operation (POO) that must be submitted in advance. A POO has been approved for exploration work in 2012.

1.7 Conclusions and Recommendations

The authors have reviewed data and reports supplied by Otis Gold pertaining to the project and have found them to be reasonable in the context in which they are being used.

The individual domain resource estimates are generally contiguous and form a body of mineralization potentially amenable to bulk tonnage mining in an open pit setting. This appears to be supported by the metallurgical studies performed to date by previous companies and Otis Gold.

Otis' 2012 drilling program consisted of 1,009 meters of drilling in 6 RC holes designed to offset and extend the >100-m thick, near surface intercepts encountered in 2011 in the North Target area located just north of the northwestern-most extent of the primary Kilgore resource area. All six of the 2012 holes encountered mineralization, with four holes returning significant bulk-tonnage thicknesses and grades (Table 10-6 2012 Significant Intercepts). The 2012 drill results served to better define and extend the North Target portion of the Kilgore resource area, which remains open to the northwest along the strike of the deposit.

The 2017 drilling results extended mineralization in the Aspen Formation deeper than was previously known, largely in the central part of the deposit southeast of the Mine Ridge Fault and north of the Cabin Fault (Figure 10-6 through Figure 10-8). Average grades in this area are generally higher than the overall average grade of the Kilgore deposit reported by Cameron (2012), and mineralization appears to be fairly continuous between holes within sections, and from section to adjacent section.

The test work conducted to date on the Kilgore Project has indicated that there are two distinct mineral host environments in the deposit that are lithologically controlled; free milling gold associated with Tertiary volcanic lithic tuffs and a more recalcitrant mineral host that is finer grained and contains active carbon irregularly distributed throughout the underlying Cretaceous arkosic turbidite sediments. The free milling gold within the lithic tuff has been shown to respond well to heap leach testing; the more recalcitrant material within the arkosic turbidites showed good gold extraction when subjected to grinding and CIL leaching. The more recalcitrant material tends to have a higher gold grade and should be able to support conventional milling/CIL processing provided the tonnage justifies this method.

Based on these findings the following recommendations have been presented:

- Continue drill testing the near surface potential of the deposit by drilling to north, south, and west where it remains open including fracture / fault studies to better define the relationship between mineralization and structure, and oriented and geotechnical drilling to assist in mine design studies.
- Continue drill testing the lateral and vertical extent of the sediment hosted gold mineralization in the Aspen Formation.
- Drill 3-5 core holes for metallurgical test work including large diameter holes to test Run-of-Mine potential in the lithic tuff and sill.
- Complete metallurgical testing on all mineralized rock to assess their amenability to Run-of-Mine Open Pit Heap Leaching or mill/CIL processing including tests specific to each host lithology to assess grade and recovery variability.
- Undertake a program that tests the distribution of gold within the host lithologies to accurately determine the average grade including design of an underground bulk sample test.

- Complete a Preliminary Economic Assessment following execution of the recommendations above.
- Continue Kilgore Project wide exploration to test for emerging targets both inside and outside the existing land position.
- The recommended budget is \$3-5 million.

The proposed budget is displayed in Table 1-4.

Table 1-4 Proposed Budget for Kilgore Project

Proposed Budget for Kilgore Project

Drilling - Exploration & development	7500 m	200.0 \$/m	Ś	1.500.000
Drilling - metallurgical & water monitoring	2500 m	200.0 \$/m	¢	500,000
	2000 m	200.0 3/11	<u>ې</u>	300,000
	10000 m		Ş	2,000,000
Drilling contingency 15%		15.0 %	\$	300,000
			\$	2,300,000
Soils sampling program			\$	196,000
Geologic mapping			\$	140,000
Core studies			\$	50,000
LiDAR survey			\$	75,000
			\$	461,000
Baseline studies			\$	250,000
Office Rent			\$	36,000
Bonding			\$	135,000
Annual Claim Maintenance Payments			\$	100,000
Resource / Metallurgy / Decline design			\$	150,000
Data Management			\$	105,000
			\$	776,000
Total		US	\$	3,537,000
		CAD	\$	4,774,950

2.0 INTRODUCTION

2.1 Terms of Reference

Otis Gold Corp. (Otis Gold) engaged consulting geologist David Rowe, CPG, of Rowearth LLC, and Global Resource Engineering, Ltd. (GRE), the "Authors", to perform a new resource estimate of the Kilgore deposit, part of Otis Gold's Kilgore Project, Clark County, Idaho, U.S.A. A previous estimate of mineral resources was described in a 43-101 Technical Report by Don Cameron entitled Technical Report on the Kilgore Project, dated July 20, 2012.

This report documents the Authors' independent estimation of the mineral resources of the Kilgore deposit as of July 1, 2018. The resource estimate and this report were prepared according to the guidelines of Form 43-101F1, and Companion Policy 43-101CP, as amended by the Canadian Securities Administrators (CSA) and enacted on June 30, 2011.

David Rowe, Terre Lane, Jeffrey Todd Harvey, and JJ Brown are a Qualified Persons under the Instrument. Mr. Rowe and JJ Brown and conducted independent site visits to the Kilgore property on August 9th through 14th, 2017 and August 4th through 5th, 2018 respectively. The conclusions and recommendations in this report are based on information available, July 1, 2018.

The term 'Kilgore Project' refers to the entire area covered by the unpatented Federal mining claims upon which the mineral resources are located, and exploration programs conducted by Otis Gold. This report makes recommendations for specific work and a budget for the Kilgore Project.

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

This Technical Report was prepared specifically for the purpose of complying with Canadian Securities Administrators National Instrument 43-101 ("NI 43-101") and may be distributed to third parties and published without prior consent of the Authors if the Technical Report is presented in its entirety without omissions or modifications, subject to the regulations of NI 43-101. Consent is expressly given for submission of this Technical Report by Otis Gold to all competent regulatory agencies, included but not limited to the British Columbia Securities Commission, the Ontario Securities Commission, the Alberta Securities Commission, the TSX-Venture Exchange, and the Toronto Stock Exchange. However, all reports, publications, exhibits, documentation, conclusions, and other work products obtained or developed by the authors during completion of this Technical Report shall be and remain the property of the author. Unauthorized use or reuse by third parties of reports, publications, exhibits, documentation or developed by the authors for the purposes of this Technical Report is prohibited. Use of this report acknowledges acceptance of the foregoing conditions.

2.2 Sources of Information and Data Used

Otis Gold provided the Authors with compilations of data used as a basis of this report, principally from geologic mapping, cross-sections, and drilling campaigns, as well as metallurgical test reports.

This report is based, in part, on internal company technical documents, maps, published government reports, company memoranda, data and reports prepared by laboratories and professional consultants in various disciplines, and public documents and statements made by Otis Gold. The NI 43-101 Technical Report by Rayner and Associates and Van Brunt (2002) and the NI 34-101 Report by Cameron (2012) was relied upon for historical information on technical aspects and mineral resources for the Kilgore deposit up to that date.

The maps and tables for this report were produced by the Authors, by Otis Gold, or modified from reports written for Otis Gold by others. Illustrations or tables derived from other sources are acknowledged in the caption below the figure or above the table.

2.3 Site Inspections

Mr. Rowe made a site visit to the Kilgore property on August 9th through 14th, 2017 where he inspected pertinent outcrops, mineralization, drill sites, and project setting, and JJ Brown visited the site on August 4th and 5th, 2018. Both Authors visited the Kilgore Project, and Otis Gold's core preparation and storage facilities located in St. Anthony, Idaho and Spokane, Washington. They inspected drill hole assay logs and certificates, quality control information, geologic maps and sections, and took samples from surface and drill core for which they maintained secure custody and performed independent analysis for gold at a certified laboratory. Although they cannot validate and verify all of the information that composes the Kilgore database, the authors have found no issues based on their site visit and other inspections which would preclude estimation of mineral resources.

2.4 Abbreviations and Acronyms

Measurements are generally reported in metric units in this report. Where information was originally reported in Imperial units, conversions may have been made according to the formulas shown below. Discrepancies may result in slight variations from the original data in some cases due to rounding of values. Abbreviations, measures and acronyms used in this report are explained in the list below:

°C	degree Centigrade
°F	degree Fahrenheit
AA	atomic absorption
Ag	silver
As	arsenic
Au	gold

BLM	Bureau of Land Management
CIL	carbon in leach
cm	centimeter = 0.3937 inches
CN	cyanide
CSAMT	Controlled Source Audio Magneto-Telluric
EBX	Echo Bay Exploration
EM	Electromagnetic
ft	feet = 0.3048 m
g/T	grams/tonne (metric)
g	1 g = 0.0010 kg
GPS	Global Positioning System
GxT	Grade x Thickness
H2S	sulfuric acid
ha	hectare – 2.471 acres
HCI	hydrochloric acid
HEM	Helicopter EM
Hg	mercury
HNO3	nitric acid
HQ	commonly used core diameter = 2.5 inches
Hz	frequency defined as the number of cycles per second
ID	Idaho
IEC	International Electrotechnical Commission
IMC	Idaho Mining Claim
ISO	International Organization for Standardization
K-Ar	Potassium-Argon (referring to age date technique)

Ка	Aspen Formation
kg	kilogram = 2.2046 pounds
km	kilometer = 0.6214 miles
lb	pound, 0.4536 kg
LDL	lower detection limit
LS-type	low-sulfidation-type of mineralization (quartz-adularia)
m	meter = 3.28 feet
Ma	million years old
mean	arithmetic average of group of samples
median	50th percentile of a distribution
mm	millimeter = 0.0394 inches
MM	Million
MOU	Memorandum of Understanding
NaCN	Sodium Cyanide (used in heap leaching)
NAD	North America Datum
NAE	North American Exploration
NaOH	sodium hydroxide
NGB	Northern Great Basin
NI 43-101	National Instrument 43-101
NNR	Northern Nevada Rift
NQ	commonly used core diameter = 1.88 inches
NSR	Net Smelter Royalty
opt	troy ounces per short ton, 1.0 opt = 34.2857 g/Tonne
Ounce	Troy ounce, or 31.1035 g
PDUS	Placer Dome U.S.

POO	Plan of Operations
ppb	parts per billion
ppm	parts per million = g/T
RQD	Rock Quality Designation
SNOTEL	Snowpack telemetry
SWE	Snow Water Equivalent
Q-25	2nd quartile
Q-75	3rd quartile
QA/QC	Quality Assurance/Quality Control
QP	Qualified Person
RC	Reverse Circulation
SD	Standard Deviation
SG	Specific Gravity
Sb	antimony
sq	square, as in sq km
Sr	strontium (87Sr is an isotope of strontium)
SRP	Snake River Plain
Standard	Standard Reference Material
т	Township
ton	unit of measure = 0.9072 metric tons
T, tonne	metric tonne = 1.1023 short tons
TF	Tonnage Factor (number of cubic feet containing 2,000 lbs of rock)
Tpr	Tertiary rhyolite flows and domes, also referred to as Tbr, Felsic Dike on some graphics
Tad	Tertiary intermediate-composition dikes and sills
Ttk	Tertiary tuff of Kilgore

Tlt	Tertiary lithic tuff
Тqр	Tertiary quartz porphyry
Тир	Tertiary upper pyroclastics (sinter and explosion breccia)
Troy ounce	31.1035 grams
USFS	United States Forest Service
UTM	Universal Transverse Mercator
VLF	Very Low Frequency

3.0 RELIANCE ON OTHER EXPERTS

The NI 43-101 Technical Reports by Rayner and Associates and Van Brunt (2002) and Cameron (2012) are relied upon for historical information on technical aspects and mineral resources for the Kilgore deposit up to that date but not for the current estimate of resources.

GRE relies upon descriptions, statements, and illustrations by Otis Gold with respect to the status of its mineral claims as described in Section 4 and for environmental studies, issues, and permits described in Section 15. These items are presented for information purposes as required by NI 43-101 and GRE has no opinion with respect to these items. The authors exercised all reasonable due diligence in checking, confirming and testing project data, but has relied on Otis Gold's information and presentation in formulating their opinions.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location

The Kilgore Project is situated on the northern margin of the eastern part of the Snake River Plain (SRP), approximately 5 miles west-northwest of the small rural community of Kilgore, Clark County, Idaho (Figure 4-1). The core of the Kilgore deposit, known as the "Mine Ridge" area, is centered on longitude 111° 59' 52" W and latitude 44° 25' 53" N. Alternative location coordinates of this core area, as measured in the Universal Transverse Mercator (UTM) Geographic Coordinate System, are 492556E and 4920494N, NAD 83, Zone 12.



Figure 4-1 Kilgore Location Map (Source: Otis Gold, 2012)

4.2 Land Area

Otis Gold's Kilgore Project land position comprises 614 unpatented federal lode mining claims located on U. S Forest Service land, Caribou-Targhee National Forest, Idaho (Figure 4-2). Included in this claim position are: 1) a core group of 162 contiguous claims, (150 that were obtained 100% by Otis Gold from Bayswater Uranium Corp. in late 2011 and an additional 12 claims staked by Otis in late June of 2010); and 2) an additional and mostly adjacent 70 claims staked by Otis Gold on February 2-7, 2012. These latter claims were staked approximately 1-mile downslope from, and in the West Camas Creek flats area north and east of the deposit to obtain ground for possible potential future processing facilities and infrastructure. In total, the 614 federal lode mining claims comprise approximately 12,150 acres (19.19 square miles) located in all or parts of Sections 7, 8, 9, 15-22 and 27-34 in township T13NR38E, and

Sections 13-24 in township T13NR37E, and parts of townships T12NR37E and T12NR38E; Boise Meridian, Clark County, Idaho. The current mineral resource lies wholly within Otis Gold's property.



Figure 4-2 Otis Gold Kilgore Property Map (Source: Otis Gold, 2017)

4.3 Nature and Extent of Issuer's Title and Type of Mineral Tenure

Otis Gold Corp. maintains a 100% ownership interest in the Kilgore Project. Otis's acquisition of the site is outlined in a 43-101 Technical Report by Donald E. Cameron (2012).

Otis Gold contracted with land person Michelle McKamy of Billings, Montana, to conduct a professional land title search and land title opinion to corroborate and verify its claim ownership on September 14, 2018. Excerpts of the results and findings of McKamy's work are summarized below:

 The property description and location were taken from: 1) the land status records and mining claim files of the Bureau of Land Management (BLM) in Boise, Idaho; 2) the indices and records of Clark County Records; and 3) documents provided by Otis Capital USA Corp.

- 2) Otis Capital USA Corp. holds title of record to 614 unpatented lode claims located on U.S. Forest Service lands in accordance with the United States 1876 mining laws 43 CFR Ch11-3800, as amended, and in accordance with Idaho Statutes Title 47, Mines and Mining, Chapter 6, Location of Mining Claims.
- 3) Idaho Mining Claim (IMC) numbers assigned to all of these claims by the BLM are as follows:

Claim Name	BLM Serial Number
Camas 1-70	IMC 209304-209373
Cat 2	IMC 177033
CATHY 1-108	IMC 220469-220576
FOB 13	IMC 77092
FOB 16	IMC 77095
FOB 17	IMC 77096
FOB 28	IMC 77106
FOB 29	IMC 77107
FOB 31	IMC 77109
GK #1-42	IMC 220174-220215
Gozer 2	IMC 174947
Lilly 1-5	IMC 218159-218163
Mary 1-231	IMC 216814-217044
MC 1	IMC 161374
MC 4	IMC 161377
Paco 1-8	IMC 218203-218210
Rex 1-32	IMC 185109-185140
Rey 1-47	IMC 185688-186638
Gwen 1-53	IMC 186532-186584
Gwen 54-61	IMC 186639-186646
OTIS 1-10	IMC 201716-201725
SAL 1-5	IMC 218164-218168
Steel 1-34	IMC 218169-218202

4) The 614 Certificates of Location for the claims and required maps were timely recorded in the office of the Clark County Clerk, Dubois, Idaho, and with the BLM State Office in Boise, Idaho. The Affidavits of Annual Maintenance Fee payment was timely recorded in the Office of the Clark County Clerk and Recorder, Dubois, Idaho. The annual payments were received and verified by the BLM, and are valid until August 31st, 2019, at which time another annual payment will be due.

4.4 Royalties, Back-In Rights, Environmental Liabilities, or Encumbrances

Otis Gold reports that there are no royalties, back-in rights, payments, environmental liabilities, or any other encumbrances affecting its holdings based on the results of McKamy's title review work (McKamy, 2018). McKamy's findings are summarized below:

- There are no valid existing claims of record in conflict with these held by Otis Capital USA Corp. There are no liens, judgments, suits, or any litigation involving either Otis Capital USA Corp. or the claims it holds in Clark County Records, Idaho, nor in the land files at the BLM State Office in Boise, Idaho.
- 2) Otis Capital USA Corp. owns 100% interest in the subject 614 lode mining claims. The property has no recorded reserve royalties, rights, agreements, or encumbrances, and no environmental or tax liabilities of record.

Annual assessment filings/fees continue to be required by the BLM to keep the claims in good standing and for Otis Gold to retain the property mineral rights. Finally, and to the extent known by GRE, there are no environmental liabilities nor are there any significant factors and/or risks that may affect access, title, or the right or ability to perform work on the property.

4.5 Permits and Bonding to Conduct Work

All of the 614 federal lode mining claims are located on USFS ground and permits are required to conduct work proposed on the property. Permits are obtained through the Caribou-Targhee National Forest local headquarters in Dubois, Idaho. During the period from 2008 to 2012, Otis Gold performed its drilling on previously established project drill-roads. As a result, the annual permitting of a Plan of Operation (POO) was expedited, and reclamation bonding requirements were minimized. During this period, permits to drill were issued by the USFS within the framework of a Categorical Exclusion (CE), where the permitted activities are deemed acceptable to all local parties, with no substantive or negative comments of appeal received.

In 2015, a new POO was approved to construct approximately 1,200 metres of new access roads within the Caribou-Targhee National Forest and conduct drilling at approximately 16 sites. The approval was received after the completion of an Environmental Assessment (EA) by the USFS and subsequent collaborative negotiations with the USFS and other interested parties. This 2015 POO was subsequently amended several times and expired at the close of 2017. An application for a new POO was submitted in October 2017. This POO was permitted with the completion of a new EA, and approval was received in August 2018. The new POO, which is subject to the receipt of bonding totaling US\$370,600 (an increase from the prior existing bond of US\$121,275), covers exploration in the Kilgore deposit, Dog Bone Ridge, Gold Ridge and Mine Ridge areas, including approval for 140 drill sites and the construction of associated access roads. Currently, Otis Gold utilizes a 3rd party agency to maintain its bonding at the Kilgore Project. This new permit is valid for five years.

Otis Gold must maintain a reclamation bond with the USFS, which is rolled forward every year with each new annual POO and corresponding permit. Otis Gold's exploration plan and the estimated amount of

surface disturbance involved are used to calculate a monetary reclamation bond assessment that must be posted by Otis Gold before it can begin its work. As of August 2017, bond monies in the amount of \$121,275.00 are held at the Idaho Branch of the East Idaho Credit Union to cover project reclamation. The bonding amount for the 2018 approved permit total \$370,600 USD.

Additional permits needed on an annual basis include temporary permits to obtain water for drilling as administered by the State of Idaho, Department of Water Resources in Idaho Falls, Idaho. Historically, this permit has been is granted within a two-week period. Water Withdrawal permits for 2018 drilling were obtained on April 17, 2018.

Idaho State Land Use Permit No. LU 800561 was acquired by Otis Gold from the Idaho State Department of Lands on February 17, 2012 to conduct exploration on 480 acres of Idaho State Lease Land in the NW, NE, and SE quarters of Section 16, T13N, R38E, Clark County, Idaho. This land is located in the West Camas Creek drainage and flats, approximately one mile north of the deposit.

4.6 Any Other Factors or Risks

The USFS may place access restrictions on the property if extreme danger of forest fire is present but this action has never been required during Otis Gold's drilling of the property. GRE does not know of or been informed of any other significant factors or risks that may affect access, title, or the right or ability to perform work on the property.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Topography, Elevation, and Vegetation

The Kilgore deposit is in a mountainous region on the northern margin of the Eastern Snake River Plain (ESRP) between the ESRP to the south and the Centennial Mountains to the north, an east-west range that forms the Continental Divide in this part of the Rocky Mountains. Elevations in the overall project area range from approximately 6,400 feet (1,951 m) to 8,400 feet (2,560 m) above sea level, and elevations in the deposit area range from about 7,000 feet (2,134 m) to 7,800 feet (2,377 m) above sea level.

Topography defining the project area and its immediate surroundings comprises a gently southwest dipping plateau (Figure 5-1), underlain by a layered, southwest-dipping pile of Miocene-Pliocene volcanic rocks that form a dip-slope. The landform terminates in a northeast-facing slope break at Kilgore in a transition to the lowlands of the West Camas Creek drainage.

Figure 5-1 Photo Showing General Southwesterly Dip of Plateau Containing the Kilgore Deposit on its Up-dip Northeastern Edge (Photo by Otis Gold)



The Kilgore Project has a growing season of less than 70 days, with vegetation characterized by open Douglas fir, lodgepole pine, and subalpine fir forests. Mountain brush and sagebrush cover the lower elevations. Other common native plant species found in the project area include spirea, pinegrass, mountain snowberry, and gooseberry currant. No plant species protected under the endangered Species Act are known from Clark County, and no special-status plants were found during Golder Associates Preliminary Environmental study of the area during 2010 (Golder Associates, 2010).

Numerous animal species exist in the project area due to the high level of habitat diversity and large tracts of forested and open land present. Game species noted in the area include mule deer, elk, moose, blue grouse, and mourning dove. Small mammals documented within the project area include red squirrel, beaver, deer mice, shrews, and voles. Carnivores noted in the area include coyote, weasel, mountain lion,

black bear, grizzly bear, wolverine, and wolf (JBR Environmental Consultants, 1997). Over nineteen bird species have been recorded within the project area, including the northern goshawk, red-tailed hawk, American kestrel, and great horned owl. Amphibians include spotted frogs and western toad. Domesticated cattle graze in the West Camas Creek drainage area.

5.2 Accessibility

Road access to and through the deposit area is good, with a network of paved and historic unimproved drill roads serving as the direct route to the deposit area (Figure 5-2). Four-wheel drive may be required in early spring or wet weather.



Figure 5-2 Map Showing Access Route from Dubois, Idaho to the Kilgore Project (Source USFS and Otis Gold, 2012)

5.3 Demographics, Local Resources, and Infrastructure

The closest infrastructure to the Kilgore Project is the small rural community of Kilgore, Idaho, located approximately 5 miles east-southeast of the deposit (Figure 5-2), which has a minimum of supplies and

resources. Dubois, Idaho, the county seat, is located approximately 26 miles by paved and gravel road from the town of Kilgore, Idaho. Dubois offers a nearly full-service community with a gas station, grocery store, bank, restaurant, two small motels and other amenities.

5.4 Nature of Transport

Access to the property is excellent by car, truck, and 4-wheel drive vehicle on paved, gravel and unimproved roads. The Union Pacific Railroad operates a major freight rail line running through Spencer, Idaho, approximately 10 miles southwest of the deposit, and through Dubois, Idaho, approximately 26 miles to the southwest of the deposit.

5.5 Climate and Length of Operating Season

Climate in Clark County in the vicinity of the Kilgore Project is defined by mainly cold, snowy winters and warm and relatively dry summers. The Natural Resource Conservation Service (NRCS) maintains the Crab Creek weather station and Snowpack Telemetry (SNOTEL) site only 0.5 miles north downslope of the Kilgore deposit and northwest of Crab Creek. SNOTEL reports an annual precipitation average of 28.6 inches, but the annual totals vary (Figure 5-3).





December and May are typically the wettest months of the year, while August and September are the driest months (Figure 5-4). A little more than half of the annual precipitation falls as snow (Figure 5-4).


Figure 5-4 Distribution of Precipitation and Snow Water Equivalent (SWE) Throughout the Year, Crab Creek (Cabin Creek) SNOTEL Station, Kilgore Project, Clark County, Idaho (Source: Otis Gold)

Average daily temperatures from the SNOTEL site show that, on average, temperatures at Kilgore are below freezing (0°C, or 32°F) from November through April, with daily maximums of 34.7°C (95°F) occurring in July and August (Figure 5-5).





The length of a typical operating/exploration drilling season is generally from about mid-May to early December, depending on snowmelt and associated water runoff conditions in the spring and snow accumulation conditions late in the year.

5.6 Water, Power, Mining Personnel, Potential Processing Sites

Otis Gold's 614 federal lode mining claims allow the Company mineral and surface access rights under established US Mining Law. Power exists as a line paralleling the USFS Road 006, West Camas Creek Road located one-mile northeast of the deposit. Water is plentiful in the West Camas Creek drainage 1.5 miles north-northeast of the deposit. Results of core drilling by both EBX and Otis Gold reveal that the water table in the deposit area is generally at depths of between 200 feet and 400 feet below the surface, suggesting a possible source for process water that would have less impact than drawing it from West Camas Creek. An ample source of labor is available from the towns of Dubois, Rexburg, Rigby, and Idaho Falls, Idaho, all within 60 miles of the deposit, from southern Montana and northern Nevada, and from the local rural and general population base. The area features potential sites for processing plants, water storage, heap leach pads and facilities. One site option is Otis Gold's CAMAS federal lode mining claims, located largely in the flats north of the deposit.

6.0 HISTORY

6.1 Pre-Otis Gold

Historic work on the Kilgore deposit is summarized in the Technical Report's by Rayner and Associates and Van Brunt (2002) and Cameron (2012). Early gold exploration at the deposit was conducted in 1937 by the Blue Ledge Mining Company (1934, State of Idaho Annual Mining Yearbook). Evidence of mining activity remains as several underground adits, prospect pits, a mill foundation, and a tramway. Although miners reportedly uncovered "considerable ore of commercial value" (Campbell, 1937), there is no evidence in the form of tailings that metals were ever recovered from the ores. Further, there is no evidence of placer mining in the gulches below the deposit, although it is probable that panning lead to the discovery of the lodes (Benson, 1986).

A total of 54 unpatented lode claims were located to cover the core area of the Kilgore deposit by Dennis Forsberg and Foster Howland in 1982. Several mining companies conducted exploration on these claims, including Bear Creek Mining in 1983 -1985, Placer Dome U.S. (PDUS) in 1990 - 1992, Pegasus Gold in 1993 - 1994, and Echo Bay Exploration (EBX) in 1994 - 1996.

Bear Creek leased the claims from Forsberg and Howland in 1983. The Bear Creek program comprised seven RC and core holes during its tenure. Placer Dome drilled 39 holes, including 5 core holes, conducted rock and soil sampling, ran a gradient array IP/resistivity survey, located 82 unpatented lode mining claims, and ran metallurgical tests. The drilling continued through a 50-50 joint venture between Placer Dome and Pegasus with an additional 23 holes.

EBX conducted more systematic exploration and evaluation of the Kilgore deposit spending \$4.7 million between 1994 and 1996. Exploration included drilling 122 new drill holes, re-logging all previous drill holes, airborne helicopter electro-magnetic (HEM) surveying, regional geological mapping and soil sampling on the backside sinter, or Dog Bone Ridge target area. It performed bottle roll and column leach metallurgical studies, collected environmental baseline data, did resource modeling and completed initial engineering assessment studies of the main Kilgore deposit area.

In all, between 1984 and 1996, a total of 122,257 feet in 190 holes were drilled on the Kilgore deposit and proximal targets with the goal of defining a bulk-tonnage, open-pittable gold deposit. The majority of this drilling concentrated on the Kilgore deposit, the subject of this NI 43-101 report. No further drilling was done on the deposit until Otis began its work in 2008, a hiatus of 12 years since the last historic drilling was completed by EBX in 1996.

Latitude Minerals entered into a 49% - 51% joint venture agreement with EBX on September 2, 1998 and drilled a sinter cap and explosion breccia area, now known as Dog Bone Ridge, located roughly 4,000 feet (1,220 m) west-southwest of the main Kilgore deposit on Mine Ridge. Latitude drilled six holes, three of which encountered anomalous gold mineralization averaging 91.4 m (300 feet) thick and extended well-mineralized intercepts at least 300 feet west-northwest of EBX hole 96 EKC-178. The drill results also revealed extensive alteration characteristic of volcanic-hosted gold systems.

In 2002, Kilgore Gold, a wholly-owned subsidiary of Kilgore Minerals, acquired 100% ownership of the property from Forsberg and Howland. From 2002 – 2006, Kilgore Gold conducted detailed field mapping and structural analysis work on Dog Bone Ridge in order to delineate drill targets to further expand on EBX's and Latitude's work in the area (Caddey, 2003). In 2004, Kilgore Minerals expanded its property position to 3,000 acres and drilled six core holes into the Dog Bone Ridge target area for a total of 1566 m (5,319 feet). Significant gold mineralization comprising a 51.8 m-thick (170 feet) intercept from 112.8-m to 164.6-m (370 – 540 feet) deep and grading 1.25 g/T Au was encountered in hole KG042, however no mineralization of significance was found in the other five holes (Kilgore Minerals news release dated September 7, 2004; Pancoast, 2004). The Company drilled eight additional core holes totaling 1697 m (5,569.4 feet) in 2006. Drill hole KG06-01, an offset to KG04-02, encountered 12.6 m of mineralized material from 155.6 m (510 feet) to 168.2 m (552 feet) grading 1.30 g/T Au.

In 2008, Otis Gold formed a joint venture with Bayswater and began its exploration programs on the Kilgore deposit.

6.2 Historical Mineral Resource Estimate

Rayner and Associates and Van Brunt (2002) reported a NI 43-101 compliant resource estimate in a Technical Report for Kilgore Gold. That study, following methodology developed for in-house EBX resource estimates, estimated grade to regular 30 x 30 x 15 foot blocks. The resource comprised separate estimates of three lithologic domains, Lithic Tuff, Crystal Tuff, and Aspen Formation, and 12,788 assay intervals. Compositing to 15-foot intervals, two composites >1.0 opt Au were excluded from the estimate as outliers. Composites were further restricted to an interpreted 0.010 gold shell. Slightly anisotropic relative gold variograms were used to design search ellipses for the individual domains with maximum dimensions of 140 - 150 feet and minimum distances of 120 - 140 feet. Blocks estimated by more than 6 composites and 3 or more drill holes were considered Indicated Resources, presented in Table 6-1.

Table 6-1 Historical Mineral Resources for Kilgore Property (Rayner and Associates and Van
Brunt, 2002) ¹

Classification	Cutoff Grade (opt)	Au opt	Tons(000's)	Ounces(000's)
Indicated	0.010	0.031	7,043	218
Inferred	0.010	0.028	9,661	269

1. Units are Imperial: tons are short tons, grade is ounces per short ton, ounces are troy ounces.

The estimation technique for the resources in Table 6.1 was ordinary kriging. The resources in this report update the 2002 report based on new geologic interpretations and additional drill information collected by Otis Gold. The mineral resources in Table 6.1 should not be considered a current resource. The authors have not used or relied upon this information in preparing the estimates of mineral resources presented in this report.

An NI 43-101 Mineral Resource Estimate was performed by Don Cameron in 2012 (Table 6-2) based on a then new block model that incorporated historic drilling information, updated geologic interpretations, bulk density test work, and geostatistical modeling of gold grade. The cutoff grade used for reporting and classification was based a heap leach open pit mining scenario. The estimate was made using Micromine software.

Table 6-2 Historical Mineral Resources for Kilgore Property by Don Cameron, 2012

Resource Category	Tonnes (000's)	Gold Grade in grams/tonne	Gold Troy Ounces
Measured	-	-	-
Indicated	27,352	0.59	520,000
Total Measured and Indicated	27,352	0.59	520,000
Inferred	20,230	0.46	300,000

^{1.} Mineral Resources are at a gold cut-off grade of 0.24 g/t; gold price 1,650 USD/ounce; Au recovery 90%, and pit walls 45°.

^{2.} Mining cost \$1.93/ton, waste mining \$1.82/ton, processing cost \$7.72/ton, selling cost \$5/ton.

^{3.} Items are rounded off to reflect the precision of the estimate, thus metal quantity varies slightly from the product of tons and grade.

^{4.} Contained gold ounces are in-situ and include metallurgical recovery losses.

^{5.} Indicated mineral resources are pit constrained; inferred mineral resources are not.

6.3 Past Production

Other than a few carloads of material mined and stockpiled at the deposit in 1937, no production is known or reported from the property (Campbell, 1937).

7.0 GEOLOGIC SETTING AND MINERALIZATION

7.1 Regional Geology

The Kilgore Project is located in the northeastern portion of the Eastern Snake River Plain ("ESRP"), locally situated on southern flank of the Centennial Mountains and regionally along the northern margin of the Miocene-Pliocene Heise Volcanic Field. The following description of the regional geologic setting of the Kilgore Project is largely based on work completed by Leeman (1982), Mabey (1982) and Morgan and MacIntosh (2005), and much of the following text is modified and/or directly excerpted from those reports.

The ESRP is an arcuate depression of low topographic relief that extends more than 500 km across southern Idaho (Figure 7-1). The plain is distinguished from the surrounding terrain by lower elevation and surface relief, and by a complete cover of Cenozoic sedimentary and volcanic rocks. Geologic relationships and recent radiometric dating have demonstrated that since middle Miocene time the SRP-Yellowstone Plateau province has been characterized by voluminous bimodal rhyolite and basalt volcanism that has progressed eastward with time and is now focused at Yellowstone National Park. The development of this eastward younging bimodal volcanism is attributed to west-southwestward movement of the North American plate over a stationary melting anomaly, or plume-like zone of hot and molten magma rooted at least several hundred km below the surface (Leeman, 1982), commonly referred to as the Yellowstone Hotspot.



Figure 7-1 Regional Geologic Setting of the Kilgore Project (modified from Mabey, 1982)

The central and northeast-trending ESRP is interpreted as a structural downwarp based on inward dipping attitudes of volcanic and sedimentary rocks along its margins and the lack of evidence for bounding faults. Most of the ESRP is covered by Quaternary basalt flows, though rhyolite domes ranging in age from 0.3 to 1.5 million years rise above the surface of the basalt in the central part of the eastern plain (Kuntz and

Dalrymple, 1979). Rhyolite ash flows are common around the margins of the plain, and Cenozoic sediments are abundant in the surface and shallow subsurface near the margins of the plain. Although cracks and fissures with trends generally normal to or parallel to the axis of the plain are common, evidence of displacement along them is rare (Reference).

Four major caldera-forming eruptions occurred within the ESRP during the late Miocene and early Pliocene. These calderas and their cogenetic ignimbrites form the framework of the Heise Volcanic Field, which is slightly older than but analogous to the adjacent (northeast) Yellowstone Plateau Volcanic Field. Field relations and high-precision 40Ar/39Ar age determinations (Morgan and MacIntosh, 2005) establish the four regional ignimbrites of the Heise volcanic field as the Blacktail Creek Tuff (6.62 \pm 0.03 Ma), Walcott Tuff (6.27 \pm 0.04 Ma), Conant Creek Tuff (5.51 \pm 0.13 Ma), and Kilgore Tuff (4.45 \pm 0.05 Ma; all errors reported at $\pm 2\sigma$).

The Heise volcanic field consists of several overlapping or nested calderas that are now buried beneath younger sedimentary and volcanic deposits. Deposits of the Heise Group cover ~35,000 km2, with extensive exposures along the margins of the eastern SRP (Morgan, 1992). Heise Group rocks lie stratigraphically above tuffaceous sediments of the late Tertiary Medicine Lodge Formation on the northern margin of the plain (Skipp et al., 1979) and above and in places overlapping tuffaceous sediments of the Salt Lake Formation on the southern margin (Allmendinger, 1982; Oriel and Moore, 1985; Love, 1986). Along the northern edge of the SRP, rhyolites from the Heise Group are distributed from the Arco area in the southwest, to southern Montana and Big Bend Ridge on the northeast.

The 1800 km³ Kilgore Tuff is the youngest and most voluminous of the four major caldera-forming eruptions in the Heise Volcanic Field. Exposures of the Kilgore Tuff span ~20 000 km² across parts of Idaho, Montana and Wyoming, and range from <3 m to >120 m thick, with the thickest deposits located near three inferred source vent areas along the northern and southern margin of the Kilgore Caldera (Morgan & McIntosh, 2005). According to anisotropy of magnetic susceptibility (AMS) measurements and grainsize distributions (Morgan, 1988), the three source vents of the Kilgore Tuff are separated by lateral distances of ~50–100 km; two of the vents are located in areas where the Kilgore Caldera overlaps the older Heise Caldera boundaries (Figure 7-2).



Figure 7-2 Local Geologic Setting of the Kilgore Project (from Watts et. al, 2011)

7.2 Local and Property Geology

The Kilgore Project is situated in an area of Miocene to Pliocene rhyolite flow-dome complexes and associated pyroclastic sequences along the northern margin of the ESRP, coincident with the northern margin of the Heise Volcanic Field and specifically with the interpreted north-eastern rim of the Kilgore Caldera Complex (Figure 7-2). The rhyolitic rocks unconformably overlie folded Cretaceous to early Tertiary clastic sedimentary rocks. Toward the project perimeter to both the north and south, the volcanic rocks are locally blanketed by the Tuff of Kilgore, a relatively distinct welded ash flow tuff thought to represent the last major eruptive event of the Kilgore Caldera. A geologic map of the Kilgore Project area is presented as Figure 7-3.





7.2.1 Lithology

The following paragraphs describe the individual lithologic units important to the Kilgore Project. Descriptions are based on distinguishing characteristics observed by Otis geologists in hand specimen, outcrop, drill core, and road cuts. The local lithologies described here generally correlate well with published accounts of presumed equivalent bedrock formations in reasonably close proximity to the project area.

Aspen Formation (Ka)

Clastic sedimentary rocks of the Cretaceous Aspen Formation (Ka) are the oldest rocks known to occur in the project vicinity. These rocks outcrop in the northern portion of the project area but are more commonly present beneath thick volcanic cover and extend to the depths explored to date. The Aspen Formation, as it is referred to here, was formally described by Scholten et al. (1955), and later variably included in or as a member of the Late Cretaceous Frontier Formation (Mansfield, 1920), the upper (also Late Cretaceous) Kootenai Formation (Mitchell and Bennett, 1979), and the Late Cretaceous-to-Paleocene Beaverhead Formation (Witkind and Prostka, 1980). Total thickness of the Aspen Formation is unknown, but Scholten et al. (1955) reports a thickness in excess of 1,067 m in the southeastern Tendoy Range, just 40 km west of the Project area. Contours of the top of the Aspen Formation based on drill hole data and outcrop indicate that the surface dips moderately to the southwest.

In outcrop, the Aspen Formation is generally gray to greenish-gray, strongly weathered, and pulverulent, with subtle to indistinct bedding. The individual sedimentary strata are comprised mostly of immature coarse- to fine-grained salt-and-pepper-textured lithic graywacke interbedded with lesser amounts of locally carbonaceous black siltstone and shale, all of which are locally calcareous. In drill core, the Aspen is represented by compact, thin-bedded layers of tightly packed and rounded to subrounded sand and silt particles within well-indurated and intercalated graywacke and siltstone sequences (Figure 7-4). Graywacke generally varies from light to dark gray and sometimes contains 2-4 mm dark streaks resembling carbon leaders or shale "rip-ups." Coarser conglomeratic phases occur locally and are thought to have developed in stream channels cut into and preserved at the top of the Aspen. These conglomerates may represent the base of the Beaverhead Formation, as described by Witkind and Prostka (1989).





Repetitive fining-upward cycles are observed in the Aspen in drill core, with some of the rocks, particularly siltstones and shales, revealing considerable penecontemporaneous soft sediment deformation such as warping, slumping, and folding, along with slump breccias and chaotic textural intermixing. Locally, angular rip-up clasts of black siltstone and shale are present within graywacke; some graywackes have been "forcefully injected" by underlying siltstones and shales.

Gold mineralization occurs throughout the Aspen Formation as deep as drilling has been completed. The calcareous matrix of the arkosic sediment has been replaced by silica, adularia and calc-silicate minerals e.g. epidote; mineralization is also encountered at depth and away from the current resource area where the Aspen is intersected by fluid pathways such as the Cabin Fault or Mine Ridge Fault, and other east or northeast trending faults. Drill hole OKC-371 intersected a 23-m interval of mineralization adjacent to the Cabin fault and at a vertical depth of 274 m below the contact of the Aspen and the overlying volcanic rocks. Mineralized Aspen Formation typically contains local quartz microveins, is iron-stained, and is occasionally cut by gold-bearing mafic dikes. Matrix replacement style mineralization is thought to be more common at depth within the Aspen in the vicinity of structural intersections.

Undifferentiated Tuff (Tlt)

The Aspen Formation is unconformably overlain by a thick (locally in excess of 300 m) layer of undifferentiated lithic and crystalline tuffs. This unit (Tlt) is comprised of a complex series of lithic lapilli tuffs, locally crystal-rich ash-fall tuffs, and other pumice-rich pyroclastic rocks, all of reportedly local extent

(Benson, 1984). Together, these rocks represent a significant host of gold mineralization at Kilgore and are thought to be the product of eruptive activity associated with a rhyolite flow dome, as suggested by Benson (1986). In general, the tuffs are composed of medium-gray, ashy tuffaceous material with variable amounts of lapilli-sized angular to sub-angular fragments of dark gray Aspen Formation sandstone and siltstone, pumice fragments, quartzite, and various volcanic and rhyolitic rocks ranging in size from 2 mm to 64 mm, as well as rare larger clasts greater than 64 mm in diameter (Figure 7-5). Lithic fragments are supported by an ashy matrix with broken fine-grained plagioclase crystals and quartz crystal fragments. Tuffs of the Tlt can be widely variable in appearance, largely due to the quantity and composition of the lithic fragments and degree of welding, but also as a result of superimposed quartz-adularia alteration and silica flooding that tends to bleach the rock from its characteristic medium-gray to a lighter gray or cream color in places.





Sills and Dikes of Intermediate Composition (Tct/Tad)

A sill-like body of presumed intrusive origin occurs at the base of Tlt and in the very uppermost part of Aspen Formation stratigraphy, where it is conformable to bedding and appears to have intruded and pried it apart. Identified previously as the Tct (crystal tuff), Otis geologists now apply the designation Tad to this sill as well as other hypabyssal sills and dikes of intermediate to andesitic composition, parts of which were subjected to quartz-adularia alteration subsequent to emplacement. Thin-section analysis of material from this unit shows none of the features found in a typical tuff such as welded glass shards. Thickness of the principal sill in the deposit area ranges between 30 - 90 m (100 - 300 feet). A northwest-

trending altered hornblende granodiorite intrusive body locally in excess of 90 m (300 feet) wide and at least 150 m (500 feet) long occurs northwest of the Mine Ridge fault and underlies the North Target area.

In drill core, Tad is green-gray to gray in color (Figure 7-6). It is typified by a fine grain matrix containing 5-10% rectangular feldspar phenocrysts ranging from 1-5mm in size, and 1-3% very fine grain, dark grey to black, elongate hornblende phenocrysts. The feldpsars are often selectively altered or replaced, and as a result Tad can exhibit a pitted texture where feldspar phenocrysts are argillically altered to clay and occasionally dissolved. Zones of strong silicification are common, often as flooding throughout the rock, but also as microveinlets, as crystals in vugs and fracture fillings, and as druzy fracture coatings. Quartz veinlets vary in composition from a translucent-grey quartz to a dense milky white variety. The typical greenish-grey color is attributed to a pervasive chlorite alteration of the fine grain matrix. Trace amounts of fine-grained, disseminated pyrite are common in the matrix, and are observed in drill core selectively replacing the feldspar phenocrysts. Pyrite, quartz-pyrite veinlets, and concentrated areas of disseminated pyrite blebs are frequently observed near the contacts with surrounding rock.



Figure 7-6 Granodiorite (?) Sill (Tad)

Based on similarity in appearance, it is often difficult to distinguish between the Tad and rhyolitic rocks of the group Tpr (described below) in drill core. The primary distinguishing factor relied upon by Otis geologists is the presence or lack of rounded quartz eyes, which are absent in the Tad but considered somewhat ubiquitous of the Tpr. The relationship between the two units, with regard to both timing and distribution, is not fully understood and warrants further investigation. Both units are known to host mineralization at Kilgore, and a better understanding of the relationship between the two should provide important insight for use in refining the overall conceptual geologic model and future exploration plans.

Biotite Rhyolite (Tpr)

A series of flow-domes, plugs, and dikes of rhyolitic composition together comprise the Tpr, which occurs in a wide northwest-trending belt or zone through the Project vicinity. This zone trends roughly parallel to Basin-and-Range-style local normal faults and to older northwest-trending regional faults (Mabey, 1982; Benson, 1986). The rhyolite is reddish-brown to light pink in color with coarse flow foliation commonly present. The flows and domes generally have well-developed vitrophyric margins with local spherulitic and lithophysae zones. The rhyolite comprises trace to 1% fine-grained biotite, 1% to 5% plagioclase and sanidine, and scattered fine-grained distinctive quartz eyes in an aphanitic, locally pilotaxitic groundmass (Figure 7-7). The presence of biotite is diagnostic where the rhyolite is fresh, though weathering, hydrothermal alteration, and bleaching frequently removes or alters most of the biotite, replacing it completely and/or liberating iron to form rusty-red and yellow-brown oxide stains. Age of the Tpr is 7.9 ± 0.4 Ma based on K-Ar age dating of biotite in a vitrophyre by (Benson, 1986).



Figure 7-7 Typical bleached, hydrothermally altered Tertiary biotite rhyolite (Tpr)

Rhyolite Quartz Porphyry (Tqp)

A thick, relatively crystal-rich rhyolite flow unit is encountered central to and northwest of the Kilgore Project area. This unit is described by Benson (1986) as a quartz porphyry lava erupted onto a highly irregular topographic surface. The unit designation reflects the presence of distinctive quartz phenocrysts throughout the rock, which is generally massive with occasional local coarse flow foliation. Tqp is commonly light gray with 2% to 10% coarse-grained quartz and sanidine phenocrysts in a micro-spherulitic groundmass (Figure 7-8). Some of the phenocrysts are at least 4 mm in diameter, with many of the quartz phenocrysts containing central inclusions of what appear to be microphenocrysts of alkali feldspar (Benson, 1986).



Figure 7-8 Tertiary Rhyolite Quartz Porphyry (Tqp)

Exposures of the Tqp within the Project area form coarse talus slopes and craggy, resistant outcrops of highly silicified material. The unit includes a basal spherulitic vitrophyre that is intensely clay altered and thought to have acted as a partial barrier to the ascending mineralizing fluids that created the Kilgore deposit. The unit attains a thickness of as much as 180 m (600 feet) based on an intersection in Bear Creek drill hole KG-3.

According to Benson (1986), local stratigraphic relations and K-Ar age dates of the Tpr and of an aphyric rhyolite in the extreme northeastern and southwestern parts of the Kilgore area constrain the age of the Tqp between 5.9 ± 0.3 Ma (younger aphyric rhyolite) and 7.9 ± 0.4 Ma (older Tpr). The rhyolite of Spring Creek is a similar, well described rhyolite flow (Morgan et al., 1984) that outcrops to the northeast of the Kilgore Project. Otis considers the rhyolite of Spring Creek, K-Ar age dated at 6.3 ± 0.3 Ma (Morgan et al., 1984), to be correlative with the Tqp.

Upper Pyroclastics (Tup)

A discrete and distinct upper pyroclastic unit (Tup) is mapped over a surface area of approximately one square mile just southwest of the Kilgore deposit. This unit is comprised of hot-spring sinter material, silicified explosion breccia, crumble breccia, clast-supported breccia, and unsorted, non-bedded to poorly-bedded lithic breccia at least 90 m (300 feet) thick (Figure 7-9). It forms the capping stratigraphic unit at the top the southwest-dipping plateau just up-slope and southwest of the Kilgore deposit. The Tup is a relatively widespread and well-preserved silica cap and silicified explosion breccia layer that represents the surface expression of a hot spring-type epithermal system. The Tup overlies much of the Dog Bone

Ridge target area, and it is interpreted by Otis as a large vent zone which has broken through an existing silica cap to form a fallout apron above the Tqp unit. Otis' interpretation is based in part on the composition of the silicified explosion breccia, which includes local fragments of coarse sand-sized silicified material, Tqp, Tpr, and much clast-supported breccia. Berger and Eimon (1982), Silberman (1982), and Berger (1985), describe similar sinters, breccias, and fallout aprons related to numerous other classic hot spring epithermal systems and related precious metals deposits.



Figure 7-9 Sinter and explosion breccia of the Tup exposed in outcrop

Tuff of Kilgore (Ttk)

The tuff of Kilgore is a widespread welded ash-flow tuff that forms a gently southwest-dipping (less than 5°) blanket over the rhyolitic and pyroclastic strata of the Kilgore Project to the south, west, and northwest of the Project area. The tuff of Kilgore is post mineral, as it mantles the hydrothermally altered rocks of the Kilgore mineralizing system but lacks hydrothermal alteration itself. The average age of the tuff of Kilgore at 4.3 Ma (Morgan et al., 1984), while a K-Ar age determination on hydrothermal adularia at the Kilgore deposit dates mineralization at 5.3 ± 0.2 Ma (Benson, 1986).

The tuff of Kilgore is generally purple gray to dark reddish-brown in color, with 1% to 7% medium-grained crystals of sanidine, plagioclase, and rare quartz in a very fine-grained glassy, locally devitrified matrix. Unit thickness is locally up to 150 m (500 feet), with a black to reddish-brown vitrophyric base that is up to 12 m (40-feet) thick (Benson, 1986). The Ttk is moderately to strongly welded, generally eutaxitic, and locally rheomorphic, with strong lineation.

Petrographic, radiometric, and field studies reveal that the tuff of Kilgore is equivalent to the tuff of Heise, which has a K-Ar age date of 4.3 ± 0.15 Ma (Armstrong et al., 1980). The tuff of Heise crops out within the neighboring Rexburg Caldera complex. Embree and others (1982) suggest that the caldera source for both tuff units is near Kilgore, Idaho, with the tuff of Heise representing the distal facies of the tuff of Kilgore where the former ponded in the Rexburg Caldera complex.

7.2.2 Structure

Three main structural trends are recognized in the Kilgore deposit area: 1) N40°-60°W; 2) N30°-60°E; and 3) E-W-to S70°E. These are corroborated by detailed local geological and structural mapping by Benson (1986), field structural investigation work by Caddey (2003), detailed local geological and structural mapping by EBX geologists in 1995 (unpublished), and recent geological and geophysical field studies by Otis including the 3D geologic modeling of drill data by Rowearth in the course of the preparation of the resource model.

To date the dominant hypothesis of structural control of mineralization has centered upon N40-60°W structures and this was evidenced by: 1) the direct association of the emplacement of gold mineralization at the Kilgore deposit with the Northwest Fault and a sub-parallel suite of structures; 2) additional scattered areas of gold mineralization and voluminous silicified vent breccia associated with the Dog Bone Ridge target area, localized along the northwesterly extension of the N60°W-trending McGarry Canyon Northwest Fault. The McGarry Canyon Northwest Fault lies approximately 760 m (2,500 feet) southwest of and parallel to the Northwest Fault (Figure 7-3).

The Northwest Fault and a number of parallel structures compose a N 40°-60°W trending fault zone at least 6 km long containing: 1) the Kilgore deposit area; 2) its southeasterly extension into the Prospect Ridge area; and 3) Otis Gold's Gold Ridge target located approximately 1.0 km (3,300 feet) northwest of the deposit. Overall, the trend of this fault zone is characterized by the emplacement of a belt of shallowly-emplaced rhyolite plugs, granitoid dikes, and domes, and granodioritic bodies; this also coincides with the geophysical interpretation of the 5.5km long arcuate toe of a volcanic terrace composed dominantly of lithic tuff (Tlt) that approximately parallels this fault trend. The Northwest Fault zone is partially or completely capped by Tqp, much of which is highly silicified (Benson, 1986). Geologic 3D modeling of the deposit carried out in the course of resource modeling by Rowearth used information gathered from geologic logging of drill cores; from that modeling a suite of sub-parallel faults was identified that hosts a significant portion of the mineralization in the Kilgore Deposit.

The McGarry Canyon Northwest Fault comprises a zone at least 3 km (1.8 miles) in length that includes a northwest-trending silicified vent zone and hydrothermal fluid conduit with related explosive pyroclastic volcanism, rhyolitic volcanism, dike emplacement, and epithermal activity (explosion breccia and sinter) in the Dog Bone Ridge area (Caddey, 2003). Surface exposures along the central part of Dog Bone Ridge consist of linear, siliceous, tectonic, and phreatic explosion breccias localized along a 1.6 km (1 mile) length of the McGarry Canyon Northwest Fault. Erosion-resistant surface outcrops forming the ridgeline are intensely silicified, brecciated, and healed with at least three generations of low-temperature varieties of chalcedonic and opaline quartz (Caddey, 2003).

Northeast of the Kilgore deposit, the West Camas Creek drainage may be the expression of a ring fracture related to the Kilgore Caldera margin; these northwest-trending structures may represent structures that are contemporaneous with the development of the Heise Volcanic Field and therefore development of the Kilgore Caldera. The recently identified toe of a volcanic terrace also approximately parallels the arcuate trend of the West Camas Creek drainage implying that it too is controlled by ring structures associated with the development of the Kilgore Caldera. Interpretations based on Otis drilling and surface geophysics suggest that these structures served as the conduits and focus for the emplacement of northwest-trending intrusive dikes with which the gold mineralization appears to be directly associated, though this has yet to be confirmed.

Prominent N30°-60°E trending structures in the Kilgore deposit area include the Mine Ridge Fault, Cabin Fault and 28 Faults (Figure 7-10), with a number of others outside the deposit area including the McGarry Canyon Northeast, Bearcat, and many that are unnamed in the Gold Ridge area (Benson, 1986; Caddey, 2003). These northeast faults may represent radial fractures that developed from doming by igneous intrusion during development of the Heise Volcanic Field, and therefore includes the development of the Kilgore Caldera. Results of detailed structural analysis by Caddey (2003) reveal both dominant radial and concentric structural patterns attributed to doming by local igneous intrusion. These radial structures are significant in the control of precious metal distribution and this is highlighted by the early exploitation of the northeast trending structures by miners in the 1930's; adits were driven along these structures. Samples collected by Otis from the remains of the dumps have returned values up to one ounce per ton gold.

In summary the Kilgore Deposit precious metal mineralization appears to be associated with a complex network of cross cutting radial faults and ring structures; the radial faults have high grade mineralization associated with them that was initially exploited during early development of the Kilgore Depsoit. The ring structures and sub-parallel fault swarms may have acted as secondary fluid pathways for the distribution of hydrothermal fluids into the receptive host rock units that constitute the Kilgore Deposit, that is the lithic tuffs (Tlt), quartz porphyry intrusives (Tpr) and sills and dikes that occupy the contact zone between the lithic tuff and underlying Aspen Formation, and sub-vertical northwest trending faults.

Lastly, gold grade-thickness maps and EBX geophysical/airborne magnetic data (Woolham, 1996) suggest the presence of an E-W - S70°E structure that crosses the heart of the Kilgore deposit into the West Camas drainage. The regional and local context of this apparent structure is not clear.

7.2.3 Mineralization and Alteration

The following description of mineralization and alteration specific to the Kilgore Project is largely excerpted and/or modified from Cameron (2012). It has been modified and updated to reflect exploration carried out from 2012 through 2018.

Mineralization

Gold mineralization at Kilgore occurs within two suites of receptive host rocks: 1) in rocks of volcanic or subvolcanic origin, including the Tlt and the sub-vertical granitoid dikes, dike swarms, and granite to

granodioritic bodies that intrude it, and 2) the sedimentary turbidites composed of arkosic sandstones and carbonaceous shales of the Aspen Formation.

Gold mineralization in the volcanic and related intrusive rocks contains high grade zones as a result of weak to moderate vein development and open space fracture-fill, together within a broad, low grade halo of disseminated gold within variably silicified and argillically altered rocks. Gold content appears to decrease rapidly to lower grades (<50-100 ppb Au) with corresponding decrease in quartz or quartz adularia as silicification and increase in argillic alteration. Exceptions occur in strongly oxidized rock near the topographic surface where strong to pervasive iron-oxide, yellow-orange to brown staining is accompanied by high gold grades.

Mineralization in the volcanic and associated intrusive rocks accounts for an estimated 85% of the known mineral resource, with the remaining 15% occurring in the underlying Aspen Formation sediments.

The Aspen Formation sedimentary rocks are arkosic sandstones with irregularly distributed carbonaceous shale layers; gold mineralization occurs associated with quartz, adularia and epidote and appears to have been the result of replacement of the carbonate cement of the arkosic sandstone. Recent petrologic work carried out by Otis has revealed 5-15 micron sized gold particles between quartz and adularia crystals that now cement the quartz and feldspar grains of the arkosic sandstone. To date a limited number of drill holes has tested the sediment hosted mineralization. Further testing of the Aspen Formation sediment hosted mineralization is necessary to assess the potential as a future target for bulk tonnage, low grade mining operations.

The Kilgore deposit is a zone of mineralization with a length of approximately 800 m long, 600 m wide, and 325 m deep from ground surface to the maximum inferred mineral resource depth. Mineralized intercepts generally average 40 m (130 feet) and range up to 90 m (300 feet) in thickness in the Mine Ridge core and North Target areas. Figure 7-11 through Figure 7-13 illustrate the distribution and orientation of mineralization of the Kilgore deposit in cross section and relative to individual intercepts and host rock geology and structure.







Figure 7-11 Representative Cross Section of the Kilgore Resource Area, Section 11900N (Otis, 2018)



Figure 7-12 Representative Cross Section of the Kilgore Resource Area, Section 12850N (Otis, 2018)



Figure 7-13 Representative Cross Section of the Kilgore Resource Area, Section 11550N (Otis, 2018)

Significant mineralized zones within the Project area are typically associated with structures and the mineralized halos around them in the surrounding rocks. The geology and apparent detailed mineralization controls vary from one area to the next. Mine Ridge comprises the core of the Kilgore deposit and the bulk of the gold mineralization contained within it. Major geologic controls include the northwest trending fault swarms and the northeast trending radial fault structures. Gold mineralization is spatially associated with the intrusive rocks and their contacts with porous and permeable lithic tuffs. Some of the higher-grade mineralization is localized in sub-vertical to vertical fissure, shear, and fault/fracture zones. The TIt hosts significant disseminated mineralization that forms more extensive zones away from the dike contacts.

The system of northwest trending faults in the areas of the north and B roads (locally identified at the north road/rhyolite fault, northwest B-Road fault, northwest central fault, and northwest western fault) may represent a fault or shear zone several hundreds of meters wide and comprised of several sub-parallel structures. These faults and the cross-cutting Cabin, Mine Ridge, and other east-northeast trending faults contribute significantly to the overall distribution of mineralization.

The upper 30 - 60 m (100 - 200 feet) of the Aspen Formation serves as a major host environment to gold mineralization in the Mine Ridge area, especially at the upper contact of the Aspen Formation with the overlying Tad sill. Here the unit is variably silicified, displaying quartz microveining, development of iron oxides along micro fractures, oxidation of sulfides, the presence of pyrite stringers, and chloritic, ankeritic, and probable magnesian alteration. Quartz veins and sheared quartz vein zones cutting Aspen rocks, as well as the edges and margins of mafic dikes intruded into the Aspen Formation, all serve as environments for the deposition of higher-grade gold values. Typical thicknesses and grades of mineralized intercepts found in the upper part of the Aspen Formation in Otis core holes include 30.4 m @ 2.53 g/T Au from 86.3 m to 116.7 m in 10 OKC-210, and 33.1 m @ 1.27 g/T Au from 206.0 m to 239.1 m in 11 OKC-253. Recent drilling in 2017 has shown that the Aspen Formation is mineralized up to 300 m vertically below the contact e.g. 17 OKC-371 at a depth of 274 m below the contact between lithic tuff and underlying sediments. @017 core drilling also indicated significant lengths of low grade mineralization below the contact including 170 KC-356 that returned an average 1.66 g/t Au over 129.4 m including 24.4 m averaging 3.45 g/t Au, and 170 KC-374 that returned an average of 0.91 g/t AU over 137.2 m.

Sulfide and precious metal mineral species identified in core from the Mine Ridge area include pyrite, electrum, native gold (some visible), galena, arsenopyrite, sphalerite, stibnite, cinnabar, naumannite (Ag₂Se), aguilarite (Ag4SeS), argentite-acanthite, chalcopyrite, wolframite (ferberite), and rare pyrargyrite (Ag₃SbS₃) (Benson, 1986; Otis, 2012). Benson's (1986) scanning electron microscope and energy dispersive X-ray spectrometry studies on heavy mineral concentrate grains from historic Bear Creek drill samples in the area found additional mineral species, including an unknown mineral composed of Ag-Pb-Bi-Se-S, galena with minor Se and Ag, gersdorffite (NiAsS), and cobaltnickelpyrite ((Ni, Co, Fe)S₂) with minor chalcopyrite. All of the silver minerals, electrum, and gold occur as discrete grains and within pyrite. Panned concentrate studies of gold grains conducted by Hazen Research, Inc. (1995) for EBX found spongy, lacy, rectangular, splinter, and amoeboid morphologies with rich yellow color and sizes in the 25-to 150-micron range.

Gangue minerals identified in the area are mostly quartz, adularia, manganiferous siderite, pyrite, pyrrhotite, illite-sericite, kaolinite, barite, and dumortierite/tourmaline.

<u>Alteration</u>

Adularia is an abundant alteration mineral, often occurring with quartz or fine-grained silica. Felsic-to intermediate dike rocks commonly show pervasive quartz–adularia alteration and replacement, and some adularia occurs on fractures (Larabee, 2012; Benson, 1986).

Silicification generally occurs as fine-grained replacement and flooding of Tlt, various dikes, and the base of the Tqp. Silicification is also present throughout the Mine Ridge core area as irregular quartz veins, quartz stockwork vein zones, sheared quartz-vein zones on, and along dike margins, quartz microveinlets and microveinlet zones, and late-stage cavity-filling quartz crystals, locally coated with rare, late-stage, visible gold. Some visible gold grains occur in oxidized selvage material along the margins of late-stage quartz veins (Figure 7-14). Some of the best developed areas of quartz veining generally occur along the margins of the northwest-trending dikes in the Mine Ridge area, along and parallel to the northeasttrending Mine Ridge fault, and near, and at the intersection of northwest- and northeast-trending structures.



Figure 7-14 Visible Gold in Late-Stage Quartz Veinlet in Drill Hole 08 OKC-193

Dumortierite, commonly found in the Mine Ridge area and logged in numerous historic core holes as tourmaline, is closely associated with higher-level quartz stockwork vein zones and also exists as radial sprays and needle-like replacements of spherulites in vitrophyre at the base of Tqp where it caps the deposit in the Mine Ridge area. It occurs distal to, and along the margins of silicified and mineralized quartz-vein material in the upper 30-90 m (100 - 300 feet) of core holes 95 EKC MET-5 and 08 OKC-191 near the intersection of the Northwest Fault zone and Mine Ridge fault. Replacement of feldspars and matrix material in Tlt is also a common mode of occurrence. The species generally forms blue-green radiating bundles, spots, and clots of acicular crystals with an average grain size of less than 1 mm. An analog for the occurrence of dumortierite at Kilgore is in the gold-dominant areas of epithermal precious metal deposits of the Rochester District, Nevada (Knopf, 1924).

Other alteration minerals reported by Otis include illite, "sericite", kaolinite, chalcedony, opal, amethyst, barite, calcite, a Mn-Fe carbonate mineral, "limonite", goethite, and hematite. Sericite is a generic term for fine-grained white mica or ordered clay mineral. Limonite is a catch-all term for tan or rusty-colored oxidation mineral(s) rather than a formal mineral name. Jarosite, a yellowish primary or secondary iron-aluminum sulfate, has also been observed.

Kilgore shows typical alteration zoning from proximal quartz-adularia through argillic to distal propylitic. Major alteration types commonly found in the Mine Ridge area include quartz-adularia, silicification, argillic, propylitic, and tourmalinization (in part dumortierite, see above).

Quartz-adularia is a dominant alteration type in parts of the Kilgore deposit where it is present as flooding, a component of quartz veinlets, and in breccias, as well as local fracture coatings. Recent petrologic work outlined in section 13.2 of this report shows that quartz-adularia alteration is associated directly with gold

mineralization. Quartz, adularia, epidote and chlorite have replaced the matrix of the arkosic sandstone. Less altered sandstones observed on the property have a carbonate cement composed dominantly of calcite and it would appear that alteration has replaced it with quartz-adularia. It is possible that the calcite is a form of advanced propylitic alteration that preceded the quartz-adularia alteration by filling the primary pore spaces in the arkosic sands; calcite veining is commonly observed in drill core associated with chlorite and calc-silicate minerals away from zones of intense quartz-adularia alteration.

Argillic alteration includes bleaching of host rocks in the Mine Ridge area, with the development of illite, sericite, and kaolinite (Larabee, 2012). Feldspars and groundmass in tuff and dike host rocks are commonly partially to completely replaced, with feldspar crystals revealing crystal casts and ghost crystal outlines where nearly totally replaced. In general, the extent of argillic alteration ranges from pervasive to structurally controlled replacement depending on the host rock.

Propylitic alteration is mostly evident deeper in Otis core holes, particularly in the sediments, as calcite, chlorite, epidote and pyrite. These minerals mostly occur on fractures and as disseminations, particularly throughout parts of Tad, in gold-bearing hornblende andesite bodies, and in altered Aspen Formation siltstones and sandstones, imparting a light to dark green color to them. Detailed logging of Otis core holes by staff geologists reveals that groundmass and mafic phenocrysts in late-stage, gold-bearing mafic dikes are also commonly chloritized, particularly where they cut the Aspen Formation and, as such, are barely distinguishable from the latter.

The geochemical signature of Kilgore is consistent with an epithermal chemical signature, one high in gold, arsenic, antimony, mercury and selenium. Arsenic exhibits the strongest correlation to the deposit where it is clear that there is a significant arsenic anomaly on top of, and down-slope from the deposit, as well as along major northeast trending faults.

8.0 DEPOSIT TYPES

The Kilgore deposit is a zoned, low sulfidation (LS) epithermal hot spring precious metals (Au, Ag) deposit associated with caldera-related volcanic activity. These deposits are commonly bulk-tonnage, low-grade, and amenable to open-pit mining. Numerous scientific articles have been written and published on this deposit type concerning its origins, physical, chemical, and geological settings, recognition criteria, majorand trace-element geochemistry, zoning, alteration types, ore mineralogy, ore grades and distribution of ore, and mining characteristics. Models are described in papers by Buchanan (1981), Silberman (1982), and Berger (1985), among others, and the reader is referred to these for more information on the subject.

Epithermal hot spring-type precious metal (Au, Ag) deposits form at low to moderate temperatures in the near-surface environment. They generally form at depths of less than 1.5 km and temperatures of less than 300° C in subaerial environments within volcanic arcs at convergent plate margins, intra- and back-arc settings, and in post-depositional settings (Robert et al., 2007). Epithermal deposits are found in all rock types, but historically, some of the largest occur as disseminated bulk-tonnage and/or stockwork-type vein deposits in volcanic rocks (e.g., Round Mountain, Nevada; McDonald Meadows, Montana). Nearby deposits of this type are the Grassy Mountain deposit, Oregon and the deposits at Sunbeam, Idaho (Grouse Creek and Sunbeam). Active geothermal areas such as Steamboat Springs, Nevada, Broadlands, New Zealand (White, 1974), and Norris Geyser Basin in Yellowstone Park, Wyoming, are modern-day analogs of epithermal hot spring-type precious metal deposits that are currently forming.

Kilgore presents district features common to many epithermal hot spring deposits such as:

- Relationship to caldera activity and structures (Rytuba, 1994);
- Extensional structural environments characterized by high-angle normal faulting and/or dilational zones proximal to strike-slip fault structures; and
- Proximity and temporal association with shallow rhyolitic intrusions and effusive volcanic centers.

Figure 8-1 presents a schematic representation of the structural and volcanic features related to the deposition of epithermal precious metals deposits in a caldera-related environment (Figure 8-1).



Figure 8-1 Structural and Volcanic Features Related to Deposition of Epithermal Precious Metal Deposits in a Caldera-Related Environment (Rytuba, 1984)

Epithermal deposits can be classified into high-sulfidation and low-sulfidation (LS) types based on variations in their hypogene sulfide assemblages (Sillitoe and Hedenquist, 2003). Kilgore is an example of the latter, or LS-type. Fluids responsible for formation of LS-type deposits are similar to waters tapped by drilling beneath hot springs into geothermal systems, waters that are reduced and neutral-pH.

Kilgore displays alteration typical of the variants in LS systems, including characteristic lateral and vertical zoning. Laterally, alteration grades from proximal quartz-adularia through argillic to distal propylitic assemblages. Vertically, quartz and adularia occur in a central zone capped by silica and clay alteration and grading to propylitic alteration at depth.

At the deposit scale, LS gold deposits can be hosted in volcanic, lacustrine, or epiclastic units, but can also be hosted by volcanic or sedimentary rocks, as at Kilgore. Both low-grade disseminated and structurally controlled high-grade deposits can form, the Mine Ridge fault zone (MRF) being an example of the latter. Syn-mineral mafic dikes are also common in these deposits (Sillitoe and Hedenquist, 2003) and they occur at Kilgore where they host high-grade mineralization.

Mineralization at Kilgore comprises an epithermal assemblage of small quantities of pyrite, electrum, silver, mercury, and base metal sulfides, sulfosalts, and selenides. Otis considers the recognition criteria for epithermal volcanic-hosted LS model (Table 8-1) essential to its exploration of the Kilgore deposit.

Table 8-1 Compar	ison of LS-Type Deposit	Model and Kilgore Dep	oosit Recognition Criteria
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Recognition Criteria	LS-Type Deposit Model	Kilgore Deposit		
Туре	Recognition Criteria	Recognition Criteria		
Deposit Form/Styles Of Mineralization	disseminated and structurally controlled mineralization, open-space veins (high grade) and stockwork mineralization common	disseminated and structurally controlled mineralization, late open-space quartz veins (some with high grade Au) and high-angle fractures, quartz stockwork veining in Mine Ridge core area		
Textures	veins, cavity fillings (bands, colloforms, druses), breccias	disseminations, veins and shear zones (on edges of high-angle dikes), hydrothermal breccias, minor banded quartz veins, silica replacement and fracture filling, stockworking, fine-grained quartz-adularia flooding and replacement, quartz microveining		
Ore Mineralogy	pyrite, electrum, gold, sphalerite, galena, arsenopyrite	pyrite, electrum, native gold (some visible), galena, arsenopyrite, sphalerite, stibnite, cinnabar, naumannite, aguilarite, argentite- acanthite, chalcopyrite		
Gangue Mineralogy quartz, adularia, chalcedony, calcite, illite, carbonates		quartz, adularia, illite, sericite, kaolinite, chalcedony, opal, calcite, chlorite, pyrite, tourmaline (dumortierite), iron oxides and hydroxides (limonite, goethite, hematite), amethyst, barite, carbonates (manganosiderite?)		
Geochemical Suite	Au, Ag, Zn, Pb, Cu, Sb, As, Hg, Se	Au, Ag, Zn, Pb, As, Sb, B, Hg, Cu, Se		
Alteration quartz-adularia through argillic to distal propylitic		quartz-adularia through argillic to distal propylitic, silicification, tourmalinization, pyritization, chloritization		
Host rocks	volcanic and basement sedimentary rocks	volcanic and basement sedimentary rocks		
Mafic Dikes	commonly present	present and often associated with high-grade (+10 g/T) gold values		

Table 8-1 is not comprehensive of all characteristics of LS-type epithermal deposits but presents eight criteria that compare well to the Kilgore setting and effectively demonstrate the correlation of lithologies, structure, mineral paragenesis, and mineralization styles at Kilgore with those of other known deposits of this class.

The Kilgore deposit lies along a major northwest-trending regional structure, the Northwest Fault Zone. This zone lies just inside of, and tangential to, the arcuate northeast part of the Kilgore Caldera margin and structural ring fracture zone. While the Kilgore deposit is located along the inferred margin of the Kilgore Caldera, the age of mineralization (~5.3 Ma; Benson, 1982) pre-dates the age of some of the volcanic deposits attributed to the caldera itself (i.e. the Kilgore tuff, ~4.45 Ma; Morgan and McIntosh, 2005; Watts et. al, 2011). Otis' present conceptual model associates gold mineralization with late-stage, northwest-trending, high-angle rhyolite dikes and andesitic intrusive bodies that are associated with the Kilgore caldera. While Benson's (1982) reported age of mineralization complicates this setting, it is believed that the current conceptual model is reasonable based on the data and information presently available, but that further investigation is warranted in order to better define the temporal relationship between the age of mineralization and controlling local and/or regional structures, and that the conceptual model should be tested and refined accordingly.

9.0 EXPLORATION

9.1 Historic Exploration

With the exception of exploration carried out by EBX in the mid to late 1990's, very little detail is available regarding exploration activity (other than drilling) conducted by previous operators of the Kilgore Project. From 1994 through 1997, EBX conducted soil sampling, regional geologic mapping, an airborne magnetic and helicopter EM (HEM) survey, and false color satellite imaging.

In 1996, EBX collected 1,857 soil samples over the Kilgore property. The data was compiled, but a rigorous interpretation was never made. The samples demonstrate anomalies in gold, arsenic (Figure 9-1), antimony, mercury and selenium over the deposit. Arsenic exhibits the strongest correlation to the deposit where it is clear that there is a significant arsenic anomaly on top of, and down-slope from the deposit. The EBX data also showed that strongly anomalous arsenic occurs on the forested slope lying 1 km to the northwest of the Kilgore deposit. This target is identified by Otis as its Gold Ridge target.

Figure 9-1 Bubble Map Showing Arsenic in Soil Anomalies in the Gold Ridge Area, EBX, 1996 (Source: Otis Gold)



In 1996, EBX contracted Aerodat of Toronto, Canada, to complete a 180 sq km helicopter-borne electromagnetic, magnetic, radiometric, and Very Low Frequency-Electromagnetic (VLF-EM) survey.

- A large resistivity high covers the property, with the Kilgore deposit located on the northeast flank of the high;
- A circular resistivity high exists 4.8 km west of the Kilgore resource and is surrounded by a ringshaped magnetic feature;
- The Kilgore deposit and core claims lie on the northeast flank of a large, round magnetic anomaly thought to be a caldera margin that is at least 14 km in diameter;
- A large ring-shaped magnetic feature to the north of the claim block may be the edge of another caldera;
- A linear northeast-trending magnetic low at least 4.8 km in length extends through the property in the area of Dog Bone Ridge; and
- An east-west magnetic low parallels the southern margin of the Kilgore resistivity high.

The relationship of the magnetic features to the Kilgore deposit is shown in Figure 9-2.



Figure 9-2 Airborne Magnetics Flown by Aerodat for EBX in 1996 (Interpretation and Annotation are by Otis Gold)

9.2 Otis Exploration

Outside of drilling, exploration activities carried out by Otis to date include geophysical survey and regional surface sampling of rock, soils, and stream sediments.

9.2.1 Geophysical Exploration

9.2.1.1 2009 CSAMT Survey

In October 2009, Otis commissioned Zonge Geoscience, of Reno, Nevada, to perform a Controlled Source Audio Magneto-Telluric (CSAMT) survey in the Dog Bone Ridge target area (Figure 9-3). Six lines were oriented N45E for a total of 8.5 line-km of data coverage. The objective of the survey was to delineate near-surface alteration as well as underlying structures and potential feeder zones.



Figure 9-3 Dog Bone Ridge CSMAT Survey (Cameron, 2012)

The survey was conducted using a 50-m (165-ft) electric-field receiver dipole in spreads consisting of four electric-field dipoles with a magnetic field antenna located in the center of the spread. The magnetic antenna was oriented perpendicular to the survey line. Measurements were made at frequencies ranging from 1 Hz to 8192 Hz in binary steps. Each current electrode consisted of three pits lined with aluminum foil and soaked with salt water. The electrodes were connected to the transmitter with lengths of insulated 14-gauge wire, separated by approximately two meters.

The survey tested for low-to-moderately resistive bodies containing higher resistivity core associated with structures that may have acted as conduits for gold mineralization. Resistivity of a rock is generally controlled by rock porosity. Dense compact rocks, such as those affected by silicification, tend to be highly resistive. Structural zones often produce relatively low resistivity due to increased porosity resulting from broken rock. Mixtures of rock and alteration types produce resistivity results that are difficult to interpret.

Figure 9-3 presents all six (6) inverted resistivity sections overlain by a structural interpretation. Clearly evident on all sections is a surface layer with predominantly high resistivity overlying variable, but predominantly less resistive material. A notable exception is Line B that exhibits a uniform high resistivity

layer for most of its length. This high surface resistivity is interpreted as representing the sinter cap and explosion breccia – rock unit Tup. The dotted lines separate the two resistivity domains and the dashed lines identify interpreted structures. For reference, the geochemical signature of the EBX soil anomaly is shown in yellow, with the Kilgore deposit to the northeast shown in salmon color.

EBX Hole EKC-178, collared on Dog Bone Ridge, drilled into the core of the low resistivity anomaly of line D and encountered 99 m @ 0.418 g/T Au. Wright (2009) discusses this intercept and recommends testing other anomalies. Kilgore Gold intercepted 51.8 m @ 1.25 g/T Au in hole KG-04-4 that was nearly coincident with the low resistivity anomaly detected at the end of Line C.

Based on the results of the 2009 CSAMT survey, Otis selected five targets on Dog Bone Ridge and drilled four of them (Table 9-1) in 2010 with mixed results.

Hole ID	Site	Azimuth (N=0)	Angle (deg)	TD (m)	Target Tested	CSAMT Line	Anomaly Type
10 OKC-240	4	45	-62	798	E4	Line E	Hi Resistivity
10 OKC-241	3	45	-63	737	E3	Line E	Hi Resistivity
10 OKC-242	1	350	-65	599	C1	Line C	Low Resistivity
10 OKC-243	1	45	-45	838	C1	Line C	Low Resistivity
10 OKC-244	2	255	-80	559	C2	Line C	Hi Resistivity

Table 9-1 Hole Drilled into Anomalies on Dog Bone Ridge (Cameron, 2012)

OKC-240 drilled into high resistivity anomaly E4. From surface to 104 m, the hole encountered barren siliceous sinter and explosion breccia that contained no detectable gold. From 104 m to 243 m, the hole cut a felsic dike that contained slightly anomalous gold. Drill hole OKC-242, drilled into Anomaly E3, encountered mostly siliceous sinter, but very little detectable gold. The most interesting hole was OKC-243 collared near Kilgore Gold's hole KG-04-4. This hole encountered a 30-m thick hydrothermally altered and brecciated felsic dike with gold grades up to 0.731 g/T Au.

9.2.1.2 2016 Ground Magnetic Survey

In November 2016, Otis contracted Justin Modroo, P.G., to conduct a ground based geophysical magnetic survey in the vicinity of the primary Kilgore resource area (Modroo, 2017). The survey was designed to test magnetic signatures surrounding the known deposit in order to better define local structural characteristics and potentially identify future drilling exploration targets.

The ground magnetic survey successfully recorded data over approximately 33 line-kilometers (Figure 9-4) using Geometrics G-859 (rover) and G-856ax (base station) magnetometers. Line directions were collected along 50° and 230° azimuth and were spaced 90 m apart. Base station data were recorded every 30 seconds, while rover data were recorded every second. The survey successfully mapped local and regional scale magnetic anomalies, providing greater insight into the structural components of the primary Kilgore deposit and surrounding area. The survey identified several significant magnetic features that may be

directly related to known faulting and other structural features which contribute to or control the distribution of mineralization.



Figure 9-4 2016 Ground Magnetometer Survey Lines (Modroo, 2017)

Based on the results of the 2016 ground magnetic survey, Modroo (2017) suggests that the Kilgore resource and region was preferentially structurally prepared prior to magmatic and meteoric epithermal gold and silver mineralization. The hydrothermal fluids utilized zones of weakness and dilation due to the conjugate fault system (300° and 10°) and extensional and relaxation faulting (335° and 60°). These structural features are interpreted in the magnetic data and include the dextral and dip-slip NW fault, the sinistral Bear Cat, Cabin, and Mine Ridge faults, and a number of subordinate faults with similar regional trends (Figure 9-5). The structural features and boundaries create a network of structural compartments, some of which could be favorable hosts for hydrothermal gold mineralization. The Kilgore resource area is interpreted to be located within one such mineralized compartment, bounded to the southwest by the NW fault, to the southeast by the Cabin fault, and to the northwest by an un-named fault that strikes 60°.


Figure 9-5 2016 Ground Magnetometer Survey RTP Structural Interpretation (Modroo, 2017)

9.2.1.3 2017 Ground Magnetic Survey

Encouraging results from the 2016 ground magnetic survey prompted Otis to contracted Justin Modroo, P.G., to conduct a second, expanded ground based magnetic survey in 2017 (Modroo, 2018). The 2017 ground magnetometer work consisted of two discrete survey grids, one in the immediate vicinity of the Kilgore resource area for a total of 474 line-kilometres, and a second, 40 line-kilometer grid in the Gold Knob area roughly 10 km west of the Kilgore deposit. The 2017 ground magnetic survey boundaries are shown in blue on Figure 9-6.





In the Kilgore resource area, survey line directions were collected along 50° and 230° azimuth and were spaced 91 m apart, following the 2016 design. The Gold Knob survey was designed to obtain general geologic and structural information based on a limited amount of existing data in the area. Line directions were collected along 0° and 180° azimuth and were spaced 100 m apart (except in the GK 32 discovery area where two extra lines were acquired 33 m apart). All 2017 location data was recorded in the NAD 83, Zone 12, North UTM grid system. Base station data were recorded every 60 seconds, while rover data were recorded every second (1 Hz).

Figure 9-7 shows the reduced-to-pole total magnetic intensity for the main Kilgore grid (Modroo, 2018) with interpretation and annotation overlaid by Otis.



Figure 9-7 2017 Kilgore Ground Magnetic Survey RTP (Otis, 2018)

The 2016 and 2017 surveys together provide a total of 548 line-kilometers of ground magnetic data within the Kilgore Project area. Results and interpretations of the combined survey efforts are summarized by Modroo (2018), as follows:

• The magnetic data illustrates the structural regime (confirming Caddey's (2003) work/interpretation) important for locating fault intersections and resultant dilation zones hosting mineralization, but also to track post mineral fault movements and help decipher the local structures within the Kilgore deposit.

- The magnetic data shows a conjugate faulting system, that created a network of pathways for fluid movement along blocks / compartments of the shattered crust and brittle volcanic geology. It will be important to test mineralization extent within the local structural setting to help determine favorable geologic/meteoric conditions for gold mineralization.
- The data has clearly defined an 8 square kilometer "volcanic pile/terrace" that is highly prospective for gold exploration associated with the Crystal Tuff (Tad) and areas in contact with reactive and permeable country rocks, like the Aspen (Ka) and Biotite Rhyolite (Tbr). The "toe" of this volcanic terrace hosts the current Kilgore deposit and it also includes other positive historical drilling results and anomalous gold surface sampling results.
- The magnetic data is also a valuable tool for mapping alteration, with many obvious localized alteration lows throughout the data, highlighting the regional extent of this hydro-thermal system. Closely monitoring the alteration and gold bearing mineral assemblage will help guide local exploration around new and existing gold occurrences.
- The data shows multiple geologic events that occurred post mineralization and have essentially covered up the most prospective geology. Sporadic surface geochemical sampling results obtained over these younger features show no elevated mineralization.
- Utilizing all available exploration data, over 20 excellent drill targets have been identified with an additional 40+ locations selected to follow up on initial success. These exploration targets cover a prospective 6 square kilometer area surrounding the Kilgore deposit.

9.2.2 Soil Sampling

To date, approximately 7,420 soil samples have been collected throughout the Kilgore Project area. Of that total, 2,781 were collected on behalf of Otis beginning in 2011 (Figure 9-8 and

Figure 9-9).



Figure 9-8 Kilgore Soil Sampling by Year (Otis, 2018)



Figure 9-9 Kilgore Soil Sampling Results (Otis, 2018)

In October 2011, Otis Gold contacted North American Exploration (NAE) and commissioned two soil surveys at Kilgore. The surveys were conducted along the trace of the Northwest Fault to determine if this structural feature could be traced further northwest or southeast of the existing road system. If anomalies could be detected, then road construction would be warranted to test them. The "C" soil horizon was sampled just above bedrock. Samples were collected with a sharp-shooter type shovel. Any large roots and/or other organic matter and small stones over the size of about 1.5 cm were removed on the shovel blade and the soil was placed into clean 6 x 20 cm (2.5" x 8") cloth bags.

After each soil sample was collected, the corresponding waypoint number was written on the sample bag and a GPS coordinate was collected using the NAD 83 Continental Datum. At each sample location a 2.5 x 7.5 cm (1" x 3") aluminum tag with a waypoint number was scribed on it and attached to vegetation along with a ribbon of pink flagging so that the site could be relocated. NAE collected 266 samples from the North Soil Grid at 30 m x 30 m spacing and 415 samples from the South Soil Grid at 30 m x 60 m spacing. The samples were put in rice bags by NAE and transported directly to ALS's "clean lab" in Winnemucca, Nevada, where they were prepped and shipped to Reno, Nevada for analysis by ALS Labs.

After results were received from the North Soil grid, the data were contoured using Golden Software's SURFER, with results plotted on an orthophoto map. The data display a strong and significant linear gold-in-soil anomaly that closely aligns to the extension of the Northwest Fault (the apparent structural conduit to the system) controlling the overall northwest trend of the deposit (Figure 9-10).

Figure 9-10 Gold-in-Soil Anomalies Associated with the North and South Soil Grids, 2011 (Cameron, 2012)



The anomaly opens the possibility of a 400 m extension of the Kilgore deposit to the northwest beyond where +100-m thick intercepts of 0.89 g/T Au were discovered in holes 11 OKC-258 and 259. The gold anomaly is supported by trace-element geochemistry characteristic of a typical epithermal gold system. The North area anomaly fills a portion of the gap between the Gold Ridge target further to the northwest and the Kilgore deposit to the southeast.

The South Soil Grid (Figure 9-10) displays a very strong and coherent gold-in-soil anomaly that covers approximately 15,000 sq m in the Prospect Ridge target area. This anomaly overlies a section of the lithic tuff that is identical to rock that hosts the majority of the Kilgore deposit.

Sample collection on the Kilgore Project from 2012 to 2016 was limited to localized prospecting north of the Kilgore resource area. That work produced 20+ rock and soil samples, most of which returned anomalous Au values, including up to 0.5 ppm from a single grab sample.

The anomalous Au samples north of the primary deposit prompted collection of 213 soils samples in 2016. The soil samples were collected from the "B" or "C" horizon using a shovel and occasionally a hand auger in areas of thick organic overburden. Soil samples were collected opportunistically and in general with a north south line direction with spacing up to 100 meters. Soils samples were collected approximately 25 meters apart along the selected line path. All geochemical samples (rocks, silts, and soils) were submitted to ALS Minerals in Reno Nevada and treated by Aqua Regia digestion and analyzed by Fire Assay with

either ICP-MS or AAS finish. The soil sample results revealed a growing and open-ended Au anomaly north of the deposit and other anomalous soil geochemistry along defined structures providing good correlation between data sets.

Sampling in 2017 produced 2,125 soil samples, 268 stream/silt samples, and 151 rock/grab samples (Figure 9-11). Acquisition protocol and personnel were the same as the 2016 exploration program. The 2017 soil geochemistry work was designed to follow-up open-ended geochemical anomalies, to better define drill targets, and to generate new exploration targets outside of the primary Kilgore resource area. The soil sample results reveal a 1,000-m by 500-m area of anomalous gold northeast of the Kilgore deposit (Figure 9-12), highlighting the mineralizing potential of subordinate structures (e.g. Gold Ridge, Northwest, Snotel, and the Vortex faults) and conjugate structures (e.g. McGarry, 28, Cabin, Mine Ridge, Dog Bone, and Bear Cat faults) and their corresponding intersections and resultant dilation zones.



Figure 9-11 Regional Soil and Rock Sampling, 2017





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10.0 DRILLING

A total of 381 drill holes (152 RC and 229 core) have been drilled in the Kilgore Project to date. Drill hole locations are identified according to year drilled on Figure 10-1, and Table 10-1 summarizes the individual drilling campaigns, broken out by operator.



Figure 10-1 Kilgore Exploration Drill hole Locations

Operator	Year(s)	No. of Drill holes	Drill hole Type	Approx. Meters Drilled
Bear Creek	1983-1985	7	RC	2499
Placer Dome LLS	1000 1002	34	RC	5244
Placer Donne 0.5.	1990-1992	5	Core	1169
Pegasus	1993-1994	23	RC	3024
Esha Davi	1994-1996	37	RC	10288
ECHO Day		67	Core	14979
Latitude	1998	6	RC	1241
Kilgore Gold	2002-2004	14	Core	3319
0	0000 0047	45	RC	8484
Otis	2008-2017	143	Core	43187
TOTALS	S	381		93434

Table 10-1 Kilgore Project Drilling Summar	Table 10-1	Kilgore	Project	Drilling	Summar
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10.1 Otis Drilling Exploration 2012 through 2017

Drilling exploration carried out at the Kilgore Project prior to 2012 is described in detail in the 2012 NI 43-101 Technical Report prepared by Cameron (2012). This report documents drilling carried out by Otis from 2012 through 2017.

10.1.1 Type and Extent

Drilling exploration carried out by Otis from 2012 through 2017 consists of 45 RC holes and 45 diamond core holes (one of which was drilled for metallurgical testing) for a total of 22,536 meters drilled. Drill hole locations are shown on Figure 10-2, and drill hole details for each of the 2012, 2015, 2016, and 2017 drill campaigns are summarized in Table 10-2 through Table 10-5, respectively.





Hole ID	Туре	Depth	Collar L (NAD83,	Collar Location (NAD83, UTM Z12) Elevat		Azimuth	Dip
		(11)	East	North	(11)		
120KR-290	RC	166	420454.39	4920597.1	2275.8	0	-90
120KR-291	RC	186	420454.39	4920597.1	2275.8	230	-70
120KR-292	RC	137	420455.39	4920598.1	2275.8	230	-50
120KR-293	RC	200	420478.89	4920579.9	2277.0	0	-90
120KR-294	RC	152	420478.89	4920579.9	2277.0	230	-70
120KR-295	RC	168	420425.8	4920606.9	2275.9	230	-70

Table 10-2 2012 Otis Drilling Exploration – Drill Hole Summary Table

Table 10-3 2015 Otis Drilling Exploration – Drill Hole Summary Table

Hole ID	Depth		Collar I (NAD83,	Location UTM Z12)	Elevation	Azimuth	Dip
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(m)	East	North	(m)		- 1
150KR-296	RC	198	420419.14	4920607.66	2278.4	144	-70
150KR-297	RC	183	420514.36	4920556.75	2276.9	50	-60
150KR-298	RC	107	420485.84	4920699.84	2231.1	246	-55
150KR-299	RC	128	420485.55	4920687.07	2232.1	0	-90
150KR-300	RC	165	420585.41	4920600.92	2234.7	355	-60
150KR-301	RC	91	420601.39	4920577.43	2233.5	0	-90
150KR-302	RC	236	420473.75	4920435.93	2313.1	50	-75
150KR-303	RC	182	420473.75	4920435.93	2313.1	0	-90
150KR-304	RC	223	420443.36	4920484.88	2312.6	0	-90
150KR-305	RC	192	420393.94	4920515.65	2312.6	0	-90
150KR-306	RC	162	420334.46	4920528.28	2311.6	0	-90
150KR-307	RC	244	420473.75	4920435.93	2313.1	230	-75
150KR-308	RC	235	420457.13	4920466.47	2312.5	0	-90
150KR-309	RC	213	420394.94	4920516.67	2312.7	50	-65
150KR-310	RC	219	420420.03	4920500.1	2313.2	0	-90
150KR-311	RC	107	420312.55	4920696.07	2234.2	311	-60
150KR-312	RC	152	420315.54	4920695.07	2234.2	217	-65
150KR-313	RC	122	420332.54	4920696.07	2234.2	180	-50
150KR-314	RC	107	420306.55	4920736.07	2209.8	320	-60

Hole ID	Type	Depth	Collar I (NAD83,	Location UTM Z12)	Elevation	Azimuth	Dip
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(m)	East	North	(m)		P
160KC-321	Core	393	420433.98	4920238.97	2335.9	50	-60
160KC-322	Core	307	420433.3	4920211.89	2334.8	50	-70
160KC-326	Core	332	420610.57	4920368.96	2260.3	0	-90
160KC-327	Core	307	420419.78	4920296.17	2339.7	50	-80
160KC-331	Core	305	420393.46	4920516.47	2312.5	0	-90
160KC-332	Core	335	420356.09	4920401.19	2348.6	50	-70
160KC-333	Core	322	420416.33	4920444.61	2328.0	230	-75
160KC-334	Core	261	420393.46	4920516.47	2312.5	50	-70
160KC-335	Core	328	420393.46	4920516.47	2312.5	50	-80
160KC-337	Core	173	420303.91	4920477.31	2330.3	50	-45
160KC-340	Core	306	420333.36	4920529.52	2311.7	50	-65
160KC-341	Core	143	420341.65	4920414.25	2348.3	0	-90
160KC-344	Core	299	420363.6	4920526.04	2311.6	50	-65
160KC-345	Core	300	420414.01	4920499.48	2313.3	50	-70
160KC-349	Core	322	420441.2	4920485.98	2312.5	50	-80
160KC-350	Core	332	420416.84	4920499.85	2313.1	50	-80
16OKC-351	Core	372	420438.83	4920482	2312.6	230	-75
160KC-352	Core	305	420457.12	4920465.63	2312.5	50	-80
160KC-353	Core	305	420457.12	4920465.63	2312.5	0	-90
160KC-354	Core	335	420490.37	4920381.64	2315.4	50	-80
160KR-315	RC	198	420610.74	4920367.88	2260.0	0	-90
160KR-316	RC	183	420614.64	4920363.81	2259.5	50	-77
160KR-317	RC	183	420624.04	4920324.09	2257.5	50	-75
160KR-318	RC	229	420593.13	4920397.11	2261.7	230	-80
160KR-319	RC	259	420471.53	4920441.56	2312.8	0	-90
160KR-320	RC	283	420416.35	4920500.38	2313.3	0	-90
160KR-323	RC	174	420644.99	4920434.52	2233.8	0	-90
160KR-324	RC	183	420676.7	4920355.12	2227.9	0	-90
160KR-325	RC	219	420683.13	4920334.62	2224.2	0	-90
160KR-328	RC	213	420483.33	4920163.53	2308.3	230	-73
160KR-329	RC	213	420487.13	4920187.26	2307.9	230	-55
160KR-330	RC	226	420498.6	4920262.05	2308.8	230	-60
160KR-336	RC	198	420305.54	4920602.02	2279.6	50	-75
160KR-338	RC	198	420393.87	4920612.52	2275.9	50	-70
160KR-339	RC	198	420425.92	4920607.47	2275.8	50	-75
160KR-342	RC	213	420504.49	4920561.37	2277.0	0	-90
160KR-343	RC	198	420303.7	4920600.92	2279.6	230	-75
160KR-346	RC	244	420644.57	4920440.69	2234.1	230	-72
160KR-347	RC	223	420653.79	4920414.92	2232.6	230	-61
160KR-348	RC	174	420687.41	4920324.25	2222.0	230	-75

Table 10-4 2016 Otis Drilling Exploration – Drill Hole Summary Table

Hole ID	Type	Depth	Collar I (NAD83,	Location UTM Z12)	Elevation	Azimuth	Dip
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(m)	East	North	(m)		- 1
170KC-355	Core	222	420654.57	4920415.86	2232.8	0	-90
170KC-356	Core	460	420442.5	4920485.9	2312.6	50	-86
170KC-357	Core	429	420690.42	4920324.63	2222.0	230	-75
170KC-358	Core	319	420442.38	4920486.01	2312.7	50	-72
170KC-359	Core	386	420690.63	4920324.79	2222.0	50	-75
170KC-360	Core	298	420460.12	4920463.84	2312.6	50	-70
170KC-361	Core	401	420676.93	4920356.74	2226.5	230	-75
170KC-362	Core	305	420476.29	4920435.51	2313.2	50	-80
170KC-363	Core	341	420678.08	4920357.48	2226.6	50	-75
170KC-364	Core	299	420476.07	4920435.44	2313.2	0	-90
170KC-365	Core	335	420670.38	4920386.79	2228.9	230	-65
170KC-366	Core	335	420535.9	4920422.91	2290.9	0	-90
170KC-367	Core	306	420670.99	4920387.36	2228.8	0	-90
170KC-368	Core	338	420582.68	4920425.74	2264.8	230	-65
170KC-369	Core	289	420654.64	4920415.67	2232.7	50	-75
170KC-370	Core	333	420583.14	4920426	2264.9	230	-80
170KC-371	Core	420	420698.68	4920283.76	2217.6	85	-71
170KC-372	Core	305	420588.72	4920407.8	2263.2	0	-90
170KC-373	Core	319	420704.53	4920237.02	2212.8	85	-71
170KC-374	Core	301	420588.25	4920407.42	2263.1	230	-75
170KC-375	Core (PQ-met)	186	420691.21	4920322.86	2222.0	230	-75
170KC-376	Core	277	420578.76	4920444.34	2266.5	230	-75
170KC-377	Core	283	420578.35	4920444.74	2266.9	0	-90
17OKC-378	Core	198	420611.81	4920368.31	2260.0	0	-90
17OKC-379	Core (PQ)	288	420442.96	4920485.3	2312.7	50	-86

Table 10-5 2017 Otis Drill	ng Exploration – Dril	I hole Summary Table
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10.1.2 Procedures

Core holes were drilled by Timberline Drilling of Coeur d' Alene, Idaho using (depending on campaign) a Longyear LF-90 on tracks, a Sandvick DE-140 on skids, and two Atlas Copco CS14 track-mounted core rigs, with support equipment consisting of a water truck and a 10,000-lb, all-wheel drive forklift (Figure 10-3). Timberline employed standard core drilling methods incorporating triple-tube core recovery, face-discharge bits, and mixed water and bentonite downhole muds. RC holes were drilled by Okeefe Drilling Company out of Butte, Montana, using a Foremost 650 Prospector drill rig outfitted with a circulating wet splitter and support equipment consisting of a water buggy and a skidder to carry the rods.



Figure 10-3 Typical Timberline Core Drilling Set Up

10.1.3 Interpretation and Relevant Results

Otis' 2012 drilling program consisted of 1,009 meters of drilling in 6 RC holes designed to offset and extend the >100-m thick, near surface intercepts encountered in 2011 in the North Target area located just north of the northwestern-most extent of the primary Kilgore resource area. All six of the 2012 holes encountered mineralization, with four holes returning significant bulk-tonnage thicknesses and grades (Table 10-6 2012 Significant Intercepts). The 2012 drill results served to better define and extend the North Target portion of the Kilgore resource area, which remains open to the northwest along the strike of the deposit.

Hole Number	From (metres)	To (metres)	Thickness (metres)	Grade (g/t Au)
12 OKR-290	13.7	15.2	1.5	1.03
	35.1	26.6	1.5	0.98
	61.0	74.7	13.7	0.311
	102.1	112.8	10.7	0.55
12 OKR-291	3.0	7.6	4.6	0.67
12 01(1-201	12.2	16.8	4.6	1.32
	45.7	128.0	82.3	0.95
includes	105.2	115.8	10.6	2.21
12 OKR-292	6.1	128.0	121.9	1.04
includes	38.1	83.8	45.7	1.52
	33.5	39.6	6.1	0.45
12 OKR-293	45.8	48.8	3.0	0.63
	76.2	89.9	13.7	0.30
	111.3	114.3	3.0	1.17
	164.6	166.1	1.5	1.48
12 OKR-294	15.2	29.0	13.8	1.09
12 01(1(-204	61.0	144.8	83.8	1.12
includes	96.0	126.5	30.5	2.10
12 OKR-295	3.0	13.7	10.7	0.42
.2 0111 200	38.1	73.2	35.1	0.77
	112.8	129.5	16.7	0.53

Table 10-6 2012 Significant Intercepts

Note: The gold grade calculation is a weighted mean with a 0.250 g/t top and bottom cutoff. The grade calculation includes internal waste and low-grade sections. Holes OKR-290 and OKR-293 are vertical; the remainder were drilled at a 230° azimuth to intercept the general strike of the deposit and structural features (i.e. Northwest Fault) at right angles so as to provide a close approximation to true thickness.

RC hole 12 OKR-292 was drilled as a twin to Otis core hole 11 OKC-258 that contains 114.3 m of 0.89 g/t Au from 6.1 m to 120.4 m. Assay results from both holes compare relatively well with one another in terms of overall average grade, thickness, depth, and continuity of mineralization.

In 2015, Otis drilled a total of 3,265 m in 19 RC holes. Drilling targeted two areas, the 'Crab Claw', a large and untested gap along the western boundary of the Kilgore resource area, and the North Target area immediately to the north (Figure 10-4).



Figure 10-4 2015 Drilling in the Crab Claw and North Target Areas (Otis, 2018)

Of the 10 holes drilled in the Crab Claw area, drill hole 15 OKR-296 was drilled along the North Road, and the remaining nine, holes 15 OKR-302 through 15 OKR-310, were drilled along the newly constructed B Road. The holes were designed to test a roughly 250-m long by 120-m wide, previously untested gap in the western part of the known resource area just northwest of the northeast-trending Mine Ridge Fault. All 10 holes intersected gold mineralization, and 6 holes encountered intercepts ranging from 50 to 100 m with associated gold grades of 0.6 to 4.2 g/t (Table 10-7). Six of the 10 holes drilled in the Crab Craw area terminated in mineralization. These 6 holes (identified by an asterisk in Table 10-7) include four vertical holes and two holes oriented N50°E, together spanning a lateral distance of approximately 250 m. Based on the drilling results, Otis interprets the Crab Claw as a western extension, largely open at depth, of the higher-grade core of the primary Kilgore resource area.

Hole Number	Site	TD (m)	Azimuth/Angle	From-To (m)	Intercept (metres)	Au Grade (g/t)	Ag Grade (g/t)
15 OKR-296	N-3	198	144/-70	16.8-117.3 161.5-173.7	100.5 12.2	0.60 g/t 0.63 g/t	N/D
15 OKR-302*	B-1	236	50/-75	135.6-231.6	100.0	0.57 g/t	N/D
15 OKR-303*	B-1	182 .3	-90	61.0-85.3 166.1-182.3	24.3 16.2	1.30 g/t 0.76 g/t	N/D
15 OKR-304*	B-3	222 .5	-90	21.3-41.1 166.1-222.5	19.8 56.4	1.22 g/t 2.05 g/t	N/D
15 OKR-305	B-5	192	-90	128.0-187.5	59.5	3.79 g/t	N/D
15 OKR-306	B-7	161 .5	-90	16.8-47.2	30.6	Anomalous (0.22 g/t)	N/D
15 OKR-307	B-1	244	230/-75	89.9-112.8 167.6-195.1	22.9 27.5	0.84 g/t 0.83 g/t	N/D
15 OKR-308*	B-2	234 .7	-90	53.3-57.9 184.4-234.7	4.6 50.3	1.03 g/t 4.24 g/t	2.3 g/t 6.8 g/t
15 OKR-309*	B-5	213 .4	50/-65	32.0-83.8 118.9-213.4	51.8 94.5	0.64 g/t 4.21 g/t	0.64 g/t 29.6 g/t
15 OKR-310*	B-4	219 .5	-90	86.9-103.6 195.1-219.5	16.8 24.4	0.60 g/t 0.94 g/t	N/D

Table 10-7 2015 Significant Intercepts, Crab Claw Target Area

All 9 holes drilled in the North Target area were intended to test gold-in-soil anomalies generated during a 2013 soil survey. Two of the 9 holes encountered low grade anomalous gold over intercepts of roughly 50 m (Table 10-8). The mixed results from the North Target area drilling indicate at least some potential northern expansion of the known resource area, which Otis followed up on in 2016.

Hole Number	Site	TD (m)	Azimuth/Angle	From-To (m)	Intercept (metres)	Au Grade (g/t)	
15 OKR-297	N-1	183	50/-60	19.8-70.1	50.3	Anomalous (0.2 g/t)	
15 OKR-298	C-3	107	246/-55	No Significant Intercepts			
15 OKR-299	C-3	128	-90	No Significant Intercepts			
15 OKR-300	C-2	165	355/-60	No Significant Intercepts			
15 OKR-301	C-1	91	-90	No Significant	Intercepts		
15 OKR-311	C-5	107	31160	No Significant	Intercepts		
15 OKR-312	C-5	153	217/-65	No Significant	Intercepts		
15 OKR-313	C-4	122	180/-50	70.1-120.4	50.3	Anomalous (0.16 g/t)	
15 OKR-314	D-1	107	320/-60	No Significant Intercepts			

In 2016, Otis completed a 40-hole, combined RC and core drilling program. The drilling program was designed based on an updated set of geologic cross sections and long sections incorporating all previous Kilgore drill results through 2015. The 2016 drill holes are located along the Main Road, Segment 1 Road, North Road and B Road (the location of the Crab Claw drilling completed in 2015). Drill hole locations were selected to target mineralization at depth in the Aspen Formation and to infill and define the limits of known mineralization, particularly in the southwestern portion of the deposit where historic drilling is sparse.

Twenty-five of the 40 holes drilled in 2016 encountered mineralization in the Aspen Formation, and an additional 11 holes encountered mineralization in Tertiary lithic tuff and dikes, the primary host of gold mineralization in the defined resource area. Significant intercepts from the 2016 drilling exploration are presented in Table 10-9. 4. True widths are estimated at between 80% and 100% of the drilled interval, based on their estimated dip, association with diking and the orientation of sedimentary bedding, and continuity of mineralization between drill holes.

Hole Number	Hole Type	TD (m)	Azimuth/ Angle	From - To (m)	Intercep t (m) ⁴	Au Grade (g/t)	Primary Host Rock Unit(s)
16 OKR-315	RC	126.5	-90°	96.0 - 126.5	30.5	5.37 ¹	Tertiary Sill and Aspen Formation
16 OKR-316	RC	182.9	50/-77	126.5-182.9	56.4	0.85	Bottomed in Aspen Formation
16 OKR-317	RC	182.9	50/-75	32.0-50.3 64.0-67.1	18.3 3.1	0.50 0.72	Felsic Dike Tertiary Sill

Table 10-9 2016 Significant Intercepts

Hole Number	Hole Type	TD (m)	Azimuth/ Angle	From - To (m)	Intercep t (m) ⁴	Au Grade (g/t)	Primary Host Rock Unit(s)			
				103.6-115.8	12.2	0.34	Tertiary Sill			
				120.4-181.4	61.0	1.032	Aspen Formation			
				53.3-57.9	4.6	0.51	Tertiary Sill			
Hole Number 16 OKR-318 16 OKR-319 16 OKR-319 16 OKR-320 16 OKC-321 16 OKC-322 16 OKR-323 16 OKR-323 16 OKR-324 16 OKR-325 16 OKR-326 16 OKC-327 16 OKC-327 16 OKR-328 16 OKR-329 16 OKR-330 16 OKR-331 16 OKR-331	RC	228.6	230/-80	80.8-86.9	6.1	0.46	Tertiary Sill			
				93.0-213.4	120.4	1.55 °	Sill and Aspen			
				57.9-88.4	30.5	0.35	Dike			
16 OKR-319	RC	259.0	-/-90	195.1-227.1	32.0	0.40	Sill and Aspen			
				233.2-259.1	25.9	0.51	Bottomed in Aspen			
16 OKB-320	RC	283 5	-90°	65.5 – 76.2	10.7	0.31	Lithic Tuff			
10 0 KR 320	ne	205.5	50	266.7 – 275.8	9.1	0.57	Aspen Formation			
				54.3-80.2	25.9	0.51	Lithic Tuff			
16 040 221	Coro	202.6	50/60	122.2-131.1	8.8	0.51	Tertiary Sill			
16 OKC-321 16 OKC-322 16 OKR-323	Core	392.6	507-60	144.5-148.7	4.3	0.51	Lithic Tuff			
			50/-60 122.2 144.9 162.4 79.2 100.4 165.9 207.3 207.3 -/-90 108.1 132.4 -90° 93.0 181.4 -90° 96.0 138.4 89.9 112	162.4-217.9	55.5	0.82	Lithic Tuff and Sill			
				79.2 – 86.9	7.6	0.54	Lithic Tuff			
10 0/0 222	C	214.0	50° / 70°	100.6 - 111.3	10.7	0.52	Lithic Tuff			
16 OKC-322	Core	314.9	50°/-70°	165.5 – 180.7	15.2	0.65	Lithic Tuff			
				207.3 - 219.5	12.2	0.92	Tertiary Sill			
				74.7-85.3	10.7	1.45				
16 OKR-323	RC	173.7	-/-90	108.2-121	13.7	0.53	All in Aspen Formation			
				132.6-140.2	7.6	0.96				
							Aspen Formation (Hole			
16 OKR-324	RC	182.9	-90°	93.0 – 158.5	65.5	0.69	ended in 4.00 g/t Au @			
10 0KN-524			50	181.4-182.9	1.5	4.00	182.9m)			
				96.0 - 117.3	21.3	1.27				
16 OKR-325	RC	219.5	-90°	138.7 – 185.9	47.2	0.81	All in Aspen Formation			
				89 9 - 105 2	15.2	0.68				
				1128 - 1250	12.2	0.51				
16 OKC-326	Core	331.6	-90°	12.0 125.0 129.5 - 146.3	16.8	0.53	All in Aspen Formation			
				120.0 - 198.1	38.1	0.81				
				57 0-172 2	11/1 2	1.00	Lithic Tuff			
16 040 227	Coro	207.2	50°/ 80°	195 0 211 9	26.9	1.00	Tortiany Sill			
10 0KC-327	COLE	307.2	507-80	257 6 277 4	10.0	1.09	Tertiary Sill			
				237.0-277.4	19.0	1.09				
16 OKR -328	RC	213.4	230°/-73°	96.0 – 109.7	13.7	0.80	Lithic Tuff			
				120.4 – 128.0	7.6	0.40				
16 OKR-320	RC	212 /	220°/-55°	103 6 - 149 4	15 7	0.67	Lithic Tuff			
10 0KR-323	RC .	215.4	230 /-33	103.0 - 149.4	45.7	0.07				
16 OKB-330	BC	225.6	230°/-50°	65 5 - 115 8	50.3	2.04	Lithic Tuff			
10 0 KN-550	NC .	225.0	2307-30	05.5 - 115.8	50.5	2.04				
16 OKC 221	Coro	201 0	/ 00°	123.4 - 139.6	16.2	0.69	Lithic Tuff			
10 0KC-331	COLE	304.ð	-7-90	164.6 – 169.2	4.6	0.92	Tertiary Sill			
				53.3 – 103.6	50.3	0.63	Lithic Tuff			
16 OKC-332	Core	335.5	50°/-70°	131.1 – 141.7	10.6	0.91	Lithic Tuff			
_			50,70	285.0 - 319.4	34.4	1.28	Aspen Formation			
					1	1	•			
16 OKR-336	RC	198.1	50°/-75°	No significant intercepts						

Hole Number	Hole Type	TD (m)	Azimuth/ Angle	From - To (m)	Intercep t (m) ⁴	Au Grade (g/t)	Primary Host Rock Unit(s)		
16 OKR-338	RC	198.1	50°/-70°	45.7 – 131.1 176 8 – 195 1	85.4 18 3	2.50 0.83	Tertiary Sill and Aspen Aspen Formation		
16 OKR-339	RC	182.9	50°/-75°	4.5 - 33.5 29.0 1. 96.0 - 114.3 18.3 0. 153.9 - 158.5 4.6 0.		1.17 0.75 0.95	Lithic Tuff Tertiary Sill Tertiary Sill		
16 OKC-340	Core	305.7	50°/-65°	No significant intercepts					
16 OKR-342	RC	213.4	-/-90°	67.1 – 76.2 9.1 0.69 Lithic Tuff 189.0 – 205.7 16.7 0.91 Aspen Formation					
16 OKR-343	RC	198.1	50°/-75°	No significant intercepts					
16 OKC-344	Core	298.7	50°/-65°	108.2 – 171.3 63.1 0.66 Tertiary Sill and As					
16 OKR-346	RC	243.8	230°/-61°	41.1 – 45.7 77.7 – 109.7 134.1 – 138.7 172.2 – 189.0	4.6 32.0 4.6 16.8	0.51 0.89 0.57 0.79	Tertiary Sill Aspen Formation Aspen Formation Aspen Formation		
16 OKR-347	RC	222.5	230°/-72°	120.4 – 170.7	120.4 – 170.7 50.3 0.97 Aspen For				
16 OKR-348	RC	174.7 ²	230°/-75°	80.8 – 97.5 105.2 – 174.3	16.7 69.1	0.43 2.07 ²	Tertiary Sill Aspen Formation		

Notes:

1. Includes 13.7 meters @ 8.71 g/t Au. This drill hole has been capped at 34.25 g/t Au (or 1.0 oz/t Au).

2. Includes 6.1 meters @ 2.26 g/t Au.

3. Includes 7.6 meters @ 8.86 g/t Au.

4. True widths are estimated at between 80% and 100% of the drilled interval, based on their estimated dip, association with diking and the orientation of sedimentary bedding, and continuity of mineralization between drill holes.

5. Hole OKR-348 was lost in Aspen Sandstone and ended in rock containing 5.63 g/t Au.

The 2016 drilling results indicate that gold mineralization in the Aspen Formation is more extensive than revealed by previous drill testing. Mineralization in the Aspen Formation appears to lie along a northwesterly-trending belt or corridor in the northern half of the resource area, much of which remains open for further drilling. Mineralization in the Aspen Formation is typically higher-grade and displays thicker mineralized intercepts than those comprising the current bulk of the resource hosted in the overlying volcanic rocks. Reported intercepts in the Aspen demonstrate that mineralization exists to depths of up to 300-meters below the surface of the deposit, and in places remains open at depth. The Tertiary intrusive sill (Tad), which directly overlies the Aspen Formation and locally intrudes the upper portion of it, is an important host of gold mineralization. Based on the results of the 2016 drilling exploration. Significant intercepts exist in both the Aspen Formation and the overlying Tad, and in many cases straddle the contact between them. Some of the intercepts drilled in 2016 in the Aspen Formation along the mineralized northwest-trending corridor contain coarse-grained visible gold.

In 2017, Otis completed 25 diamond core holes for a total of 7,974 m of drilling (Figure 10-5). The primary goal of the drilling program was to follow up on open-ended drilling at depth and laterally as infill of 2015 and 2016 drill intercepts in the primary resource area, and specifically at depth in the Aspen Formation.



Figure 10-5 2017 Drill hole Locations

In summary, the 2017 drilling results extended mineralization in the Aspen Formation 60 to 90 m deeper than was previously known, largely in the central part of the deposit southeast of the Mine Ridge Fault (Figure 10-6 through Figure 10-8). Average grades in this area are generally higher than the overall average grade of the Kilgore deposit reported by Cameron (2012), and mineralization appears to be fairly continuous between holes within sections and from section to adjacent section.



Figure 10-6 2017 Drilling Results, Section 12100N



Figure 10-7 2017 Drilling Results, Section 12000N



Figure 10-8 2017 Drilling Results, Section 11900N

Drilling results also bound known mineralization to the northeast (drill hole 17 OKC-363) and to the southeast (drill hole 17 OKC-369). Hole 17 OKC-373, drilled near the Cabin fault, encountered a highly altered and brecciated intercept of 24.4 m @ 4.33 g/t Au at the contact between the Tpr (rhyolite dome) and adjacent Aspen Formation (Figure 10-9). Based on this intercept, Otis considers the contact between the rhyolite dome and Aspen Formation in the Cabin Fault area and beyond to the southeast, which remains largely untested, a high priority exploration target for future exploration.



Figure 10-9 2017 Drilling Results, Drill hole 17 OKC-373

Significant intercepts from the 2017 drilling campaign are presented in Table 10-10. True widths are estimated at between 80% and 100% of the drilled interval, based on their estimated dip, association with diking and the orientation of sedimentary bedding, and continuity of mineralization between drill holes.

Table 10-10 2017	' Significant	Intercepts
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Hole ID	TD (m)	Azimuth/ Angle		From (m)	To (m)	Intercept (m)	Au (g/t)	Primary Host Rock Unit(s)
17 OKC-355		-/-90°		85.0	96.9	11.9	0.63	Aspen
	221.0			121.3	124.4	3.1	1.56	Aspen
	221.9			139.6	162.5	22.9	0.74	Aspen
				177.7	186.8	9.1	0.78	Aspen
	459.9	50°/-86°		10.7	32.0	21.3	0.44	Lithic Tuff
				155.4	285.0	129.4	1.66	Aspen
17 OKC 256			Including	157.0	181.4	24.4	3.45	Aspen
17 UKC-356			Including	204.2	208.8	4.6	3.39	Aspen
			Including	259.1	263.7	4.6	6.55	Aspen
				292.6	295.7	3.1	1.34	Aspen
17 OKC-357	429.2	230°/-75°		128.9	132.0	3.1	1.74	Aspen

Hole ID	TD (m)	Azimuth/ Angle	From (m)	To (m)	Intercept (m)	Au (g/t)	Primary Host Rock Unit(s)
			142.6	153.3	10.7	0.59	Aspen
			159.4	182.3	22.9	0.66	Aspen
			17.7	38.1	20.4	1.56	Lithic Tuff
17 OKC-358	310 /	50°/-72°	156.4	185.6	29.2	0.7	Sill & Aspen
17 010-000	515.4	307-12	209.7	212.8	3.1	1.72	Aspen
			221.9	295.0	73.1	1.13	Aspen
17 OKC-359	389.5	50°/-75°	No Signit	ficant Valu	es		
			141.7	155.4	13.7	0.43	Aspen & Sill
			185.9	192.0	6.1	0.47	Aspen
17 OKC-360	298.1	50°/-70°	201.2	217.9	16.8	0.77	Aspen
			245.4	254.5	9.1	0.85	Aspen
			280.4	288.0	7.6	0.91	Aspen
47.01/0.004	404.4	220%/ 75%	79.2	82.3	3.1	0.84	Andesite Sill
17 OKC-301 401.4	2307-75	93.0	203.6	110.6	0.90	Aspen	
47.01/0.000	005.4	F0°/ 00°	234.1	299.6	65.5	1.21	Aspen
17 OKC-362	305.1	50 /-80	68.0	82.9	14.9	0.40	Rhyolite Dike
17 OKC-363	341.4	50°/-75°	No Signit	ficant Valu	es		
17 OKC-364	200.2	/ 00°	190.5	222.5	32.0	1.09	Aspen & Sill
	299.3	-/-90	231.6	294.1	62.5	1.11	Aspen
17 OKC-365	334.7	230°/-65°	70.1	73.2	3.1	1.22	Sill
			93.0	123.4	30.4	0.68	Sill & Aspen
			134.1	172.2	38.1	0.69	Aspen
17 OKC-366		-/-90°	16.8	36.6	19.8	0.47	Rhyolite
	334.7		141.7	151.1	9.4	1.53	Sill
			181.4	268.2	86.8	1.05	Aspen
			76.9	85.3	8.4	0.33	Aspen
17 OKC-367	306.0	-/-90°	106.7	114.3	7.6	0.36	Aspen
			123.4	157.0	33.6	0.56	Aspen
			46.6	67.4	20.8	0.56	Tuff, Aspen
17 OKC-368	337.7	230°/-65°	123.1	146.0	22.9	0.48	Sill & Aspen
			187.6	206.7	19.1	0.59	Aspen
17 OKC-369	289.3	50°/-75°	No Signit	ficant Valu	es		
			57.3	64.9	7.6	0.59	Tuff
	333.1	230°/-80°	109.1	121.6	12.5	0.43	Sill
17 OKC-370			138.1	224.9	86.8	0.76	Aspen
			232.6	235.6	3.0	0.63	Aspen
			246.3	258.0	11.7	1.15	Aspen
	100.0	05174	30.2	33.2	3.0	0.80	Rhyolite
17 OKC-3/1	420.3	85 /-/1	80.2	86.3	6.1	0.57	Sill

Hole ID	TD (m)	Azimuth/ Angle		From (m)	To (m)	Intercept (m)	Au (g/t)	Primary Host Rock Unit(s)
				356.5	359.4	2.9	1.53	Rhyolite
				57.9	62.5	4.6	0.50	Sill & Aspen
17 OKC 272	204.9	/ 00°		105.2	135.6	30.5	0.78	Sill & Aspen
17 OKC-372	304.0	-/-90		169.2	172.2	2 3.0 0.94 Aspen	Aspen	
				192.0	221.0	29.0	0.71	Aspen
17 OKC-373				45.1	48.2	3.1	0.88	Lithic Tuff
	318.5	85°/-71°	113.7	133.5	24.4	4.33	Dike & Aspen	
				234.1	243.2	9.1	0.84	Dike & Aspen
17 OKC-374	301.1	230°/-75°		109.1	246.3	137.2	0.91	Sill & Aspen
				282.9	289.1	6.2	0.80	Aspen
17 OKO 275	405.0	230°/-75°		98.5	151.8	53.3	1.23	Sill & Aspen
17 OKC-375	105.9			165.5	174.7	9.1	0.87	Aspen
17 OKC 276	276.9	220°/ 75		109.7	189.0	79.3	0.79	Sill & Aspen
17 UKC-376	270.0	230 /-75	204.2 275.8 71	71.6	1.05	Aspen		
17 OKC 277	202.0	-/-90°		103.6	113.6	10.0	0.30	Sill
17 UKC-377	202.9			121.3	240.2	118.9	1.41	Aspen
17 OKO 272	107.7	/ 00°		4.6	21.3	16.7	0.78	Lithic Tuff
17 OKC-378	197.7	-/-90		97.5	197.7	100.2	0.74	Aspen

Notes:

1. True widths are estimated at between 80% and 100% of the drilled interval, based on their estimated dip, association with diking and the orientation of sedimentary bedding, and continuity of mineralization between drill holes.

10.2 RC and Core Comparisons

The resource database includes 217 core drill holes and 168 RC drill holes. The data populations of both types of drilling samples were analyzed by creating an Ordinary Kriged block model and a Nearest Neighbor block model, and the blocks containing data from both drilling sets were compared. The input data was the same 10ft composites used to create the resource model. The OK block model was 100 ft by 100 ft blocks limited to lithologies 3Tpr, 5Tad, 6Tlt, and 7Ka; the investigated area was also limited by the 1500 \$/oz pit shell. An isotropic search of 80 ft was used. The NN block model was 20 ft by 20 ft by 10 ft and limited by the same lithology types and pit. The search was also isotropic, but a shorter 75 ft search distance was used.



Figure 10-10 QQ Plot of OK Blocks

The resource database includes 217 core drill holes and 168 RC drill holes. The data populations of both types of drilling samples were analyzed by creating an Ordinary Kriged block model and a Nearest Neighbor block model, and the blocks containing data from both drilling sets were compared. The input data was the same 10ft composites used to create the resource model. The OK block model was 100 ft by 100 ft blocks limited to lithologies 3Tpr, 5Tad, 6Tlt, and 7Ka; the investigated area was also limited by the 1500 \$/oz pit shell. An isotropic search of 80 ft was used. The NN block model was 20 ft by 20 ft by 10 ft and limited by the same lithology types and pit. The search was also isotropic, but a shorter 75 ft search distance was used.

Figure 10-10 shows a Q-Q plots of the two different drilling models. Clearly, at any gold grade range the RC composites show a positive bias compared to the core holes.



Figure 10-11 QQ Plot of NN Blocks

Figure 10-11 shows a Q-Q plots of the two different drilling models. Clearly, at any gold grade range the RC composites show a positive bias compared to the core holes.

Figure 10-12 and Figure 10-13 show the blocks with common core and RC modeled grade in each of the OK and NN methods.



Figure 10-12 OK Blocks with both Core and RC Modeled Grade



Figure 10-13 NN Blocks with both Core and RC Modeled Grade

Otis Gold geologists are aware of issues related to water inflow-induced contamination in RC holes and washing-out of soft matrix material and fracture coatings in core samples. At this time, it is evident that there is a positive grade bias in the paired RC data and a contained metal bias for RC data versus core. Unfortunately, it is not possible to know which data set is more representative of the *in-situ* mineralization without adding separate bulk sample data, such as a decline, trenching, or test pits, to the data analysis. The most obvious examples of compromised drill holes are removed from the data analysis. The use of triple-tube core recovery systems combined with face-discharge drill bits used by EBX and Otis Gold since 1995 is an effort to improve the quality of gold sampling in the Kilgore deposit, representing approximately 57.4% of the total footage drilled. At Kilgore, RC samples compose only 33% of the assays in the final resource database.

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11.0 SAMPLE PREPARATION AND SECURITY

Sampling and analytical procedures prior to 2012 are described in detail in the 2012 NI 43-101 Technical Report prepared by Cameron (2012). This report documents the sample preparation, analysis, and security measures employed by Otis from 2012 through 2017.

11.1 Sample Preparation

Otis employs standard sample handling and preparation procedures during all core and RC drilling programs. RC samples are logged, bagged, and tagged at the drill rig by an Otis geologist. The chip samples are collected continuously over 5-ft intervals directly from the rotary splitter with a sample bag catching one side of the split, and a sample sieve catching the other. The standard split ratio is 50/50, though that ratio is occasionally adjusted to maintain sample volume. At the end of each sample interval, the sample bag is sealed and laid out for double checking and later transport. The sample sieve is rinsed and logged by the geologist, and a representative portion is placed in the chip tray. Duplicate samples are collected every 100 ft, with the duplicate sample bag sharing the same stand as the sieve. All RC samples are transported to St. Anthony by Otis staff prior to shipment to the lab.

Drill core is collected, cleaned, and placed into wax-coated core boxes at the drill site by the drill crew. The number and depth of each core run is indicated by marked wooden blocks placed at the end of the run. Core boxes are labelled in the field with the drill hole number, box number, and the associated footage interval. Filled core boxes are transported to the core storage facility in St. Anthony once daily by Otis personnel.

In St. Anthony, each box of whole core is photographed and logged, and selected sample intervals are prepared for shipment to the lab. Core recovery, rock quality designations, lithology, structure, alteration and other pertinent details are recorded by Otis geologists on a standard, hand-written log form. Samples are selected by Otis geologists during logging and are identified by a red ribbon, marked with the sample number, placed at the beginning and end of each assay interval.

Drill core sample intervals are split with a hydraulic core splitter. Care is taken to ensure that the core is oriented appropriately to produce unbiased and representative split samples when veining is present, and the hydraulic splitter is cleaned between samples to avoid cross-contamination. One half-core of each sample interval is retained in the core box, and the other is bagged in a clean 45 x 60 cm (18" x 24"), 8-mil, industrial-strength, polyethylene sample bag secured with a wire tie. The hole number and sample ID are written on each bag in indelible marker, and the individual samples are then consolidated into 60 x 90 cm rice bags for transport to the lab. All samples are delivered directly to ALS-Chemex in Elko, Nevada by Otis personnel.

11.2 Analytical Procedures

All assay work is performed at ALS Global laboratories located in Elko and Reno, Nevada. ALS is an ISO-certified lab, with an ISO 9001:2008 quality management system certification and ISO 17025:2005 technical capability accreditation.

Samples received at ALS are logged into a tracking system and a bar code label is attached to each individual sample. Excessively wet or damp samples are dried in drying ovens. Samples are crushed to a standard of 70% passing a 2mm sieve, and the split using a riffle splitter. A sample split of up to 1,000 g is pulverized to >85% of the sample passing a 75-micron sieve. One sample pulp is retained by the lab for analysis, and the other is sent to Otis' office facility in Spokane, Washington for cataloguing and storage.

Gold content is determined by a 50-g fire assay with atomic absorption finish (ALS method Au-AA24) to an upper limit of 10 grams. Over-limit samples are analyzed by fire assay with gravimetric finish (Au-GRA22). Internal quality control measures employed by ALS include insertion of standards, duplicates and blanks (about 10% of the total samples in each analytical run), and the QC data are routinely monitored to ensure that reference materials and duplicate analyses meet specific precision and accuracy requirements.

11.3 Quality Assurance and Quality Control

Otis' quality assurance and quality control measures include routine insertion of blank, standard, and duplicate samples into the sample stream, and subsequent monitoring of associated analytical results.

11.3.1 Reference Materials

Certified commercial standard samples are supplied by Rocklabs, and blank material is derived from Columbia River flood basalt acquired near Spokane. A sealed kraft envelope of reference material is labelled sequentially and inserted into the sample stream at a frequency of one in every 15 to 20 samples, and the lab is instructed to analyze all samples and pulps in numerical order.

Standard and blank assay results in excess of plus or minus three standard deviations from the expected mean for the material are considered a failed result. In cases of failure, the reference sample and a select number of surrounding samples are re-analyzed, and the assay data within the database updated accordingly.

In 2017, Otis analyzed a total of 236 blanks and 243 standard samples. Analytical results for 8 of the total 236 blank samples failed to meet the QA criteria. In all cases, the failed reference and surrounding samples were re-analyzed with positive results. Eight (8) of the 243 standard samples also failed. The failed standards and surrounding samples were reanalyzed, with the results of the re-run superseding the original assay results. In all but one instance the results of the re-run fell within the control limits defined for the standard material.

11.3.2 Duplicate Samples

RC field duplicates are inserted into the sample stream at a typical rate of one in every 20 samples. Core duplicates are selective, and the insertion rate is widely variable. Duplicate sample results are reviewed statistically using an average relative difference comparison and scatter plots to illustrate the strength of correlation.

In 2017, Otis analyzed a total of 60 duplicate core samples. Results of the duplicate analysis are presented in Figure 11-1. Of the 60 duplicate pairs analyzed, 7 have an average relative difference in excess of 1.0 (Table 11-1). Based on visual examination of the original and duplicate core samples (prior to submission to the lab), Otis attributes the variable results to local variation in sample mineral quality and possibly the presence of coarse gold.





Table 11-1 2017 Field Duplicates with Poor Correlation

Hole	From_ft	To_ft	Sample	QCSample	QCType	Certificate	Au Best ppm	QC Au Best ppm	ARD
170KC-363	243	248	170KC-363_42R	170KC-363_42DR	DUP	EL18027376	0.076	2.48	1.88
170KC-374	515	520	170KC-374_106	170KC-374_106D	DUP	EL18013178	0.056	1.565	1.86
170KC-377	668	673	170KC-377_132	170KC-377_132D	DUP	EL18004208	2.1	0.33	1.46
170KC-373	228	233	170KC-373_42	170KC-373_42D	DUP	EL17239910	0.0025	0.013	1.35
170KC-364	820	825	170KC-364_160	170KC-364_160D	DUP	EL17221093	1.155	0.297	1.18
170KC-374	278	283	170KC-374_57	170KC-374_57D	DUP	EL18013178	0.05	0.015	1.08
170KC-359	198	203	17OKC-359_38	170KC-359_38D	DUP	EL17215119	0.126	0.038	1.07

11.3.3 Check Samples

A total of 215 check samples were analyzed in 2017 by a secondary laboratory, American Assay Laboratories, Inc., of Sparks, Nevada. The samples were analyzed by fire assay with an ICP finish, slightly different than the ALS method which utilizes an atomic absorption finish. Check sample results are shown on Figure 11-2. Results of the check sample analysis generally fall within an acceptable range, though of the total 215 samples, 29 show an average relative difference of greater than 1.0.


Figure 11-2 Scatter Plot of 2017 Check Sample Results

Otis again attributes the high ARD results to local variation in sample mineral quality and/or the presence of coarse gold, and reports no apparent bias between the two laboratories.

11.4 Sample Security

Otis maintains standard chain of custody procedures during all segments of sample transport. Samples are bagged and labelled in a manner sufficient to prevent tampering, and the samples remain in Otis custody from the time they are collected until released to the lab. Upon receipt by the laboratory, samples are tracked by a blind sample number assigned and recorded by Otis.

All whole and retained half core samples are securely stored in Otis' St. Anthony core storage facility, with the exception of a few select intervals which are stored at Otis' office facility in Spokane. The core is neatly stored in labelled core boxes, which are arranged according to drill hole on sturdy shelving units. Coarse rejects were discarded, and pulp samples are stored at the Otis Spokane office.

11.5 Opinion on Adequacy

GRE finds the sample preparation, analytical procedures, and security measures employed by Otis to be reasonable and adequate to ensure the validity and integrity of the data derived from Otis' sampling programs to date.

12.0 DATA VERIFICATION

Data verification efforts carried out by GRE included an on-site inspection of the Project site and core storage facility, visual examination of selected core intervals in comparison with drill hole logs and assay data, and mechanical and manual auditing of the Project database.

12.1 2018 Site Visit and Drill Core Inspection

GRE representative and QP J.J. Brown, P.G., conducted an on-site inspection of the Kilgore Project area and St. Anthony core storage facility (Figure 12-1) on August 4 and 5, 2018, accompanied by Otis V.P. of Exploration, Alan Roberts. While on site, Ms. Brown conducted general geologic field reconnaissance, including inspection of surficial geologic features and ground-truthing of reported drill collar locations. Ms. Brown also reviewed plans and sections on which the conceptual geologic model is based, discussed Otis' rational for future exploration, and reviewed past and present drilling and sampling methods and protocols. The full second day of the site visit was spent at the core storage facility in St. Anthony, where select drill core intervals were visually inspected and compared with associated hand written drill hole logs and original assay certificates.



Figure 12-1 Core storage in St. Anthony

Observations during the site visit generally confirm previous reports on the geology and mineralization within the Project area, and specifically within the primary resource area. Bedrock lithologies, alteration types, and significant structural features appear consistent with descriptions provided in existing Project reports, and the author did not see any evidence in the field or in drill core that might significantly alter

or refute the current interpretation of the local geologic setting as described in Section 7 of this report. The author did note some discrepancy between lithology and mineral assemblages observed in select core intervals and those described in the logs, with specific regard to sulphide mineralization, which was observed in a few the core intervals examined but was either not noted or was under-reported on the associated drill hole logs.

Geographic coordinates for 46 individual drill hole collar locations were recorded in the field using a handheld GPS unit. In many instances, a single location was recorded for 2 to 7 holes all located within feet of each other (Figure 12-2), for a total of 109 collars checked for at least reasonable correlation with the coordinate locations listed in the Project database.



Figure 12-2 Closely Spaced, Variably Marked Drill Hole Collars

The difference between field collar coordinates and those contained in the Project database is quite variable, though generally within the expected, fairly wide margin of error given the rough manner of record. A number of drill hole collars are not well marked in the field, and many have no marker at all. The QP recommends that Otis clearly identify existing drill holes in the field, where possible and practical, by installing semi-permanent markers such as a survey cap or labelled and grouted-in lathe. The marked collars should be professionally surveyed to confirm location and elevation, and the survey data should then be tied in to the digital topographic surface used for geologic and resource modelling. Future drill holes can be located using standard GPS instrumentation, provided that the GPS coordinates and elevations are reasonably similar to those reported for the same locations within the digital topographic surface.

12.2 Database Audit

GRE audited the database by generating graphic sections, plan views, checked assays, and downhole information. The database audit work completed to date indicates that occasional inconsistencies and/or erroneous entries are likely inherent or inevitable in the data entry process. The QP recommends that Otis establish a routine, internal mechanical audit procedure to check for overlaps, gaps, total drill hole length inconsistencies, non-numeric assay values, and negative numbers. The internal mechanical audit should be carried out after any significant update to the database, and the results of each audit, including any corrective actions taken, should be documented and stored for future use in database validation.

12.3 2012 Data Verification

A vigorous data verification effort was carried out during preparation of a previously reported mineral resource estimate for the Kilgore Project. That work is described in detail in the subsequent NI 43-101 technical report, "Technical Report and Resource Estimate for the Kilgore Project, Clark County Idaho", by Cameron (2012), and is summarized in the following paragraphs. The following is a summary of the work completed by Mr. Cameron in 2012.

During preparation of the 2012 mineral resource estimate, independent QP and professional geologist Don Cameron completed a variety of tasks in order to validate the technical data provided to him by Otis. A random check of assay certificates stored by Otis in Spokane, Washington covered the 17 drilling programs conducted on the property between 1984 and 2011. Assay data for drill holes comprising approximately 10% of the resource database, 21 drill holes in all, was compared to the corresponding original assay certificates (2,486). This comparison revealed an error rate of 1.9%, almost all minor rounding errors apparently related to conversions from assays originally generated in units of ounces per short ton to grams per metric tonne, or vice-versa. Other errors included improper entry of detection limit assays.

Mr. Cameron reviewed hard copy drill hole information stored in Spokane and noted whether the physical information included the written log, core photographs, a map or reference section, original certificate, a summary or assay listing, survey data, recovery log, and RQD log. This data was not complete for all holes; e. g., some holes are reverse circulation drill holes and thus do not have photographs, recovery, and RQD. Two files contained the downhole survey records, eight included photographs, five included maps and/or sections showing the drill hole geology and assays, eleven files had recovery measurements, and ten had RQD measurements. All drill holes had written logs and all of the certificates were found in the files. A final check included comparing an interval or two of high assays in the database with the drill log to see if the assays corresponded to the geologic notes. In some cases, there was no correspondence due to a lack of detail in the log, or in others, because gold is not visible, and the controls are not apparent. In a few cases, higher gold appeared to have a definite association with silicified or tournalinized intervals, faulting, and oxidation noted in the logs.

Assisted by Otis geologists, Mr. Cameron conducted comprehensive checking of the electronic database provided by Otis. The database comprises tables for collar information, downhole survey, assay, lithology and alteration. The collars were checked against topography to make sure they plotted properly, and the

hole traces checked to look for kinks and corkscrews, which indicate survey errors. A Micromine software database validation was the principal checking tool used to detect overlapping intervals, intervals extending beyond the depth of the drill hole, anomalous downhole changes in azimuth and dip, duplicate intervals, interval information out of sequence, information with no corresponding collar, and other checks. A secondary check technique was use of filters in EXCEL® to detect spurious codes, handling inconsistencies for detection-limit assays, inconsistent hole naming, and other tests. Errors were corrected as a result of these checks in several sessions at Otis' office.

Mr. Cameron visited the Kilgore Project area in July 2012, where he collected samples from locally derived float to test stockwork-veined and silicified rhyolite and rhyolite autobreccia near a caved adit along one of the drill roads to test for the presence of gold, with positive results. The site visit included an inspection of core preparation and storage facilities in Otis' St. Anthony field office, and an inspection of drill cores. Selected intervals from three holes were sampled for independent assay. Cores from three drill holes stored at Otis' Spokane core storage facility were also examined, and one remaining half-core of an original sample from each of the three holes was submitted for check assay. The results of these check assays were variable, as is generally expected with alternate core halves. In total, the check assay data collected were insufficient to make conclusions about the adequacy, accuracy, and precision of assaying over the history of the project but were deemed acceptable to confirm the presence of gold, though with a potential persistent low bias.

The geologic and assay databases were considered by Cameron to have an industry-standard degree of content, organization, continuity, and documentation for a project at the exploration stage. The assay results between laboratories showed a high degree of variance, both EBX data comparing Cone to Chemex, and 2008 – 2011 Otis data comparing Inspectorate and Acme to ALS Chemex. The variance was addressed in the 2012 study by capping of metal-at-risk in the estimation, and the Mr. Cameron concluded that taken as a whole, the database was sufficient for resource estimation.

12.4 Opinion on Adequacy

Based on the results of the site investigations related to this current study, visual examination of selected core intervals and the results of GRE's database audit, as well as the data verification work completed in 2012, GRE considers the data contained in the Project data base to be reasonably accurate and suitable for use in estimating mineral resources and reserves.

Comparison of field and database elevations indicates that additional or improved ground survey may be necessary to increase confidence in the accuracy of the drill hole location data contained within the database. GRE recommends that Otis clearly identify all existing drill holes in the field. The existing drill collars should then be professionally re-surveyed and tied in to the digital topographic surface used for geologic and resource modelling.

12.5 2017 Site Visit

In accordance with 43-101 guidelines, Mr. Rowe conducted site visits for the Kilgore Project from the 9th to the 14th of August 2017. The site visits included visits to the Otis gold Spokane, Washington office and core shed, to the St. Anthony, Idaho core shed/sample preparation facility, and to the Kilgore Project site. Mr. Rowe was accompanied on this visit by Senior Geologists Mitch Bernardi and John Carden of Otis Gold.

During the site visits, Mr. Rowe reviewed the following technical aspects for the property:

- How historic drill hole data was collected, stored, and compiled into the electronic drill hole database;
- Property geology, gold mineralization, alteration and controlling structures;
- Drill hole logging and sampling procedures;
- QaQc data verification program for project sampling;
- Chain of custody procedure for sample handling and transport to ALS in Elko, NV;
- Representative drill core from primary geologic setting for gold in all rock types;
- Database management and data entry;
- Drill hole collar locations.

At the Kilgore Project site, active core drilling sites were observed, and core handling was reviewed. Several drill hole collar locations were verified by GPS and compared to the Otis Gold collar database. Mr. Rowe reviewed the property geology and controls of gold mineralization on site and in representative drill core. Rowearth was provided access to all relevant data and interviewed Otis geologic staff to understand the exploration history and the procedures to compile and store all project data.

The site visit included inspection of the core storage and sample preparation facilities in Spokane, Washington and St. Anthony, Idaho. During these visits, Mr. Rowe requested and inspected 12 separate core sample intervals from 8 drill holes that were stored in both Spokane and St. Anthony. 12 umpire core samples were collected by Mr. Rowe that consisted of ½ core samples that were previously sampled by Otis Gold and these samples were given directly to ALS Labs for analysis. Two separate analytical samples were split from these core samples for analysis (Umpire samples A and B), and the analytical sample pulp for the Umpire B sample was also split and ran as a pulp duplicate. The umpire sample gold values show agreement with the original Otis gold samples. The results from this study are shown in Table 12-1 and Figure 12-3 and Figure 12-4.

No significant issues were identified by Rowearth during the 2017 site visit, and the Otis Gold procedures for the Kilgore Project meet NI 43-101 operational standards.

Project	Hole_ID	From (ft)	To (ft)	Au (ppm) Otis Sample	Au (ppm) Umpire A	Au (ppm) Umpire B	Au (ppm) <i>Pulp Dup</i> Umpire B
Kilgore	09OKC-195	462	467	1.29	9.83	26.20	36.40
Kilgore	110KC-258	190	195	8.57	4.03	18.05	5.94
Kilgore	110KC-265	435	440	0.66	0.31	0.23	0.74
Kilgore	110KC-265	535	540	0.19	0.11	0.17	0.17
Kilgore	110KC-253	248	253.5	0.93	0.56	0.60	0.60
Kilgore	110KC-253	741	746	1.01	0.17	0.22	0.32
Kilgore	110KC-259	305	310	1.07	0.80	0.69	0.84
Kilgore	100KC-227	308	313	0.79	1.06	0.76	0.66
Kilgore	100KC-227	358	363	0.88	0.60	0.44	0.41
Kilgore	100KC-228	252	257	5.27	8.94	4.49	7.57
Kilgore	11-0KC-260	585	590	0.36	0.13	1.43	0.52
Kilgore	110KC-260	605	610	1.23	0.25	0.80	0.31

Samples are ½ Core Splits (all remaining material from original core)



Figure 12-3: Plot of Umpire Sample Gold Values

% Core Sample Umpire sample values collected by Rowearth compared to original Otis Gold sample values.



Figure 12-4: Plot of Umpire Sample Gold Values: Duplicates from Same Pulp

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical testing of the Kilgore Project prior to 2012 is described in detail in the 2012 NI 43-101 Technical Report prepared by Cameron (2012).

Early test work commissioned by Echo Bay Mines (EBX) was performed by Hazen Research, Inc., of Golden, CO. Gold recoveries obtained in the heap leach column test at a crush size of a P_{80} of 1/2" (12.5 mm) after 60 days were 94.0%, 81.0% and 64.0% for materials identified as oxide, mixed and unoxidized, respectively. A coarser crushed material at a P_{80} of 1" (25 mm) achieved a gold recovery of 86.9% after 75 days. Bottle roll leach test of RC drill cuttings show that gold in the Kilgore samples tested was easily extracted with direct cyanide leaching. The extractions ranged from 82.9% to 94.8%.

In 2010, Otis Gold investigated the heap leach characteristics of each host rock separately to provide information for mine design and to confirm the heap leach scenario. This material composed the feed for separate column leach tests of the three main host rock types identified at the time; Ka, Tlt, and Tpr (Ka=Aspen Sandstone, Tpr=Felsic Dike, Tlt = Lithic tuff), collected from four holes in the deposit area. The column tests were performed at a P_{80} of 1/2'' (12.5 mm) feed size.

Tlt and Tpr lithologies host most of the gold mineralization in the Kilgore deposit. For the composites of these rocks, the tests show that approximately 77% of the gold extracted occurs in the first 30 days of leaching. The leach curves for Tpr and Ka flattened after about 90 days, whereas the leach curve for Tlt was still positive and climbing after 109 days, suggesting slightly more than 81% can be expected with a longer leach time. The Aspen ore also leached at a good rate achieving almost 70% gold extraction in 109 days. Recovery results generally agree with the earlier EBX tests.

As a result of these positive column leach results, Otis decided to perform leach tests on material from new drill holes and at a coarser size fraction. Otis Gold segregated the samples by rock type to comprise three new composites: MTF-1 - oxidized bulk sample of Tlt, MDO-2 - oxidized bulk sample of Tpr, MDS-3 - unoxidized bulk sample of Tpr.

Column leach test were conducted at a P_{80} of 12.5 mm and 38 mm crush size on all three samples. The MTF-1 sample achieved similar recoveries of 84.9% and 85.5% after 91 days for the 38mm and 12.5 mm crush sizes respectively. The MDO-2 sample exhibited a lower recovery for the coarse size fraction of 71.2% compared to 83.3% for the 12.5 mm crush size both after 78 days of leaching. It appears that these recoveries would have equalized with the extension of the leaching time. The MDS-3 sample achieved similar recoveries of 78.5% and 74.5% after 78 days for the 38mm and 12.5 mm crush sizes respectively.

The relative insensitivity of crush size in relation to recovery of gold from altered and mineralized lithic tuffs and porphyry rhyolite flows comprising approximately 83% of the deposit has led Otis to believe that it may be amenable to a run-of-mine (ROM), open pit, heap leach mining operation. The amenability of the Kilgore deposit ore to ROM leaching needs to be investigated by further metallurgical testing in the course of producing a preliminary economic analysis (PEA).

13.1 2018 Otis Test Work

In mid-2018 Otis gold delivered 14 plastic drums of PQ drill core to Research Development Inc. (RDI) for analysis. The core was derived from drill hole DDH 2018-169 and categorized into three lithologies:

- Aspen Top
- Aspen Bottom
- Aspen Sill

The goal of the test work was to determine if the Aspen material had similar metallurgical performance to the other areas examined specifically with respect to heap leach amenability.

The 14 drums representing 3 different domains were prepared for testing. Each drum was weighed and individually jaw crushed to a particle size of minus 2 inch. Crusher work index samples were taken from each of the three domains and bulk density samples were taken from each drum. Each drum was thoroughly blended and approximately 5-7 kilograms of material was split out for head assay, moisture determination, mineralogy, and bottle roll leaches. The remaining material from each drum was then combined by domain. Each domain sample was thoroughly blended, and material was split out for column testing, acid-base accounting, and QEMSCAN. The column testing splits were jaw crushed to the appropriate sizes designated for each column test. The moisture and bulk density results are summarized in Table 13-1.

Sample	Bulk Density (t/m3)	Moisture %
Aspen Bottom Drum 1	2.525	0.6
Aspen Bottom Drum 2	2.619	0.1
Aspen Bottom Drum 3	2.593	0.2
Aspen Bottom Drum 4	2.554	0.1
Aspen Bottom Drum 5	2.586	0.3
Aspen Bottom Drum 6	2.647	0.1
Aspen Bottom Drum 7	2.435	0.5
Aspen Bottom Drum 8	2.6	0.1
Aspen Bottom - Average	2.57	0.3
Aspen Top Drum 9	2.422	3.1
Aspen Top Drum 10	2.298	3
Aspen Top Drum 11	2.636	1.3
Aspen Top Drum 12	2.573	0.6
Aspen Top - Average	2.543	0.8
Aspen Sill Drum 13	2.461	0.1
Aspen Sill Drum 14	2.479	0.1
Average Sill - Average	2.47	0.1

Table 13-1 Aspen Samples Bulk Density and Moisture

Sample splits from each individual drum were submitted for assay of gold, silver, forms of carbon, forms of sulfur and ICP analysis. The assay results are summarized in Table 13-2. The gold grades varied significantly, from 0.2 g/mt Au to 16.9 g/mt Au. Based on the weighted average of each drum that was used when creating the domain composites, the average gold grade of the Bottom domain would be 1.5 g/mt Au, the Top domain would be 7.8 g/mt Au, and the Sill domain would be 0.6 g/mt Au.

Assay				Aspen	Bottom					Aspe	en Top		Aspen Sill		
	Drum 1	Drum 2	Drum 3	Drum 4	Drum 5	Drum 6	Drum 7	Drum 8	Drum 9	Drum 10	Drum 11	Drum 12	Drum 13	Drum 14	
Au, g/mt	0.795	1.118	3.137	0.274	0.226	0.305	3.281	3.037	1.039	1.652	8.125	16.884	0.339	0.884	
Ag, g/mt	0.8	1.4	5.2	4.2	3.6	0.4	4.8	1	0.8	6.6	2.4	4.4	6.8	3.8	
Organic C %	0.07	0.04	0.08	0.01	0.05	0.08	0.06	0.06	0.15	0.53	0.07	0.2	<0.01	<0.01	
Inorganic C %	0.87	1.09	1.1	1.1	0.89	0.62	1.11	0.96	0.34	0.25	0.54	0.8	<0.01	<0.01	
Total C %	0.94	1.13	1.18	1.11	0.94	0.69	1.18	1.01	0.5	0.78	0.61	1	0.02	0.02	
Sulfide %	<0.01	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.06	<0.01	0.06	<0.01	<0.01	<0.01	
Sulfate %	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.05	0.01	<0.01	<0.01	<0.01	
Total S %	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	0.08	0.08	0.05	0.07	<0.01	0.13	0.05	
ICP %															
Al	4.44	4.89	5.11	5.5	4.87	4.33	5.02	5.35	3.74	5.8	4.89	5.19	1.93	2.21	
Ca	5.77	5.23	7.56	5.98	5.06	4.36	8.2	4.77	1.53	0.94	2.84	5.01	0.03	0.03	
Fe	1.33	2.11	2.12	2.02	1.69	1.54	2.02	1.84	1.6	3.91	1.63	2.43	1.32	1.32	
К	2.92	2.93	2.63	3.71	2.95	2.34	2.95	3.65	2.28	4.87	3.31	4.44	1.58	1.73	
Mg	1.22	1.5	1.88	1.77	1.31	1.06	2.17	1.5	1.03	1.07	1.36	2.08	0.56	0.6	
Na	0.07	0.06	0.13	0.07	0.11	0.04	0.11	0.05	< 0.01	0.06	0.03	0.05	< 0.01	< 0.01	
Ti	0.15	0.13	0.2	0.21	0.15	0.13	0.22	0.14	0.04	0.1	0.07	0.14	<0.01	<0.01	
ICP ppm															
As	<10	34	<10	63	87	17	12	30	23	42	25	19	220	134	
Ba	703	551	475	534	610	503	505	477	395	433	533	516	129	158	
Bi	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Cd	1	3	3	3	4	2	3	2	2	5	2	3	2	2	
Co	6	6	8	8	6	5	10	6	4	10	4	8	1	1	
Cr	137	126	156	109	116	133	113	105	103	124	117	90	84	73	
Cu	12	26	31	34	45	9	33	33	<2	5	5	4	12	55	
Mn	390	628	574	450	314	304	444	469	728	2680	458	1210	774	972	
Mo	<1	2	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	4	
Ni	16	21	44	30	24	23	52	20	14	29	16	29	<5	14	
Pb	<10	<10	<10	21	<10	<10	<10	27	<10	<10	<10	<10	14	<10	
Sr	160	148	195	229	160	126	215	126	31	142	67	164	17	20	
V	50	64	70	79	56	50	75	62	37	70	52	60	4	2	
W	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Zn	35	54	51	46	78	37	49	24	17	210	62	83	124	155	

Table 13-2 Aspen Samples Head Assays and ICP Analysis

Samples from each domain were submitted for crusher work index and abrasion index testing. A summary of the results is given in Table 13-3.

Sample	CWi (kWh/metric ton)	Classificatio n
Aspen Bottom	20.3	Very Hard
Aspen Top	15.5	Medium Hard
Aspen Sill	14.0	Medium

Bottle roll leach tests were completed with samples from each of the 14 drums at a particle size of P_{80} 10 mesh. This test is designed to provide an indication of heap leach amenability by using a finer particle size

than a heap leach but over a much shorter leach duration of 96 hours. Table 13-4 shows the coarse particle bottle roll cyanidation test results.

Time	1 - E	Bot	2 -E	ot	3 -B	ot	4 -B	ot	5 - E	Bot	6 -	Bot	7 - E	Bot
	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %
2	1.8	7.4	2.3	9.4	1.1	8.4	1.6	4.2	3.2	12.5	3.3	6.6	1.5	8.7
6	1.8	10.3	8.5	18.1	3.2	13.4	3.3	5.7	6.5	17.5	6.7	10	3.7	14
24	3.7	25.3	28.9	38.1	10.7	28.2	5	17	16.3	31.2	13.5	18.4	13.9	30.8
48	5.5	35.8	43.4	50	20.5	39.9	6.7	35.4	26.3	39.4	20.4	26.9	20	41.2
72	5.6	44.8	48.1	55.5	25.1	47.6	10.1	43	30	44.8	27.3	30.7	24	47.7
96	7.5	51	50	56.9	26.6	53.5	11.9	45.1	30.5	49.4	31.1	34.5	25.1	52.1
Residue, g/t	0.78	0.8	1.36	1.4	1.05	3.2	0.82	0.6	0.33	0.8	0.31	0.6	1.56	2
Cal. Feed, g/t	0.84	1.6	2.71	3.2	1.42	6.9	0.93	1.1	0.47	1.6	0.45	0.9	2.08	4.2
NaCN kg/t	0.661		0.718		0.84		0.781		0.658		0.6		0.901	
Lime kg/t	0.723		0.748		0.897		0.718		0.564		0.572		0.594	
Time	8 - E	Bot	9 - 1	ор	10 -1	Гор	11 - 1	Гор	12 -	Гор	13 -	Sill	14 -	Sill
Time	8 - E Au %	Bot Ag %	9 - 1 Au %	op Ag %	10 -1 Au %	Гор Ag %	11 - Au %	Гор Ag %	12 - Au %	Гор Ag %	13 - Au %	Sill Ag %	14 - Au %	Sill Ag %
Time 2	8 - E Au % 2.4	Ag % 6.6	9 - 1 Au % 6.4	ор Ад % 20.2	10 - 7 Au % 3.6	Гор Ад % 10.9	11 - Au % 2.8	Гор Ад % 13	12 - 7 Au % 5.4	Гор Ад % 7.1	13 - Au % 14.9	Sill Ag % 13.1	14 - Au % 19.3	Sill Ag % 9
Time 2 6	8 - E Au % 2.4 6	Ag % 6.6 14.6	9 - 1 Au % 6.4 10.7	op Ag % 20.2 26	10 - 7 Au % 3.6 8.8	Ag % 10.9 18.1	11 - Au % 2.8 8.4	Ag % 13 20.8	12 - Au % 5.4 13.4	Fop Ag % 7.1 14.5	13 - Au % 14.9 35.9	Sill Ag % 13.1 19.2	14 - Au % 19.3 37.1	Sill Ag % 9 16.7
Time 2 6 24	8 - E Au % 2.4 6 16.1	Ag % 6.6 14.6 32.5	9 - 1 Au % 6.4 10.7 15.1	Ag % 20.2 26 39.9	10 - Au % 3.6 8.8 21.3	Ag % 10.9 18.1 35.5	11 - Au % 2.8 8.4 18.3	Ag % 13 20.8 38.3	12 - 7 Au % 5.4 13.4 35.4	Ag % 7.1 14.5 34.6	13 - Au % 14.9 35.9 63.2	Sill Ag % 13.1 19.2 31.3	14 - Au % 19.3 37.1 62.3	Sill Ag % 9 16.7 32.9
Time 2 6 24 48	8 - E Au % 2.4 6 16.1 23.5	Ag % 6.6 14.6 32.5 44.9	9 - 1 Au % 6.4 10.7 15.1 19.6	op Ag % 20.2 26 39.9 44.6	10 - 7 Au % 3.6 8.8 21.3 29	Ag % 10.9 18.1 35.5 46.4	11 - Au % 2.8 8.4 18.3 26	Ag % 13 20.8 38.3 51.9	12 - 7 Au % 5.4 13.4 35.4 51	Ag % 7.1 14.5 34.6 45.3	13 - Au % 14.9 35.9 63.2 79.1	Sill Ag % 13.1 19.2 31.3 38.4	14 - Au % 19.3 37.1 62.3 66.8	Sill Ag % 9 16.7 32.9 44.1
Time 2 6 24 48 72	8 - E Au % 2.4 6 16.1 23.5 27.4	Ag % 6.6 14.6 32.5 44.9 48.8	9-1 Au % 6.4 10.7 15.1 19.6 19.9	Ag % 20.2 26 39.9 44.6 46.6	10 - 7 Au % 3.6 8.8 21.3 29 33	Ag % 10.9 18.1 35.5 46.4 56.2	11 - 7 Au % 2.8 8.4 18.3 26 29.6	Ag % 13 20.8 38.3 51.9 56	12 - 7 Au % 5.4 13.4 35.4 51 64.3	Ag % 7.1 14.5 34.6 45.3 51.4	13 - Au % 14.9 35.9 63.2 79.1 95.3	Sill Ag % 13.1 19.2 31.3 38.4 47.7	14 - Au % 19.3 37.1 62.3 66.8 81.9	Sill Ag % 9 16.7 32.9 44.1 53.4
Time 2 6 24 48 72 96	8 - E Au % 2.4 6 16.1 23.5 27.4 34.3	Ag % 6.6 14.6 32.5 44.9 48.8 56.9	9-1 Au % 6.4 10.7 15.1 19.6 19.9 20.2	Ag % 20.2 26 39.9 44.6 46.6 47.3	10 - Au % 3.6 8.8 21.3 29 33 33.6	Ag % 10.9 18.1 35.5 46.4 56.2 58.1	111 - Au % 2.8 8.4 18.3 26 29.6 32.4	Ag % 13 20.8 38.3 51.9 56 58	12 - Au % 5.4 13.4 35.4 51 64.3 68.0	Ag % 7.1 14.5 34.6 45.3 51.4 56.1	13 - Au % 14.9 35.9 63.2 79.1 95.3 87.8	Sill Ag % 13.1 19.2 31.3 38.4 47.7 50.6	14 - Au % 19.3 37.1 62.3 66.8 81.9 84.9	Sill Ag % 9 16.7 32.9 44.1 53.4 58.4
Time 2 6 24 48 72 96 Residue, g/t	8 - E Au % 2.4 6 16.1 23.5 27.4 34.3 1.69	Ag % 6.6 14.6 32.5 44.9 48.8 56.9 1	9-1 Au % 6.4 10.7 15.1 19.6 19.9 20.2 0.58	Ag % 20.2 26 39.9 44.6 46.6 47.3 0.6	10 - 7 Au % 3.6 8.8 21.3 29 33 33.6 1.4	Ag % 10.9 18.1 35.5 46.4 56.2 58.1 3.2	11 - Au % 2.8 8.4 18.3 26 29.6 32.4 2.25	Ag % 13 20.8 38.3 51.9 56 58 1.2	12 - Au % 5.4 13.4 35.4 51 64.3 68.0 6.46	Ag % 7.1 14.5 34.6 45.3 51.4 56.1 5.8	13 - Au % 14.9 35.9 63.2 79.1 95.3 87.8 0.06	Sill Ag % 13.1 19.2 31.3 38.4 47.7 50.6 2.4	14 - Au % 19.3 37.1 62.3 66.8 81.9 84.9 0.13	Sill Ag % 9 16.7 32.9 44.1 53.4 58.4 3
Time 2 6 24 48 72 96 Residue, g/t Cal. Feed, g/t	8 - E Au % 2.4 6 16.1 23.5 27.4 34.3 1.69 2.57	Ag % 6.6 14.6 32.5 44.9 48.8 56.9 1 2.3	9 - 1 Au % 6.4 10.7 15.1 19.6 19.9 20.2 0.58 0.73	Ag % 20.2 26 39.9 44.6 46.6 47.3 0.6 1.1	10 -7 Au % 3.6 8.8 21.3 29 33 33.6 1.4 2.11	Ag % 10.9 18.1 35.5 46.4 56.2 58.1 3.2 7.6	11 -7 Au % 2.8 8.4 18.3 26 29.6 32.4 2.25 3.32	Ag % 13 20.8 38.3 51.9 56 58 1.2 2.9	12 -7 Au % 5.4 13.4 35.4 51 64.3 68.0 6.46 20.17	Ag % 7.1 14.5 34.6 45.3 51.4 56.1 5.8 13.2	13 - Au % 14.9 35.9 63.2 79.1 95.3 87.8 0.06 0.51	Sill Ag % 13.1 19.2 31.3 38.4 47.7 50.6 2.4 4.9	14 - Au % 19.3 37.1 62.3 66.8 81.9 84.9 0.13 0.86	Sill Ag % 9 16.7 32.9 44.1 53.4 58.4 3 7.2
Time 2 6 24 48 72 96 Residue, g/t Cal. Feed, g/t NaCN kg/t	8 - E Au % 2.4 6 16.1 23.5 27.4 34.3 1.69 2.57 1.085	Ag % 6.6 14.6 32.5 44.9 48.8 56.9 1 2.3	9 - 1 Au % 6.4 10.7 15.1 19.6 19.9 20.2 0.58 0.73 1.634	Ag % 20.2 26 39.9 44.6 46.6 47.3 0.6 1.1	10 -7 Au % 3.6 8.8 21.3 29 33 33.6 1.4 2.11 2.854	Ag % 10.9 18.1 35.5 46.4 56.2 58.1 3.2 7.6	11 -7 Au % 2.8 8.4 18.3 26 29.6 32.4 2.25 3.32 1.27	Ag % 13 20.8 38.3 51.9 56 58 1.2 2.9	12 -7 Au % 5.4 13.4 35.4 51 64.3 68.0 6.46 20.17 1.569	Ag % 7.1 14.5 34.6 45.3 51.4 56.1 5.8 13.2	13 - Au % 14.9 35.9 63.2 79.1 95.3 87.8 0.06 0.51 0.901	Sill Ag % 13.1 19.2 31.3 38.4 47.7 50.6 2.4 4.9	14 - Au % 19.3 37.1 62.3 66.8 81.9 84.9 0.13 0.86 0.66	Sill Ag % 9 16.7 32.9 44.1 53.4 58.4 3 7.2

 Table 13-4 Aspen Samples Coarse Bottle Roll Cyanidation (10 mesh, 96 hours)

Figure 13-1 shows the graph of the leach extractions versus time for the bottle roll cyanidation tests on the Aspen samples.

Au Recovery vs Time 🗕 1 - Bot 100 - 2 -Bot 90 •---- 3 -Bot 80 - 4 -Bot 🗕 5 - Bot 70 🗕 6 - Bot 60 Recovery • 7 - Bot 50 🗕 8 - Bot 40 💻 9 -Тор 30 **—** 10 - Top 20 🗕 11 - Тор 10 **-** 12 - Top 0 **-** 13 - Sill 0 20 60 80 100 40 📥 14 - Sill Time (hr)

Figure 13-1 Aspen Sample Bottle Roll Cyanidation Results - Gold

The leach results indicate the following:

- The maximum gold extractions were observed from the Sill samples. Each drum sample achieved gold extractions of 87.8% and 84.9%.
- The Bottom samples had a wide range of gold extractions, varying from 7.5% to 50.0%, with an average of 27%. Similarly, the gold extraction of the Top samples ranged from 20.2% to 68.0%, with an average of 38%.
- Silver extraction were similar for all tests, ranging from 34.5% to 58.4%, with an average of 52%.
- In general, the calculated head grade from each leach test agrees with the individual head assay.

As a further investigation the gold extraction was plotted against the feed grade in an attempt to find a correlation between grade and recovery. This relationship often exists in gold processing due to an unliberated constant tail. Figure 13-2 show the relationship between grade and recovery for the Aspen Samples.



Figure 13-2 Grade versus Gold Recovery for the Aspen Sample Bottle Roll Tests

Based on these results a series of hot cyanide leach tests were conducted to determine if there was a specific mineralogical issue related to the lower gold recoveries in certain areas of the Top and Bottom Aspen formations.

Head Grade (g/t)

The hot cyanide leach tests utilized 15.0 grams of pulverized sample, 30 mL water at 0.10% NaCN with a 2-hour hot cyanide shake. Gold and silver were assayed by AAS Analysis. Table 13-5 shows the results of the hot cyanide leach tests.

	1 - 6	Bot	2 -B	lot	3 -B	ot	4 - E	Bot	5 - E	Bot	6 -	Bot	7 - E	Bot	8 - E	Bot
	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %	Au %	Ag %
Grade g/mt	0.16	0.54	0.26	0.96	0.54	2.34	0.04	1.4	0.04	1.5	0.08	0.22	0.3	1.64	0.28	0.58
Extraction	19.0	33.8	9.6	30.0	38.0	33.9	4.3	127.	8.5	93.8	17.8	24.4	14.4	39.0	10.9	25.2
(%)								3								

Time	9 - T	ор	10 -1	Гор	11 -1	бр	12 -1	Гор	13 -	Sill	14 -	Sill
	Au %	Ag %	Au %	Ag %	Au %	Ag %						
Grade g/mt	0.1	0.52	0.22	4.32	0.78	0.86	1.24	2.46	0.12	4.16	0.22	1.74
Extraction (%)	13.7	47.3	10.4	56.8	23.5	29.7	6.1	18.6	23.5	84.9	25.6	24.2

The hot cyanidation results were inconclusive and did not provide much additional insight into any potential mineralogical issue related to leaching. Based on these results and the previous bottle roll tests a mineralogical examination was undertaken on select samples from each domain along with a Carbon In-Leach Test (CIL). The CIL test was conducted as there is carbon present in the Aspen materials and the previous bottle roll leach tests showed the potential for preg-robbing. The following samples were submitted for CIL testing

- Aspen Bottom Drum 2
- Aspen Bottom Drum 8
- Aspen Top Drum 10

The samples were ground to a P80 of 75 um. The material was transferred to a bottle and was adjusted to 40% solids. The pH of the slurry was adjusted to ~11 with hydrated lime and sodium cyanide was added to a calculated level of 1.0 g/l. At 6, 24, 48 and 72 hours, the pH and free cyanide were determined. Sodium cyanide was added to return the level to 1.0 g/L and the pH was adjusted to 10 with hydrated lime if needed. After 96 hours, the solution was measured to determine pH, free cyanide, and gold and silver contents. The slurry was washed, re-pulped, filtered, and dried. After drying, a representative sample of the solids was submitted for determination of gold and silver contents. Table 13-6 shows the results of the CIL testing.

Table 13-6 Aspen Samples CIL Test Result	Table 13-6 A	spen Samples	CIL Test Results
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Sample	Head Assay		Extra	ction	Reagent Consumption		
	Au g/t	Ag g/t	Au %	Ag %	NaCN kg/t	Lime kg/t	
Aspen Bottom - Drum 2	3.60	6.70	87.2	55.3	1.953	1.406	
Aspen Bottom - Drum 8	3.78	3.70	85.7	56.7	2.133	1.515	
Aspen Top - Drum 10	2.55	14.50	87.9	47.4	2.857	3.571	

The results from the CIL tests clearly show that good gold extractions can be achieved from the Aspen samples when ground and treated with cyanide in the presence of carbon. A standard CIL process would likely be suitable to treat this material. The Sill sample were not tested as they did not show any gold extraction issues and would be suitable for treatment in a heap leach format.

13.2 2018 Otis Mineralogy

To further validate the presence of carbon in the Aspen Bottom and Top materials samples were submitted by RDI for mineralogical examination to DCM Science Laboratory, Inc. The following samples were submitted for CIL testing

- Aspen Bottom Drum 2
- Aspen Bottom Drum 8
- Aspen Top Drum 10
- Aspen Sill Drum 13

13.2.1 2018 Otis Mineralogy Aspen Bottom Drum 2

Mineralogy: Quartz 60% K-spar/Adularia 18% Calcite 11% Chlorite 2% Clay (undifferentiated) 5% Epidote 3% Carbon 1%

Trace Mineralogy: Pyrite, Chalcopyrite, Sphalerite, Rutile, Plagioclase, Zircon, Iron Oxide, Au

In thin section this sample contains rock fragments that represent a silicified sediment. The clasts contained in the altered sediment are primarily quartz with lesser amounts of primary igneous potassium feldspar represented by orthoclase/sanidine and grid twinned microcline. The quartz occurs as angular to well-rounded grains with measurements in the 5µm to 300µm range. Many of the quartz grains show corroded grain boundaries. The K-spar is generally angular with a grain size that varies from 10µm up to 150µm and shows a cloudy appearance from weathering. Angular grains of plagioclase are present as a trace with a grain size up to 50µm. The quartz/feldspar clasts are firmly cemented by fine grained secondary quartz showing a microcrystalline habit. Large fragments of chert-like quartz with no included clasts are also common. Intermixed with the secondary silica are pockets of brown clay and fine grained, water clear adularia in the 5µm to 15µm size range. Secondary adularia is also associated with large 2mm fragments of coarse vein quartz as attachments. The coarse quartz commonly carries euhedral prisms of epidote displaying anomalous blue colors. Epidote is also seen as prisms and granular inclusions in coarse calcite and silicified sedimentary rock where it is associated with green chlorite and yellow rutile. Opaque carbon/graphite is present in low amounts and occurs as a fine-grained dust and fragments up to 50µm. Sulfides are present as a trace but represented by several types. Pyrite is the primary sulfide and occurs as euhedral cubes, thin strings and anhedral grains in guartz and carbonate. Pyrite grain size varies from 5µm to approximately 100µm. Some grains show mild alteration to goethite. Chalcopyrite occurs as small anhedral grains with a maximum size of around 20µm. Some of the larger pyrite grains carry minute inclusions of chalcopyrite. One large spongy looking grain of yellow sphalerite measuring >1mm was identified in a silicified rock fragment and carries small inclusions of pyrite. An extensive search of the sample identified one 2µm grain of Au situated in a small quartz pit.

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Figure 13-3 Aspen Bottom Drum 2 - Coarse quartz with numerous inclusions of epidote showing anomalous blue colors – 200X PL



Figure 13-4 Aspen Bottom Drum 2 - Dark blocky carbon/graphite in secondary silica – 200X RL



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Figure 13-5 Aspen Bottom Drum 2 - A large mass of spongy looking sphalerite in a fragment of silicified sediment – 200X RL



Figure 13-6 Aspen Bottom Drum 2 - Bright 2µm Au grain in secondary silica – 500X RL





Figure 13-7 Aspen Bottom Drum 2 - Odd shaped grain of pyrite in coarse calcite – 200X RL

Figure 13-8 Aspen Bottom Drum 2 - Brown clay mass with opaque carbon/graphite and chlorite – 200X PL



Figure 13-9 Aspen Bottom Drum 2 - Quartz clasts cemented by secondary silica and adularia – 200X PL



Figure 13-10 Aspen Bottom Drum 2 - Coarse calcite flanked by brown clay and chlorite – 200X PL



13.2.2 2018 Otis Mineralogy Aspen Bottom Drum 8

Mineralogy: Quartz 60% K-spar/Adularia 17% Calcite 13% Clay (undifferentiated) 6% Epidote 2% Chlorite 1% Carbon/Graphite 1%

Trace Mineralogy: Pyrite, Chalcopyrite, Rutile, Zircon, Plagioclase, Iron Oxide, Au

In thin section this sample is essentially the same as Aspen Bottom Drum 2 and represents a silicified clastic sediment. The original sediment is a fine to medium grained arkosic sand subsequently cemented by fine grained secondary hydrothermal silica. Some of the silicified fragments are very fine grained and have the appearance of silt. Individual clasts of angular to well-rounded quartz vary significantly in size from 2µm up to 400µm. Many of the grains show mild to moderate corrosion along grain boundaries. Clasts of primarily K-spar and lesser amounts of plagioclase occur as angular fragments in the 2µm to 150µm size range and show pitting from dissolution. A brown clay showing a sinuous habit is present in appreciable amounts and occurs as irregularly shaped patches and thin strings cutting most of the clastic fragments. Associated with the clay is green chlorite and small rusty grains of iron oxide. Most of the clastic fragments up to 50µm in size. Adularia is well represented and occurs as fine-grained aggregates and fairly large water clear grains showing sharp crystal faces and zoning. The coarsest grains measure up to 300µm are generally associated with coarse calcite and coarse secondary vein quartz. The vein quartz commonly carries euhedral prisms of epidote. Sulfides are present as a trace with pyrite as the main type.

Pyrite occurs as small cubes and irregularly shaped grains in carbonate and quartz with a grain size of $2\mu m$ to $75\mu m$. Chalcopyrite occurs as small $2\mu m$ to $25\mu m$ grains primarily confined to quartz. The sulfides show minor decay to goethite. An extensive search of the sample identified one grain of Au measuring approximately $15\mu m$. The Au is situated between quartz/feldspar grains in secondary silica. Although other small bright grains were identified in the sample that strongly suggest Au, they are too small for positive identification by light microscopy.

Figure 13-11 Aspen Bottom Drum 8 - String of opaque carbon particles in silicified sediment fragment – 200X RL



Figure 13-12 Aspen Bottom Drum 8 - Large carbon/graphite grain with quartz and calcite – 200X RL



Figure 13-13 Aspen Bottom Drum 8 - Large grain of pyrite and yellow chalcopyrite with quartz grains – 200X RL





Figure 13-14 Aspen Bottom Drum 8 - A 15µm grain of Au between quartz grains – 500X RL

Figure 13-15 Aspen Bottom Drum 8 - Prisms of anomalous blue epidote in coarse secondary quartz – 200X PL



Figure 13-16 Aspen Bottom Drum 8 – Adularia with inclusions of carbon showing crystal faces and zoning – 200X PL



Figure 13-17 Aspen Bottom Drum 8 – Calcite and grey adularia – 200X PL



13.2.3 2018 Otis Mineralogy Aspen Top Drum 10

Mineralogy: Quartz 58% K-spar/Adularia 28% Siderite 7% Clay (undifferentiated) 5% Chlorite 1% Carbon/Graphite 1%

Trace Mineralogy: Pyrite, Chalcopyrite, Rutile, Zircon, Epidote, Plagioclase, Iron Oxide, Au

Although there are some subtle differences, this sample is similar to Aspen Bottom Drum 2 and Aspen Bottom Drum 8 and represents a silicified, fine to medium grained clastic sediment. Fragments of microcrystalline chert like fragments that carry little or no clastic material are common. Like the previous samples, individual clasts of quartz are angular to well-rounded and measure from 2µm to around 300µm in size and show corroded grain boundaries. Clasts of K-spar and plagioclase feldspar are generally angular with measurements up to 200µm. Secondary silica cementing the fragments carry thin strings, blocky grains and fine dust sized particles of carbon/graphite. Interstitial patches and thin veins of brown clay showing a sinuous habit are common in most of the silicified fragments. The clay is commonly associated with green chlorite, rutile and iron oxide. Coarse grained vein quartz commonly carries numerous prisms of epidote and opaque carbon and is associated with euhedral crystals of secondary, water clear adularia. Adularia also occurs as small interstitial patches in some of the silicified sediment fragments. In contrast to the previous samples, the carbonate contained in this material is siderite. The siderite has a distinct yellow color and generally occurs as fine-grained aggregates with individual grains measuring up to 100µm. Much of the siderite is iron stained and carries inclusions of sulfides. Pyrite is the dominant sulfide and occurs as small cubes and anhedral grains with measurements that vary from 2µm up to 50µm. Chalcopyrite occurs as small anhedral grains up to 10µm. The sulfides show mild to strong decay to goethite and in some cases, smaller grains show compete to nearly complete replacement. Au is present but difficult to locate. One 15µm grain was identified in an aggregate of siderite and quartz.



Figure 13-18 Aspen Top Drum 10 - Bright pyrite grain in yellow siderite – 200X RL

Figure 13-19 Aspen Top Drum 10 - Aggregate of colorful siderite – 200XPL





Figure 13-20 Aspen Top Drum 10 - Aggregate of secondary quartz and adularia – 200X PL

Figure 13-21 Aspen Top Drum 10 - Quartz/feldspar clasts cemented by secondary silica – 200X PL





Figure 13-22 Aspen Top Drum 10 - Bright 15µm grain of Au with quartz and siderite – 500X RL

13.2.4 2018 Otis Mineralogy Aspen Sill Drum 13

Mineralogy: Quartz 62% K-spar/Adularia 36% Chlorite 2% Trace Mineralogy: Pyrite, Marcasite, Chalcopyrite, Rutile, Zircon, Epidote, Iron Oxide, Au, Sphalerite, Kaolinite

In thin section this sample is markedly different than the previous samples. Although this material shows fairly strong alteration, there is no evidence of any silicified clastic material. This sample represents a porphyritic igneous rock composed of quartz and potassium feldspar set in a fine grain microlitic matrix. Quartz occurs as anhedral to euhedral phenocrysts and some bipyramidal forms with a grain size up to 300µm. Some of the quartz shows embayed margins and all phenocrysts tend to wear ragged, secondary quartz overgrowths. K-spar occurs a euhedral phenocrysts with measurements up to 1mm. The phenocrysts show moderate to strong alteration to the point where only ghost outlines remain. Some of the phenocrysts show complete replacement by fine grained green chlorite. Due to strong alteration, optical measurements for determination of K-spar type is difficult. However, measurements that could be made indicate the feldspar is likely sanidine. Cross cutting many of the porphyry fragments are thick fractures and micro seams filled with secondary quartz. Although the vein quartz generally has a mosaic texture, some prismatic forms are present. Some of the quartz carries small inclusions of epidote, attachments of clear secondary adularia and small vugs filled with kaolinite. Pyrite is the primary sulfide and occurs as euhedral cubes and anhedral grains with measurements up to 50µm. Aggregates of pyrite mixed with minor marcasite measure up to 300µm. Chalcopyrite and yellow colored sphalerite are present as a trace. The sphalerite carries minute exsolution bodies of chalcopyrite. Some of the pyrite/chalcopyrite

shows mild to moderate decay to iron oxide. An extensive search of the material identified one 4µm grain of Au in the matrix of a porphyry fragment.



Figure 13-23 Aspen Sill Drum 13 - Bright 4µm grain of Au in porphyry fragment – 500X RL

Figure 13-24 Aspen Sill Drum 13 - Liberated grain of yellow sphalerite with exsolution bodies of yellow chalcopyrite – 500X RL



Figure 13-25 Aspen Sill Drum 13 – Aggregate of pyrite and marcasite with adularia – 200X RL





Figure 13-26 Aspen Sill Drum 13 – Aggregate of adularia attached to vein quartz – 200X PL

Figure 13-27 Aspen Sill Drum 13 – K-spar phenocryst strongly altered to chlorite in a microlitic groundmass – 100X PL



Figure 13-28 Aspen Sill Drum 13 – Phenocrysts of yellow quartz and altered K-spar in a microlitic groundmass – 100X PL



13.3 Recommendations

The test work conducted to date on the Kilgore Project has indicated that there are two distinct mineral hosts in the deposit; free milling gold and a more recalcitrant mineral host that is finer grained and contains active carbon. The free milling gold has been shown to respond well to heap leach testing and the more recalcitrant material showed good gold extraction when subjected to grinding and CIL leaching. The more recalcitrant material tends to have a higher gold grade and should be able to support a conventional milling/CIL process provided the tonnage justifies this processing method.

Based on these findings the following recommendations have been presented:

- Evaluate the Aspen Sill material in a column leach format to confirm its amenability to heap leaching including evaluation of the crush size.
- Evaluate the Aspen Bottom and Top materials in a CIL format to optimize the gold and silver extraction through the use of grind versus recovery testing.
- Ensure that all subsequent metallurgical analysis on new samples utilizes cyanide amenability tests (P₈₀ of 10 mesh with a 96 hour leach) to define the direction for subsequent testing.
- Ensure that complete carbon assays are undertaken on all mineral domains.

14.0 MINERAL RESOURCE ESTIMATE

14.1 Introduction

The Mineral resource statement presented herein represents the second mineral resource estimate reported by Otis Gold for the Kilgore Project in accordance with the Canadian Securities Administrators' NI 43-101. The mineral resource evaluation reported herein replaces the earlier resource estimate presented in the report titled "Technical Report and Resource Estimate for the Kilgore Project, Clark County, Idaho, U.S.A." prepared by Donald Cameron in 2012. This section describes the resource estimation methodology and summarizes key assumptions.

The mineral resources were estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines and are reported in accordance with the Canadian National Instrument 43-101. Mineral resource estimates do not account for mine-ability, selectivity, mining loss and dilution. This mineral resource estimate includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves. There is also no certainty that the inferred mineral resources will be converted to the measured or indicated categories through further drilling, or into mineral reserves, once economic considerations are applied. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserve. The project presently has no mineral reserves.

The mineral resource estimate for the Kilgore Project was completed by David Rowe, CPG, of Rowearth LLC who is an independent Qualified Person as defined in NI 43-101. The effective date of the resource statement is August 14, 2018. Vulcan's Pit optimization was applied to the resource estimate to assess the reasonable prospects for economic extraction for the resource, and was completed by Kelsey Stark, Mining Engineer under the direction of Terre Lane, Principal Mining Engineer of Global Resource Engineering (GRE). Peer review of the mineral resource estimate was completed by Terre Lane.

In the opinion of Rowearth, the mineral resource estimate reported here is a reasonable representation of the global mineral resources found in the Kilgore Project at the current level of sampling.

14.2 Resource Estimation Procedures

The gold resource estimate is based on the current drill hole database, interpreted geology and fault structures, and topographic data. Three-dimensional geologic modelling was completed with Leapfrog Geo and estimation of mineral resources was completed using Leapfrog EDGE (Version 4.3).

Geostatistical analysis, semi-variogram analysis, and block model validation were completed using both Snowden Supervisor™ Version 8.8 and Leapfrog EDGE.

The resource evaluation methodology involved the following procedures:

• Database compilation and verification;

- Construction of 3D geologic models for lithology, alteration, oxidation state, and gold mineralization in Leapfrog Geo;
- Definition of the resource estimation domains for use in the gold and specific gravity estimations;
- Sample data preparation (compositing and capping) for geostatistical analysis, variography, and block model estimation;
- Block modelling and grade estimation in Leapfrog EDGE;
- Resource validation and classification;
- Assessment of "reasonable prospects for eventual economic extraction" and selection of appropriate cut-off grades with Vulcan pit optimization;
- Preparation of the Mineral Resource Statement and Grade Sensitivity Analysis.

14.3 Drill Hole Database for the Resource

Otis Gold prepared the drill hole database for Kilgore and is determined to be of good quality. The drill hole data for the Kilgore Project was delivered as a Microsoft Access database that contains collar locations, drill hole survey orientations, sample intervals with gold assays in ppm, geologic intervals with rock types, alteration, and oxidation state, and specific gravity values. The collar locations are projected in State Plane Coordinate System, Zone Idaho East, NAD83 datum, with planar and elevation units in feet. All downhole intervals are captured in feet. Rowearth believes the drill hole assay data are sufficiently reliable to support the estimation of gold mineral resources.

The exploration database for Kilgore contains drill hole information from numerous companies that begin in 1984 and end in 2017. The cut-off date for drill hole assay data pertaining to this resource estimate is February 20, 2018 ending with drill hole 17OKC-379. The drill holes were validated during import with minor corrections made, and certain drill holes were excluded for use in the mineral resource estimation if they were judged to be of insufficient quality. The complete drill hole database delivered by Otis contains 377 separate drill holes. After filtering out holes that were well outside the main Kilgore resource model and flagging 6 drill holes for exclusion, the resulting drill hole dataset contains 323 holes and is summarized in Table 14-1. Figure 14-1 shows the position of the holes relative to the geologic model boundary for the resource.

Project	Years	Companies	Drill Holes	Samples	Interval Length (ft)	Percent of Total (ft)
Kilgore	1984-1985	Kennecott	6	1,341	6,720	3%
	1990-1992	Placer Dome US	33	2,865	17,700	8%
	1993	Pegasus Gold	19	1,637	8,245	4%
	1994-1996	Echo Bay Mines	87	11,611	58,874	26%
	2008-2017	Otis Gold	178	26,490	134,173	59%
		Grand Total	323	43,944	225,711	100%

Table 14-1: Drill hole data with assays for the Kilgore Project



Figure 14-1: Kilgore drill holes used in geologic models and resource estimation

Gray rectangle outlines the boundary of the geologic and block models. Plan view.

14.4 Geologic Modelling

The resource estimation was constrained by a 3D geologic model consisting of multiple rock types including the basal Aspen formation, volcaniclastic lithic tuff, granodioritic and granitic intrusive rocks, a minor involvement of overlying porphyritic rhyolite volcanic rocks, and a layer of overburden material. The principal gold mineralization is disseminated and structurally controlled mineralization with quartz veins, quartz vein stockwork, and fault related rock types. The gold mineralization and associated alteration are controlled by steeply dipping northwest trending fault zones and a cross-cutting northeast trending fault. The gold mineralization is also controlled by the host rock lithologies cut by the fault zones. The geologic rock type model is displayed in Figure 14-2 and Figure 14-3.


Figure 14-2: Geologic Model for the Kilgore Deposit, Plan View

Showing top of bedrock with overburden removed. North is up. Vertical section line shown. Aspen formation (Ka), lithic tuff (Tlt), andesitic sills (Tad), rhyolite flow (Tqp), rhyolite intrusive rock (Tpr).



Figure 14-3: Geologic Model for the Kilgore Deposit, Vertical Section

Looking NW parallel the northwest fault system. Gold zone > 0.1 g/t Au outlined. Aspen formation (Ka), lithic tuff (Tlt), and esitic sills (Tad), rhyolite flow (Tqp), rhyolite intrusive rock (Tpr), overburden (Ovb). Steeply dipping fault zones in blue.

The Kilgore deposit is subdivided into five estimation domains based on host rock types and the modelled extents of the gold mineralization using a 0.1 g/t Au threshold. Modelling of the gold zone was controlled by the gold grade values from drilling while respecting the geologic and structural trends identified for the deposit, the northwest trending fault system. The gold zone boundary was treated as a hard boundary during block model estimation and samples outside the boundary were excluded from the gold grade estimation. Rock type contacts are also treated as hard boundaries during the grade estimation. The estimation domains used in the resource evaluation are presented in Figure 14-4, Figure 14-5, and Figure 14-6.





Showing top of bedrock with the 0.1 g/t Au zone shown in red. Fully projected, north is up.



Figure 14-5: Five estimation domains for the Kilgore Deposit, plan view

Rock types clipped by the limits of the 0.1 g/t Au zone. Fully projected, north is up. Vertical section line shown. Aspen formation (Ka), lithic tuff (Tlt), andesitic sills (Tad), rhyolite flow (Tqp), rhyolite intrusive rock (Tpr). Overburden removed



Figure 14-6: Five Estimation Domains for the Kilgore Deposit, Vertical Section

Looking NW. Rock types clipped by the limits of the 0.1 g/t Au zone. Steeply dipping fault zones in blue. Aspen formation (Ka), lithic tuff (Tlt), andesitic sills (Tad), rhyolite flow (Tqp), rhyolite intrusive rock (Tpr), overburden (Ovb)

14.5 Sample Compositing

Prior to constructing the composite samples for gold estimation, assay values were compared to corresponding sample interval lengths. Higher gold grades are not observed to correlate with sample lengths shorter than the most common sample length of 5 ft, and evaluation of outlier values was completed on the composite samples (Figure 14-7).

Ten-foot composite assay intervals were constructed from the original assay samples. The composite samples were constructed within the boundary limits for each of the five estimation domains and tagged with the associated rock code for each domain. Any residual end composite samples less than 3.3 ft in length were added to the previous composite sample interval.





14.6 Evaluation of Outliers

Very high-grade assay values can bias block grade estimates. Therefore, the drill hole composite samples were evaluated for extreme high-grade outliers and reduced or "capped" to values appropriate for the estimation. The capped values were identified from inflection points of cumulative probability plots, at the highest end of the grade distributions. Grades above these inflection points were selected for capping.

Capping of assay gold values for the Kilgore deposit was limited to a select few extreme values. To reduce bias from a larger set of high-grade gold samples, those outlier values are range restricted by a method known in Leapfrog EDGE as "clamping". In clamping, samples above a specified high-grade threshold value are used at full value out to a specified distance from the sample. Beyond the specified distance the samples are reduced in value or "clamped" to a stated high-grade threshold value (Table 14-2).

To quantify the impact of sample value capping in combination with the clamping of other high-grade samples the resource was evaluated using uncapped and unclamped sample grades. The process of capping and clamping of sample values reduced the total estimated metal content in the Kilgore deposit by 3%.

Estimation Domain	Number Comps	Capping g/t Au	Number Capped	% Capped	Clamp g/t Au	Number Clamped	% Clamped
Tpr	2758	21	2	0.07%	12	9	0.3%
Тqр	71	0.60	1	1.41%	0.35	3	4.2%
Tad	2585	None	1	0.04%	9	8	0.3%
Tlt	4690	48	0	0.00%	14	13	0.3%
Ка	2040	None	0	0.00%	8	11	0.5%
ALL	12144		4	0.03%		44	0.4%

Table 14-2: Kilgore Gold Value Capping and High-Grade Clamping Values by EstimationDomain

Ndat = number of samples, HG Threshold is the value above which samples are clamped

14.7 Statistical Analysis and Variography

For the following statistics and for the composite assay data used in the resource estimation, assay data listed as missing in the original database were omitted from the composite samples.

14.7.1 Statistics of Composited Data

To assess the global, unbiased characteristics of the gold composite samples within each of the Kilgore estimation domains, the data were declustered by a cell declustering method. The declustered composite data statistics reveal that gold grades observed vary according to the host rock estimation domain. The declustered statistics of composite samples for all estimation domains in the Kilgore deposit are presented in Figure 14-8.



Figure 14-8: Kilgore, Au Box-Plot and Composite Sample Declustered Statistics by Estimation Domain

14.7.2 Boundary Conditions

Composite data statistics establish that gold values observed within the estimation rock-type-based domains are variable with higher mean grades found in the Aspen formation, 7Ka, and the andesitic sills, 5Tad. Inspection of drilling intersections across intrusive rock /lithic tuff contacts reveal that higher grades commonly occur in the lithic tuff (6Tlt) adjacent to the intrusive rocks. In general, metal grades across the domains change substantially at distances shorter than the average drill hole spacing. Accordingly, hard boundary conditions were applied during resource estimation between all five of the estimation domains developed for the resource. Hard boundary conditions restrict sample values to the domain in which they are located, and a domain's resource block grade estimates are not affected by samples outside the domain.

14.7.3 Variography

Variogram models were developed with Snowden Supervisor from the composite samples for gold within each estimation domain separately, and the nugget values were established from downhole variograms. The variogram parameters were transferred from Supervisor to Leapfrog EDGE. The experimental variograms are log transformed to handle the strongly skewed data set. The variogram model parameters used for gold grade estimation are summarized in Table 14-3. An example of the gold variography for the 6Tlt domain (lithic tuff) is presented in Figure 14-9 and variogram plots for all domains are included in Appendix A.

Estimation	L	eapfrog Tre	nd	Nugget	Sill C1	Range	
Domain	Dip	Dip Az	Pitch	C ₀	and C ₂	(ft)	Model
2Tor	75	240	15	0.00	0.46	70	Spheroidal
зтрі	75	240	15	0.22	0.33	200	Spheroidal
4Tap	75	245	100	0.20	0.28	65	Spheroidal
4 i qp	75	240	100	0.20	0.79	200	Spheroidal
FT ad	75	255	00	0.05	0.16	70	Spheroidal
DIAU	75	200	90	0.25	0.6	210	Spheroidal
CTH.	75	245	100	0.00	0.28	65	Spheroidal
611	75	75 245 100		0.20	0.77	200	Spheroidal
71/ 75		245	00	0.25	0.24	50	Spheroidal
/na	10	245	00	0.25	0.45	225	Spheroidal

Table 14-3: Kilgore Variogram Models by Estimation Domain

Leapfrog trend orientation. Variography from the 6Tlt domain was applied to the 4Tqp domain



Figure 14-9: Variography for the 6Tlt Domain

Top: major axis variogram model; Bottom: ellipsoid of variogram trend within Tlt domain

14.7.4 Specific Gravity

Otis has measured specific gravity ("SG") for 671 drill core samples from the Kilgore deposit at the time of this resource estimation. The SG sampling program was designed to collect representative specimens from all rock types present at Kilgore and from all alteration types impacting the host rock types. The SG values range from 1.96 to 2.78 across the deposit with a mean value of 2.45, and it was observed that clay-altered zones tend to have the lowest mean SG values observed. Accordingly, the five host rock types at Kilgore were sub-divided by modeled clay alteration zones vs. all other alteration types. This resulted in 10 SG sub-domains that best outline the density variation at Kilgore. The SG statistics for the combined domains are displayed in Figure 14-10.



Figure 14-10: Statistics for Specific Gravity at Kilgore

Box plot of SG values for 10 combined domains: rock type sub-divided by clay and non-clay alteration zones.

14.8 Resource Estimation Procedure

The block model resource estimate for the Kilgore deposit was completed using Leapfrog EDGE version 4.3. In Leapfrog EDGE a sub-blocked model was created that consists of primary parent blocks that are sub-divided into smaller sub-blocks whenever triggering surfaces intersect the parent blocks. For the Kilgore sub-block model, the five estimation domain boundaries were used as triggers to produce sub-blocks. Gold grades are estimated for the primary parent blocks, and all categorical data such as

estimation domains, oxidation, resource class, or optimized pits are evaluated into the sub-blocks. Optimal parent block size was identified by KNA analysis and considers possible future selective mining units. The block model parameters for Kilgore are presented in Table 14-4.

Deposit	Description	X Axis	Y Axis	Z Axis
	Block Model Origin (min X and Y, max Z)	698,060	1,006,120	8400
Kilgore	Size by number of Parent Blocks	187	173	226
Ū	Parent Block Dimension	20	20	10
	Sub-block Dimension	X Axis Y Axis Z n X and Y, 698,060 1,006,120 8 ent Blocks 187 173 8 ension 20 20 10 10	10	

Table 14-4: Kilgore Block Model Parameters

Block model rotation is dip of 0° and rotation of 0°

The Kilgore block model resource estimate was completed for Au and was constrained by the five estimation domains, which are the Au zone subdivided by the host rock types. All block grades were estimated from 10 ft composite sample values captured within the respective domains.

Block grades were estimated by ordinary kriging using the variogram models observed for composite sample Au values within the estimation domains. Hard boundary conditions were applied during the block estimation for all estimation domains. An exception was made for small regions of the Tqp domain where a modified soft boundary was used that allow samples outside the domain if within 5 feet of the boundary.

The blocks were estimated with two successive interpolation passes for all Au. The shorter first pass was designed to interpolate gold grades for blocks that are well-informed by drill hole composite samples. The second pass was designed to estimate most of the remaining blocks within the geologic domains including extrapolated estimates.

Within select estimation domains, extreme composite Au assay values were capped and other samples above a specified high-grade threshold value were used at full value out to a specified range from the sample. Beyond the specified range the samples are reduced in value or "clamped" to a specified high-grade threshold value.

Block specific gravity was estimated within ten estimation domains: the five host rock types subdivided by clay or non-clay alteration. Specific gravity was estimated using distance cubed methodology (ID³) and using hard boundary conditions between most domains. The blocks were estimated by a single search pass within each domain and all blocks not estimated by the single pass were assigned the mean specific gravity value for the respective domain. A summary of estimation parameters is presented in Table 14-5 and Table 14-6.

Estimation Domain	Tpr	Tpr	Тqр	Тqр	Tad	Tad	Tlt	Tlt	Ka	Ka
Pass	Pass 1	Pass 2								
Value Clipping Lower (g/t Au)										
Value Clipping Upper (g/t Au)	21	21	0.6	0.6			48	48		
Search Ellipsoid Orientation										
dip	75	75	75	75	75	75	75	75	75	75
dip-azimuth	240	240	245	245	255	255	245	245	245	245
pitch	15	15	100	100	90	90	100	100	80	80
Search Ellipsoid Lengths ft										
max	240	400	240	400	240	400	240	400	240	400
Interm.	240	400	240	400	240	400	240	400	240	400
min	120	200	120	200	120	200	120	200	120	200
Minimum Samples	6	5	6	5	6	5	6	5	6	5
Maximum Samples	17	17	17	17	17	17	17	17	17	17
Outlier Restriction										
Enabled (True or False)	TRUE									
Discard or Clamp	Clamp	Clamp	Clamp	Clamp	Clamp	Clamp	Clamp	Clamp	Clamp	Clamp
Range Restriction (% of search range)	25%	15%	25%	15%	30%	18%	33%	20%	42%	25%
High-grade threshold (g/t Au)	12	12	0.35	0.35	9	9	14	14	8	8
Octant Search										
Enabled (True or False)	TRUE	FALSE								
Max samples per octant	5		5		5		5		5	
max number of empty octants	5		5		5		5		5	
<u>Drill hole Limit</u>										
Enabled (True or False)	TRUE									
max samples per drill hole	5	5	5	5	5	5	5	5	5	5

Table 14-5: Summary of Au Estimation Parameters for the Kilgore Block Model Estimation

SG Estimation Domain	Clay, Tpr	Clay, Tqp	Clay, Tad	Clay, Tlt	Clay, Ka	Tpr	Тqр	Tad	Tlt	Ka
Pass	Pass 1	Pass 1	Pass 1	Pass 1	Pass 1	Pass 1	Pass 1	Pass 1	Pass 1	Pass 1
Value Clipping Lower (SG)								2.3		
Value Clipping Upper (SG)										
Search Ellipsoid Orientation										
dip	77	75	75	75	75	75	75	75	75	75
dip-azimuth	233	240	240	240	240	240	240	240	240	240
pitch	61	15	15	15	15	15	15	15	15	15
Search Ellipsoid Lengths ft										
max	240	240	240	240	240	240	240	240	240	240
interm	200	200	200	200	200	200	200	200	200	200
min	140	140	140	140	140	140	140	160	140	160
Minimum Samples	2	2	1	1	1	2	2	2	2	2
Maximum Samples	6	6	6	6	6	6	6	6	6	6
Outlier Restriction										
Enabled (True or False)	False	False	False	False	False	False	False	False	False	False
Octant Search										
Enabled (True or False)	False	False	False	False	False	False	False	False	False	False
Drill hole Limit										
Enabled (True or False)	False	False	False	False	False	False	False	False	False	False

Table 14-6: Summary of SG Estimation Parameters for the Kilgore Block Model Estimation

14.9 Block Model Validation

Validation of the estimated block grades for the Kilgore deposit was completed for each of the geologic domains. The resource block model estimate was validated by:

- Completing a series of visual inspections by comparisons of composite sample grades to estimated block values across the deposit. This was done for gold and SG.
- Comparison of "well informed" block gold grades with the average of composite sample values contained within those blocks using both scatter and cumulative probability plots.
- Comparing average composite sample values with average estimated block grades along east, north, and elevation orientations Swath grade trend plots.

Estimated Au and SG block grades were visually inspected in a series of detailed vertical sections across the deposit. This review confirmed that the supporting composite sample grades closely match the estimated block values. Figure 14-11 displays a representative vertical section of the estimated gold block grades and the composite sample values used in the estimation.



Figure 14-11: Kilgore Block Model and Composite Sample Gold Values, Vertical Section

Vertical section looking NW. 50 ft thick displaying estimated gold block grades and composite gold values in g/t. Geologic contacts shown.

Figure 14-12 and Figure 14-13 compare estimated block grade distribution with drill hole composite sample grades for Au using the average of composite samples within the blocks. Well-informed parent blocks are selected that have composite samples within 14 feet of the block centroid. The scatter plot demonstrates that the estimated block grades correlate well to the composite sample value mean, with scatter around the x = y line. This indicates that the estimated block grades are quite variable and not over smoothed. The probability plots reveal similar sample distribution between estimated block and composite sample values, and the mean estimated block grades and composite sample averages for the blocks are nearly identical.



Figure 14-12: Scatter Plot Comparison of Gold Composites with Estimated Block Values

Parent blocks selected with composite samples within 14 feet of block centroid. Composite grades developed as the average of samples within a 5 ft distance tolerance of the distance to the closest point.





Parent blocks selected with composite samples within 14 feet of block centroid. Composite grades developed as the average of samples within a 5 ft distance tolerance of the distance to the closest point.

through the Kilgore deposit (swath plots). The slices are in the X and Z (Elevation) directions. The swath plots created for Au across the entire Au zone and within four important estimation domains are shown in Figure 14-14 to Figure 14-18. The estimated block grades, the nearest neighbor block grades, and the composite sample values are similar in all directions for all estimation domains. Overall, the validation shows that current resource grade estimates are a good representation of drill hole assay data.



Figure 14-14: Swath Plot Across the Kilgore Au Deposit

Swath plot of gold values (ppm) comparing declustered composite sample grades (gray) to block estimates (black) and NN block estimates (blue). Swaths along Z.

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Figure 14-15: Swath Plot of the Tpr Domain

Swath plot of gold values (ppm) comparing clipped composite sample grades (gray) to block estimates (black) and NN block estimates (blue). Swaths along X



Figure 14-16: Swath Plot of the Tad Domain

Swath plot of gold values (ppm) comparing clipped composite sample grades (gray) to block estimates (black) and NN block estimates (blue). Swaths along X



Figure 14-17: Swath Plot of the Tlt Domain

Swath plot of gold values (ppm) comparing clipped composite sample grades (gray) to block estimates (black) and NN block estimates (blue). Swaths along X



Figure 14-18: Swath Plot of the Ka Domain

Swath plot of gold values (ppm) comparing clipped composite sample grades (gray) to block estimates (black) and NN block estimates (blue). Swaths along X

14.10 Mineral Resource Classification

Block model quantities and grade estimates for the Kilgore deposit were classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014). Mineral resources were estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserve Best Practices" Guidelines.

Generally, most of the factors influencing the mineral resource classification at Kilgore are positive. Rowearth is satisfied that the geologic modelling for the deposit honours the current geologic information and knowledge available. The location of the samples and the assay data are sufficiently reliable to support resource evaluation.

Mineral resources are classified as Measured, Indicated, or Inferred. To classify mineralization as a Measured mineral resource, "the nature, quality, quantity and distribution of data are such that the tonnage and grade or quality of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability of the deposit". No blocks were classified as a Measured mineral resource at Kilgore.

To classify mineralization as an Indicated Mineral Resource, "the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably

assume the continuity of mineralization" (CIM Definition Standards on Mineral Resources and Mineral Reserves, May 2014).

Estimated blocks were classified as either Indicated or Inferred according to:

- Confidence in interpretation of the mineralized zones.
- Continuity of gold grades defined from variogram models.
- Number of samples used to estimate a block.
- Number of drill holes used to estimate a block.
- Number of Octants required to estimate a block.

To identify blocks to consider for Indicated classification:

- 1. Blocks were flagged by a classification search pass that required:
 - a. Au composite values for each estimation domain.
 - b. A 130 ft x 130 ft x 100 ft search volume obtained from the Au variography.
 - c. At least 6 samples.
 - d. At least 2 Drill Holes.
 - e. At least 3 Octants. Octants demonstrate that minimal spatial support exists from drilling to allow regions into the Indicated Class.
- 2. Final broad areas of flagged blocks were outlined by constructing a classification wireframe designed to encompass zones predominantly flagged by the search pass used. This process allows review of the geologic confidence on the deposit along with drill hole support and expands certain areas but excludes others from Indicated. The number of blocks flagged for Indicated class was increased by the wire-framing process.
- 3. Blocks were finally selected as Indicated if the centroid of the block falls inside the classification wireframe.

For blocks classified as Inferred, the confidence in the estimate was insufficient to allow for the meaningful application of technical and economic parameters or to enable an evaluation of economic viability. All estimated blocks not assigned to the Indicated class are classified as Inferred. Figure 14-19 displays the distribution of Indicated and Inferred resources at Kilgore.



Figure 14-19: Indicated and Inferred Resources Classified at Kilgore with Composite Samples

Top: Plan view fully projected. Bottom: Vertical section across the resource looking NW, 130 ft thick projection

14.11 Pit Constrained Mineral Resource

CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) defines a mineral resource as: "a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling." The mineral resources may be impacted by further infill and exploration drilling that may result in increase or decrease in future resource evaluations. The mineral resources may also be affected by subsequent assessment of mining, environmental, processing, permitting, taxation, socio-economic and other factors. Mineral resources are not mineral reserves and do not have demonstrated economic viability. Mineral reserves can only be estimated based on the results of an economic evaluation as part of a Preliminary Feasibility Study or Feasibility Study. As such, no mineral reserves have been estimated as part of this study. There is no certainty that all or any part of the mineral resources will be converted into a mineral reserve.

The requirement, "reasonable prospects for eventual economic extraction", generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at a cut-off grade considering appropriate extraction scenarios and processing recoveries. To meet this requirement, Rowearth considered that major portions of the Kilgore deposit are amenable for open pit extraction.

To determine the quantities of material offering "reasonable prospects for eventual economic extraction" by an open pit, Global Resource Engineering, Ltd of Denver, Colorado ("GRE") constructed open pit scenarios developed from the resource block model estimate using Vulcan's Lerchs Grosman miner "Pit Optimizer" software. Reasonable mining assumptions were applied to evaluate the portions of the block model (Indicated and Inferred blocks) that could be "reasonably expected" to be mined from an open pit. The optimization parameters presented in Table 14-7 were selected based on experience and benchmarking against similar projects. The results are used as a guide to assist in the preparation of a mineral resource statement and to select an appropriate resource reporting cut-off grade. Rowearth considers that the blocks located within the resulting conceptual pit envelope show "reasonable prospects for economic extraction" and can be reported as a mineral resource.

Parameter	Unit	Values
Metal Price	US\$/oz gold	\$1,300.00
Selling cost	US\$/oz gold	\$2.20
Gold Recovery	%	80.00%
Mining cost	US\$/short ton	\$2.00
Process cost	US\$/short ton includes \$1.00 G&A	\$4.00
Pit slope	degrees	50

Table 14-7: Kilgore Resource Parameters for Conceptual Open Pit Optimization

The reader is cautioned that the results from the pit optimization are used solely for testing the "reasonable prospects for eventual economic extraction" by an open pit and do not represent an attempt to estimate mineral reserves. There are presently no mineral reserves on the project.

The Kilgore mineral resource within the pit is shown in Figure 14-20 and the mineral resources for the Kilgore deposit are reported in Table 14-8.





Top: Au block model estimate with pit shell and gold composite sample values. Bottom: Reported gold mineral resources above 0.21 Au g/t cut-off grade within the optimized pit shell.

Table 14-8: Mineral Resource Statement for the Kilgore Deposit

Kilgore Indicated Mineral Resources^(1,2,3,4)

		Imperial Units			Metric Units			
Project	Category	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces
Kilgore	Indicated	0.006	49,106,000	0.017	0.21	44,556,000	0.58	825,000
_	Total Indicated	0.006	49,106,000	0.017	0.21	44,556,000	0.58	825,000

Kilgore Inferred Mineral Resources^(1,2,3,4)

		Imperial Units			Imperial Units Metric Units					Metric Units		
Project	Category	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces				
Kilgore	Inferred	0.006	10,354,700	0.013	0.21	9,399,000	0.45	136,000				
	Total Inferred	0.006	10,354,700	0.013	0.21	9,399,000	0.45	136,000				

(1) Mineral resources have been classified in accordance with the CIM Definition Standards on Mineral Resources

(2) Gold resources are reported above a 0.21 g/t Au cut-off

(3) Mineral resources reported here are constrained within an optimized pit shell.

(4) Pit shell input parameters: Gold price \$1,300, Selling price \$2.20/oz, Recovery 80%, Mining cost \$2/ton, Process cost + G&A \$4/ton, Pit slope 50°

14.12 Grade Sensitivity to Gold Cut-off

The mineral resources reported for the Kilgore deposit are sensitive to the selection of the reporting gold cut-off grade. To illustrate this sensitivity, the block model gold quantities and grade estimates are presented at different cut-off grades within the conceptual pit used to constrain the mineral resources (Table 14-9). The sensitivity to gold cut-off grade is also presented as grade tonnage curves for the Kilgore deposit (Figure 14-21). The reader is cautioned that the information presented in the table should not be misconstrued as a Mineral Resource Statement.

	Imperial Units				Metric Units				
Classification	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces		
	0.003	62,382,000	0.014	0.10	56,592,000	0.49	886,000		
	0.004	58,647,000	0.015	0.14	53,206,000	0.51	873,000		
	0.005	53,976,000	0.016	0.17	48,966,000	0.54	852,000		
Indicated	<u>0.006</u>	<u>49,106,000</u>	<u>0.017</u>	<u>0.21</u>	<u>44,556,000</u>	<u>0.58</u>	<u>825,000</u>		
	0.007	44,549,000	0.018	0.24	40,414,000	0.61	796,000		
	0.008	40,294,000	0.019	0.27	36,559,000	0.64	764,000		
	0.009	36,343,000	0.020	0.31	32,970,000	0.69	730,000		
	0.010	32,830,000	0.021	0.34	29,786,000	0.73	697,000		
	0.003	16,271,700	0.010	0.10	14,761,000	0.34	163,000		
	0.004	14,511,400	0.011	0.14	13,168,000	0.37	157,000		
	0.005	12,336,900	0.012	0.17	11,192,000	0.41	147,000		
Inferred	<u>0.006</u>	<u>10,354,700</u>	<u>0.013</u>	<u>0.21</u>	<u>9,399,000</u>	<u>0.45</u>	<u>136,000</u>		
	0.007	8,736,180	0.014	0.24	7,925,000	0.49	126,000		
	0.008	7,272,060	0.016	0.27	6,600,000	0.54	115,000		
	0.009	6,017,710	0.017	0.31	5,459,000	0.59	104,000		
	0.010	5,030,820	0.019	0.34	4,567,000	0.65	95,000		

Table 14-9: Mineral Resource Sensitivity

Au block model metal quantities reported at various Au cut-off grades for the Kilgore deposit.



Figure 14-21: Kilgore Deposit Grade-Tonnage Curves for Au Reported Above a Cut-Off Grade

Rowearth is of the understanding that Otis Gold Corp is unaware of any factors that may potentially affect the resource estimate reported here.

15.0 MINERAL RESERVE ESTIMATE

There are no mineral reserve estimates for the Kilgore Project.

16.0 MINING METHODS

Conventional open pit mining methods using drill, blast, load, haul mining cycle is applicable to the Kilgore deposit. Mine planning, scheduling, and costing are not part of this Mineral Resource Estimate.

17.0 RECOVERY METHODS

Based on the test work conducted the majority of the Kilgore Project appears suitable to conventional heap leach processing. The process involves crushing the ore to a suitable size distribution (test work has indicated that a P_{80} of 1/2" to 1" would be suitable) using a primary and secondary crushing circuit. The material may be agglomerated with cement and lime using an agglomeration drum prior to being conveyed to the heap leach.

The heap leach would consist of a suitable area lined with a containment system, typically a LLDPE liner with an overliner of sized material to facilitate drainage. Within this overliner would be placed drainage pipes to conduct the leach solution to the centralized collection ponds. The agglomerated material would be stacked by a radial stacker into heap lifts, ranging from 5 to 10 meters in height. After a suitable area has been stacked, the heap would be irrigated with dilute cyanide solution. Stacking would continue, and the areas irrigated with solution as the heap advances. The solution leaches gold from the heap materials and transports it to a series of storage ponds.

This "pregnant leach solution" (PLS) would be collected in a dedicated pond and either recirculated or processed in the Adsorptions-Desorption-Recovery plant (ADR). The gold in the solution is collected on activated carbon in a series of carbon-in-column (CIC) reactors (from 4 to 8 columns is typical). The depleted "barren" solution would report back to the heap leach barren pond and have the reagent levels adjusted prior to being recirculated back to the heap. Additional ponds such as an intermediate leach solution (ILS) can also be employed to help maintain the required solution gold grades for the process plant by allowing more controlled recirculation.

The once the gold level on the carbon in the CIC circuit reaches a specific setpoint (3,000 g/t in the lead column for example). The carbon is advanced and a set amount removed for gold recovery. Gold recovery takes place through stripping the activated carbon using a specifically designed process (ZADRA or AARL are typical). The gold is stripped from the carbon into an enriched solution that reports to an electrowinning circuit where the gold is recovered as a sludge that is ultimately smelted into high purity gold bars.

The heap leach is typically designed to have multiple lifts installed. Each new lift goes on top of the last lift until the heap reaches its ultimate height. Heap leaches often utilize 10 or more lifts to reach an ultimate height of 100 to 150 meters. The configuration of the heap leach is heavily dependent on the permeability characteristics of the material, the terrain available and the geotechnical aspects of the site.

Portions of the Kilgore material appear better suited to CIL processing due to the presence of active carbon and higher head grade. Often two processing systems are developed for projects with variations in grade and mineralogy. Typically, a heap leach is employed for the lower grade materials and a mill system for the higher-grade material. The determination of which process is utilized for which material is defined by the cross-over grade. The cross-over grade defines the material treatment path, grades higher than the crossover grade would report to the mill and grades lower would report to the heap leach. The cross-over grade does not have to be just gold, it can also include carbon and other determining assays. For Kilgore a typical milling process would include primary crushing – likely shared with the heap leach plant, followed by SAG and ball milling to achieve a suitable size distribution. The test work indicates that a grind size of 80% passing 75 um should be sufficient to achieve the desired gold extraction.

The ground material would report to a CIL circuit where cyanide is added to leach the gold while activated carbon simultaneously adsorbs the gold from solution. This leaching takes place in a series of stirred tanks equipped with air injection and carbon screens to retain the carbon in the tank. This system is specifically designed to combat "preg-robbing" type materials.

The gold loaded carbon is advanced counter-current to the leach slurry flow as it becomes loaded with gold. The carbon advancement is achieved by pumping the tank slurry containing the carbon to the next upstream tank. The slurry flows back to the original tank and the carbon is retained by the screens. Loaded carbon is removed from the circuit once it reaches the desired gold loading, just as in the CIC circuit of the heap leach. Similarly, the carbon is stripped of its adsorbed gold via a dedicated system such as the ZADRA or AARL system. The striped carbon is regenerated with steam in a kiln as required before being returned to the leach circuit. In combination plants such as is envisioned here, many of the systems can be shared including the carbon elution, regeneration and the gold refining unit operations.

18.0 PROJECT INFRASTRUCTURE

Limited amount of infrastructure is currently available on site.

Power, water, and all other systems necessary for a mining and processing operation will be required.

19.0 MARKET STUDIES AND CONTRACTS

No market studies or contracts were created for the project. Third party refiners are common in the international gold market, and gold doré is a readily marketable commodity. The study assumes a selling cost of \$2.20 per ounce of gold which is a value on the conservative side.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Environmental Studies

In December of 2010, Golder Associates prepared a Preliminary Environmental Report (Golder, 2010) to provide Otis with an overview of potential ecological and environmental issues that may be encountered in developing a new mine, identify potential roadblocks to development, and outline the environmental permit, process, and additional baseline studies that will be necessary to develop the project. The report identifies the various permits that will be required on the local, state and federal level if this project goes to a mining stage. The Golder report states that in general, the company did not identify any issues that they consider to be fatal flaws. They state that, as project development and design continue, and specific studies are completed for the project facilities, it is possible that issues may surface that are currently difficult to identify. The Golder Report recommends that general baseline studies for the immediate project area be initiated. Otis Gold plans to initiate these various baseline studies when funding permits."

20.2 Cultural Inventory

In 2010, and in connection with permitting a Plan of Operation (or POO), North Wind Engineering of Idaho Falls, Idaho performed a cultural inventory of the Mine Ridge area. No material items were identified and the Plan of Operation was approved. Subsequent Plans of Operation have been approved after the completion of two separate Environmental Assessments in 2015 and 2018 and no cultural issues were identified.

20.3 Permitting

As covered in Section 4.5 of this report, the Kilgore Project is located on federal ground administered by the Department of Agriculture, United States Forest Service (USFS). The local headquarters for this portion of the Caribou-Targhee National Forest is located in Dubois, Idaho. In 2018, the USFS issued a Decision Notice authorizing a 5-year exploration POO which approved drilling on 140 drill sites throughout the Kilgore Project, including step-out and infill drilling at the existing Kilgore deposit and exploration drilling at emerging targets including Gold Ridge, Prospect Ridge and Dog Bone Ridge. The POO was approved by the United States Forest Service (the "USFS") after completion of an Environmental Assessment, a process which included input and feedback from the local community and others. As required by the current POO, Otis is currently increasing its reclamation bond from \$121,275 to \$370,600 and meeting other USFS stipulations in the Decision Notice to enable the commencement of exploration activities, including road construction and drilling.

21.0 CAPITAL AND OPERATING COSTS

Not applicable for a Mineral Resource Report

Kilgore Project Otis Gold

22.0 ECONOMIC ANALYSIS

Not applicable for a Mineral Resource Report
23.0 ADJACENT PROPERTIES

There are no surrounding mineral properties adjacent to Kilgore.

24.0 OTHER RELEVANT DATA AND INFORMATION

Section 27, References, provides a list of documents that were consulted in support of this report. No further data or information is necessary, in the opinion of the authors, to make the Report understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Interpretation

The Kilgore Project is located in the northeastern portion of the Eastern Snake River Plain ("ESRP"), locally situated on southern flank of the Centennial Mountains and regionally along the northern margin of the Miocene-Pliocene Heise volcanic field. The ESRP is an arcuate depression of low topographic relief that extends more than 500 km across southern Idaho (Figure 7-1). The plain is distinguished from the surrounding terrain by lower elevation and surface relief, and by a complete cover of Cenozoic sedimentary and volcanic rocks. Geologic relationships and recent radiometric dating have demonstrated that since middle Miocene time the ESRP-Yellowstone Plateau province has been characterized by voluminous bimodal rhyolite and basalt volcanism that has progressed eastward with time and is now focused at Yellowstone National Park. The development of this eastward younging bimodal volcanism is attributed to west-southwestward movement of the North American plate over a stationary melting anomaly, or plume-like zone of hot and molten magma rooted at least several hundred km below the surface (Leeman, 1982), commonly referred to as the Yellowstone hotspot.

Gold mineralization at Kilgore occurs in two genetically related but distinct hosts of mineralization. The near surface mineralization is hosted within rocks of volcanic or subvolcanic origin, including the Tlt and the sub-vertical granitic dikes, dike swarms, and granodioritic bodies that intrude it. Locally concentrated mineralization is known to occur within the Tlt in association with sub-vertical fissures and fault zones, and along lithologic contacts of dikes and sills within the Tlt and between the Tlt and the Aspen Formation. The sedimentary rocks of the Aspen Formation host additional and potentially significant mineralization, one which is characterized by a low-grade, bulk-mineable type distribution with an overall higher average grade than the volcanic hosted mineralization. It's relationship to fault and or feeder structures is not clearly understood but has been demonstrated by drilling to be found at significant depths below the volcanic – sedimentary rock contact.

Gold mineralization in the volcanic and related intrusive rocks is generally higher grade as a result of weak to moderate vein development and open space fracture-fill, together within a broad, low grade halo of disseminated gold within variably silicified and argillically altered rocks. Gold content appears to decrease rapidly to lower grades (<50-100 ppb Au) with corresponding decrease in quartz or quartz adularia as silicification and increase in argillic alteration. Exceptions occur in strongly oxidized rock near the topographic surface where strong to pervasive iron-oxide, yellow-orange to brown staining is accompanied by high gold grades. Mineralization in the volcanic and associated intrusive rocks accounts for an estimated 70% of the known mineral resource, with the remaining 30% occurring in the underlying Aspen Formation.

The 2017 drilling results extended mineralization in the Aspen Formation up to 300m deeper than was previously known, largely in the central part of the deposit southeast of the Mine Ridge Fault (Figure 10-6 through Figure 10-8) and north of the Cabin Fault. Average grades in this area are generally higher than the overall average grade of the Kilgore deposit as reported in this report, and mineralization appears to be fairly continuous between holes within sections and from section to adjacent section. The addition to

depth of the mineralization within the Aspen Formation sediments represents an opportunity to significantly expand the size of the resource at Kilgore.

The Kilgore deposit is subdivided into five estimation domains based on host rock types and the modelled extents of the gold mineralization using a 0.1 g/t Au threshold. Modelling of the gold zone was controlled by the gold grade values from drilling while respecting the geologic and structural trends identified for the deposit, the northwest trending fault system. The gold zone boundary was treated as a hard boundary during block model estimation and samples outside the boundary were excluded from the gold grade estimation. Rock type contacts are also treated as hard boundaries during the grade estimation.

Rock type contacts are also treated as hard boundaries during the grade estimation. The estimation domains used in the resource evaluation are:

- 3Tpr Biotite Rhyolite
- 4Tqp Rhyolite Quartz Porphyry
- 5Tad Sills and Dikes of Intermediate Composition
- 6Tlt Undifferentiated Tuff
- 7Ka Aspen Formation

These are modeled separately because they appear to deport differently with geostatistical analysis.

25.2 Conclusions

The authors have reviewed the information supplied by Otis Gold for the Kilgore Project and have found it to be reasonable in the context in which it is used herein. The authors have modified geological interpretations to some degree where deemed appropriate and necessary to complete the resource estimation and has applied their independent judgment in the application of Otis Gold information to the resource estimates.

Kilgore is an epithermal, volcanic- and sediment-hosted vein-fracture to disseminated, structurecontrolled gold mineralized system in a caldera environment. The deposit is emplaced beneath a silicified cap that was at, or close to the paleosurface at the time of formation of the gold deposit. Near surface gold was deposited in the cover of Tertiary volcanic and subvolcanic rocks that were emplaced unconformably on Cretaceous sedimentary rocks. Drilling has indicated that the mineralization is potentially significant and extensive within the Aspen Formation sediments; these are now know to extend up to 300m below the unconformable contact with the overlying volcanic rocks.

Metallurgical testing of the near surface volcanic hosted gold mineralization may potentially lend itself to Run-of-Mine processing resulting in a low cost open-pit heap leach mining operation that supports mining using a lower cut-off grade, therefore enhancing the tonnage and ounces mined. Testing of the underlying Aspen Formation sediments reveal high gold recoveries through mill / CIL processing; the higher average grades encountered in the sediments would potentially add significant potential to the Kilgore Project after mining the overlying volcanic hosted mineralization.

RC and core assays do not compare well, with paired data comparisons and separate estimates showing that RC assay samples are generally higher than core. Issues are identified with both types of data which will not be fully resolved without collecting bulk samples. The various operators of the project have been alerted to recovery and sampling issues and appear to have taken measures to reduce sample bias, reflected in the core drilling techniques used. A bulk sample testing program should be designed including potential development of an underground bulk sample operation.

The individual domain resource estimates are generally contiguous and form a body of mineralization potentially amenable to bulk tonnage mining in an open pit setting. This appears to be supported by the metallurgical studies performed to date by previous companies and Otis Gold. The estimated mineral resources for the Kilgore Project (Table 25-1) conform to standards set forth in NI 43-101 for Indicated and Inferred mineral resources.

Table 25-1 Mineral Resource Statement for the Kilgore deposit

Kilgore Indicated Mineral Resources^(1,2,3,4)

	Imperial Units Metric Units							
Project	Category	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces
Kilgore	Indicated	0.006	49,106,000	0.017	0.21	44,556,000	0.58	825,000
	Total Indicated	0.006	49,106,000	0.017	0.21	44,556,000	0.58	825,000

Kilgore Inferred Mineral Resources^(1,2,3,4)

	Imperial Units Metric Units							
Project	Category	Cut-off (Au opt)	Short tons	Au Grade (opt)	Cut-off (Au g/t)	Metric Tonnes	Au Grade (g/t)	Au Ounces
Kilgore	Inferred	0.006	10,354,700	0.013	0.21	9,399,000	0.45	136,000
	Total Inferred	0.006	10,354,700	0.013	0.21	9,399,000	0.45	136,000

(1) Mineral resources have been classified in accordance with the CIM Definition Standards on Mineral Resources

(2) Gold resources are reported above a 0.21 g/t Au cut-off

(3) Mineral resources reported here are constrained within an optimized pit shell.

(4) Pit shell input parameters: Gold price \$1,300, Selling price \$2.20/oz, Recovery 80%, Mining cost \$2/ton, Process cost + G&A \$4/ton, Pit slope 50°

Resource reporting is in metric units with Imperial system units also shown for informational purposes and consistency with the text and methodology of the report. There is no assurance that mineral resources will be converted into mineral reserves. Mineral resources are subject to further dilution, recovery, lower metal price assumptions, and inclusion in a mine plan to demonstrate economics and feasible of extraction. Exploration in and around the Kilgore Project reveals a large area of hydrothermal alteration that resulted from the geothermal system generated by the magmatism and volcanism associated with the Heise Volcanic Field. Multiple super-volcanic eruptions created both the host rocks and the structural environment to allow precious metal bearing fluids to be emplaced throughout the Kilgore Project area. Continuing exploration work conducted by Otis has demonstrated gold occurrences over the entire land package currently held. Regional exploration including stream sediment and soil sampling in combination with surface geologic mapping are valuable in identifying further near surface precious metal epithermal style mineralization.

26.0 RECOMMENDATIONS

The coordinate system for the project is a local Imperial coordinate system that may have served its purpose at the early stages, however, surveying has historically been performed in UTM NAD83. Some of the drill holes cannot be re-located and have been adjusted to local coordinates mathematically from UTM. The assays from most of the drilling campaigns are reported in ppm, ppb, or g/T units, but much work is performed using ounces per short ton because of the Imperial coordinate units. GRE recommends adding the UTM coordinates to the drill hole database and using that grid and metric measurements for all project work going forward including the construction of the geologic models that support the resource estimation. This will reduce the possibility of conversion errors and facilitate reporting to international standards.

The test work conducted to date on the Kilgore Project has indicated that there are two distinct mineral hosts in the deposit; free milling gold and a more recalcitrant mineral host that is finer grained and contains active carbon. The free milling gold has been shown to respond well to heap leach testing and may prove amenable to a Run-of-Mine open pit heap leach mining scenario. The more recalcitrant material showed good gold extraction when subjected to grinding and CIL leaching; tends to have a higher average gold grade than the volcanic hosted material and should be able to support a conventional milling/CIL process provided the tonnage justifies this method.

Based on these findings the following recommendations have been presented:

- Continue drill testing the near surface potential of the deposit by drilling to north, south, and west where it remains open including fracture / fault studies to better define the relationship between mineralization and structure, and oriented and geotechnical drilling to assist in mine design studies.
- Continue drill testing the lateral and vertical extent of the sediment hosted gold mineralization in the Aspen Formation.
- Drill 3-5 core holes for metallurgical test work including large diameter holes to test run-of-mine potential.
- Complete metallurgical testing on all mineralized rock to assess their amenability to Run-of-Mine Open Pit Heap Leaching or mill/CIL processing including tests specific to each host lithology to assess grade and recovery variability.
- Undertake a program that tests the distribution of gold within the host lithologies to accurately determine the average grade including design of an underground bulk sample test.
- Evaluate the Aspen Sill material in a column leach format to confirm its amenability to heap leaching including evaluation of the crush size.
- Evaluate the Aspen Bottom and Top materials in a CIL format to optimize the gold and silver extraction through the use of grind versus recovery testing.
- Ensure that all subsequent metallurgical analysis on new samples utilizes cyanide amenability tests (P₈₀ of 10 mesh with a 96 hour leach) to define the direction for subsequent testing.
- Ensure that complete carbon assays are undertaken on all mineral domains.

- Create a Core vs RC verification program that tests grade correlation of large samples from each.
- Complete a Preliminary Economic Assessment following execution of the recommendations above.
- Continue Kilgore Project wide exploration to test for emerging targets both inside and outside the existing land position.
- The recommended budget \$3-5 million

The proposed budget is displayed in Table 26-1.

Table 26-1 Proposed Budget for the Kilgore Project

Proposed Budget for Kilgore Project

Drilling - Exploration & development	7500 m	200.0 \$/m	\$	1,500,000
Drilling - metallurgical & water monitoring	2500 m	200.0 \$/m	\$	500,000
	10000 m		\$	2,000,000
Drilling contingency 15%		15.0 %	\$	300,000
			\$	2,300,000
Soils sampling program			\$	196,000
Geologic mapping			\$	140,000
Core studies			\$	50,000
LiDAR survey			\$	75,000
			\$	461,000
Baseline studies			\$	250,000
Office Rent			\$	36,000
Bonding			\$	135,000
Annual Claim Maintenance Payments			\$	100,000
Resource / Metallurgy / Decline design			\$	150,000
Data Management			\$	105,000
			\$	776,000
Total		US	\$	3,537,000
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CERTIFICATE OF QUALIFIED PERSON

I, Terre A Lane, of 600 Grant St., Suite 975, Denver, Colorado, 80203, the co-author of the report entitled "Independent Technical Report and Mineral Resource Estimate for the Kilgore Project, Clark County, Idaho, USA" with an effective date of August 14, 2018 and an Issue date of September 28, 2018 (the "PEA"), DO HEREBY CERTIFY THAT:

- 1. I am a MMSA Qualified Professional in Ore Reserves and Mining, #01407QP and a Registered member of SME 4053005.
- 2. I hold a degree of Bachelor of Science (1982) in Mining Engineering from Michigan Technological University.
- 3. I have practiced my profession since 1982 in capacities from mining engineer to senior management positions for engineering, mine development, exploration, and mining companies. My relevant experience for the purpose of this MRE is project management, mineral resource estimation, mine capital and operating costs estimation, and economic analysis with 25 or more years of experience in each area.
- 4. I have created or overseen the resource estimation, mine design, capital and operating cost estimation, and economic analysis of well over a hundred open pit projects.
- 5. I have been involved in or managed several hundred studies including scoping studies, prefeasibility studies, and feasibility studies.
- 6. I have been involved with the mine development, construction, startup, and operation of several mines.
- 7. I have read the definition of "Qualified Person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation with a professional organization (as defined in National Instrument 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of National Instrument 43-101.
- 8. I have not visited the property.
- 9. I am responsible for Sections 2, 3, 4, 5, 6, 10, 11, 12 15, 16, 18-24, and corresponding sections of the Summary, Other Relevant Data and Information, Interpretation and Conclusions, Recommendations and References that are related to these sections.
- 10. I am independent of Otis Gold as described in section 1.5 by National Instrument 43-101.
- 11. I have read National Instrument 43-101 and Form 43-101F1. The MRE has been prepared in compliance with the National Instrument 43-101 and Form 43-101F1.
- 12. As of the effective date of the Resource Estimate, to the best of my knowledge, information and belief, the Resource Estimate contains all scientific and technical information that is required to be disclosed to make the Resource Estimate not misleading.

Terre A. Lane

"Terre A. Lane" Principal Mining Mining Engineer Date of Signing: September 28, 2018

CERTIFICATE OF QUALIFIED PERSON

I, Jeffrey Todd Harvey, PhD, of 600 Grant St., Suite 975, Denver, Colorado, 80203, the co-author of the report entitled "Independent Technical Report and Mineral Resource Estimate for the Kilgore Project, Clark County, Idaho, USA" with an effective date of August 28, 2018 (the "PEA"), DO HEREBY CERTIFY THAT:

- 1. I am a Society of Mining Engineers (SME) Registered Member Qualified Professional in Mining/Metallurgy/Mineral Processing, #04144120.
- 2. I hold a degree of Doctor of Philosophy (PhD) (1994) in Mining and Mineral Process Engineering from Queen's University at Kingston. As well as an MSc (1990) and BSc (1988) in Mining and Mineral Process Engineering from Queen's University at Kingston.
- 3. I have practiced my profession since 1988 in capacities from metallurgical engineer to senior management positions for production, engineering, mill design and construction, research and development, and mining companies. My relevant experience for the purpose of this PEA is as the test work reviewer, process designer, process cost estimator, and economic modeler with 25 or more years of experience in each area.
- 4. I have taken classes in mineral processing, mill design, cost estimation and mineral economics in university, and have taken several short courses in process development subsequently.
- 5. I have worked in mineral processing, managed production and worked in process optimization, and I have been involved in or conducted the test work analysis and flowsheet design for many projects at locations in North America, South America, Africa, Australia, India, Russia and Europe for a wide variety of minerals and processes.
- 6. I have supervised and analyzed test work, developed flowsheets and estimated costs for many projects including International Gold Resources Bibiani Mine, Ashanti Goldfields Obuasi Mine, Equinox Gold Castle Mountain Mine, Cluff Resources Agnes Mine, and others, and have overseen the design and cost estimation of many other similar projects.
- 7. I have worked or overseen the development or optimization of mineral processing flowsheets for close to one hundred projects and operating mines, including gold heap leach and stirred tank gold leaching processes.
- 8. I have been involved in or managed many studies including scoping studies, prefeasibility studies, and feasibility studies.
- 9. I have been involved with the mine development, construction, startup, and operation of several mines.
- 10. I have read the definition of "Qualified Person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation with a professional organization (as defined in National Instrument 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of National Instrument 43-101.
- 11. I have not visited the project.
- 12. I am responsible for Sections 13 and 17 of the PEA and have contributed to Sections 1, 25, 26, and 27.
- 13. I am independent of Otis Gold as described in section 1.5 by National Instrument 43-101.
- 14. I have no prior experience with the Kilgore Project.
- 15. I have read National Instrument 43-101 and Form 43-101F1. The Resource Estimate has been

prepared in compliance with the National Instrument 43-101 and Form 43-101F1.

16. As of the effective date of the Resource Estimate, to the best of my knowledge, information and belief, the Resource Estimate contains all scientific and technical information that is required to be disclosed to make the Resource Estimate not misleading.

Jeffrey Todd Harvey, PhD *"Todd Harvey"* Director of Process Engineering Global Resource Engineering, Ltd. Denver, Colorado Date of Signing: September 28, 2018

CERTIFICATE OF QUALIFIED PERSON

I, Jennifer J. Brown, P.G., of Hard Rock Consulting, LLC, 7114 W. Jefferson Ave., Ste. 313, Lakewood, Colorado, 80235, DO HEREBY CERTIFY THAT:

- 1. I am a graduate of the University of Montana and received a Bachelor of Arts degree in Geology in 1996.
- 2. I am a:
 - Licensed Professional Geologist in the State of Wyoming (PG-3719)
 - Registered Professional Geologist in the State of Idaho (PGL-1414)
 - Registered Member in good standing of the Society for Mining, Metallurgy, and Exploration, Inc. (4168244RM)
- 3. I have worked as a geologist for a total of 20 years since graduation from the University of Montana, as an employee of various engineering and consulting firms and the U.S.D.A. Forest Service. I have more than 10 collective years of experience directly related to mining and or economic and saleable minerals exploration and resource development, including geotechnical exploration, geologic analysis and interpretation, resource evaluation, and technical reporting.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 5. I am a co-author of the report titled "Independent Technical Report and Mineral Resource Estimate for the Kilgore Project, Clark County, Idaho, US" with an effective date of August 14, 2018 and an Issue date of September 28, 2018, with specific responsibility for Sections 7 through 9 and corresponding sections of the Summary, Other Relevant Data and Information, Interpretation and Conclusions, Recommendations and References that are related to these sections.
- 6. 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 make the report not misleading.
- 7. I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101.
- 8. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 28th day of September 2018.

Jennifer J. (J.J.) Brown, SME-RM Printed name of Qualified Person

CERTIFICATE OF QUALIFIED PERSON

I, David Rowe, of PO Box 10087, Bainbridge Island, WA, 98110, a co-author of the report entitled "NI 43-101 Technical Report on the Mineral Resource Estimate Technical Report of the Kilgore Project, Clark County, Idaho, USA" with an effective date of August 14, 2018 and an Issue date of September 28, 2018 (the "MRE"), DO HEREBY CERTIFY THAT:

- 1. I am a Certified Professional Geologist registered with the American Institute of Professional Geologists, Certificate # 10953;
- 2. I hold a BA degree in Geology (1984) from the University of Montana and a Master of Science degree in Geology (1987) from the University of Wyoming;
- 3. I have practiced my profession continuously since 1987. I have been involved in mineral exploration and mineral resource estimation and consulting covering a wide range of mineral commodities in North America, Central America, the Caribbean, Africa, and Asia;
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience (as defined in National Instrument 43-101), I fulfill the requirements to be a "Qualified Person" for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101;
- 5. I personally inspected the subject property on August 9-14, 2017;
- I am a co-author of this report and responsible for sections 12.5, 14, and corresponding sections of the Summary, Other Relevant Data and Information, Interpretation and Conclusions, Recommendations and References that are related to these sections;
- 7. I am independent of Otis Gold as defined in Section 1.5 of National Instrument 43-101;
- 8. I have no prior involvement with the subject property;
- 9. I have read National Instrument 43-101 and confirm that the MRE has been prepared in compliance with the National Instrument 43-101 and Form 43-101F1;
- 10. As of the effective date of the MRE, to the best of my knowledge, information and belief, the MRE contains all scientific and technical information that is required to be disclosed to make the MRE not misleading.

Original document dated September 28, 2018, signed and sealed.

David Rowe Certified Professional Geologist, AIPG Senior Resource Geologist Rowearth LLC



APPENDIX A VARIOGRAPHY FOR GOLD COMPOSITE SAMPLES



Top: major axis variogram model; Bottom: ellipsoid of variogram trend

Variogram model for estimation Domain 3Tpr



Top: major axis variogram model; Bottom: ellipsoid of variogram trend

Variogram model for estimation Domain 5Tad



Top: major axis variogram model; Bottom: ellipsoid of variogram trend

Variogram model for estimation Domain 6Tlt



Top: major axis variogram model; Bottom: ellipsoid of variogram trend

Variogram model for estimation Domain 7Ka