OreWin
Independent Mining Consultants

SSR MINING INC.

Marigold 2021 Technical Report

February 2022

Job No. 21013

IMPORTANT NOTICE

This notice is an integral component of the Marigold 2021 Technical Report (Marigold21TR) and should be read in its entirety and must accompany every copy made of the report. The Marigold21TR has been prepared using the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects.

The Marigold21TR has been prepared for SSR Mining Inc. (SSR) by OreWin Pty Ltd (OreWin). The Marigold21TR is based on information and data supplied to OreWin by SSR and other parties and where necessary OreWin has assumed that the supplied data and information are accurate and complete.

This report is a Feasibility Study (FS) that represents forward-looking information. The forward-looking information includes metal price assumptions, cash flow forecasts, projected capital and operating costs, metal recoveries, mine life and production rates, and other assumptions used in the FS. Readers are cautioned that actual results may vary from those presented. The factors and assumptions used to develop the forward-looking information, and the risks that could cause the actual results to differ materially are presented in the body of this report under each relevant section.

The conclusions and estimates stated in the Marigold21TR are to the accuracy stated in the Marigold21TR only and rely on assumptions stated in the Marigold21TR. The results of further work may indicate that the conclusions, estimates and assumptions in the Marigold21TR need to be revised or reviewed.

OreWin has used its experience and industry expertise to produce the estimates and approximations in the Marigold21TR. Where OreWin has made those estimates and approximations, it does not warrant the accuracy of those amounts and it should also be noted that all estimates and approximations contained in the Marigold21TR will be prone to fluctuations with time and changing industry circumstances.

The Marigold21TR should be construed in light of the methods, procedures, and techniques used to prepare the Marigold21TR. Sections or parts of the Marigold21TR should not be read or removed from their original context.

The Marigold21TR is intended to be used by SSR, subject to the terms and conditions of its contract with OreWin. Recognising that SSR has legal and regulatory obligations, OreWin has consented to the filing of the Marigold21TR with the Canadian Securities Administrators and its System for Electronic Document Analysis and Retrieval (SEDAR). Except for the purposes legislated, any other use of this report by any third party is at that party's sole risk.

Title Page

Project Name:	Marigold
Title:	Marigold 2021 Technical Report
Location:	Humboldt County, Nevada, USA
Effective Date of Technical Report:	31 December 2021
Effective Date of Mineral Resources:	31 December 2021
Effective Date of Mineral Reserves:	31 December 2021

Qualified Persons:

- Bernard Peters, BEng (Mining), FAusIMM (201743), employed by OreWin Pty Ltd as Technical Director - Mining, was responsible for the overall preparation of the Marigold21TR and, the Mineral Reserve estimates, Sections 1 to 6; Section 13; Sections 15 to 27.
- Sharron Sylvester, BSc (Geol), RPGeo AIG (10125), employed by OreWin Pty Ltd as Technical Director - Geology, was responsible for the preparation of the Mineral Resources, Sections 1 to 12; Section 14; Sections 23 to 27.

Signature Page

Project Name:	Marigold
Title:	Marigold 2021 Technical Report
Location:	Humboldt County, Nevada, USA
Date of Signing:	23 February 2022
Effective Date of Technical Report:	31 December 2021

/s/ Bernard Peters

Bernard Peters, Technical Director – Mining, OreWin Pty Ltd, BEng (Mining), FAusIMM (201743)

/s/ Sharron Sylvester

Sharron Sylvester, Technical Director – Geology, OreWin Pty Ltd, BSc (Geol), RPGeo AIG (10125)

TABLE OF CONTENTS

TABLES

FIGURES

1 SUMMARY

1.1 Introduction

The Marigold 2021 Technical Report (Marigold21TR) has been in prepared using the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

The Marigold mine (Marigold or the Property) is located in Humboldt County, Nevada, U.S. and is directly owned by Marigold Mining Company (MMC), a wholly-owned (100%) subsidiary of SSR Mining Inc. (SSR).

SSR is a gold mining company with four producing assets located in the USA, Turkey, Canada, and Argentina, and with development and exploration assets in the USA, Turkey, Mexico, Peru, and Canada. SSR is listed on the NASDAQ (NASDAQ:SSRM), the Toronto Stock Exchange (TSX:SSRM), and on the Australian Stock Exchange (ASX:SSR)

The Marigold21TR was prepared by appropriately experienced technical professionals employed by OreWin Pty Ltd (OreWin), an independent mining consultancy, with input and assistance from MMC and SSR personnel.

1.2 Property Description and Location

Marigold is located in south-eastern Humboldt County, accessible by public road off Interstate Highway 80 corridor in the northern foothills of the Battle Mountain Range, Nevada, US.

Activities at the Property are centred at approximately 40°45′ north latitude and 117°8′ west longitude.

The Property is situated approximately 5 km south–south-west of the town of Valmy, Nevada at Exit 216 off Interstate Highway 80. Other nearby municipalities include Winnemucca and Battle Mountain, Nevada, which lie approximately 58 km to the north-west and 24 km to the south-east of the Property, respectively.

1.3 Land Tenure and Ownership

The authorised Marigold Plan of Operations (PoO) area for Marigold currently encompasses approximately 10,703 ha with approximately 3,296 ha within the PoO permitted for mining-related disturbance. Land and mineral ownership within the PoO are within the corridor initially governed by the Pacific Railroad Act of 1862, and, as such, these areas generally have a "checkerboard" ownership pattern. Mineral claims in Nevada are managed federally by the Bureau of Land Management (BLM).

SSR holds a 100% interest in the Property through its wholly-owned subsidiary, MMC. Surface and mineral rights at the Property comprise the following: real property owned by MMC; unpatented mining claims owned by MMC; and leasehold rights held by MMC with respect to unpatented mining claims, mill site claims, and certain surface lands.

Some of the leases require MMC to make certain net smelter return (NSR) royalty payments to the lessors and comply with other obligations, including completing certain work commitments or paying taxes levied on the underlying properties. The NSR royalty payments are based on the specific gold-extraction areas and are payable when the corresponding gold ounces are extracted, produced, and sold. The NSR royalty payments vary between 0% and 10.0% of the value of gold production, net of off-site refining costs, which equates to an annual average ranging from 3.7% to 10.0% and a weighted average of 7.8% over the life-of-mine (LOM).

1.4 Geology and Mineralisation

The Property is located on the northern margin of the Battle Mountain-Eureka trend of mineralisation, in the Battle Mountain Mining district, in north central Nevada, U.S.

1.4.1 Regional Geology

The western part of the North American continent has undergone a complex history of extensional and compressional tectonics from the Proterozoic through to the Quaternary. Predominantly Paleozoic rifting and basin subsidence led to the formation of thick (hundreds of metres) passive margin sedimentary sequences and repeated inter-plate collisions caused accretion of arc related volcanics and ocean floor rocks, which were pushed together with the basin sediments to form fold and thrust belts. Subsequent extension related to subduction and back arc basin rifting resulted in the development of Basin and Range topography. Crustal thinning caused by the extension allowed the rise of magma close to the surface, which produced extensive and voluminous magmatism from the middle Eocene to late Miocene. Crustal extension with bimodal (mafic and felsic) volcanism occurred in the region from the late Miocene to the present day.

Marigold is located in north-central Nevada within the Basin and Range physiographic province, bounded by the Sierra Nevada to the west and the Colorado Plateau to the east.

1.4.2 Local and Property Geology

Sedimentary Rocks

Four packages of Paleozoic sedimentary and metasedimentary rocks are present at Marigold. In ascending tectono-stratigraphic order, they include: the Cambro-Ordovician Preble-Comus Formation; the Ordovician Valmy Formation of the Roberts Mountain allochthon; the Pennsylvanian-Permian Antler overlap sequence; and the Mississippian-Permian Havallah sequence of the Golconda allochthon.

Comus-Preble Formation

The Comus-Preble Formation consists of fine-grained siliciclastic turbidite sequences, mudstone, siltstone, limey mudstone, limestone, debris flows, and mafic volcanic flows. Based on data compiled from downhole televiewer logs, abrupt lithologic change from overlying rocks correlates with a transition from tight, east-vergent, overturned folds to open folds.

Valmy Formation

The Valmy Formation consists of quartzite, argillite, and lesser chert and metabasalt, all of which are complexly folded and faulted in the Marigold mine area. The total thickness of the Valmy Formation is approximately 450 m at Marigold, although true thickness of the section is likely less than 200 m. Where the contact is not eroded or structurally displaced, the top of the Valmy Formation is unconformably overlain by rocks of Pennsylvanian age.

Antler Sequence

The Antler overlap sequence is composed of Pennsylvanian to Permian-aged rocks assigned to three formations: the basal Battle Formation; the Antler Peak Limestone Formation; and the Edna Mountain Formation. These Formations represent a transgressive sequence of fluvial-to-shallow marine rocks that include conglomerate, sandstone, limestone, siltstone, and debris flows. Antler sequence rocks are relatively undeformed, except for offset and rotation along Basin and Range normal faults and potentially low-amplitude, long-wavelength (kilometres to tens of kilometres) F4 folding likely related to Mesozoic deformation. The Antler sequence is in thrust contact with the overlying and partially contemporaneous Havallah sequence.

Havallah Sequence

The uppermost package of Paleozoic rocks exposed at Marigold is the Mississippian-Permian Havallah sequence. The Havallah sequence is an assemblage dominated by siltstone, metabasalt, chert, sandstone, conglomerate, and carbonate rocks. These marine sedimentary rocks were deposited in a fault-bounded deep-water trough (Ketner, 2008) and subsequently obducted over the Antler sequence along the Golconda thrust (Roberts, 1964).

1.4.3 Property Structure

The main structural corridor and apparent primary controlling feature for the localisation of the deposits at Marigold is a 1.5 km wide by >10 km long half graben rotated no more than 045° to the west and bound by east dipping early Permian growth faults and younger (post-Triassic) east dipping faults. This half graben structure is cut by north-west to north-east striking pre-mineralisation structures with relatively minor offset and a series of south-west striking post-mineralisation extensional normal faults parallel to the Oyarbide fault.

1.4.4 Mineralisation

The gold deposits at Marigold cumulatively define a north trending alignment of gold mineralised rock more than 8 km long.

Gold mineralising fluids were primarily controlled by fault structure and lithology, with tertiary influence by fold geometry. The deposition of gold was restricted to fault zones and quartzite-chert dominant horizons within the Valmy Formation and high permeability units within the Antler sequence. Gold mineralisation was also influenced by fold geometry in the Valmy Formation.

Rocks within the Marigold mine area are oxidised to a maximum depth of approximately 450 m. The redox boundary is not consistent throughout the Property and is substantially influenced by lithology. Shale, argillite, and siltstone units are frequently unoxidised adjacent to pervasively oxidised quartzite horizons. Gold occurs natively in fractures in association with iron oxide.

1.4.5 Alteration

Alteration of rocks includes silicification along high-angle mineralising structures and decalcification of carbonate horizons. Argillic alteration of quartz monzonite intrusive bodies occurs in fault zones and areas of high hydrothermal fluid flow. The intensity of alteration decreases towards the core of the intrusions.

1.5 Exploration

Currently, exploration work is performed by SSR staff. SSR self-funds all work to develop exploration targets.

1.5.1 Exploration – Marigold

1.5.1.1 Historical Exploration – Marigold

The first recorded gold production from Marigold was in 1938 from an underground mine. Approximately 9,000 t of ore averaging approximately 6.85 g/t Au was processed before World War II halted production. Several unsuccessful attempts were made to re-open and operate the mine before exploration activities re-commenced in 1968.

From 1968 through 1985, several companies took an interest in, and conducted exploration programs across, the Marigold area. The exploration activities during this time led to encouraging results and the acquisition of rights over additional parcels of land.

In 1986, a joint venture was formed between SFP Minerals (a subsidiary of Santa Fe Pacific Railroad) and the Cordex Group, which consolidated some of the land holdings over the Marigold area. In March 1988, a production decision was made on the 8S deposit, and by September 1988 stripping had begun on the 8S pit (McGibbon, 2004).

In August 1989, the first gold doré bar was poured at the Marigold mill.

In March 1992, Rayrock Mines (operating company for Cordex) purchased a two thirds ownership interest in the Property, and with the remainder held by Homestake Mining Company (Homestake).

In 1994, mining of the 8S deposit was completed, and the Marigold mill was no longer used to process ore. At this point, Marigold became a run-of-mine (ROM) heap leach operation.

Some five years later, under the ownership of Glamis Gold Ltd. (Glamis Gold), the Basalt, Antler, and Target II deposits were discovered in Section 31 at the south end of the Property and subsequently mined.

In 2007, discovery holes were drilled in the Red Dot deposit. and by mid-2009, a total of two million ounces of gold had been recovered from Marigold.

1.5.1.2 Exploration and Drilling Activities Since 2014 – Marigold

After SSR's purchase of Marigold was completed in 2014, the exploration activities of previous owners were reviewed.

Between 2014 and 2016, SSR completed gravity surveys from 3,164 stations with the main objective of delineating possible fluid conduits or feeder structures for the Marigold mineralisation.

Meanwhile, in October 2015, the three millionth ounce was poured at Marigold.

SSRs exploration programs targeted the discovery of near-surface gold mineralisation proximal to Marigold's open pits and had the result of upgrading existing Inferred Mineral Resources to Indicated Mineral Resources. SSR drilled a total of 713 drillholes for 178,272 m from 2014 to 2017.

From 2018 through to the end of 2021, a further 995 holes have been drilled. This era of drilling included:

- 950 reverse circulation (RC) holes,
- 45 diamond core holes.

The 2018–2021 drilling adds a further 343,232 m of drilling to the Project database, bringing the total drilling in the history of the Marigold project to 9,435 drillholes for 1,988,280 m. This includes recent drilling on the Trenton Canyon and Buffalo Valley prospects.

Marigold has now been in continuous operation for more than 30 years and poured the four millionth ounce of gold in 2020.

1.5.2 Exploration – Trenton Canyon and Buffalo Valley

The Trenton Canyon project is located approximately 4 km south of New Millennium at Marigold and is one of three historically producing mines on a 100%-owned 8,900 ha parcel acquired from Newmont in 2019. The Buffalo Valley project is located approximately 10 km south-west of New Millennium.

Gold mineralisation at Trenton Canyon is structurally controlled with significantly less dissemination than at Marigold, with the net result being higher gold grades in a smaller volume of mineralised rock.

Exploration work on the Trenton Canyon and Buffalo Valley properties consists of drilling, geophysical surveying, remote sensing, geochemical surveying, and mapping.

SSR has completed 13 exploration diamond core holes on Trenton Canyon totalling 10,131 m, and 249 RC drillholes for 73,165 m. As of December 2021, one diamond core hole has been completed at Buffalo Valley to a depth of 597.5 m.

1.6 Mineral Resources

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

The Mineral Resources for Marigold were estimated based on an optimised pit shell at a payable gold grade of 0.065 g/t (gold assay factored for recovery, royalty, and net proceeds) using an assumed gold price of $1,750/oz. The Mineral Resources are reported exclusive of Mineral Reserves in Table 1.1 and Table 1.2.

Table 1.1 Summary of Marigold Mineral Resource Estimate Exclusive of Mineral Reserve (as at 31 December 2021) Based on $1,750/oz Gold Price

Mineral Resource	Mineral Resource							
	Measured		Indicated		Measured + Indicated		Inferred	
	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)
Marigold	–	–	115.3	0.43	115.3	0.43	21.8	0.36
Total	–	–	115.3	0.43	115.3	0.43	21.8	0.36

1. The Mineral Resource estimate was prepared in accordance with NI 43-101.
2. The Mineral Resource estimate is based on an optimised pit shell at a cut-off grade of 0.065 g/t payable gold (gold assay factored for recovery, royalty, and net proceeds), with a gold price assumption of $1,750/oz.
3. The Mineral Resources estimate is reported below the as-mined surface as at 31 December 2021 and is exclusive of Mineral Reserves.
4. The point of reference for Mineral Resources is the entry to the carbon columns in the processing facility.
5. Metallurgical recoveries used are, on average, 67% for gold.
6. Mineral Resources are reported exclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. SSR has 100% ownership of the Project.
8. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
9. Totals may vary due to rounding.

Table 1.2 Summary of Metallurgical Recoveries of Marigold Mineral Resource Estimate Exclusive of Mineral Reserve (as at 31 December 2021) Based on $1,750/oz Gold Price

Mineral Resource Classification	Tonnage (Mt)	Au Grade (g/t)	Contained Gold (koz)	Cut-off Grade (Au g/t)	Metallurgical Recovery (%)
Measured	–	–	–	–	–
Indicated	115.3	0.43	1,611	0.065	66%
Measured + Indicated	**115.3**	**0.43**	**1,611**	**0.065**	**66%**
Inferred	21.8	0.36	250	0.065	75%

1. The Mineral Resource estimate was prepared in accordance with NI 43-101.
2. The Mineral Resource estimate is based on an optimised pit shell at a cut-off grade of 0.065 g/t payable gold (gold assay factored for recovery, royalty, and net proceeds), with a gold price assumption of $1,750/oz.
3. The Mineral Resources estimate is reported below the as-mined surface as at 31 December 2021 and is exclusive of Mineral Reserves.
4. The point of reference for Mineral Resources is the entry to the carbon columns in the processing facility..
5. Metallurgical recoveries used are, on average, 67% for gold.
6. Mineral Resources are reported exclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. SSR has 100% ownership of the Project.
8. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
9. Totals may vary due to rounding.

1.7 Mineral Reserves

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

The Mineral Reserve estimate, shown in Table 1.3 and Table 1.4 reported in accordance with NI 43-101. The Mineral Reserves estimate is based on all available data for Marigold.

Table 1.3 Summary of Marigold Mineral Reserve Estimate (as at 31 December 2021) Based on $1,350/oz Gold Price

Mineral Reserve	Mineral Reserve						
	Proven		Probable		Total		
	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Contained Gold (koz)
In Situ	–	–	203.8	0.48	203.8	0.48	3,173
Leach Pad	–	–	–	–	–	–	237
Total	**–**	**–**	**203.8**	**0.48**	**203.8**	**0.48**	**3,410**

1. The Mineral Reserve estimate was prepared in accordance with NI 43-101.
2. The Mineral Reserve estimate is based on metal price assumptions of $1,350 gold.
3. The Mineral Reserve estimate is reported at a cut-off grade of 0.065 g/t Au.
4. Economic analysis for the Mineral Reserve has been prepared using long-term metal prices of $1,600/oz.
5. No mining dilution is applied to the grade of the Mineral Reserves. Dilution intrinsic to the Mineral Reserves estimate is considered sufficient to represent the mining selectivity considered.
6. The point of reference for Mineral Reserves is the entry to the carbon columns in the processing facility.
7. SSR has 100% ownership of the Project.
8. Metals shown in this table are the contained metals in ore mined and processed.
9. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
10. Totals may vary due to rounding.

Table 1.4 Summary of Metallurgical Recoveries of Marigold Mineral Reserve Estimate (as at 31 December 2021) Based on $1,350/oz Gold Price

Mineral Reserves Classification	Tonnage (Mt)	Au Grade (g/t)	Contained Gold (koz)	Cut-off Grade (Au g/t)	Metallurgical Recovery (%)
Proven In Situ	–	–	–	–	–
Probable In Situ	203.8	0.48	3,173	0.065	74.69
Probable Leach Pad	–	–	237	–	–
Total Proven + Probable	**203.8**	**0.48**	**3,410**	**0.065**	**74.69**

1. The Mineral Reserve estimate was prepared in accordance with NI 43-101.
2. The Mineral Reserve estimate is based on metal price assumptions of $1,350 gold.
3. The Mineral Reserve estimate is reported at a cut-off grade of 0.065 g/t Au.
4. Economic analysis for the Mineral Reserve has been prepared using long-term metal prices of $1,600/oz.
5. No mining dilution is applied to the grade of the Mineral Reserves. Dilution intrinsic to the Mineral Reserves estimate is considered sufficient to represent the mining selectivity considered.
6. The point of reference for Mineral Reserves is the entry to the carbon columns in the processing facility.
7. SSR has 100% ownership of the Project.
8. Metals shown in this table are the contained metals in ore mined and processed.
9. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
10. Totals may vary due to rounding.

1.8 Mining Operations

Marigold uses standard open pit mining methods at a LOM sustained mining rate of approximately 250,000 tpd. The mine conducts conventional drilling and blasting activities with a free face trim row blast to ensure stable wall rock conditions. Electronic detonators are used to control the timing of the blasthole detonation.

Mining occurs on 15.2 m benches for prestripping waste and selected ore areas when mining with the P&H electric shovel. One blasthole sample is taken for ore control Blasting is done with an ammonium nitrate and fuel oil (ANFO) blend and a sensitised ANFO emulsion. The ore control mark-out procedure includes blast movement analysis for 90% of ore production blasts.

Loading operations are currently performed using one electric shovel and three hydraulic shovels. Waste and ore haulage is performed with a fleet of 300 t class haul trucks.

Equipment maintenance is performed on site for all equipment. There are no contract mining operations on site.

The Marigold geotechnical management plan (GMP) includes highwall monitoring using three radar systems which provide full coverage for the (largest) Mackay pit, or can be deployed in smaller pits, if required. Routine monitoring of waste dumps, leach pads and inactive pits using INSAR data is performed by a third party on a monthly basis.

1.9 Mineral Processing

The Marigold processing plant and processing facilities combine ROM heap leaching, carbon adsorption, carbon desorption and electro-winning circuits to produce a final precious metal (doré) product.

All processing of ore, which is oxide in nature, is completed via run-of-mine (ROM) heap leaching. ROM ore is delivered to the leach pad by haulage truck and stacked in 6.1 m to 12.2 m lifts. At any given time, approximately 0.5 million m^2 of pad area is being leached.

Barren leach solution (cyanide-bearing solution, very low in Au grade) is applied selectively to different areas of the heap leach pad.

The pregnant solution (gold-bearing) is then collected from the leach pad in pregnant solution pond(s) before it is pumped to carbon column trains where gold is adsorbed from solution onto activated carbon. Carbon loaded with gold is taken from the carbon columns and transported to the process facility where gold is stripped from the carbon by solution. The gold-bearing solution is passed through electro-winning cells where metals are plated out. The plated material is retorted for mercury removal and drying prior to smelting for final precious metal recovery.

From March 1990 through December 2021, gold recovery from the heap leach pad was 71.1%. Historical production figures for the Marigold heap leach pad are shown in Table 1.5. This recovery was achieved with 90–120 day primary leach. The current total gold recovery of more than 70% from ROM ore compares favourably to similar mining operations, and given current and past gold prices, suggests that a crushing circuit is not required.

Table 1.5 Historical Heap Leach Production and Recovery

Ore (Mt)	Gold Loaded (koz)	Au Grade (AuFA g/t)	Gold Recovered (koz)	Gold Recovery (%)
324	5,490	0.53	3,904	71.1

Marigold uses an assay method that measures cyanide-soluble gold. This technique generates a value that represents the head grade of the ore in terms of the amount of gold in a finely ground sample that can be dissolved by a strong sodium cyanide solution. The gold content of the final solution is measured using atomic absorption (AA).

All Marigold blasthole samples are assayed for cyanide-soluble gold. Samples from each ore polygon delineated by ore control are selected for fire assay based on the grade distribution for the polygon tonnage and targeting one sample per every 2,000 short tons of ore. Therefore, some samples have two assay values: an AuCN (cyanide soluble) value; and an AuFA (fire assayed) value. The ratio of AuCN:AuFA provides the theoretical maximum gold recovery that can be achieved.

Testwork has demonstrated that, generally, all ore at Marigold behaves similarly. The ratio of AuCN / AuFA is an important characteristic. A best fit linear regression from approximately 155,000 pairs of fire assays (field AUFA in the database) and cyanide soluble assays (field AUAA in the database shows the AuCN / AuFA ratio is 0.8037:1 (~80% cyanide soluble gold), based on the most recent assessment in 2017.

The LOM actual leach pad recovery is 74% (including in-process gold inventory through December 2021).

An adjustment factor can be calculated using the chemical maximum AuCN / AuFA recovery and the actual pad recovery:

Actual: 74% / Chemical: 80% = 0.92

Therefore, the estimated recovery from the ROM heap leach can be expressed as:

Heap Leach Recovery = AuCN / AuFA x 0.92

1.10 Infrastructure

Marigold is accessible via Interstate Highway 80 in northern Nevada and is approximately 5 km south–south-west of Valmy in Humboldt County. The site access road supports two lanes of traffic and consists of hard packed clay and gravel.

The infrastructure facilities at Marigold include ancillary buildings, offices and support buildings, access roads into the plant site, power distribution, source of fresh water and water distribution, fuel supply, storage and distribution, waste management and communications.

The power supply for Marigold is provided by NV Energy Inc. via a 120 kV transmission line to site. Site power draw is 5 MW. After exiting the main substation, power is distributed through a 25 kV distribution grid.

Water for Marigold is supplied from three existing groundwater wells located near the access road to the Property. Marigold owns groundwater rights and collectively allows up to 3.134 Mm^3 of water consumption annually, the majority of which is used as makeup water for process operations. On average, total freshwater makeup is 2.4 m^3/min. Approximately 5.3 m^3/min of fresh water is required during peak periods in the summer months. The water is primarily consumed by retention in the heap leach pad, evaporation, processing operations and dust suppression.

1.11 Environmental, Permitting and Social Responsibility

Significant portions of the Property exist on public lands administered by the BLM. Therefore, the majority of environmental studies related to mining activities are conducted under BLM authority as part of the National Environmental Policy Act (NEPA) regulations, which require various degrees of environmental impact analyses dictated by the scope of the proposed action. Marigold has undergone several significant NEPA actions in the normal course of operational planning; the most recent is an amendment to the existing PoO to permit the future mining of all pits to their planned maximum depths.

The environmental baseline studies to support the Environmental Impact Statement (EIS) process were initiated in 2013. These baseline studies completed in preparation for the Plan of Operations – Mackay Optimization Project Amendment included, but were not limited to, socioeconomics, air quality impacts, cultural and archaeological resources, groundwater model, pit lake model, screen level ecological risk assessment (SLERA), waste rock / material characterisation, water characterisation, sage grouse habitat evaluation, evaluations for flora and fauna, and feasibility evaluation and pilot testing for rapid infiltration basins.

The final EIS record of decision approving the amended plan of operations was received October 30, 2019. Scope of the amended plan of operations included:

- Increasing surface disturbance by 833 ha on private and public lands.
- Consolidation of multiple pits into three larger pits with associated expansion of pits, waste rock storage areas and leach pads.
- Mining below the historic water table requiring installation of facilities to extract and dispose of excess groundwater.

The approval allowed for infiltration of excess dewatering water by way of rapid infiltration basins (RIBs) on private (leasehold) land north of the mine. A proposed relocation of the RIBs to an alternative location on adjacent BLM land is in the process of being approved. RIB testing, approval and construction, and the associated water pollution control permit issuance is expected by early 2023. In the interim, mine dewatering and infiltration is proceeding according to the LOM plan by means of temporary surface discharge permits allowing water diversion into local watercourses.

Subsequent to the EIS, a minor modification was submitted and approved through the BLM and the NDEP to increase the total approved disturbance to 3,296 ha; which was related to converting some land for heap leach cell 19B construction, modifying waste rock storage facilities, and converting some land to infill.

SSR has a reasonable expectation that all necessary operating permits will be granted within the required timeframes to meet the LOM plan.

1.12 Market Considerations

The metal prices used in the Marigold21TR are based on an internal assessment of recent market prices, long-term forward curve prices, and consensus among analysts regarding price estimates. For the economic analysis in the Marigold21TR, the metal prices shown in Table 1.6 were used.

Table 1.6 Metal Prices

Metal	Unit	Average	2022	2023	2024	2025	2026	>2026
Gold Price	$/oz	1,647	1,800	1,740	1,710	1,670	1,600	1,600
Silver Price	$/oz	21.56	24.00	23.00	22.00	21.00	21.00	21.00

Marigold currently produces gold/silver doré bars. The doré refining terms are typical and consistent with standard industry practices and reflect similar contract conditions for doré refining worldwide.

The doré is securely transported by road freight to a refinery where it is refined into gold bullion. The bullion is sold by SSR to banks that specialise in the purchase and sale of gold bullion.

1.13 Capital and Operating Cost Estimates

Costs related to the development of reserves are based on a combination of historical site costs for fixed costs and a zero-base cost method for calculating variable costs. The variable costs are based on tonnage mined, tonnage processed, or hours worked for mining, maintenance, process, and administration costs. The total planned spend is divided by tonnes mined for mining and maintenance unit costs, and ore tonnes stacked for process and administration unit costs.

LOM project capital costs (excluding closure costs) are summarised in Table 1.7

Table 1.7 Summary of Capital and Reclamation Costs

Capital Costs	**Total ($M)**
Exploration and Development	9.1
Sustaining Capital	348.9
Mine Development	10.3
Total Capital Costs	**368.3**
Reclamation	71.8
Total Capital and Reclamation	440.1

Sustaining capital costs include:

- Replacement of mining equipment as it reaches its economic life during the remaining 11 years of mining. The majority relates to replacing haul trucks and excavators but is also covers drills and mine support equipment. Equipment replacement represents approximately 25% of future sustaining capital costs.
- Major equipment rebuilds and component replacement. In order to maintain equipment availability for the extended equipment lives, major equipment is programmed for rebuilds at set points during its economic life. Approximately 50% of future sustaining capital is capitalised parts and maintenance costs associated with these rebuilds. Major components with a life of more than one year are capitalised.
- Costs associated with on-going expansion of the leach pad and associated process infrastructure represents about 8% of future capital.
- Dewatering and permitting costs total about 17% of future sustaining capital, with the majority associated with dewatering infrastructure (wells, pipelines, rapid infiltration basins) that are required to lower the water table in advance of planned mine development.

1.14 Operating Costs by Category

The LOM operating costs estimate is $10.05/t of processed ore. Operating costs per tonne for the LOM and next five years of operations are shown in Table 1.8.

Table 1.8 Summary of Operating Costs

Operating Costs	Total LOM ($M)	$/t Ore	
		Years 1–5	LOM
Mining	1,469	7.53	7.18
Processing	373	1.57	1.82
Site Support	214	0.92	1.05
Total Operating Cost	**2,056**	**10.01**	**10.05**

Totals may vary due to rounding

1.15 Economic Analysis

This economic analysis presents the key economic performance indicators for Marigold, including cash costs, all-in sustaining costs (AISC) and net present value (NPV), based on a 5% discount rate and mid-year cash flows approach. The key results from the economic analysis are shown in Table 1.9.

Cash flow projections commenced on 1 January 2022 and are estimated over the remaining LOM based on estimates of sales revenue, site production costs, capital expenditures, and other cash flows, including taxes and reclamation expenditures, all presented on a real cash flow basis.

Cash inflows from sales assume all production within a period is sold, with minimal working capital movements, using the gold price in Table 1.6.

The estimates for site production costs, sustaining capital and reclamation expenditures have been developed specifically for Marigold and are presented in the relevant sections of the Marigold21TR.

Based on SSR's projections as set forth in the Marigold21TR, Marigold will incur cash costs of $1,009 per payable ounce of gold sold and AISC of $1,154 per payable ounce of gold sold over the LOM. The after-tax NPV using a 5% discount rate and mid-year cash flows approach is $860M over the LOM.

Table 1.9 Marigold Key Economic Indicators

Item	Unit	Amount
Oxide Processed		
Heap Leach Quantity Placed	Mt	205
Au Feed Grade	g/t	0.48
Total Gold Produced		
Total Payable Gold	koz	2,536
Gold Recovery	%	79.7[1]
5-Year Annual Average		
Total Payable Gold Produced	koz/yr	215
Free Cash Flow	$M/yr	72
Total Cash Costs (CC)	$/oz payable gold	1,042
All In Sustaining Costs (AISC)	$/oz payable gold	1,278
Key Financial Results		
Total Cash Costs (CC)	$/oz payable gold	1,009
All In Sustaining Costs (AISC)	$/oz payable gold	1,154
Site Operating Costs	$/t treated	10.07
After-Tax NPV	$M	860
Discount Rate	%	5
Mine (processing) Life	years	17

1. Recovery includes impact of starting pad inventory
2. Includes operating cost plus $0.02/t refining cost
3. Differences between the Mineral Reserve and LOM quantities used in the economic analysis are due to differences between planned and actual 31 December 2021 face positions

1.15.1 Life-of-Mine Production

Mined material is either placed on the waste dumps or directly onto the leach pad over the course of eleven years of active mining.

A summary of projected mine and gold production over the LOM is shown in Table 1.10, resulting in total production of 2.5 Moz payable gold.

Table 1.10 LOM Operating and Production Statistics Mining and Leaching Production

Year	Total Mined (kt)	Ore Mined (kt)	Au Grade (g/t)	Waste Mined (kt)	Gold Recovery (%)	Recover-able Gold Stacked (koz)	Gold Produced (koz)
2022	102,616	21,818	0.53	80,798	76.4%	282.2	230.0
2023	90,646	22,010	0.38	68,637	76.2%	203.6	260.1
2024	92,828	21,410	0.42	71,418	76.4%	218.3	200.4
2025	93,988	15,713	0.50	78,275	74.9%	190.1	201.9
2026	90,633	16,538	0.40	74,095	76.1%	161.3	182.3
2027	83,225	20,857	0.40	62,369	74.0%	198.5	138.3
2028	90,358	20,207	0.64	70,151	73.8%	305.5	302.7
2029	78,934	26,911	0.43	52,023	71.5%	265.5	278.6
2030	93,861	18,188	0.47	75,673	72.4%	198.2	220.3
2031	87,403	13,103	0.68	74,299	75.6%	215.6	209.8
2032	28,105	7,792	0.72	20,313	75.6%	136.0	162.1
2033	–	–	–	–	–	–	77.7
2034	–	–	–	–	–	–	29.9
2035	–	–	–	–	–	–	15.0
2036	–	–	–	–	–	–	10.0
2037	–	–	–	–	–	–	7.0
2038	–	–	–	–	–	–	10.0
Total	**932,597**	**204,547**	**0.48**	**728,050**	**74.7%**	**2,374.9**	**2,535.9**

1. Gold produced from 2033 onwards is derived from the residual recoverable gold remaining in the leach pad when mining is completed and is recovered through continued leaching from 2033 to 2038.
2. Recoverable Gold Stacked on Pads refers to gold content of ore stacked on the pads in that period that is recoverable by the leaching process. Gold Produced refers to the amount of gold recovered from the heap in that period and processed to product for sale. The difference between the values in these columns is due to the lag effect of the leach cycle on gold dissolution in the heap and ounces already in the pads as of 1 January 2022.
3. Overall leaching recovery excludes impact of previously placed recoverable ounces
4. The mismatch between Mineral Reserves and the LOM production quantities is due to the difference between LOM plan and actual face positions at the end of 2021.
5. Totals may vary due to rounding.

1.15.2 Cost Statistics

Over the mine life, cash costs are estimated to average $1,009 per payable ounce of gold sold, and AISC is estimated to average $1,154 per payable ounce of gold sold.

Table 1.11 summarises the estimated components of the cash costs and AISC per payable ounce of gold sold over the LOM.

Table 1.11 LOM Average Costs per Payable Ounce of Gold Sold

Operating Costs	**Value ($/payable oz of gold sold)**
Mine Operations	579
Processing	147
General and Administration	84
Inventory Adjustment	54
Royalties and Refining (net of silver credits)	144
Total Cash Costs (CC)	**1,009**
Sustaining Capital	138
Other Capital	8
Total AISC	**1,154**

1. Inventory adjustment represents carrying values of starting leach pad and doré inventory at 1 January 2022, which are released into cash costs over the LOM through to 2038 as the associated gold ounces are sold.
2. Payable ounces of gold sold over the LOM total 2,535.9 koz.
3. Cash costs and AISC per payable ounce of gold sold are non-GAAP financial measures.
4. Totals may vary due to rounding.

1.16 Interpretation and Conclusions

The conversion of Mineral Resources to Mineral Reserves used industry best practices to determine operating costs, capital costs, and recovery performance. Therefore, the estimates are considered to be representative of actual and future operational conditions.

Possible areas of uncertainty that could materially impact the estimate of Mineral Reserves at Marigold include the commodity price assumptions, capital and operating cost estimates, estimation methodology, and the geotechnical slope designs for the pit walls. These reasonably foreseeable impacts of the uncertainties in the cost, operations and estimation assumptions are discussed in Section 25.

SSR has initiated exploration and Mineral Resources and Mineral Reserves development activities to enhance Marigold's operating margins and extend the mine life. Further studies will examine the sulfide-hosted gold and could include further drilling evaluation and metallurgical testwork.

1.17 Recommendations

SSR should continue its commitment to safe gold production and continuous progress within the guidelines of its environmental and social license to operate drive improvements at Marigold. The following recommendations include work that has already been identified by SSR and in some cases is in progress.

1.17.1 Processing

Pursue an upgrade to the barren pumping system in order to maintain a solution to ore ratio in excess of 1.5 as the leach pad increases height and new expansions are further from the barren ponds. An upgrade to the pumping system will aid in reducing the current WIP inventory and decrease the likelihood of building inventory in the future. Perform a trade -off study between CIC efficiency loss at high flow vs addition CIC trains with increased efficiency over the life of mine plan. The additional column trains to create a one-pass recovery system are a significant improvement to the system however there is still opportunity to optimise the flow rates through the columns and pull ounces forward through increased efficiency.

1.17.2 Metallurgy / Analytical

Investigate sample processing automation throughout the assay lab to decrease potential for bias and increase representivity. Continue work on fully implementing the ICP-OES to reduce detection limits for gold on leach pad, plant, and blasthole samples. Continue to conduct metallurgical test work with the goal of understanding all future leach ore at Marigold and how test results compare to resource model predictions. Perform more detailed test work on the sulfide ore types to better understand the value of this material at Marigold in the future. Utilise the new LECO machine for sulfur and carbon speciation both in current Marigold ore but also in conjunction with drilling activities being performed for near pit expansions. These data can be utilised to optimised reagent addition as well as reduce operational risks associated with preg-robbing material.

1.17.3 Mineral Resources

Incorporate geological data (from pit mapping) and hard boundaries (from faults that offset mineralisation) into the resource model. Costs associated with this project are minor. As the mine progresses into zones below the water table, undertake a review of the effects of the water table on grade distribution and potential loss of fines.

Re-assay all samples that report the cyanide soluble gold assay values as zero and have not been assayed by the FA method outside of the current LOM pit designs. This should be conducted in a phased-in manner and will help convert Mineral Resources to Mineral Reserves and increase the volume of Mineral Resources and Mineral Reserves.

Collect additional density samples from core holes and in pit, where required, to obtain an improved spatial distribution of density values. Attempt to obtain additional samples from the upper levels of the deposit at between 0–152.4 m deep. It is planned by SSR that one sample be collected for every 9.1 m (30ft) downhole from surface. The density testwork could be completed at Marigold's on-site laboratory and a proportion of these samples should be sent to a commercial laboratory for QA/QC purposes.

Upgrade the Mineral Resources classifications and infill drilling programme. Systematically design infill drill programs to increase the confidence of the model estimates based on the LOM plan within sparsely drilled areas and before ultimate pit walls are finalised.

1.17.4 Mine Planning

Develop and evaluate a digital twin of the mine haulage network utilising industrial mathematics to iterate on material destinations over the LOM and optimise haulage profiles. Code projections of dewatering progress to the mine planning model. Record weekly plan variances, explanations, and associated actions for trending.

1.17.5 Exploration Drilling

Conduct RC exploration drilling to target the lateral extensions of structures known to contain mineralisation. This drilling could target near-surface, higher grade oxide mineralisation. The estimated cost for this project is between $3M and $5M spent over a period of 3–5 years.

1.17.6 Mine Operations

The Marigold operations team anticipates undertaking work focused on improving quality of ore delivered to leach pads and tactical fleet resourcing optimisations for improved cost efficiencies in the haulage cycles.

To improve utilisation of existing dispatch tools onsite as well as implementation of industrial mathematics-based haulage simulation tools for strategically optimised efficiencies throughout the LOM. Training of dispatch personnel for operation of updated fleet management systems onsite to optimise load / haul fleet resourcing and positively improve site productivity should be undertaken. Site will also deploy simulation software for strategic haulage network planning. This haulage simulator can be used to identify opportunities for mine planners and operations personnel to optimise material destinations.

1.17.7 Maintenance Operations

The Marigold maintenance team is committed to remain focused on improved maintenance operations at the site with the aim of increasing equipment availabilities and reducing unit costs. Projects underway include disciplined work planning and execution and consumables wear optimisation.

Following improvements experienced from previous years' initiatives, Marigold's maintenance teams remain focused on improving quality of planned work execution at the site. Key areas of focus include plan compliance improvements, Komatsu PC7000 shovel availability increases, and coordination with supply chain for improved parts availability. These projects are primary enablers to ensuring site production requirements may be met.

In addition to systematic improvements, site has undertaken multiple trials to improve upon life of wear parts and maintenance consumables in the operation. These improvements include Shovel GET wear analysis, engine air filter pre-cleaners (de-risks potential supply chain shortages), and truck bed liner wear packages. Scale of sustaining improvements are pending based upon successful trials within the operation.

2 INTRODUCTION

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

SSR is a gold mining company with four producing assets located in the USA, Turkey, Canada, and Argentina, and with development and exploration assets in the USA, Turkey, Mexico, Peru, and Canada. SSR is listed on the NASDAQ (NASDAQ:SSRM), the Toronto Stock Exchange (TSX:SSRM), and on the Australian Stock Exchange (ASX:SSR).

Marigold mine is owned directly by SSR's wholly-owned subsidiary, Marigold Mining Company (MMC).

The purpose of the Marigold21TR is to report the Mineral Resources and Mineral Reserves for the project. The primary source of data for the Marigold21TR is the Marigold 2021 Project Update Report.

A list of the references used to prepare the Marigold21TR is provided in Section 27.

2.1 Qualified Persons and Property Inspection

The Qualified Persons are:

- Bernard Peters, BEng (Mining), FAusIMM (201743), employed by OreWin Pty Ltd as Technical Director - Mining, was responsible for the overall preparation of the Marigold21TR and, the Mineral Reserve estimates, Sections 1 to 6; Section 13; Sections 15 to 27.
- Sharron Sylvester, BSc (Geol), RPGeo AIG (10125), employed by OreWin Pty Ltd as Technical Director - Geology, was responsible for the preparation of the Mineral Resources, Sections 1 to 12; Section 14; Sections 23 to 27.

OreWin personnel, Sharron Sylvester Technical Director – Geology, and Graeme Baker Principal Mining Consultant, each visited the Project on 18–19 February 2020. The site visit included briefings from mining, geology, and exploration personnel; discussions with technical staff; and review of the existing infrastructure and facilities around the Project site.

Bernard Peters has not visited the site due to travel restrictions.

During the preparation of the Marigold21TR discussions have been ongoing between SSR personnel, technical and management, and the QPs.

2.2 Units and Currency

Unless otherwise stated, all units in this Marigold21TR are metric and all currency values are expressed in US dollars.

2.3 Abbreviations and Acronyms

A list of abbreviations and acronyms used in the Marigold21TR is shown in Table 2.1. The units of measurement used are shown in Table 2.2.

Table 2.1 Abbreviations and Acronyms

Abbreviation/ Acronym	Term/Definition
%	percent
°C	degrees Celsius
µ	micron
3D	three dimensional
5N	5 North
8D	8 Deep
8N	8 North
8S	8 South
8Sx	8 South Extension
AA	atomic absorption
ADR	adsorption/desorption/recovery
Ag	silver (element)
AISC	all-in sustaining costs
amsl	above mean sea level
ANFO	ammonium nitrate and fuel oil
ARD	absolute relative difference
ARO	asset retirement obligation
As	arsenic (element)
ASX	Australian Stock Exchange
Au	gold (element)
AuEq	gold-equivalent
BLM	Bureau of Land Management
BTU	British thermal unit
CaO	lime
CIL	carbon-in-leach
cm	centimetre
CN	cyanide
CRD	carbonate-replacement deposit
CSR	corporate social responsibility

Abbreviation/ Acronym	Term/Definition
CTGD	Carlin-type gold deposit
Cu	copper (element)
d	day
DEM	digital elevation model
E	east
EA	Environmental Assessment
EDA	exploratory data analysis
EIS	Environmental Impact Statement
EOY	end of year
FA	fire assay
g	gram
G&A	General and Administration
g/t	grams per tonne
GAAP	Generally Accepted Accounting Principles
GET	ground engaging tools
GMP	Geotechnical Management Plan
GPS	Global Positioning System
ha	hectare
Hg	mercury (element)
hp	horsepower
ID3	inverse distance cubed
IFRS	International Financial Reporting Standards
IRA	inter-ramp angle
IRR	internal rate of return
ISO	International Organisation for Standardisation
J	joules
kg	kilogram
km	kilometre

Abbreviation/ Acronym	Term/Definition
km^2	square kilometre
kV	kilovolt
kW	kilowatt
L/s	litres per second
LDL	lower detection limit
LOM	life-of-mine
M	million
m	metre
m^2	square metre
m^3	cubic metre
Ma	million years
MCC	motor control centre
min	minute
mL	millilitre
mm	millimetre
MMC	Marigold Mining Company
Moz	million ounces
Mt	million tonnes (metric)
MW	megawatt
tpd	tonnes per day
mV/V	millivolts per volt
Mya	million years ago
N	north
NaCN	sodium cyanide
NDEP	Nevada Division of Environmental Protection
NEPA	National Environmental Policy Act
NN	nearest neighbour
NPV	net present value
NSR	net smelter return
oz	Troy ounce
Pb	lead (element)

Abbreviation/ Acronym	Term/Definition
pH	acidity
PM	Preventative Maintenance
PoO	plan of operations
ppm	parts per million
QA/QC	quality assurance/quality control
QP	qualified person
RC	reverse circulation
ROM	run-of-mine
RTK	Real-Time Kinematic
S	south
Sb	antimony (element)
SG	specific gravity
SI	International System of Units
SLERA	screen-level ecological risk assessment
SRTM	shuttle radar topography mission
SSR	SSR Mining Inc.
st	short ton (imperial)
t	tonne (metric)
t/m^3	tonnes per cubic metre
TSF	tailings storage facility
TSX	Toronto Stock Exchange
TZN	Terry Zone North
US SEC	U.S. Securities and Exchange Commission
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VLF-EM	very-low-frequency electromagnetic
W	west
wk	week
yr.	year
Zn	zinc (element)

Table 2.2 Units of Measurement

Type	Unit	Unit Abbreviation	Si Conversion
area	hectare	ha	10,000 m^2
area	square kilometre	km^2	100 ha
concentration	grams per tonne	g/t	1 part per million
length	foot	ft	0.3048 m
length	mile	mi	1,609.34 km
mass	pound	lb	0.453592 kg
mass	troy ounce	oz	31.103481 g
mass	metric tonne	t or tonne	1,000 kg
mass	short ton	st or ton	2,000 lbs
temperature	degrees Celsius	°C	°C=(°F - 32) x 5/9

3 RELIANCE ON OTHER EXPERTS

OreWin has relied on the following information provided by SSR in preparing the findings and conclusions in this Technical Report regarding the following aspects of modifying factors:

- Macroeconomic trends, data, and assumptions, and interest rates.
  - This has been used in Sections 19 and 22
- Marketing information and plans within the control of the registrant.
  - This has been used in Sections 19 and 22
- Legal matters outside the expertise of the qualified person, such as statutory and regulatory interpretations affecting the mine plan.
  - This has been used in Sections 4 and 20
- Environmental matters outside the expertise of the qualified person.
  - This has been used in Sections 4 and 20
- Accommodations the registrant commits or plans to provide to local individuals or groups in connection with its mine plans.
  - This has been used in Sections 4 and 20
- Governmental factors outside the expertise of the qualified person.
  - This has been used in Sections 4 and 22

The source for all this information is the Marigold 2021 Project Update Report.

OreWin considers it reasonable to rely on SSR because SSR employs professionals and other personnel with responsibility in these areas and these personnel have the best understanding of these areas. OreWin is not qualified to provide advice on legal, permitting and ownership matters.

4 PROPERTY DESCRIPTION AND LOCATION

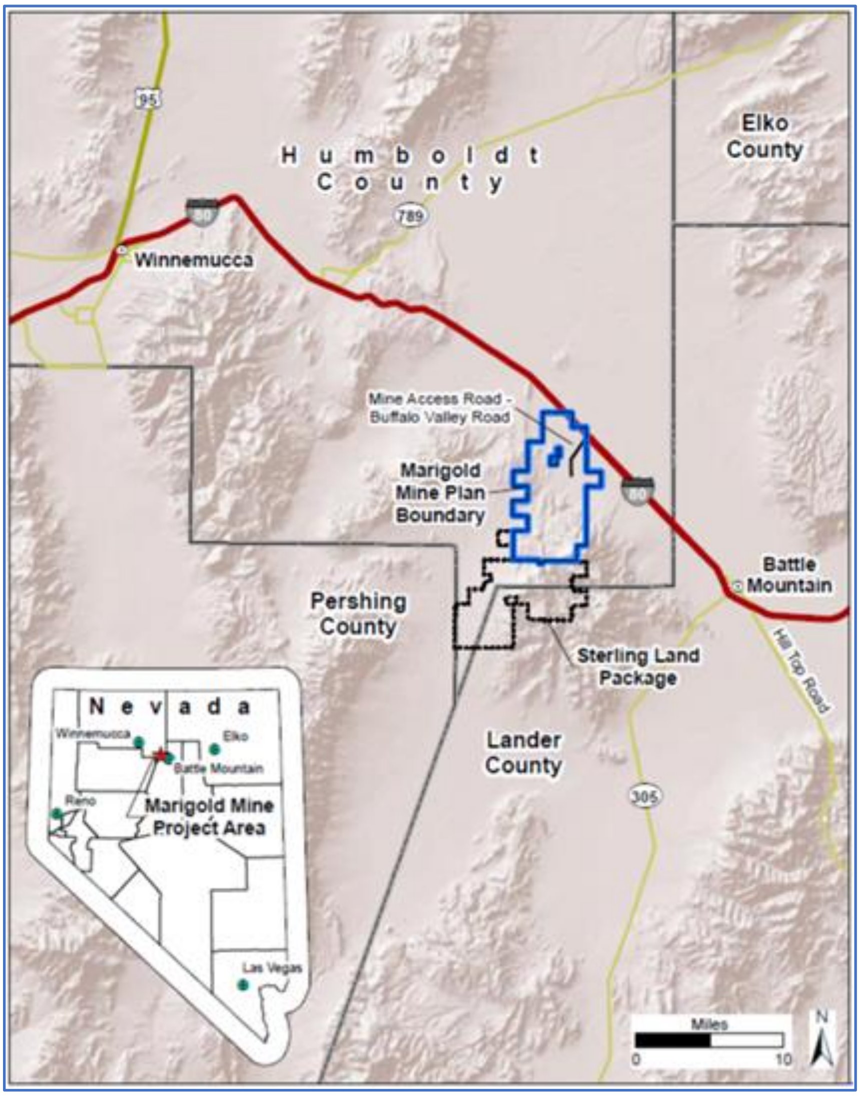
4.1 Property Location

Marigold is located in south-eastern Humboldt County along the Interstate Highway 80 corridor in the northern foothills of the Battle Mountain Range, Nevada, U.S. Activities at the Property are centred at approximately 40°45′ north latitude and 117°8′ west longitude.

The Property is situated approximately 5 km south–south-west of the town of Valmy, Nevada at Exit 216 off Interstate Highway 80. Other nearby municipalities include Winnemucca and Battle Mountain, Nevada, which lie approximately 58 km to the north-west and 24 km to the south-east of the Property, respectively.

Figure 4.1 shows the Property outline relative to these towns and Interstate Highway 80.

Figure 4.1 Marigold Mine Location

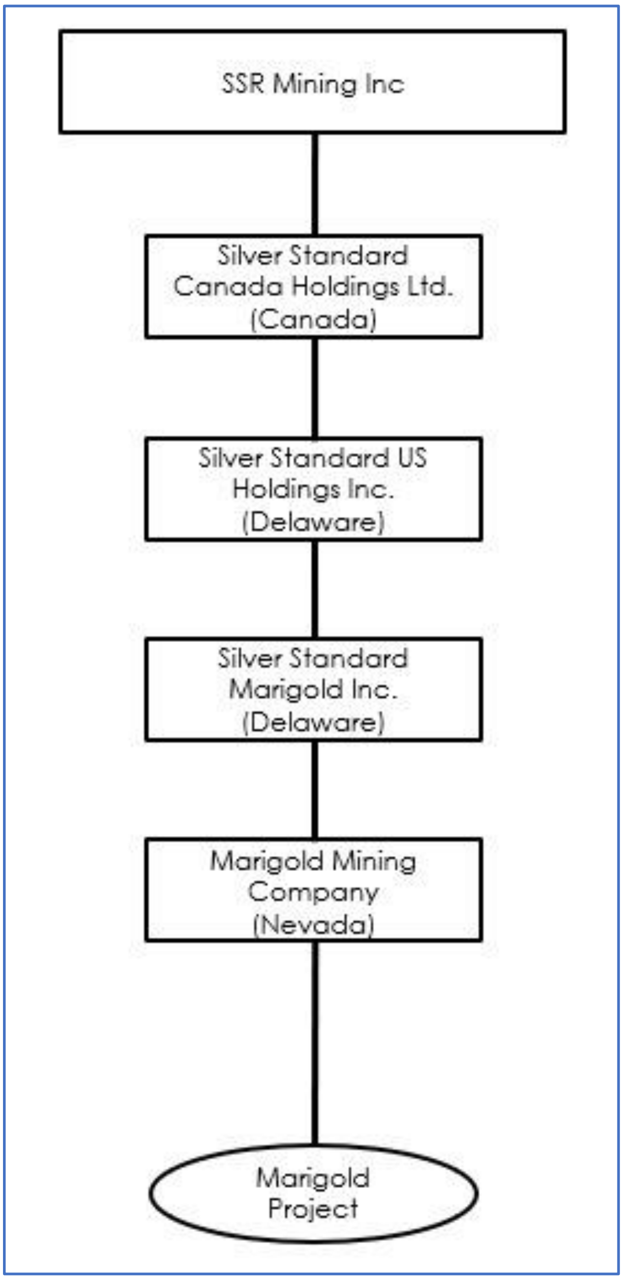


SSR, 2021

4.2 Corporate Structure

Marigold is 100% owned by SSR. The corporate structure of the subsidiary companies owned by SSR is shown in Figure 4.2.

Figure 4.2 Marigold Corporate Structure



SSR, 2021

4.3 Land Tenure and Ownership

The authorised plan of operations (PoO) area for Marigold currently encompasses approximately 10,703 ha with approximately 3.296 ha within the PoO permitted for mining-related disturbance. Land and mineral ownership within the PoO are within the corridor initially governed by the Railroad Act, and, as such, these areas generally have a "checkerboard" ownership pattern. Mineral claims in Nevada are managed federally by the Bureau of Land Management (BLM).

SSR Mining Inc. (SSR Mining) holds 100% interest in the Property through its wholly owned subsidiary, Marigold Mining Company (MMC). Surface and mineral rights at the Property comprise real property owned by MMC; unpatented mining claims owned by MMC; and leasehold rights held by MMC with respect to unpatented mining claims and mill site claims and surface lands.

4.3.1 Owned Real Property

MMC owns the following surface lands at Marigold shown in Table 4.1.

Table 4.1 Marigold Surface Lands

Parcel Number	Hectares	Location
007-0401-25	65.28	SE1/4 'Section 22', T.34N, R.43E
007-0461-09	259.00	'Section 9', T.33N, R.43E
007-0461-14	259.00	'Section 17', T.33N, R.43E
007-0404-10, 007-0404-11, 007-0404-12, 007-0404-13 (Lot 8, Parcel 1-4), 007-0404-05 (Lot 11), 007-0404-06 (Lot 12), 007-0404-09 (Lot 15), 007-0403-03 (Lot 3)	84.40	'Section 33', T.34N, R.43E
007-0461-42 (Parcel A) and 007-0461-43 (Parcel B)	259.00	'Section 21', T.33N, R.43E
007-0461-44 (Parcel C) and 007-0461-45 (Parcel D)	259.00	'Section 29', T.33N, R.43E
007-0481-06	254.40	'Section 1', T.32N, R.42E
007-0491-03	277.90	'Section 5', T.32N, R.43E
07-0461-39	16.19	'Section 16', T.33N, R.43E
07-0461-41	32.37	'Section 30', T.33N, R.43E
07-0491-02	64.75	'Section 6', T.32N, R.43E
07-0481-13	16.19	'Section 12', T.32N, R.42E

4.3.2 Owned Unpatented Mining Claims

MMC owns a total of 323 unpatented mining claims at Marigold, as shown in Table 4.2.

Table 4.2 MMC-Owned Unpatented Mining Claims

BLM Serial Numbers	Claims	Total Number of Claims
NMC371561 to NMC371573	APRI # 1 to APRI # 13	13
NMC519580	APRI # 14	1
NMC552229	APRI # 15	1
NMC361136 to NMC361161	VAL #237 to VAL #262	26
NMC600391 to NMC600402	VAL #1013 to VAL #1024	12
NMC371574 to NMC371609	TYLER # 1 to TYLER # 36	36
NMC454876 to NMC454911	REMARY #237 to REMARY #272	36
NMC552228	REMARY FRACTION	1
NMC359040 to NMC359057	MARY # 73 to MARY # 90	18
NMC400277 to NMC400288	HS #123 to HS #134	12
NMC400289	HS #134A	1
NMC358968 to NMC359003	MARY# 1 to MARY # 36	36
NMC371610	BONZ # 1	1
NMC371612	BONZ # 3	1
NMC371614	BONZ # 5	1
NMC371616	BONZ # 7	1
NMC371618 to NMC371627	BONZ # 9 to BONZ # 18	10
NMC371630 to NMC371639	BONZ # 21 to BONZ # 30	10
NMC451485 to NMC451488	BONZ # 33 to BONZ # 36	4
NMC487422	REBONZ # 2	1
NMC487423	REBONZ # 4	1
NMC487424	REBONZ # 6	1
NMC487425	REBONZ # 8	1
NMC487426 to NMC487427	REBONZ # 19 to REBONZ # 20	2
NMC487428	REBONZ # 31	1
NMC524363	REBONZ # 32	1
NMC1112641 to NMC1112686	GINGER #1 to GINGER #46	46
NMC362237 to NMC362272	LCL #1 to LCL #36	36
NMC684371 to NMC674382	EJM #1 to EJM #12	12
Total Number of Claims		323

BLM Serial number reflect the old BLM-LR2000 system. Claims require annual maintenance fee / renewal notification by 1 September each year. All claims expire on 1 September 2022 at 11:59:59 A.M

4.3.3 Leasehold Rights

MMC holds leasehold rights in each of the following leases:

- Mineral Lease Agreement made and entered into as of 20 June 1986, by and between Donald J. Decker and Suzanne R. Decker, as lessors, Nevada North Resources (USA) Inc., as lessee, and Nevada North Resources Inc. (as amended, the Decker Lease (Section 4.3.3.1)).
- Lease Agreement made and entered into as of 15 September 1985, by and between Vek Associates, as lessor, and Rayrock Mines, doing business as Cordex, as lessee (as amended, the Vek & Andrus Lease (Section 4.3.3.2)).
- Lease Agreement made and entered into as of 1 August 1988, by and between Euro-Nevada Mining Corp., Inc., as lessor, and Rayrock Mines, doing business as Cordex, as lessee (as amended, the Euro-Nevada Lease (Section 4.3.3.3)).
- Lease Agreement made and entered into as of 1 August 1988, by and between the Board of Regents of the University of Nevada System, as lessor, and Donald J. Decker, Suzanne Decker, Nevada North Resources (USA) Inc., and Rayrock Mines, doing business as Cordex, as lessee (the University of Nevada Lease (Section 4.3.3.4)).
- Minerals Lease dated and effective 17 June 1988, by and between SFP Minerals Corporation, as lessor, and Santa Fe Pacific Mining, Inc., as lessee (the SFP Lease (Section 4.3.3.5).
- Minerals Lease dated and effective as of 19 February 1986, by and between Southern Pacific Land Company, as lessor, and SFP Minerals Corporation, as lessee (the Southern Pacific Land Company Lease (Section 4.3.3.6)).
- Minerals Sublease dated and effective 30 April 1986, by and between SFP Minerals Corporation, as sublessor, and Santa Fe Pacific Mining, Inc., as sublessee (as amended, the Southern Pacific Land Company Sublease (Section 4.3.3.7) and, together with the Decker Lease, the Vek & Andrus Lease, the Euro-Nevada Lease, the University of Nevada Lease, the SFP Lease and the Southern Pacific Land Company Lease, collectively, the Leases).
- Minerals Lease Agreement made and entered into as of 5 June 1987, by and between Donald J. Decker and Suzanne R. Decker, as lessors, Nevada North Resources (USA) Inc. and Welcome North Mines (U.S.) Inc., as lessees (the Franco-Nevada Lease (Section 4.3.3.8)).
- Minerals Lease Agreement made and entered into as of 20 December 1994, by and between Nevada North Resources (USA), Inc. by and between Nevada North Resources (USA), Inc., as lessors, and Santa Fe Pacific Gold Corporation, as lessee (the Nevada North Lease (Section 4.3.3.9)).
- Minerals Lease Agreement made and entered into as of 16 October 2012, by and between New Nevada Resources, LLC and Lease Agreement made and entered into as of 16 October 2012 by and between New Nevada Resources, LLC and New Nevada Lands, LLC, as lessors, and Newmont Mining Company, as lessee (the New Nevada 2012 Lease (Section 4.3.3.10)).

- Minerals Lease Agreement made and entered into as of December 3, 2014, by and between New Nevada Resources, LLC and Lease Agreement made and entered into as of 3 December 2014 by and between New Nevada Resources, LLC and New Nevada Lands, LLC, as lessors, and Newmont Mining Company, as lessee (the New Nevada 2014 Lease (Section 4.3.3.11)).

4.3.3.1 Decker Lease Claims

Pursuant to the Decker Lease, MMC has leasehold rights to 170 unpatented mining claims, as shown Table 4.3 The initial term for the Decker Lease was through 25 May 1991 and, thereafter, as long as operations continue.

Table 4.3 Decker Lease Unpatented Mining Claims

BLM Serial Numbers	Claims	Total Number of Claims
NMC48409 to NMC48412	RED # 21 to RED #24	4
NMC48415 to NMC48426	RED # 27 to RED # 38	12
NMC56187 to NMC56198	RED # 39 to RED # 50	12
NMC56199 to NMC56216	RED # 52 to RED # 69	18
NMC271665 to NMC271688	RED #201 to RED #224	24
NMC271689 to NMC271716	RED #601 to RED #628	28
NMC365642 to NMC365677	KIT # 1 to KIT # 36	36
NMC678030 to NMC678047	RED 1801A to RED 1818A	18
NMC678055 to NMC678063	RED 1826A to RED 1834A	9
NMC552226 to NMC552227	RED # 23A to RED # 24A	2
NMC871541 to NMC871547	NURED 1819 to NURED 1825	7
Total Number of Claims		170

BLM Serial numbers reflect the legacy serial numbers from the BLM-LR2000 system. The new serial numbers are non-sequential and can be found in the BLM-MLRS system. Claims require annual maintenance fee / renewal notification by 1 September each year

4.3.3.2 Vek & Andrus Lease Claims

Pursuant to the Vek & Andrus Lease, MMC has leasehold rights to 205 unpatented mining and millsite claims, as shown in Table 4.4. The initial term of the Vek & Andrus Lease was through 15 September 1995 and runs for terms of ten years and, at the lessee's sole option, may be renewed for up to eight successive ten-year periods, upon prior written notice.

Table 4.4 Vek & Andrus Lease Unpatented Mining and Millsite Claims

BLM Serial Numbers	Claims	Total Number of Claims
NMC271972 to NMC272007	COT # 1 to COT # 36	36
NMC275733	COT # 38	1
NMC275750 to NMC275753	COT # 55 to COT # 58	4
NMC275755	COT # 60	1
NMC275757	COT # 62	1
NMC275759 to NMC275767	COT # 64 to COT # 72	9
NMC342068 to NMC342071	COT # 73 to COT # 76	4
NMC297554 to NMC297571	VAL # 1 to VAL # 18	18
NMC347463 to NMC347475	VAL # 19 to VAL # 31	13
NMC297572 to NMC297607	VAL # 37 to VAL # 72	36
NMC361164 to NMC361172	COT FRAC # 1 to COT FRAC # 9	9
NMC371559 to NMC371560	COT # 75A to COT # 76A	2
NMC822614	RECOT 37	1
NMC822615 to NMC822619	RECOT 39 to RECOT 43	5
NMC822620	RECOT 45	1
NMC822621	RECOT 47	1
NMC822622 to NMC822626	RECOT 50 to RECOT 54	5
NMC822627	RECOT 59	1
NMC822628	RECOT 61	1
NMC822629	RECOT 63	1
NMC822630	RECOT 63B	1
NMC822560 to NMC822613	GMMCMS 1 to GMMCMS 54	54
Total Number of Claims		205

BLM Serial numbers reflect the legacy serial numbers from the BLM-LR2000 system. The new serial numbers are non-sequential and can be found in the BLM-MLRS system

NMC822560 to NMC822613 are Mill Site Claims and require annual maintenance fee / renewal notification by 1 September each year

4.3.3.3 Euro-Nevada Lease Claims

Pursuant to the Euro-Nevada Lease, MMC has leasehold rights to 36 unpatented mining claims, as shown in Table 4.5. The original term for the Euro-Nevada Lease was five years, and, at the lessee's option, the Euro-Nevada Lease may be renewed for up to ten additional and successive five-year periods, upon giving the lessor prior written notice. The last Euro-Nevada five year renewal notification was provided 25 May 2018.

Table 4.5 Euro-Nevada Lease Unpatented Mining Claims

BLM Serial Numbers	Claims	Total Number
NMC373649 to NMC373684	SAR# 37 to SAR# 72	36
Total Number of Claims		**36**

BLM Serial numbers reflect the legacy serial numbers from the BLM-LR2000 system. The new serial numbers are non-sequential and can be found in the BLM-MLRS system

Claims require annual maintenance fee/renewal notification by 1 September each year BLM Serial number reflect the old BLM-LR2000 system

4.3.3.4 University of Nevada Lease Claims

Pursuant to the University of Nevada Lease, MMC has leasehold rights to property in 'Section 19', T.33N., R.43E., Humboldt County, Nevada, identified as Humboldt County Assessor's parcel number 007 461 19. The initial term of the University of Nevada Lease was ten years, and the lessee may renew the lease for successive 10-year periods upon providing the lessor with prior written notice. A new agreement was executed on 1 August 2018 and extends through 31 July 2038.

4.3.3.5 SFP Lease Claims

Pursuant to the SFP Lease, MMC has leasehold rights to property in 'Section 5', 'Section 9', 'Section 17', and 'Section 31', T.33N., R.43E., Humboldt County, Nevada. The initial term of the SFP Lease was for 20 years or for so long, thereafter, as mining is conducted on a continuous basis.

4.3.3.6 Southern Pacific Land Company Lease Claims

Pursuant to the Southern Pacific Land Company Lease, MMC has leasehold rights to property in 'Section 13' and 'Section 25', T.34N., R.42E.; 'Section 19', 'Section 29', 'Section 31', and 'Section 33', T.34N., R.43E.; and 'Section 7', T.33N., R.43E., Humboldt County, Nevada. The initial term of the Southern Pacific Land Company Lease was for 25 years and for so long, thereafter, as the lessee continues to exercise its rights on any portion of the property.

4.3.3.7 Southern Pacific Land Company Sublease Claims

Pursuant to the Southern Pacific Land Company Sublease, MMC has leasehold rights to certain property in 'Section 19', 'Section 29', 'Section 31', and 'Section 33', T.34N., R.43E.; 'Section 7', T.33N., R.43E.; and 'Section 1', 'Section 13', and 'Section 25', T.33N., R.42E., Humboldt County, Nevada. The initial term of the Southern Pacific Land Company Sublease was for 25 years and for so long, thereafter, as the lessee exercises any rights granted by such sublease.

4.3.3.8 Franco-Nevada Lease Claims

Pursuant to the Franco-Nevada Lease, MMC has leasehold rights to 82 unpatented mining claims, as set out in Table 4.6. The initial term for the Franco-Nevada Lease was from 5 June 1987 for a period of 50 years and for so long, thereafter, as the lessee exercises any rights granted by such lease.

Table 4.6 Franco-Nevada Lease Unpatented Mining Claims

BLM Serial Numbers	Claims	Total Number of Claims
NMC379514 to NMC379585	N-1 to N-72	72
NMC623992 to NMC623995	N-109 to N-112	4
NMC676435	N-20A	1
NMC676436	N-22A	1
NMC676437 to NMC676440	N-28A to N-31A	4
Total Number of Claims		82

Claims require annual maintenance fee/renewal notification by 1 September each year

4.3.3.9 Nevada North Lease

Pursuant to the Nevada North Lease, MMC has leasehold rights to 12 unpatented mining claims, as set out in Table 4.7. The initial term for the Nevada North Lease was from 20 December 1994 for a period of 10 years and for so long, thereafter, as the lessee exercises any rights granted by such lease.

Table 4.7 Nevada North Lease Unpatented Mining Claims

BLM Serial Numbers	Claims	Total Number of Claims
NMC409224 to NMC409235	BC-1 to BC-12	12
Total Number of Claims		12

Claims require annual maintenance fee/renewal notification by 1 September each year

4.3.3.10 New Nevada 2012 Lease

Pursuant to the New Nevada 2012 Lease, MMC has leasehold rights to property in 'Section 33', T.33N., R.43E., Humboldt County, Nevada. The initial term for the New Nevada 2012 Lease was from 16 October 2012 for a period of 20 years and for so long, thereafter, as the lessee exercises any rights granted by such lease.

4.3.3.11 New Nevada 2014 Lease

Pursuant to the New Nevada 2014 Lease, MMC has leasehold rights to property in 'Section 11', T.33N, R.44E; 'Section 23', T.33N, R.42E; and 'Section 35', T.33N, R.42E, Humboldt County, Nevada. The initial term for the New Nevada 2014 Lease was from 3 December 2014 for a period of 20 years and for so long, thereafter, as long as the lessee exercises any rights granted by such lease.

4.4 Royalties and Encumbrances

Each Lease requires MMC to make certain net smelter return (NSR) royalty payments to the lessors and comply with certain other obligations, including completing certain work commitments or paying taxes levied on the underlying properties. These NSR royalty payments are based on the specific gold-extraction areas and are payable when the corresponding gold ounces are extracted, produced and sold. The NSR royalty payments vary between 0% and 10.0% of the value of gold production net of off-site refining costs, which equates to an annual average ranging from 3.7% to 10.0% and a weighted average of 7.8% over the life-of-mine (LOM).

4.5 Environmental Liabilities

At present, there are no known environmental liabilities to which the Property is subject. Further discussion on environmental matters with respect to the Property is provided in Section 20.

4.6 Operating Permits

Marigold holds active, valid permits for all facets of the current mining operation as required by county, state, and federal regulations. MMC performs duties on leased lands pursuant to all federal and state requirements, and all the Leases are maintained in good standing. MMC engages in concurrent reclamation practices and is bonded for all permitted features, as part of the Nevada permitting process.

Further discussion on permitting requirements with respect to the Property is provided in Section 20.

4.7 Permits, Mineral, and Surface Rights

Mining activities at Marigold are authorised by and conducted under both federal and state regulatory requirements, notably the General Mining Law of 1872, the National Environmental Policy Act of 1970, and the Federal Land Policy and Management Act of 1976. All requirements are administered by the BLM, along with applicable statutes and regulations within the Nevada Revised Statutes and Nevada Administrative Code, administered by the Nevada Division of Environmental Protection.

Further discussion regarding Marigold's mineral and surface rights, including leasehold rights under the Leases, is provided in Section 3. Further discussion regarding permitting requirements with respect to the Property is provided in Section 20.

4.8 Other Significant Factors and Risks

SSR have advised that there are no other known significant risks that may affect access, title or the right or ability to perform mining-related work on the Property.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

Access to the Property is via a 5 km public road (hard-packed clay and gravel) off the Valmy exit (Exit 216) on Interstate Highway 80.

5.2 Climate and Physiography

Elevations at Marigold range from approximately 1,372–1,890 mamsl. The climate is typical of the Great Basin region of the western U.S., with temperatures ranging from highs of 40°C in summer to lows of –7°C in winter. Annual precipitation is relatively low, ranging from 15–20 cm per year, with approximately 50% of precipitation occurring as snowfall during the months of December through March.

The climate presents no restrictions on the operating season, and Marigold operates year-round. Terrain varies from a relatively flat alluvial plain to sloped foothills at the base of the Battle Mountain Range. Vegetation mainly comprises sagebrush, rabbit brush, and a variety of grasses and forbs. Fauna is not abundant on the Property primarily due to the lack of surface water and limited forage. No threatened or endangered plant or animal species have been noted within the Property's operating area.

5.3 Infrastructure

Marigold has been in continuous operation since 1989. There is significant infrastructure existing on site for delivering power and water to the various mine shops, leach pad, and process and ancillary facilities. The Property is located in a favourable area for natural resource development with significant resources in place to support the mining industry. The nearby towns of Winnemucca and Battle Mountain host the majority of the local workforce. Contractor support, transportation, and general suppliers are all readily available in these communities as well as in Elko, which is located approximately 142 km east of Marigold and serves as a major hub for mining operations in northern Nevada. Employees are transported to the Property primarily by contract buses and light-duty vehicles owned by MMC.

Water for Marigold is supplied from three existing groundwater wells located near the access road to the Property. Marigold owns groundwater rights and collectively allows up to 3.134 Mm^3 of water consumption annually, the majority of which is used as makeup water for process operations. On average, total freshwater makeup is 2.4 m^3/min.

Approximately 5.3 m^3/min of fresh water is required during peak periods in the summer months. The water is primarily consumed by retention in the heap leach pad, evaporation, processing operations and dust suppression. Marigold also owns 0.893 Mm^3 annually of surface water storage rights associated with the Trout Creek Dam (J-666). In addition, in September 2019, Marigold was issued water rights permits associated with the activities described in the Plan of Operations – Mackay Optimization Project Amendment, including permits for the dewatering during mine operations and evaporative losses from a future pit lake that will develop in closure.

The power supply for Marigold is provided by NV Energy Inc. via a 120 kV transmission line to site. Site power draw is 5 MW. After exiting the main substation, power is distributed through a 25 kV distribution grid.

The tailings storage facility (TSF) has been decommissioned and reclaimed. The only remaining activity concerning the TSF is ongoing monitoring.

Details regarding completed, in progress, and future waste dumps at Marigold can be found in Section 16. The leach pad is discussed in detail in Section 17. Further discussion on the Property's infrastructure is provided in Section 18.

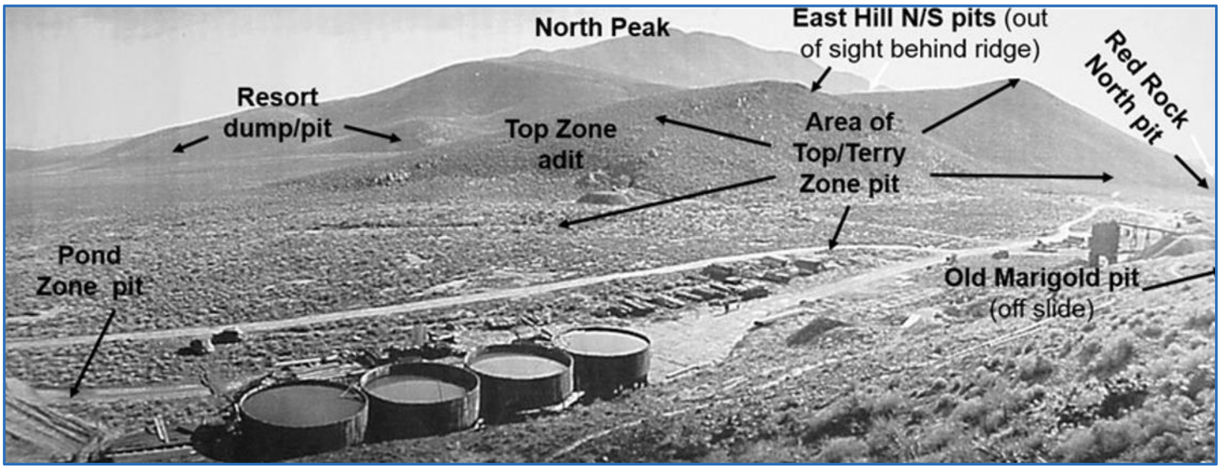
6 HISTORY

6.1 Historical Exploration Work

The first recorded gold production from the Property near Valmy, Nevada occurred in 1938 when the Marigold Mining Company, owned by Frank Horton, developed and operated an underground mine which came to be known as Marigold. Figure 6.1 shows the Marigold mine prior to World War II.

The Horton family processed approximately 9,000 t of ore averaging about 6.85 g/t Au before World War II halted production. In 1943, Mr. Horton's estate sold its interest in the Property and claims. Several unsuccessful attempts were made to open and operate the mine before exploration activities began again in 1968.

Figure 6.1 View to the East–South-East over the Cyanide Leach Tanks from the Marigold Mine prior to World War II



SSR, 2017

From 1968 through 1985, several companies conducted exploration programmes in the Marigold area and completed a total of 126 exploratory drillholes. Records document the activities of Homestake (1968), St. Joe (1979), Decker Exploration (1979), Placer Amex (1979–1980), True North, Marigold Development Company (MDC) (1981–1983), Welcome North (1984), and Nevada North Resources (USA) Inc. (1985–1986). Other groups that conducted work in the area include Newmont, Kerr-McGee, SFP Minerals Corporation, Cordex/Rayrock Mines, and Vek/Andrus Associates (partnership between Vic Kral, Ralph Roberts, Bob Reeve, and Bill Andrus composed of Vek Associates and Andrus Resources Corporation).

From 1983 through 1984, MDC excavated a small open pit over the historical Marigold underground workings, producing 2,812 t containing 271 oz gold (McGibbon, 2004).

In 1985, Vek/Andrus Associates drilled three holes under the supervision of Ralph Roberts in the 'Section 8' area of the Property, just north-east of the old underground mine. Roberts invited Andy Wallace of Cordex to view the drilling results, and Wallace was encouraged by the deep level of oxidation, presence of favourable rock units, anomalous indicator elements, and anomalous gold values. The operating partner Cordex, an exploration syndicate composed of Dome Exploration (U.S.) Ltd., Lacana Gold Inc. (Lacana) and Rayrock Mines, leased the Vek/Andrus Associates claim block in September 1985 and began a drilling programme in November 1985. Drillholes NM-3 and NM-4 intersected 21.3 m of 2.40 g/t Au and 25.9 m of 7.54 g/t Au, respectively. These were the discovery holes for the 8 South (8S) ore body (Roberts, 2002).

The Property is within the "checkerboard" railway lands, where the U.S. Government originally awarded the surface, water, and mineral rights for alternate sections (2.5 km^2 of land) to the Santa Fe Pacific Railroad as an incentive to develop the transcontinental railway project in the 1860s. Santa Fe Pacific Railroad eventually became the parent company of SFP Minerals. Following further drilling in the 8S deposit in the spring of 1986, a joint venture was formed between SFP Minerals and the Cordex group, which consolidated some of the land holdings over the Marigold area.

In late-1986, the Cordex group leased other claims, including the historical Marigold mine, Top Zone, East Hill, and Red Rock area from various claim holders (Figure 6.2).

In March 1988, Rayrock Mines (operating company for Cordex) made a production decision on the 8S deposit, and, by September 1988, it began stripping on the 8S pit (McGibbon, 2004).

In August 1989, the first gold doré bar was poured at the Marigold mill.

In March 1992, Rayrock Mines purchased a two thirds ownership interest in the Property, and Homestake Mining Company (Homestake), which had taken Lacana's interest through previous corporate mergers, held the remaining one third ownership interest in the Property.

In 1994, mining of the 8S deposit was completed, and the Marigold mill was no longer used to process ore. At this point, Marigold became a run-of-mine (ROM) heap leach operation.

In March 1999, Glamis Gold Ltd. (Glamis Gold) purchased all the assets of Rayrock Mines, resulting in Glamis Gold holding a two thirds ownership interest in Marigold, and Homestake continuing to hold a one third ownership interest. In the same year, the Basalt, Antler and Target II deposits were discovered at the south end of the Property in 'Section 31'. These deposits were mined and partially backfilled with the unmined East Basalt deposit which is currently under development as an easterly extension of the original Basalt pit.

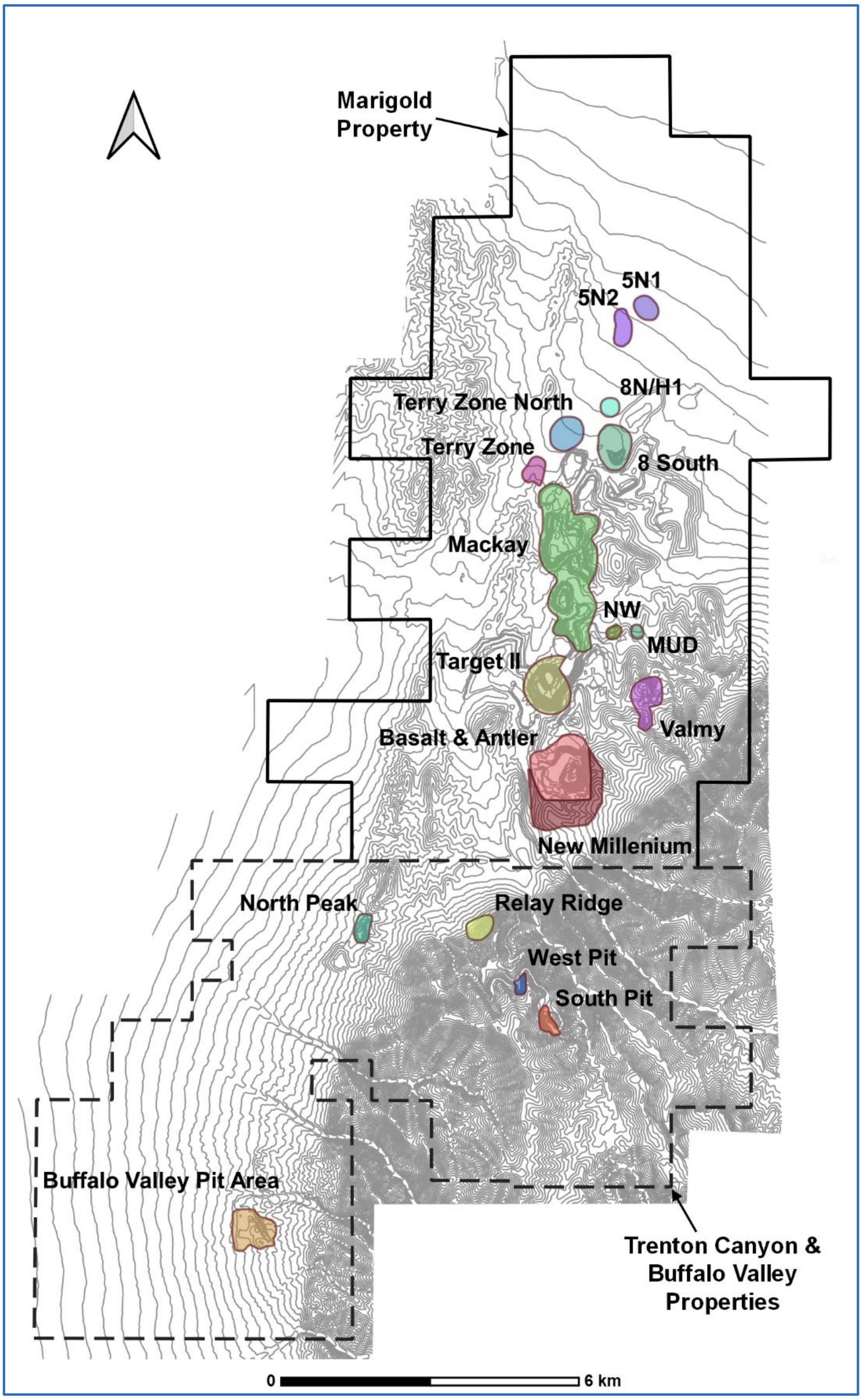
By January 2001, a total of one million ounces of gold had been recovered from the Property. In July 2001, Glamis Gold released a revised NI 43-101 Technical Report (Glamis Gold, 2001) to report the Mineral Resources and Mineral Reserves for 'Section 31' of the Property.

In 2006, Glamis Gold merged with Goldcorp Inc. (Goldcorp), resulting in a Goldcorp subsidiary holding a two thirds ownership interest in Marigold, as operator, and Homestake, which had been acquired by Barrick Gold Corporation (Barrick) in 2001, continued to hold the remaining one third ownership interest.

In 2007, discovery holes were drilled in the Red Dot deposit.

By mid-2009, two million ounces of gold had been recovered from Marigold.

Figure 6.2 Location of Marigold Areas



SSR, 2021

On 4 April 2014, SSR (formerly Silver Standard Resources Inc.) completed the acquisition of Marigold from subsidiaries of Goldcorp and Barrick. Subsequently, SSR filed an updated NI 43-101 Technical Report in November 2014 to support the October 2014 press release that announced the estimates of Mineral Resources and Mineral Reserves, and the LOM at Marigold.

In August 2015, Marigold mine acquired 2,844 ha of adjacent land from Newmont. This land included previously mined areas known as the Mud pit, NW pit, and the Valmy pits. Exploration drilling in the area had been completed by a combination of companies including Hecla Mining Company (Hecla), SFP Minerals, and Newmont.

In October 2015, the three millionth ounce was poured at Marigold. Marigold has now been in continuous operation for more than 30 years and poured the four millionth ounce of gold in 2020.

On 31 July 2018, SSR filed an updated NI 43-101 Technical Report (SSRTR18) to support press release 18-09 (18 June 2018) updating the life-of-mine plan and confirming near-term production growth and robust economics. In that report it was stated that, as at 31 December 2017, a total of 8,440 drillholes for 1,645,048 m of drilling had been completed on the Property.

From 2018 through to the end of November 2021, a further 975 holes have been drilled, including 932 RC holes and 43 diamond core holes (24 with RC pre-collars). This adds a further 337,910 m of drilling, bringing the total to 9,323 drillholes for 1,940,438 m.

A summary of the exploration work carried out on the Property is shown in Table 6.3.

Further discussion on historical drilling programmes with respect to the Property is provided in Section 10.

6.2 Historical Production Work

Historically, gold recovery at Marigold was initially a milling circuit with a carbon-in-leach (CIL) process and then a ROM heap leach process where the ore is dumped on a lined leach pad and irrigated with a dilute cyanide solution. The tonnes, grade, and contained and recovered ounces from the start of commercial production in August 1989 to 31 December 2021 is provided in Table 6.1.

An overall average recovery for the milling circuit was 92%, and it is calculated to be at 73% with the ROM heap leach process until October of 2010 when the recovery equation was updated.

Table 6.1 Marigold Historical Production: Tonnes, Grade, Contained, and Recovered Gold Ounces as of 31 December 2021

Process Type	Tonnes (Mt)	Au Grade (g/t)	Contained Gold (koz)	Recovered Gold (koz)
Leach Pad	323.9	0.527	5,489	3,904
Milled	4.6	3.13	483	458
Total	328.5	0.56	5,973	4,362

The Marigold mine production for April 2014 to 2021 is shown in Table 6.2.

Table 6.2 Marigold Mine Production April 2014 to 31 December 2021

Mine Production	Tonnes (Mt)	Au (g/t)	Contained Ounces (koz)
April 2014—31 December 2021	177.7	0.41	2,350

Table 6.3 Summary of Exploration Work Carried out to End of November 2021

Year	Company	Exploration Type	Details
1968–1985	Various exploration and mining groups	Drilling	7,037.2 m in 126 drillholes.
1985–1999	Cordex and Rayrock Mines	Drilling	335,500.7 m in 2,358 drillholes.
		Geophysics	1989 – CSAMT survey conducted by Quantec Geoscience using Zonge CSAMT System covering 33 EW and NW-SE lines, spaced 300.3 m and 499.9 m. A total of 59.2 km covered.
			1997/1999 – CSAMT survey conducted by Zonge Geoscience using Zonge CSAMT System covering 33 EW and NW–SE lines, spaced 300.3 m and 499.9 m. A total of 51.8 km covered.
			1998 – Gravity survey conducted by Zonge Geoscience using Scintrex Gravity Meter, Trimble GPS System survey conducted on 150 m square grid and data collected from a total of 1,252 stations.
			1999 – Induced Polarisation conducted by Zonge Geoscience using Zonge IP system, Dipole-Dipole Array, A = 182.9 m, 1 line N20W. A total of 3.0 km covered.
1999–2006	Glamis Gold	Drilling	486,648.9 m in 2,506 drillholes.
		Geophysics	2004 – Airborne Magnetic conducted by Pearson, deRidder & Johnson, Inc. using Ultra Light System / 75.0 m EW flight lines, 300.3 m NS tie lines. A total of 323.5 km covered.
2006–2013	Goldcorp	Drilling	528,225.7 m in 1,870 drillholes.
		Geophysics	2009 – Magneto-telluric/Induced Polarisation survey conducted by Quantec Geoscience, using Quantec Titan System. 11 lines in various orientations. A total of 46.4 km covered.
			2010 – Induced Polarisation conducted by Zonge Geoscience using Zonge IP system, Dipole-Dipole Array, A= 150.0 m and 200.0 m, 27 lines EW, spaced 300.3 m –1,499.9 m. A total of 117.5 km covered.
			2009–2010 – Review of all geophysical survey data and compilation of Marigold geophysical data by J L Wright Geophysics.

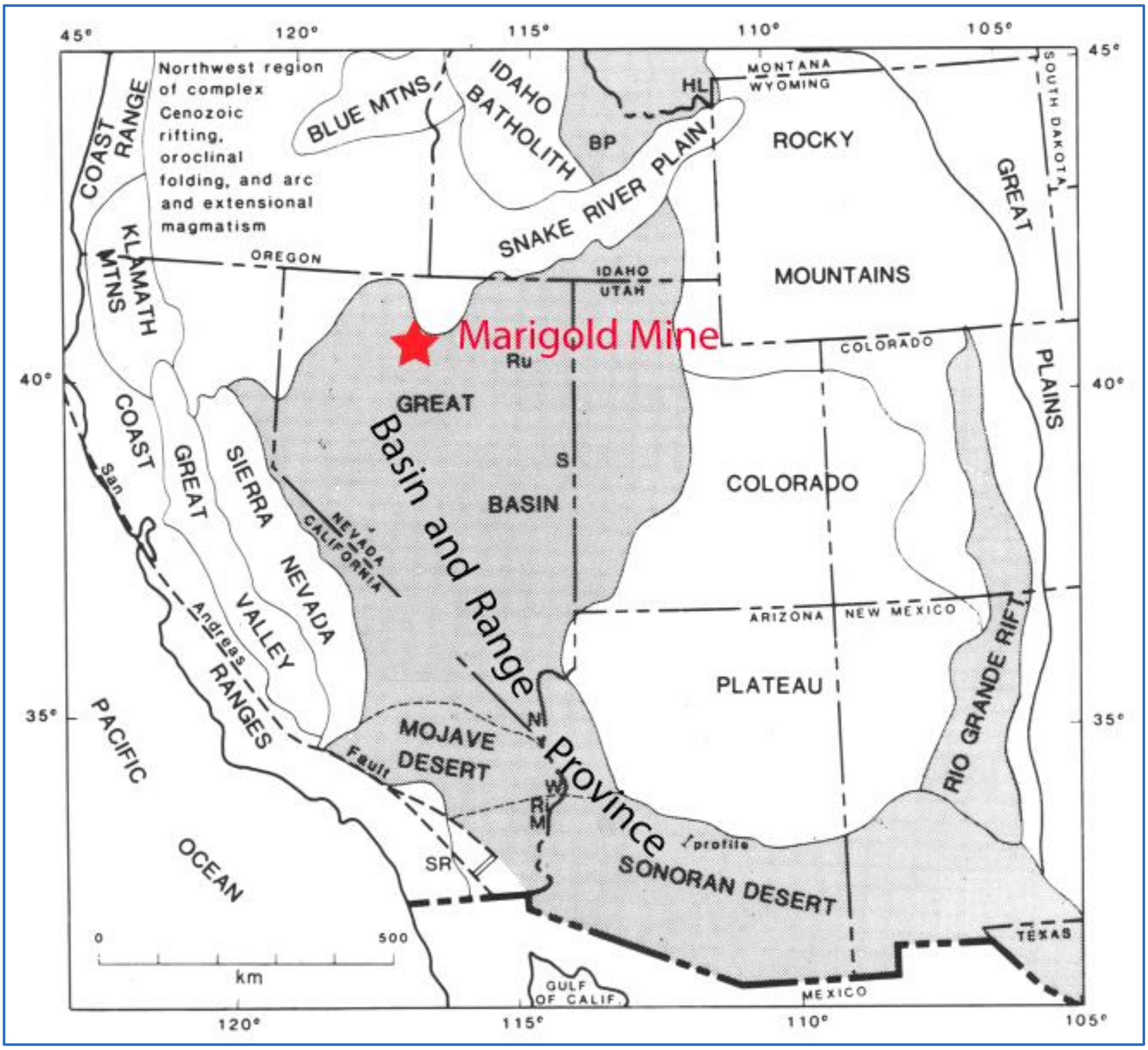
Year	Company	Exploration Type	Details
2006–2013 cont.d	Goldcorp	MMI Survey	2007–2009 – Initial survey in 2007 covered Red Dot area, and, in 2008–2009, most of undisturbed land within Marigold was covered. A total of 11,493 samples were taken. Samples collected every 15.2 m along 117 EW lines separated by 30.5 m. In 2007, samples were analysed for Ag, As, Au, Ba, Cd, Co, Cu, Pb, Pd, Sm, Y, Zn, and Zr. In 2008, Pd was dropped. In 2009, Co, Sm, Y, and Zr were dropped and replaced with Mg, Sr, and Sb.
1985–2006	Newmont (including Hecla and SFP Minerals)	Drilling	109,363 m in 867 drillholes. Data was acquired from Newmont with the acquisition of the 2,844 ha Valmy property in 2015.
2014	SSR	Geophysics	J L Wright Geophysics conducted a gravity survey. Magee Geophysical Services LLC conducted the field data collection. The gravity measurements were collected from 1,358 stations using two LaCoste and Romberg Model-G gravity meters at a grid spacing of 150 m x 150 m. (Magee, 2014)
2014–2017	SSR	Drilling	178,272 m in 713 drillholes.
2016	SSR	Geophysics	Gravity survey conducted by Magee Geophysical Services LLC. A total of 1,806 stations were acquired on a 150 m square grid and 150 m x 300 m staggered grid. Relative gravity measurements were made with LaCoste and Romberg Model-G gravity meters. Topographic surveys were performed with Trimble Real-Time Kinematic (RTK) and Fast-Static GPS. (Magee, 2016)
2018–Nov.2021	SSR	Drilling	343,233 m in 995 drillholes (259,339 m in 732 drillholes in Marigold; 83,894 m in 263 holes in Trenton Canyon and Buffalo Valley)
2020	SSR	Geophysics	Two reflection seismic lines covering 16.9 km. The lines were surveyed by Riolada Surveying LLC and Xtreme Drilling completed the shot holes. Bird Seismic acquired the data, and processing was completed by SubTerraSies and Wright Geophysics.
2021	SSR	Geophysics / Soil Samples	In 2021 a proprietary airborne hyperspectral dataset was acquired with district-scale coverage. This dataset includes mineral maps generated from short and long wave infrared sources. a soil sampling program was completed by North American Exploration on behalf of SSR Mining consisting of 3,284 soil samples covering 14.5 km^2 of mountainous terrain predominantly east the previously mined pits at Trenton Canyon.

7 GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Geological Setting

Marigold is located in north-central Nevada within the Basin and Range physiographic province bounded by Sierra Nevada to the west and the Colorado Plateau to the east (Figure 7.1).

Figure 7.1 Location of the Marigold Mine in North-Central Nevada within the Basin and Range Physiographic Province

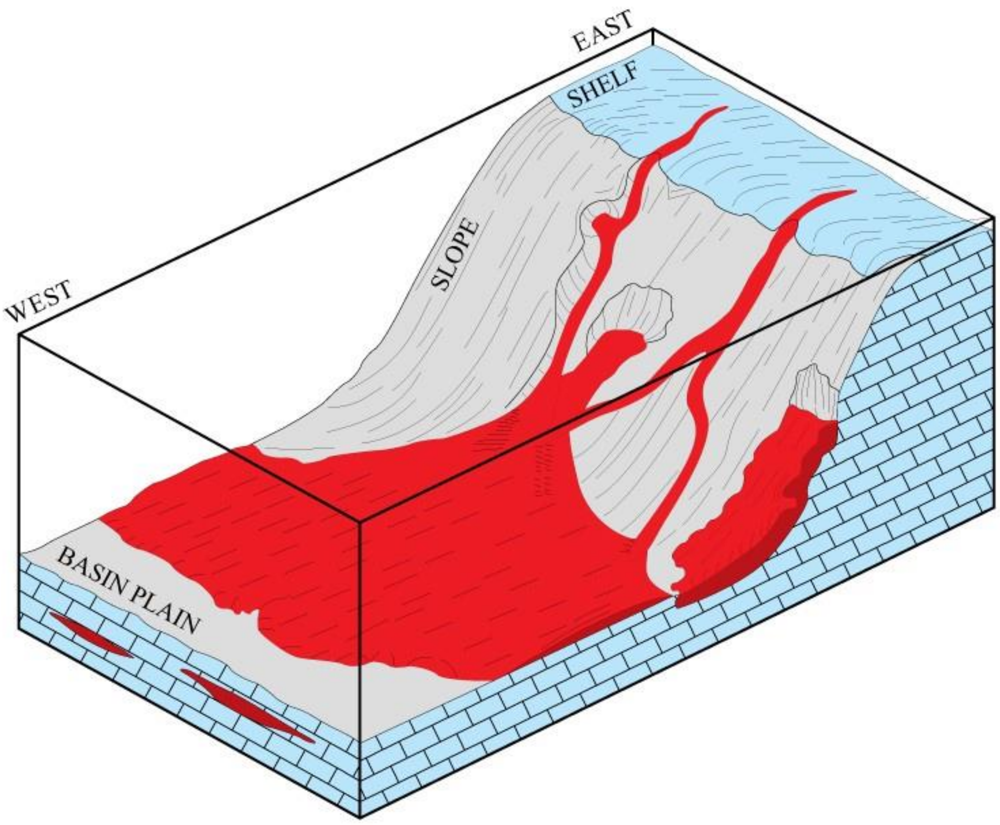


Modified after Hamilton, 1987

Paleozoic basement rocks of north-central to north-eastern Nevada generally comprise four distinct tectonostratigraphic assemblages: the eastern carbonate assemblage; the slope or transitional assemblage; the western siliceous and volcanic assemblage; and the overlap assemblage (Roberts, 1964). These rocks record a complex history of compressional and extensional tectonics affecting the western margin of North America from the early Paleozoic through present.

Late Proterozoic rifting associated with the breakup of Rodinia resulted in passive margin sedimentation on the miogeocline of the proto-Pacific margin of western North America (Cook and Taylor, 1977; Wallace et al., 2004; Cook, 2015). Subsidence and sedimentation continued along the passive margin from the late Proterozoic through Devonian, a period of approximately 240 million years (Cook and Taylor, 1977; Cook, 2015). Carbonate platform rocks (eastern assemblage) 4,800 to 7,000 m thick developed on the eastern margin of the miogeocline. Debris flow, turbidite, and lime mudstone of the transitional assemblage accumulated on the slope further west, and siliceous and volcanic rocks belonging to the western assemblage were deposited in the basin plain (Figure 7.2) (Roberts, 1964; Cook and Corboy, 2004; Cook, 2015).

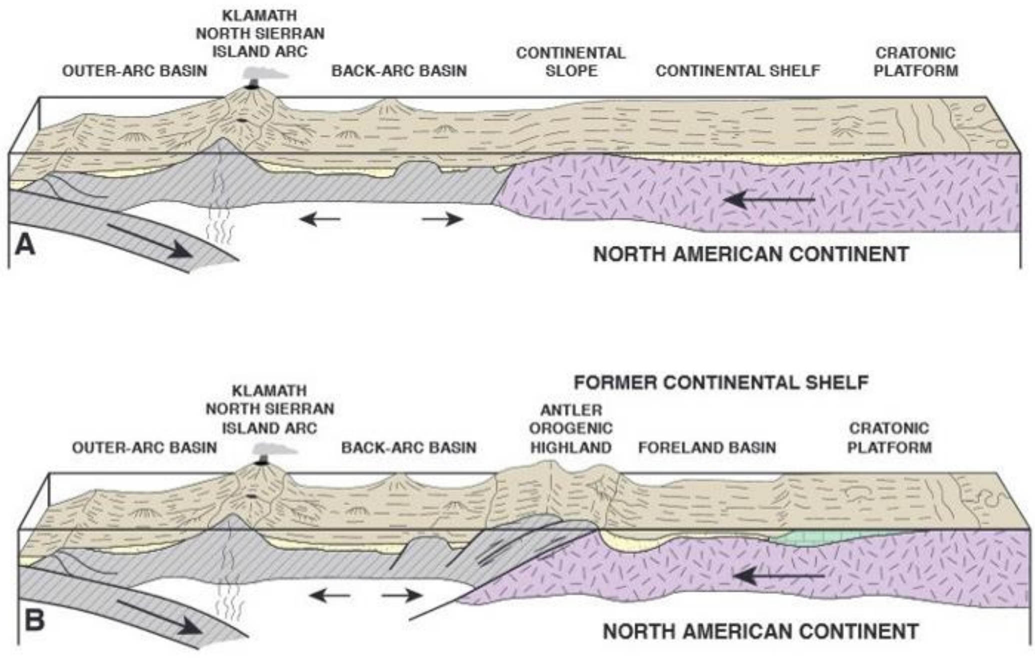
Figure 7.2 Model of Shelf-Slope to Basin in late Cambrian-early Ordovician of Nevada, with Carbonate Rocks to East and Siliciclastic and Volcanic Rocks to West



Cook and Corboy, 2004

Evidence for an enigmatic late Devonian to early Mississippian tectonic event, known as the Antler orogeny, is recorded by folding and thrusting of Ordovician western assemblage rocks and formation of the Antler highland (Roberts, 1964). In north-central Nevada, western assemblage rocks are tectonically emplaced over eastern assemblage rocks along the Roberts Mountain thrust, although the legitimacy of the thrust is disputed (Ketner, 2013). Uplift and erosion of the Antler highland in the Pennsylvanian shed clasts of western assemblage rocks into a foreland basin, forming basal units of the Pennsylvanian-Permian overlap assemblage (Figure 7.3).

Figure 7.3 Schematic Model of Devonian - Mississippian Compression on the Western Margin of North America



Cook and Corboy, 2004

Marine sedimentary rocks and submarine volcanic rocks accumulated in a basin west of the Antler orogenic belt from the Mississippian to the Permian. These rocks were transported eastward and structurally emplaced on top of western assemblage and overlap assemblage rocks along the Golconda thrust during the Permo-Triassic Sonoma orogeny (Roberts, 1964). The mechanism for compression resulting in the Sonoma orogeny is controversial, and modern work by Ketner (2008) has called into question the relationship between the Sonoma orogeny and the Golconda thrust.

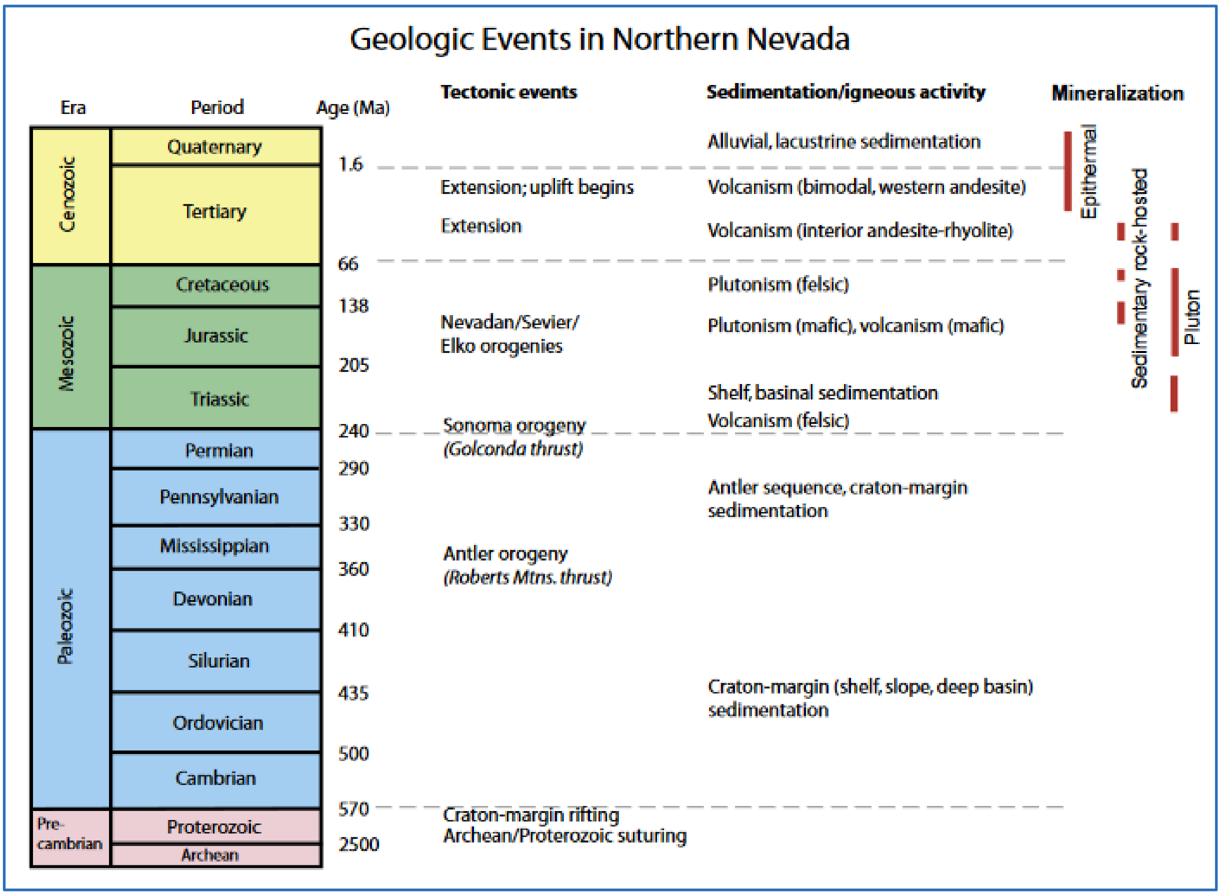
Compression during the Jurassic and early Cretaceous resulted in subduction of oceanic plate material beneath continental crust of western North America, generating large volumes of intermediate to felsic melts along a magmatic arc and emplacement of plutons into the Sierra Nevada batholith. Continued compression resulted in accretion of oceanic arc terrane onto the continental margin, forming thrust belts and ophiolite sequences. Collectively, these Andean and Cordilleran style compression events are known as the Nevadan orogeny. The Nevadan orogeny resulted in substantial back-arc shortening and formation of the Luning-Fencemaker fold-thrust belt in Nevada (Wyld et al., 2003). A major mode of felsic plutonism also occurred in Nevada during the late Jurassic (~155–160 Ma) (du Bray, 2007).

Late Jurassic and Cretaceous compression formed an extensive fold and thrust belt further east in Utah and Wyoming during the Sevier orogeny. Flat-slab subduction of the Farallon plate underneath North America from the late Cretaceous to Eocene resulted in thick-skinned deformation and uplift of the Rocky Mountains from New Mexico to British Columbia during the Laramide orogeny. The second major mode of felsic plutonism occurred in Nevada during this time (~90–95 Ma) (du Bray, 2007), associated with porphyry-style base metal mineralisation events.

As the Laramide orogeny waned into the Eocene, there was a major transition from compressional to extensional tectonic regimes in Nevada. Extensional tectonic stresses, evidenced by block faulting and titling, have dominated Nevada from the late Eocene to the present. Three temporally distinct orientations of post-Cretaceous crustal extension have been identified: north-west–south-east in the late Eocene to middle Miocene; west–south-west–east–north-east in the middle Miocene; and north-west–south-east in the late Miocene to present (Zoback et al., 1994). These extension events resulted in the development of basin and range physiography seen throughout central Nevada. The landform is characterised by a series of horsts and grabens that created narrow north–north-east oriented ranges separated by flat bottomed valleys. Extension and resultant crustal thinning are associated with the third major magmatic pulse in Nevada, during which time several porphyry copper–gold systems developed. In addition, the famous Carlin-type gold deposits (CTGD) of northern Nevada are thought to have formed during this time (~36–42 Ma) (Cline et al., 2005).

Magmatism of andesitic to rhyolitic affinity dominated from the late Eocene to early Miocene with the production of voluminous ash flowsheets, plutons, hypabyssal intrusives and calderas. Volcanic arc-related andesitic igneous activity continued in western Nevada from early to late Miocene. Further east in central and eastern Nevada, rift related bi-modal rhyolite and tholeiitic basalt were emplaced in the mid Miocene and are related to epithermal silver–gold deposits in the region. A summary of significant geologic events of northern Nevada is presented in Figure 7.4.

Figure 7.4 Major Igneous, Tectonic, and Mineralising Events in Northern Nevada

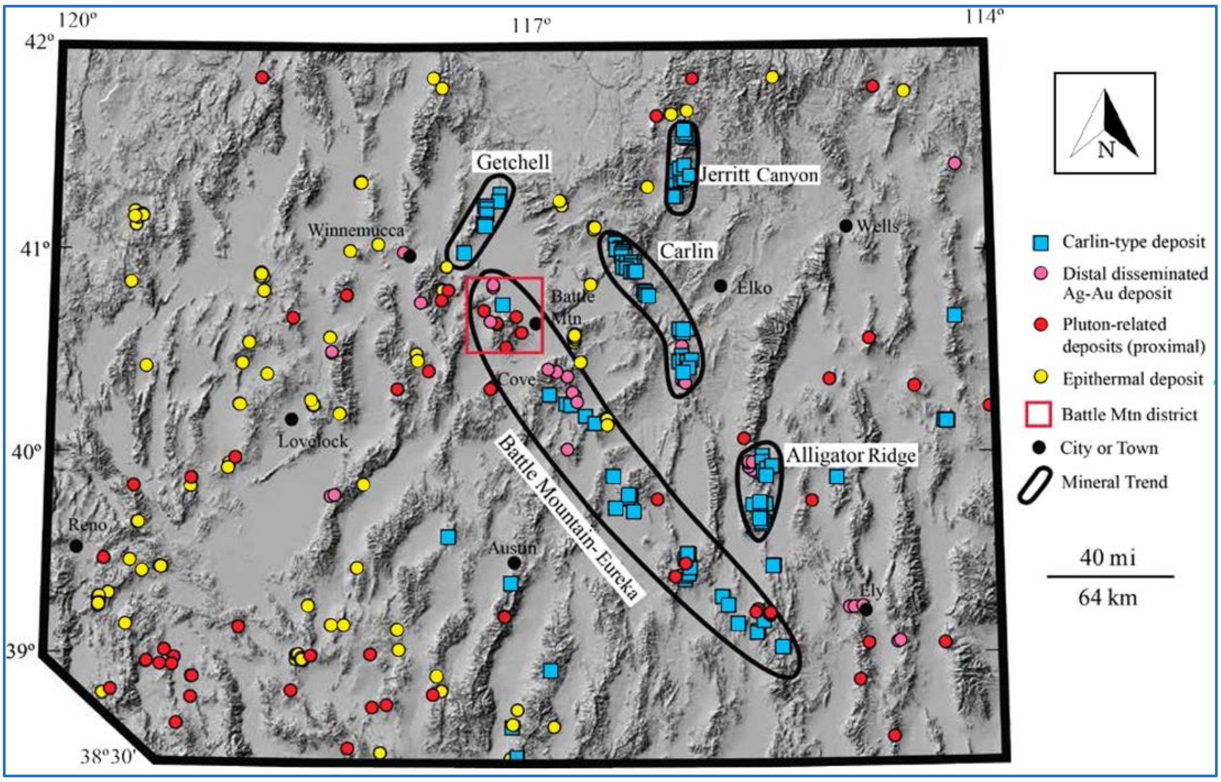


Wallace et al., 2004

7.2 Local Geology

The Property is in the Battle Mountain mining district on the northern end of the Battle Mountain-Eureka trend, a conspicuous lineament of sedimentary-hosted gold deposits (Figure 7.5). The Battle Mountain district hosts numerous mineral occurrences, including porphyry copper–gold, porphyry copper–molybdenum, skarn, placer gold, distal disseminated silver-gold, and Carlin-type gold systems.

Figure 7.5 Location of Marigold and the Battle Mountain Mining District on the Battle Mountain-Eureka Mineral Trend



Modified after Wallace et al., 2004

7.2.1 Stratigraphy

The Battle Mountain mining district is underlain by Paleozoic metasedimentary and metavolcanic rocks that are cut by Jurassic, Cretaceous, and Eocene intrusions. Post-mineralisation tuff, volcanic rock, and detritus were deposited and preserved in structural and paleotopographic lows. The oldest rocks in the Battle Mountain mining district are para-autochthonous Cambro-Ordovician carbonate, clastic, and volcanic rocks in the footwall of the Roberts Mountain allochthon; assigned to the Comus-Preble Formation, (Cook, 2015). The Comus-Preble Formation comprises fine-grained siliciclastic turbidite sequences, mudstone, siltstone, limey mudstone, limestone, debris flows, and mafic volcanic flows.

Rocks of the Roberts Mountain allochthon were thrust eastward during the Devonian-Mississippian Antler orogeny. This event resulted in intense deformation, including folding and intra-formational thrusting of the metasedimentary units that comprise the Roberts Mountain allochthon. Rocks of the allochthonous clastic assemblage in the Battle Mountain district were previously separated into the Cambrian Scott Canyon Formation, Cambrian Harmony Formation, and the Ordovician Valmy Formation, complicating the understanding of Paleozoic tectonic processes affecting the district. Recent work by Ketner (2008; 2013) proposed the abandonment of the Scott Canyon Formation and reassignment of these rocks to the Valmy and Harmony Formations. Ketner (2008) demonstrated the Harmony Formation conformably overlies the Valmy Formation, eliminating the necessity for the Dewitt thrust mapped by Roberts (1964) and Theodore (1991).

Unconformably overlying rocks of the clastic assemblage is the autochthonous Antler overlap sequence; a Pennsylvanian-Permian package of conglomerate, limestone, siltstone, and debris flow. Basal Antler sequence rocks were deposited as material eroded off the Antler highland into a foreland basin during the Antler orogeny. The base of the Antler sequence, the Battle Formation, is a coarse conglomerate up to approximately 220 m thick (Roberts, 1964) that contains clasts derived from the Roberts Mountain allochthon and underlying para-autochthonous rocks. The Battle Formation was deposited in a fluvial-to-shallow marine environment, with coarse, locally derived boulders at the base and interbedded limestone and siltstone units toward the top.

Disconformably overlying the Battle Formation is the Antler Peak Limestone Formation, a package of shallow marine carbonate rocks over 180 m thick at its type locality (Roberts, 1964). The Antler Peak Limestone Formation contains abundant brachiopod, coral, and crinoid fossils. The type of section for the Antler Peak Limestone Formation is in the Battle Mountain Range at Antler Peak.

The Permian Edna Mountain Formation disconformably overlies the Antler Peak Formation and consists of locally present basal debris flow and brown weathering phosphatic siltstone (McGibbon, 2005) at least 120 m thick. Unoxidised Edna Mountain Formation is black in colour and difficult to differentiate from unoxidised siltstone of the Havallah sequence in drill cuttings and in the field.

Allochthonous rocks of the Mississippian-Permian Havallah sequence were tectonically emplaced over rocks of the Antler sequence, Valmy Formation, and Preble-Comus Formation during the Permo-Triassic Sonoma orogeny (Theodore, 2000; McGibbon, 2005). The Havallah sequence includes chert, siltstone, limestone, conglomerate, sandstone, and submarine volcanic rocks. The total thickness of the sequence is thought to exceed 2.8 km (Roberts, 1964).

7.2.2 Igneous Rocks

The oldest igneous rocks in the district are submarine pillow basalts within the Cambro-Ordovician Preble-Comus and Ordovician Valmy Formations.

Volcanic rocks within the Preble-Comus are only known from drill core and consist of submarine pillow basalt and volcaniclastic units derived from a continental source. These rocks are typically highly altered due to their age, submarine emplacement, present surface to near-surface position, and exposure to hydrothermal systems.

Metabasalt belonging to the Valmy Formation outcrops in the vicinity of Trout Creek south of the Oyarbide fault. On the east side of the district at Elder Creek, diorite dikes of Devonian age are inferred based on cross-cutting relationships. Mesozoic igneous rocks include a relatively unaltered Jurassic lamprophyric dike (Fithian, 2015) and an abundance of north-west striking Cretaceous granodiorite and quartz monzonite porphyry dikes and stocks.

Late Cretaceous granodiorite and quartz monzonite porphyry rocks are associated with molybdenum mineralizing systems at Buckingham, Trenton Canyon, and Buffalo Valley (Doebrich and Theodore, 1996).

Cenozoic igneous activity coincided with the onset of extensional tectonism throughout the Basin and Range province and normal reactivation of north and north-west striking faults in the Battle Mountain district (Doebrich and Theodore, 1996).

Late Eocene to early Oligocene granodiorite to monzogranite intrusive stocks and dikes are associated with copper-gold mineralizing systems in the district, such as those at Converse and Copper Canyon. Intrusive dikes and sills are typically low relief slope forming units with very little outcrop in part due to argillic alteration where it has been exposed to hydrothermal fluids.

Tertiary volcanic rocks in the district are post-mineralisation. Oligocene to Miocene rhyolitic tuff and basaltic andesite flows are intercalated with Tertiary gravels and are locally ridge-forming units. The youngest volcanic rock, Pliocene (2.8–3.3 Ma) basalt, is present south-east of Copper Canyon (Doebrich and Theodore, 1996).

7.2.3 Regional Structure

Geophysical and isotopic evidence indicate that broad structural zones within the Battle Mountain-Eureka trend may be related to large-scale tectonic processes affecting the western margin of North America from the late Proterozoic through Mesozoic (Grauch et al., 2003). These features may be associated with deep crustal faults that originated as rift or transform faults during Proterozoic breakup of Rodinia, or as faults accommodating late Paleozoic compressional tectonic events (Grauch et al., 2003). Within the Battle Mountain-Eureka trend, deep crustal normal faults with a north-west, north, and north-east strike have influenced sedimentation, deformation, magmatism, extension, and mineralisation (Grauch et al., 2003).

In the Battle Mountain mining district, the most prominent surface fault expressions are thrust faults related to Paleozoic-Mesozoic compressional tectonism, and normal faults related to Cenozoic extensional tectonic regimes. There is evidence of a more cryptic late Paleozoic transtensional fault system throughout the district, which is potentially late to post-Antler orogeny. These structures do not display significant slip in post-Permian aged rocks, and as a result are commonly concealed. Structures related to the transtensional fault system are responsible for preservation of thick wedges of Antler sequence rocks.

The Permo-Triassic Golconda thrust fault is traceable throughout the entire Battle Mountain range. Onset of the latest crustal extension began in the late Eocene and has continued sporadically to present. The most prominent extensional faults in the district are the range-bounding normal faults that define the Battle Mountain range, including the post-mineralisation, south-west striking Oyarbide fault (Doebrich and Theodore, 1996).

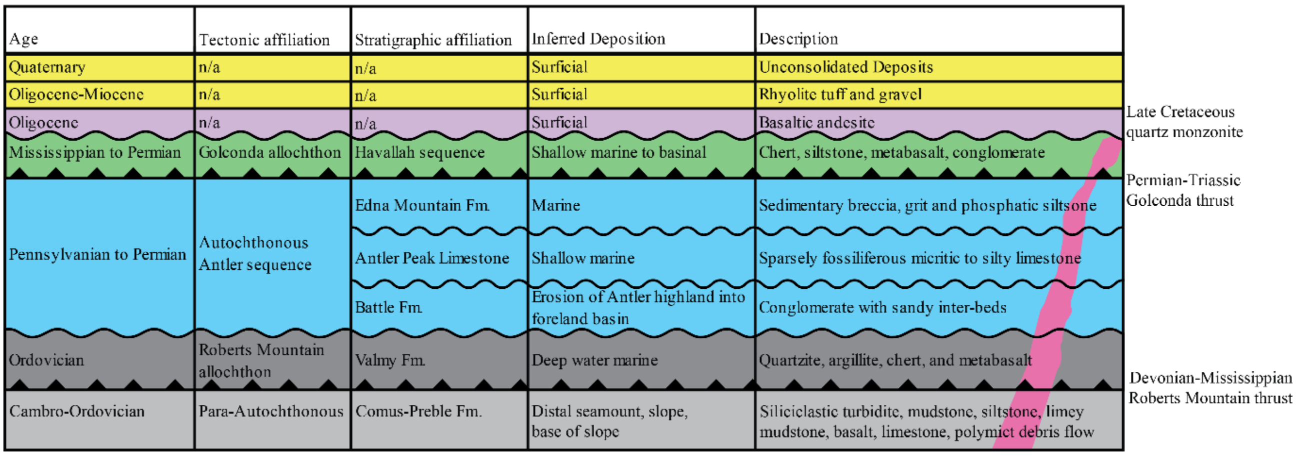
At least four generations of folding are recorded in Ordovician rocks of the Roberts Mountain allochthon, including tight-to-isoclinal overturned F1 folds with north-west–south-east fold axes, open and upright F2 folds with west–north-west fold axes, large-scale open and upright F4 folds with north–north-east fold axes, and roll-over anticline style F5 folds that affect the entire rock package. Fold events F1 and F2 pre-date deposition of Antler sequence rocks. The F3 fold event is restricted to the Havallah sequence. F4 folds are thought to be related to Mesozoic tectonics and affect Comus-Preble Formation, Valmy Formation, Antler sequence, and Havallah sequence rocks while F5 folds appear to affect the entire rock package including Tertiary rocks.

7.3 Property Geology

7.3.1 Property Stratigraphy

The Property stratigraphy is summarised in Figure 7.6.

Figure 7.6 Schematic Tectono-stratigraphic Section of the Rock Units at Marigold



SSR, 2021

7.3.1.1 Sedimentary Rocks

Four packages of Paleozoic sedimentary and metasedimentary rocks are present at Marigold. In ascending tectono-stratigraphic order, they include: the Cambro-Ordovician Preble-Comus Formation; the Ordovician Valmy Formation of the Roberts Mountain allochthon; the Pennsylvanian-Permian Antler overlap sequence; and the Mississippian-Permian Havallah sequence of the Golconda allochthon. The distribution of these Paleozoic units is shown in plan view in Figure 7.7.

There are no Mesozoic sedimentary rocks in the Marigold mine area; however, approximately two thirds of the Property is covered by Tertiary to Quaternary intercalated gravel and volcanic material.

Comus-Preble Formation

The assignment of rocks to the Comus-Preble Formation at Marigold is the result of an extensive effort to explore the depths of the Marigold system. On the basis of lithology and deformation style, rocks believed to be positioned below the Roberts Mountain Thrust were assigned to the Comus-Preble Formation.

The Comus-Preble Formation consists of fine-grained siliciclastic turbidite sequences, mudstone, siltstone, limey mudstone, limestone, debris flows, and mafic volcanic flows. Based on data compiled from downhole televiewer logs, abrupt lithologic change from overlying rocks correlates with a transition from tight, east-vergent, overturned folds to open folds.

Valmy Formation

The Valmy Formation consists of quartzite, argillite, and lesser chert and metabasalt, all of which are complexly folded and faulted in the Marigold mine area. The total thickness of the Valmy Formation is approximately 450 m at Marigold, although true thickness of the section is likely less than 200 m.

Fold deformation in the Valmy Formation is characterised by tight, east-vergent, and overturned folds. This fold deformation has resulted in shattering of quartzite beds and ductile deformation of argillite. Where the contact is not eroded or structurally displaced, the top of the Valmy Formation is unconformably overlain by rocks of Pennsylvanian age. Silurian and Devonian rocks are not present either due to nondeposition or erosion.

Antler Sequence

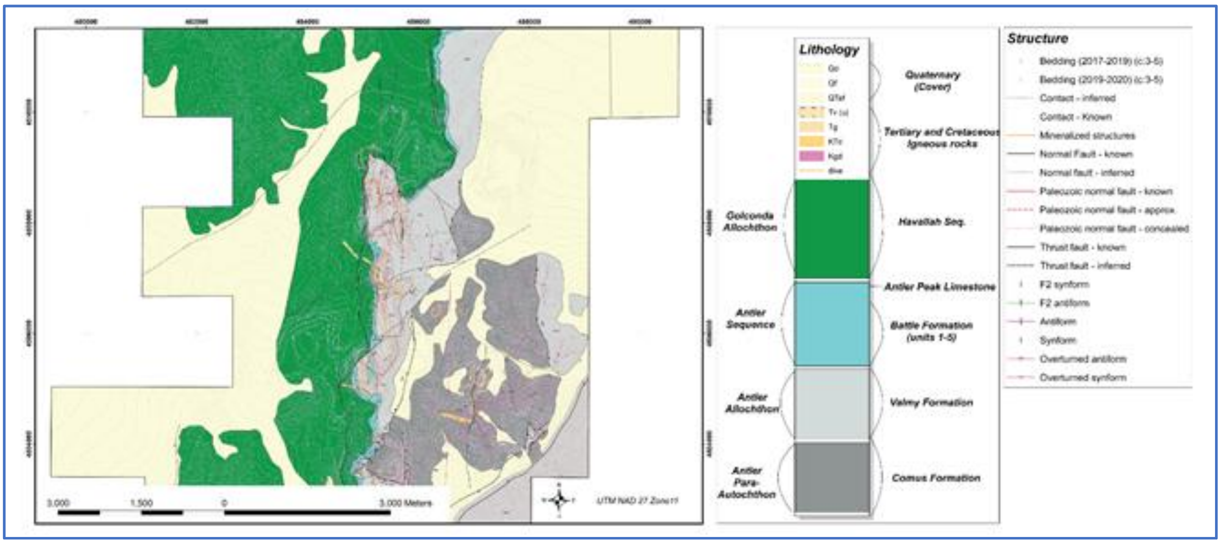
The Antler overlap sequence is composed of Pennsylvanian to Permian-aged rocks assigned to three formations: the basal Battle Formation; the Antler Peak Limestone Formation; and the Edna Mountain Formation. These Formations represent a transgressive sequence of fluvial-to-shallow marine rocks that include conglomerate, sandstone, limestone, siltstone, and debris flows. There is evidence the Antler sequence was locally deposited into sub-basins developed by normal offset on growth faults of likely late Pennsylvanian to early Permian age.

Antler sequence rocks are relatively undeformed, except for offset and rotation along Basin and Range normal faults and potentially low-amplitude, long-wavelength (kilometres to tens of kilometres) F4 folding likely related to Mesozoic deformation. The Antler sequence is in thrust contact with the overlying and partially contemporaneous Havallah sequence.

Havallah Sequence

The uppermost package of Paleozoic rocks exposed at Marigold is the Mississippian-Permian Havallah sequence. The Havallah sequence is an assemblage dominated by siltstone, metabasalt, chert, sandstone, conglomerate, and carbonate rocks. These marine sedimentary rocks were deposited in a fault-bounded deep-water trough (Ketner, 2008) and subsequently obducted over the Antler sequence along the Golconda thrust (Roberts, 1964). Fold deformation in the Havallah sequence is highly variable, ranging from relatively undeformed to tight to isoclinal, overturned and recumbent F3 folds.

Figure 7.7 Plan View Map Showing Distribution of Paleozoic Units at Marigold.



SSR, 2018

7.3.1.2 Igneous Rocks

A 2 m interval of an extremely biotite-rich intrusive rock, interpreted to be lamprophyre, was intersected in a single drillhole approximately 1,100 m below the pre-mining topography. Even though the rock is relatively unaltered, the lamprophyre is Jurassic in age (160.7 ± 0.1 Ma Ar-Ar of biotite) (Fithian, 2018) and is age-equivalent to lamprophyre intrusions in northern Nevada.

A series of late Cretaceous (~92.22 ± 0.05 Ma to 97.63 ± 0.05 Ma, CA-TIMS of zircon) (Fithian, 2015) porphyritic quartz-monzonite dikes crosscut the Paleozoic rock package at Marigold. The intrusions are up to tens of metres wide, and several can be traced along strike for hundreds of metres. The dikes strike south-east to north–south and are typically steeply dipping. No alteration aureole related to these intrusive rocks has been identified at Marigold (Fithian, 2015). The dikes contain phenocrysts of plagioclase feldspar, biotite, hornblende, and quartz. The mafic phenocrysts have all been altered to secondary mineral assemblages to varying degrees.

Oligocene (~31.8 ± 0.8, 31.4 ± 1.0 Ma) (Theodore, 2000) basaltic andesite is present on the Property, and forms a small, mesa-like landform between Trout and Cottonwood Creeks. The basaltic andesite is crudely columnar in this location.

Late Oligocene to early Miocene (22.9 ± 0.7 Ma) (McKee, 2000) post-mineralisation rhyolite tuff is intercalated with gravel throughout the Property. The tuff contains phenocrysts of biotite and is typically altered to white clay. The tuff provides a minimum age of mineralisation at Marigold, as it is unmineralised and immediately overlies the orebody at the 8S deposit (Theodore, 2000; McGibbon and Wallace, 2000).

7.3.2 Property Structure

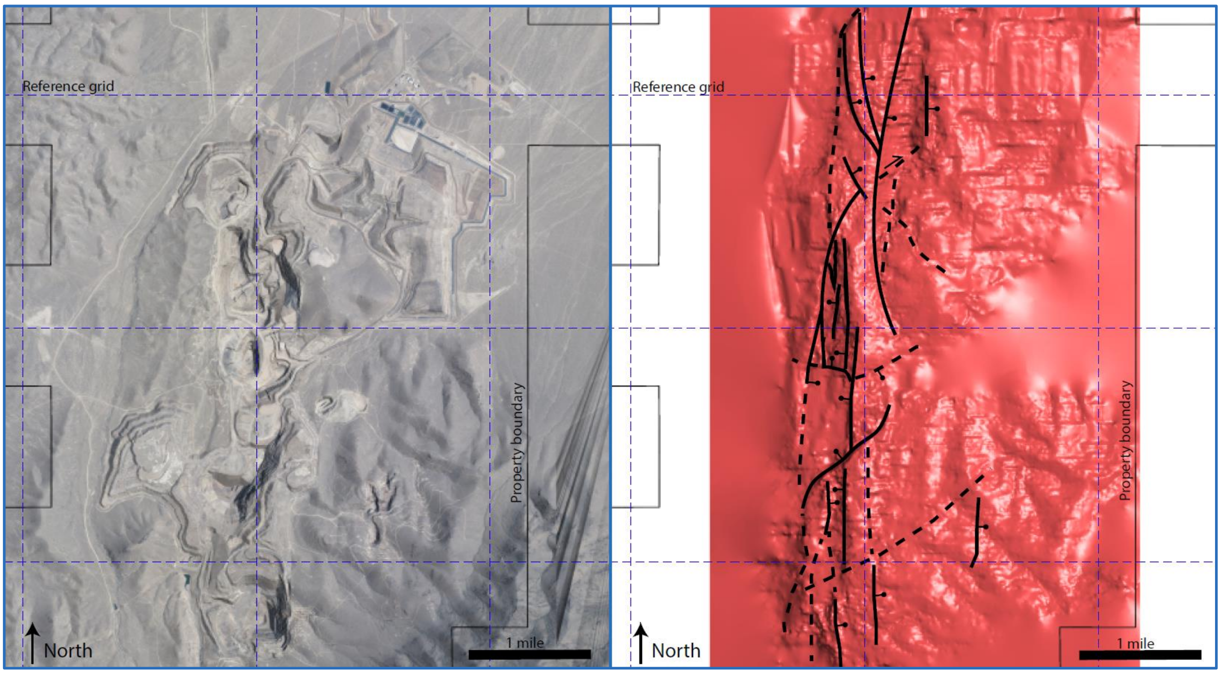
The main structural corridor and apparent primary controlling feature for the localisation of the deposits at Marigold is a 1.5 km wide by >10 km long half graben rotated no more than 045° to the west and bound by east dipping early Permian growth faults and younger (post-Triassic) east dipping faults. This half graben structure is cut by north-west to north-east striking pre-mineralisation structures with relatively minor offset and a series of south-west striking post-mineralisation extensional normal faults parallel to the Oyarbide fault (Figure 7.8).

Valmy Formation rocks are highly deformed, with interpreted imbricate low-angle intra-plate thrust faults and at least two generations of pre-Pennsylvanian folding. The first generation of deformation related to folding of the Valmy Formation, D1, is characterised by tight, east verging folds with approximately north-west–south-east to north–south striking fold axes. The second deformation event, D2, is defined by open folds with approximately east–west striking fold axes. Folds of this orientation are best defined on the southernmost part of the property, including the Basalt pit area.

Although D1 and D2 folds are described individually because of their unique character, it is possible that these fold sets are the product of the same deformation event. The areas of confluence of D1 and D2 folds are thought to have played a role in the localisation of mineralizing fluids.

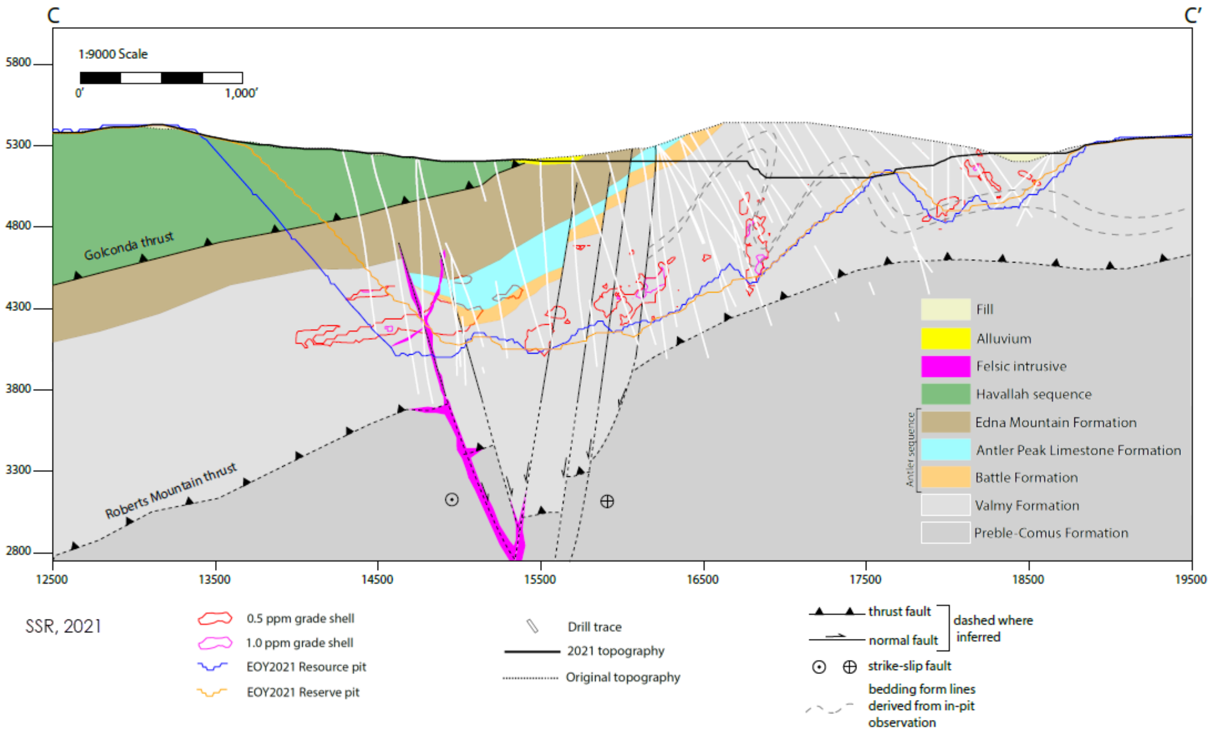
Argillite beds within the Valmy Formation deformed plastically while brittle quartzite beds shattered, creating open fracture space amenable for precipitation of auriferous iron sulfides. Antler sequence rocks are cut by, and rotated along, early Permian and Cenozoic normal faults. The timing of the proposed early Permian growth faults is based on preservation of Battle Formation, Antler Limestone Formation, and a thicker wedge of Edna Mountain Formation in the hangingwall of east dipping normal faults, with little-to-no appreciable offset of the overlying Havallah sequence (Figure 7.9).

Figure 7.8 The Top Surface of the Valmy Formation with the Current Property Boundary



SSR, 2021. Black lines indicate the position of major structures in the Valmy Formation (dashed where projected)

Figure 7.9 Cross-Section 11,200N Highlighting Inferred Permian Growth Fault and Associated Antithetic Normal Faults with a Steep West Dip

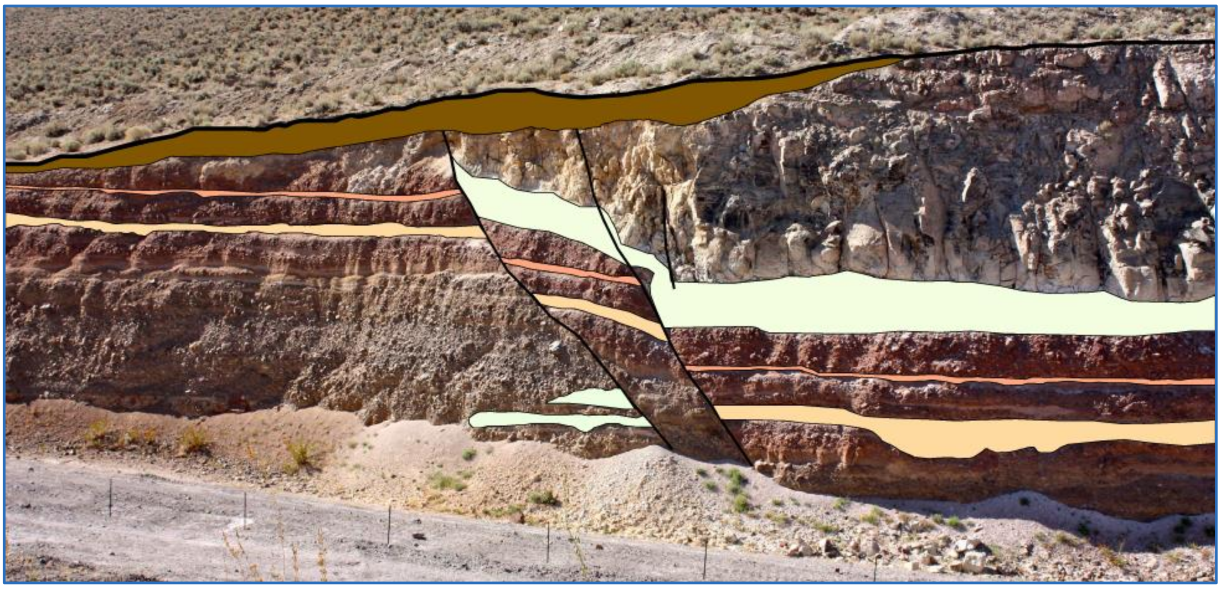


Rocks of the Antler sequence are deformed by F4 and F5 folds, which are not easily recognised in the field. Despite the position between two inferred major allochthonous packages, the Antler sequence does not display more-intense fold deformation akin to F1 and F2 folds.

Havallah sequence rocks were deformed by thrusting and folding related to compression during the Permo-Triassic Sonoma orogeny. An extensive series of thrust faults and folds are documented by Theodore (1991) in the Valmy and North Peak quadrangles west of the Marigold mine area.

Deformation of the Havallah sequence is apparently unrelated to gold mineralisation at Marigold. Development of basin and range normal faults and reactivation of Paleozoic faults during the Cenozoic affected the entire stratigraphic section at Marigold, including displacement of post-mineralisation Oligocene tuff and Quaternary gravel (Figure 7.10).

Figure 7.10 Normal Displacement of Alluvium and Tuff Immediately South of the Basalt Pit



View is towards the south
Fithian, 2015

7.3.3 Mineralisation

The gold deposits at Marigold cumulatively define a north-trending alignment of gold mineralised rock more than 8 km long (Figure 7.11).

Gold mineralizing fluids were primarily controlled by fault structure and lithology, with tertiary influence by fold geometry. Within the Valmy Formation, higher gold grades are observed in the hinge zones of open folds that trend west–north-west and plunge gently. When viewed down plunge, the undulation of these folds is mimicked by gold mineralised horizons. The deposition of gold was restricted to fault zones and quartzite dominant horizons within the Valmy Formation and high permeability units within the Antler sequence.

In unoxidised rocks, gold occurs in arsenic-enriched overgrowths on pre-ore pyrite (Figure 7.12). Arsenopyrite is also present on pre-ore pyrite grains but is not auriferous. Geochemically, the gold mineralisation event is characterised by elevated arsenic, barium, antimony, and mercury, among others. Gangue minerals include quartz, arsenopyrite, stibnite, calcite, clay, and barite. Hypogene sulfide minerals do not occur in ore as these gold-bearing phases are not amenable to heap leaching.

In oxidised rocks, gold occurs natively in fractures associated with iron oxide (Figure 7.13). Rocks within the Marigold mine area are oxidised to a maximum depth of approximately 450 m. The redox boundary is not consistent throughout the property and is substantially influenced by lithology. Shale, argillite, and siltstone units are frequently unoxidised adjacent to pervasively oxidised quartzite horizons.

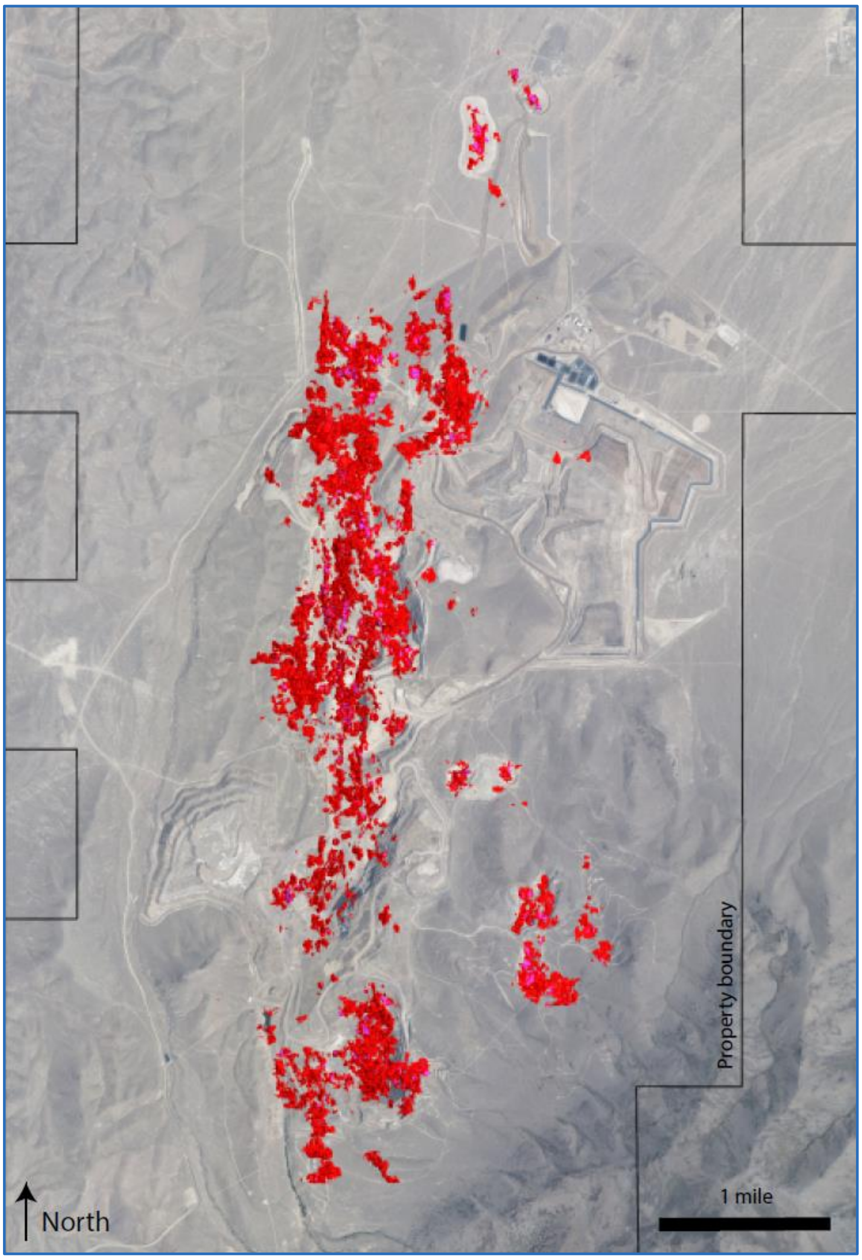
A silver and base metal mineralizing event at Marigold includes a mineral association of chalcopyrite, argentiferous tennantite, galena, and sphalerite. The absolute age of this event is unclear, although it may be related to late Cretaceous magmatism in the district.

7.3.4 Alteration

Alteration of rocks includes silicification along mineralizing structures and decalcification of carbonate horizons (primarily in the Antler sequence). Argillic alteration of quartz monzonite intrusive bodies occurs in fault zones and areas of high hydrothermal fluid flow (Fithian, 2015). The intensity of alteration decreases towards the core of the intrusions.

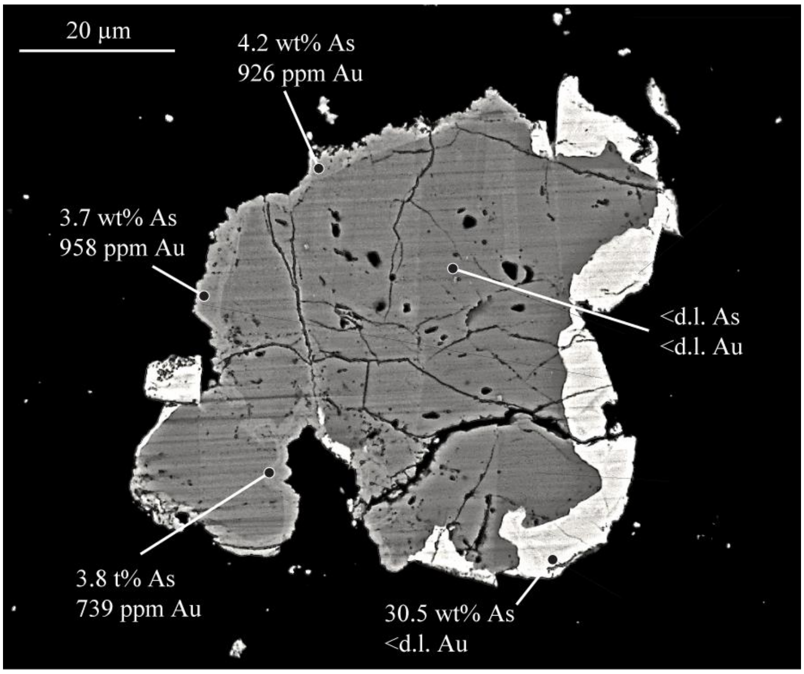
Studies have demonstrated a spatial correlation between gold mineralised rock and increased white mica crystallinity index (Kester, 2015). There is evidence for large volumes of quartz precipitation within and outboard of gold mineralised zones, including jasperoid bodies, cryptic silicification, and quartz vein breccias.

Figure 7.11 Plan View of the Marigold Mine Area showing the Spatial Distribution of 1.0 g/t Au Grade Shells Over an 8 km Northerly Trend



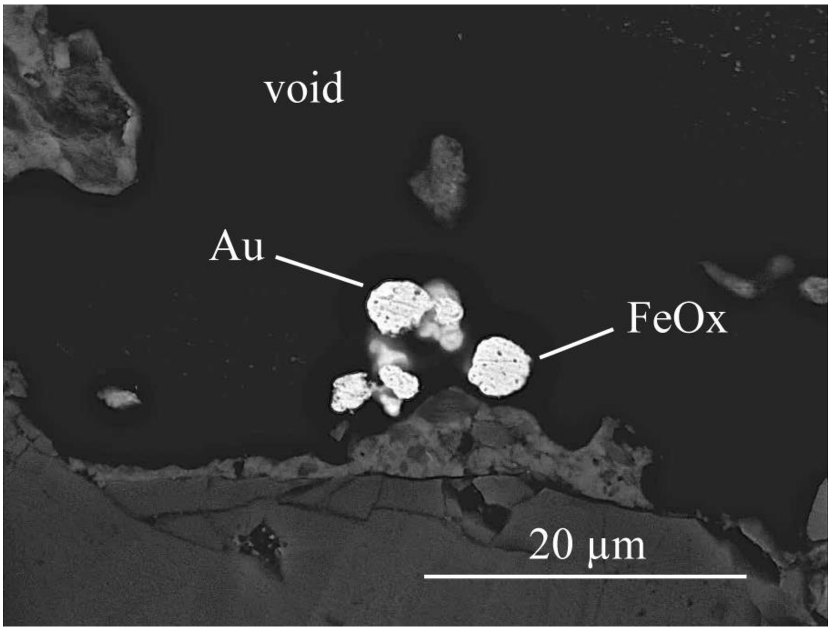
SSR, 2018

Figure 7.12 Gold in Arsenian Pyrite Overgrowths on Pyrite Grains in Unoxidised Rock



Arsenopyrite (white) does not contain gold
Modified from Fithian, 2015

Figure 7.13 Native Gold Occurs with Iron Oxide in Weathered Rocks



Modified from Fithian, 2015

7.4 Deposit Geology

Gold at Marigold is currently mined from multiple deposits located on a 10 km by 1.5 km area.

From north to south, historical and future mineral deposits at Marigold include 32 North (32N), 5 Northeast (5NE), 5 North (5N), 8 North(8N), 8 Deep (8D), Terry Zone North (TZN), 8 South (8S), 8 South Extension (8Sx), Terry Zone (Old Marigold), Top Zone, HideOut, Terry Complex (Battle, Red Rock, East Hill), Red Dot, Mackay, Mud, Target, Valmy, Basalt-Antler, East Basalt, and Battle Cry. The majority of these individual mineralisation zones have coalesced into the Mackay pit.

7.4.1 Mackay Pit

The Mackay pit contains most of Marigold's current Mineral Resources. Gold is predominantly associated with iron oxide minerals on fracture surfaces of Valmy Formation quartzite, with lesser amounts of gold in Antler sequence rocks (Figure 7.14). Gold is concentrated within narrow structures with a steep west dip, and the intersection of these structures with favourable quartzite horizons within the Valmy Formation.

On the northern end of the planned Mackay pit, a greater percentage of the ore is hosted in Antler sequence rocks, including the deposits at HideOut (Figure 7.15), 8Sx, and 8N.

Where mineralised, Antler sequence rocks tend to host higher concentrations of gold, likely due to increased chemical reactivity with mineralizing fluids.

Figure 7.14 Cross-Section 13,200N Highlighting Distribution of Gold in Antler Sequence and Valmy Formation Rocks

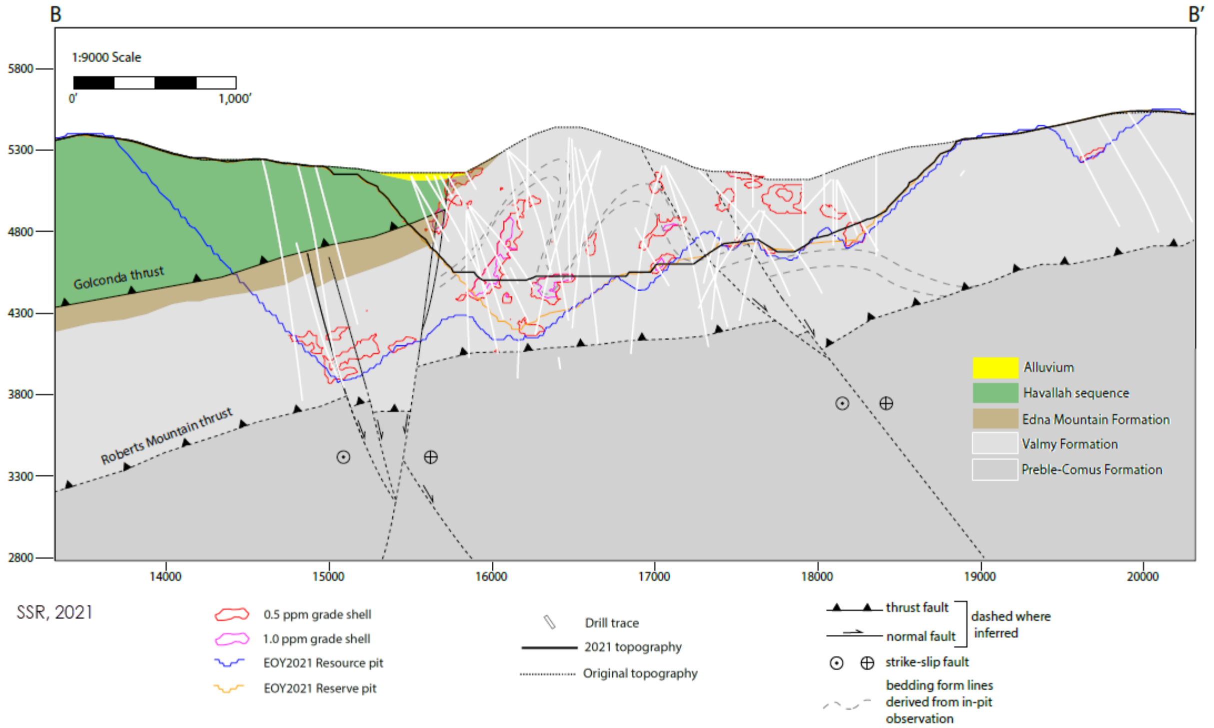


Figure 7.15 Cross-Section 16,000N Highlighting the HideOut Deposit Hosted by Antler Sequence Rocks

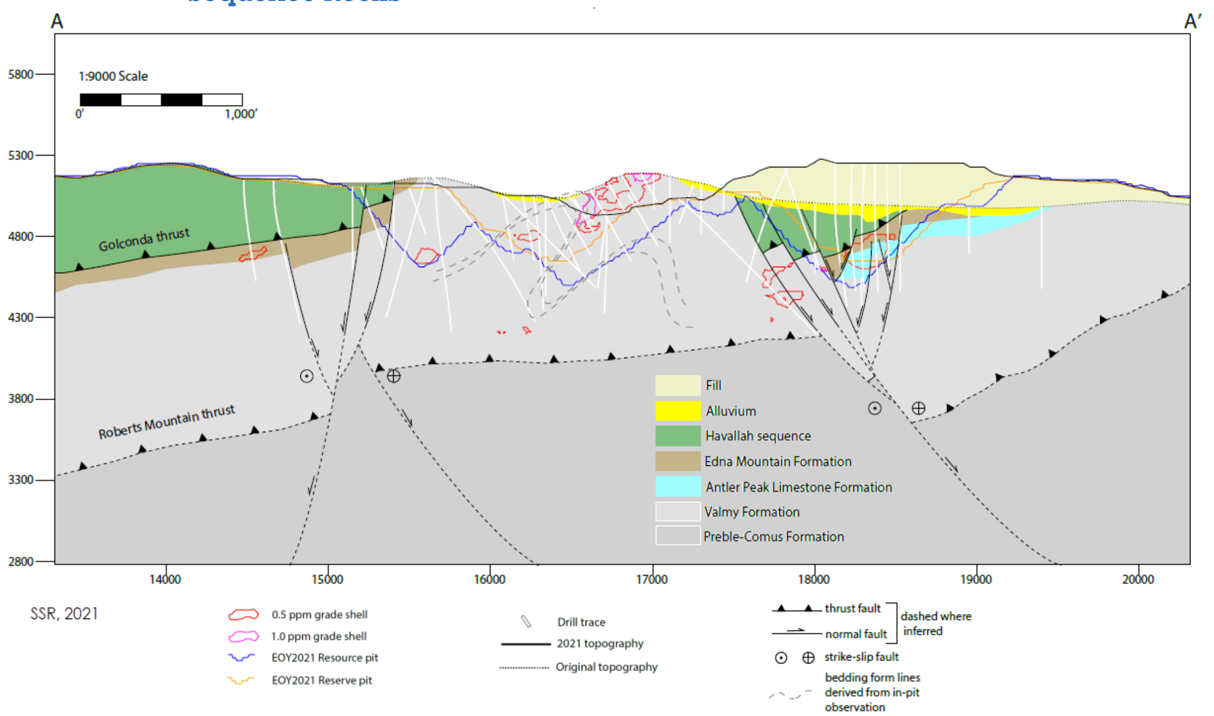
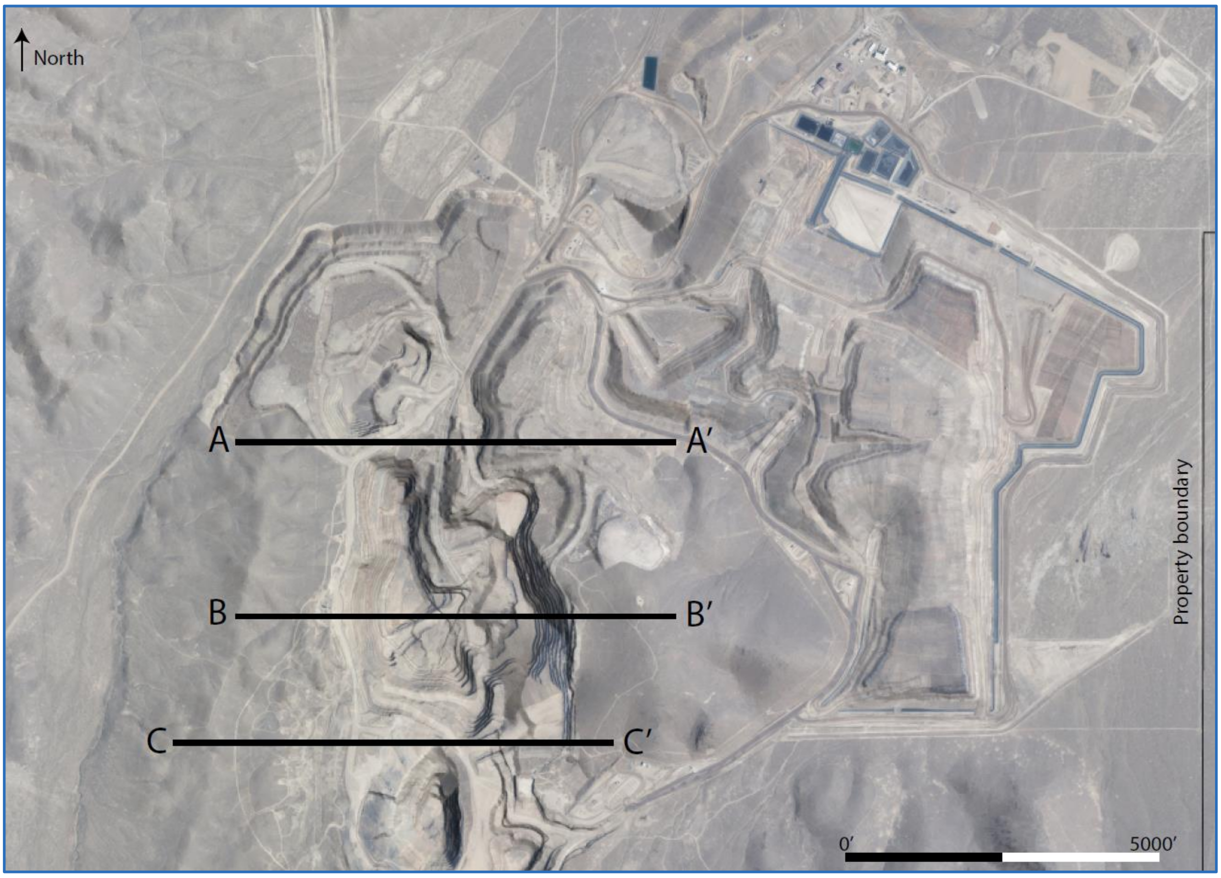


Figure 7.16 Plan Reference of Cross-Sections in Figure 7.9, Figure 7.14, and Figure 7.15



SSR, 2021

8 DEPOSIT TYPES

Doebrich and Theodore (1996), Theodore (1998), and Theodore (2000) described the deposits at Marigold as distal disseminated silver–gold deposits. These deposits are disseminated equivalents of polymetallic vein deposits, characterised by a geochemical signature that includes silver, gold, lead, manganese, zinc, copper, antimony, arsenic, mercury, and tellurium (Cox and Singer, 1990). Typically, they contain substantially more silver relative to gold than other types of disseminated gold deposits and may feature supergene enrichment of silver if significantly oxidised.

In Nevada, distal disseminated silver–gold deposits are proximal to Jurassic, Cretaceous, and mid-Tertiary granitoid intrusions (Hofstra and Cline, 2000). A fundamental requirement of the distal disseminated silver–gold model necessitates a genetic link between silver–gold mineralisation and causative intrusions (Hofstra and Cline, 2000); however, no such relationship has been conclusively demonstrated at Marigold (Fithian, 2015).

A Carlin-type gold deposit (CTGD) is a unique type of disseminated, sedimentary rock-hosted gold deposit. The genesis of CTGDs is currently not well understood. In Nevada, CTGDs occur along several main mineralisation trends, including the Carlin trend and Battle Mountain-Eureka trend, and are primarily hosted by silty carbonate rocks.

Gold in a CTGD occurs in arsenian pyrite rims on pyrite grains and is associated with arsenic, sulfur, antimony, mercury, and thallium (Cline et al., 2005). There is considerable debate regarding the source of gold in CTGDs. Leading theories include a magmatic-hydrothermal origin (e.g., Sillitoe and Bonham, 1990; Johnston and Ressel, 2004; Ressel and Henry, 2006; Muntean et al., 2011) and gold sourced from the sedimentary host package (e.g., Ilchik and Barton, 1997; Emsbo et al., 2003; Large et al., 2011). Even though the genesis of CTGDs remains enigmatic, there is consensus that all CTGDs in Nevada formed during the Eocene period (42 to 36 Ma) (Cline et al., 2005).

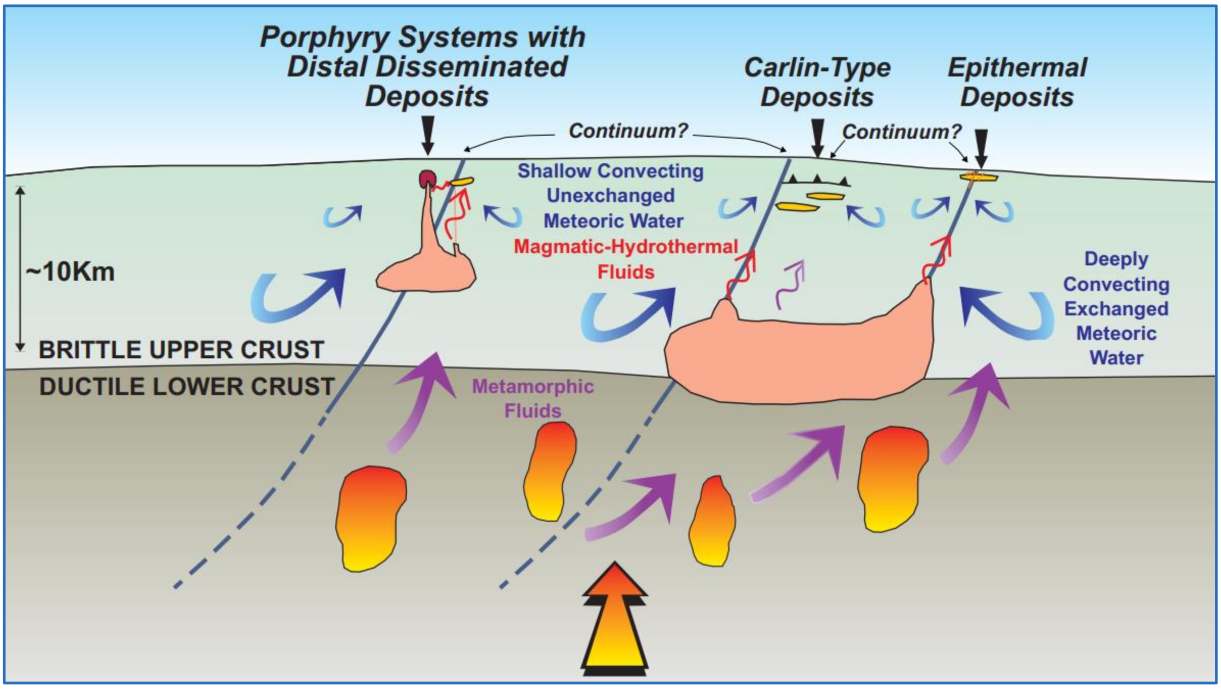
Distal disseminated silver–gold deposits may share similarities with CTGDs, including orebody morphology, structural setting, and alteration styles, but drastically differ with respect to alteration zonation, geochemical signature, hypogene mineralogy, and endowment. Distal disseminated silver–gold deposits show a more definitive magmatic signature than CTGDs that includes zoning of alteration relative to felsic hypabyssal intrusions, base metal enrichment, significantly higher Ag:Au ratios, and distinctive hypogene ore mineralogy (e.g., base metal sulfides, native gold and silver, electrum, silver sulfides and silver sulfosalts) (Cox and Singer, 1990; Cox, 1992; Hofstra and Cline, 2000), and are typically much smaller in terms of gold endowment.

There is increasing support for a model that proposes a continuum between CTGDs, distal disseminated silver–gold deposits, and epithermal deposits. This model implies a magmatic source for heat and metal. Those most familiar with the Marigold system support a model invoking an intrusive metal and heat source, despite a lack of definitively magmatic features. The expanded Marigold property boundary enables study of the Marigold system on a considerably broader scale and may enable recognition of large-scale alteration zonation.

Recent work by Fithian (2015) suggests that the gold deposits at Marigold are best classified as CTGDs, based on many similarities with the CTGD model and a lack of evidence for causative hypabyssal intrusions.

Figure 8.1 is a diagrammatic representation of the deposit model.

Figure 8.1 Model Illustrating Inferred Processes Related to Formation of Carlin-Type Gold Deposits (CTGD) and Distal Disseminated Silver–Gold Deposits



SSR, 2021

9 EXPLORATION

For a discussion regarding historical exploration programmes completed following SSR's acquisition of the Property in April 2014, refer to Section 6.

9.1 Gravity Surveys

9.1.1 Gravity Survey Pre-2015

After the purchase of Marigold was completed in 2014, SSR completed a gravity survey at a grid spacing of 150 m x 150 m in areas that had not been previously covered. The main objective of this work was to delineate possible fluid conduits or feeder structures for the Marigold mineralisation.

The gravity survey was planned and designed by James L. Wright of J L Wright Geophysics, Spring Creek, Nevada. The gravity survey and field data collection were conducted by Magee Geophysical Services LLC of Reno, Nevada.

The gravity measurements were collected from 1,358 stations using two LaCoste & Romberg Model-G gravity meters. Forty planned stations were skipped due to active mining and/or unsafe ground conditions. Figure 9.1 shows the actual station locations from the gravity survey. Topographic measurements were also collected at each station using the RTK GPS method. Where it was not possible to receive GPS-based information via a radio modem, the Fast-Static (post-processing) GPS method was used.

9.1.2 Gravity Survey Post-2015

After finalising the purchase of Valmy in 2015 (additional Newmont owned land to the east and west of the previous land boundary), SSR expanded the geophysical gravity survey to include this new ground.

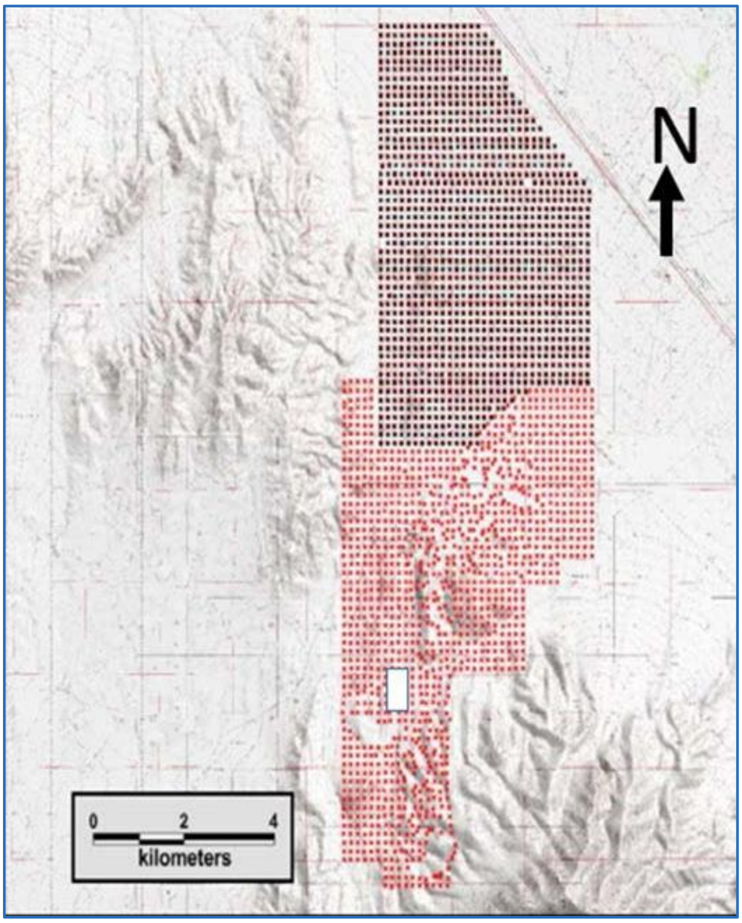
The gravity survey was conducted by Magee Geophysical Services in August and September of 2016. The main objective of this work was to extend the detailed coverage of three previous gravity surveys in the vicinity of the Marigold mine.

Relative gravity measurements were made with LaCoste & Romberg Model-G gravity meters. Topographic surveying was performed with Trimble RTK and Fast-Static GPS methods. Gravity measurements were processed to complete Bouguer gravity, merged with existing data, and forwarded to J L Wright Geophysics for further processing and interpretation.

9.1.3 Gravity Stations

In 2016, a total of 1,806 new gravity stations were acquired by Magee Geophysical Services at variable station spacing on a 150 m square grid and a 150 m x 300 m staggered grid. Existing gravity data included 1,358 stations collected in 2014 by Magee Geophysical Services, 1,250 stations collected in 1998 by Zonge International Inc. (Zonge), and 122 stations collected on various dates by Newmont. Additional stations, including repeats, totalled 4,853 stations. Figure 9.2 shows a complete station posting, colour-coded by survey date.

Figure 9.1 Marigold Mine Gravity Survey Stations in 2014



Marigold mine gravity survey stations in 2014 are shown in red over as-mined topography
Magee Geophysical Services, 2014

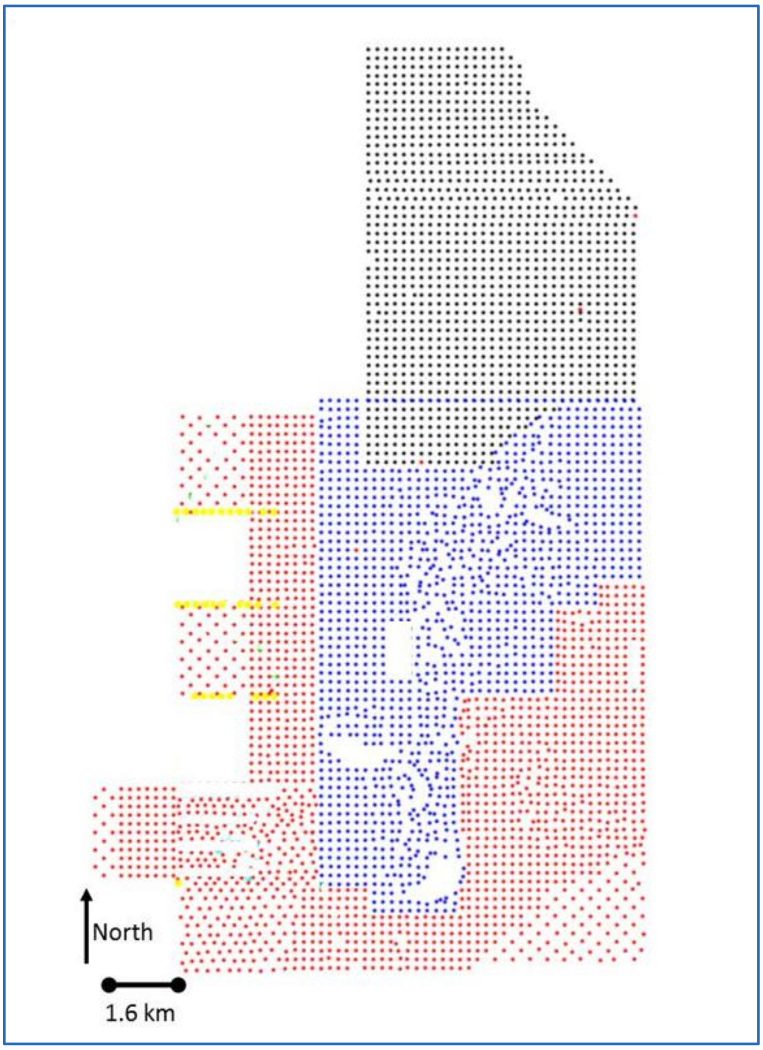
9.1.4 Terrain Corrections

Terrain corrections were calculated to a distance of 167 km for each gravity station. The terrain correction for the distance of 0–5 m around each station used a sloped triangle method with the average slopes measured in the field. The terrain correction for the distance of 5–2,000 m around each station used a prism method and a sectional ring method with digital terrain from a 5 m digital elevation model (DEM). The 5 m DEM was prepared by merging a 2016 proprietary Marigold DEM with surrounding United States Geological Survey (USGS) 10 m DEMs. The Marigold proprietary elevation data were assumed to be in NGVD 29; some minor edits were made to remove artificial terrain prior to merging with USGS data.

The terrain correction for the distance of 2–167 km around each station used the sectional ring method with digital terrain from shuttle radar topography mission (SRTM) DEM and/or a 90 m DEM.

Terrain corrections for existing data were performed using the same procedures, but with local terrain derived from a 2014 proprietary 5 m Marigold DEM.

Figure 9.2 Gravity Stations

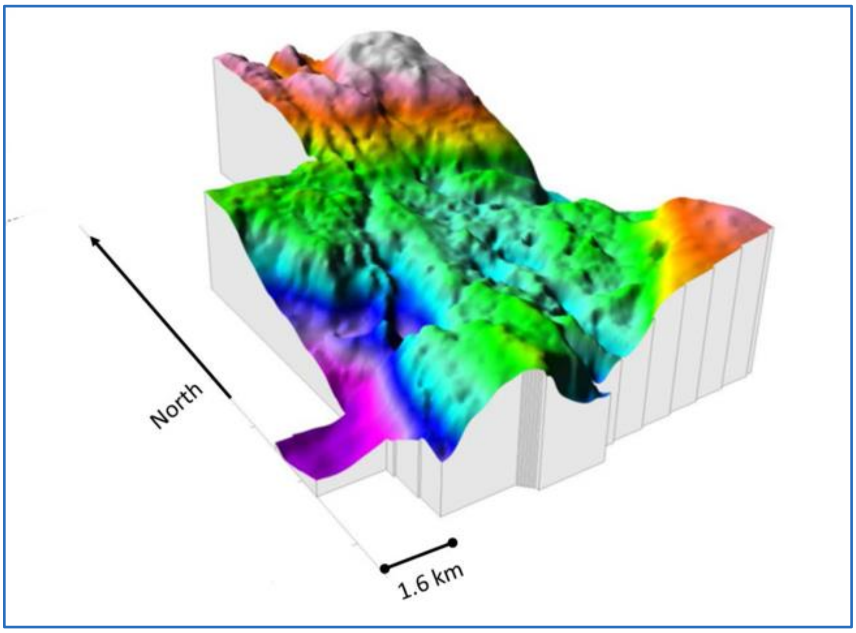


Stations: Zonge 1998 (●), Magee 2014 (●), Magee 2016 (●), and USGS (●)
James L. Wright, 2016

9.1.5 Interpretation

The complete Bouguer anomaly at 2.55 grams per cubic centimetre (g/cm^3) shows a clear north-east–south-west trending feature that corresponds to the Oyarbide fault cutting the survey's south-east corner. Dense rocks lie to the south-east of the fault relative to those in the north-west. However, both rock units are mapped as Valmy Formation. A gravity high to the north-east is attributed to carbonate rocks beneath the valley fill. North–south structures extend directly along the middle of the gravity coverage, and gravity lows along the south-west edge are produced by basin fill in the head of Buffalo Valley (Figure 9.3).

Figure 9.3 Marigold Mine Gravity Survey Compilation, Complete Bouguer Anomaly Oblique Image



James L. Wright, 2016

10 DRILLING

OreWin is of the opinion that the drilling and sampling procedures adopted at Marigold are consistent with generally recognised industry best practices. The resultant drilling pattern is sufficiently dense to interpret the geometry and the boundaries of gold mineralisation with confidence. The reverse circulation (RC) samples were collected by competent personnel using procedures meeting generally accepted industry best practices. The process was conducted or supervised by suitably qualified geologists. The QPs are of the opinion that the samples are representative of the source materials, and there is no evidence that the sampling process introduced a bias. Accordingly, there are no known sampling or recovery factors that could materially impact the accuracy and reliability of drilling results.

As at the end of November 2021, 9,323 drillholes for 1,940,438 m of drilling comprise the current resource database for the Property.

Table 10.1 summarises all of the drilling on the Property from 1968 through 2021.

10.1.1 Exploration Drilling at Marigold (Pre-2014)

For details on drilling activities conducted at Marigold prior to 2014, refer to SSR's NI 43-101 Technical Report on the Marigold Mine (19 November 2014).

10.1.2 Exploration Drilling at Marigold (2014–2017)

Shortly after SSR's acquisition of the Project was complete, an exploration programme was initiated with a view to delineating additional Mineral Resources. The programme commenced in June 2014 and targeted the discovery of near surface gold mineralisation proximal to Marigold's open pits and had the result of upgrading the Inferred Mineral Resources to Indicated Mineral Resources.

The 2014 to 2017 drilling included:

- 706 reverse circulation (RC) drillholes for 170,684 m;
- 37 sonic drillholes in rock stockpiles (included in RC totals); and
- 7 HQ diamond core holes for 7,588 m.

SSR drilled a total of 713 drillholes for 178,272 m from 2014 to 2017.

10.1.3 Exploration Drilling at Marigold (2018–2021)

From 2018 through to the end of December 2021, a further 995 holes have been drilled. This era of drilling included:

- 950 RC holes, and
- 45 diamond core holes.

The 2018–2021 drilling adds a further 343,233 m of drilling to the database.

This brings the total drilling in the history of the Marigold project to 9,435 drillholes for 1,988,280 m.

SSR's drilling has been directed at various targets and resource areas including East Basalt, Battle Cry, Showdown, Valmy SE, Mud & NW, Crossfire, HideOut, 8Sx, TZN, 8D, 5N, Red Dot, North Red Dot, Mackay pit extensions, and the Mackay Herco Keel structure. These areas are shown in Figure 6.2.

Since 2018, the focus of exploration at Marigold has been:

- Exploration drilling to expand Mineral Resources and Mineral Reserves through systematic step out drilling.
- Drilling of 21 core holes to confirm the grades below water table that were originally obtained from RC drilling in the Red Dot area
- Infill drilling to increase the confidence of Mineral Resource estimates specifically targeting areas widely spaced drilling ~35–50m and around drillholes drilled prior to 2006 with missing assays.
- Drilling to confirm the final position of the pit highwall.
- Advancing drilling to define orebody at Trenton Canyon.

10.1.4 Marigold Sulfide Drilling Programme

SSR has undertaken a drilling programme to test sulfide mineralisation at Marigold. To date, nine diamond drillholes have been drilled to test for sulfide mineralisation.

This drilling has been completed across the Property to help understand the overall geology of the Property and to target higher gold grades beyond the oxidation boundary that is currently mined at Marigold.

10.1.5 Exploration Drilling at Valmy (1968–2006)

In 2015, SSR purchased the Valmy property from Newmont, and all previous drilling information for Valmy was incorporated into the Marigold drilling database.

Numerous companies explored the Valmy property from 1968 until Newmont put the Valmy and Mud pits into operation in 2002. These companies included Hecla, Santa Fe Pacific Minerals Limited, and Newmont. As mentioned, this drilling data has been reviewed closely by SSR.

10.1.6 Exploration – Trenton Canyon and Buffalo Valley

The Trenton Canyon project is located approximately 4 km south of New Millennium at Marigold and is one of three historically producing mines on a 100%-owned 8,900 ha parcel acquired from Newmont in 2019. The Buffalo Valley project is located approximately 10 km south-west of New Millennium.

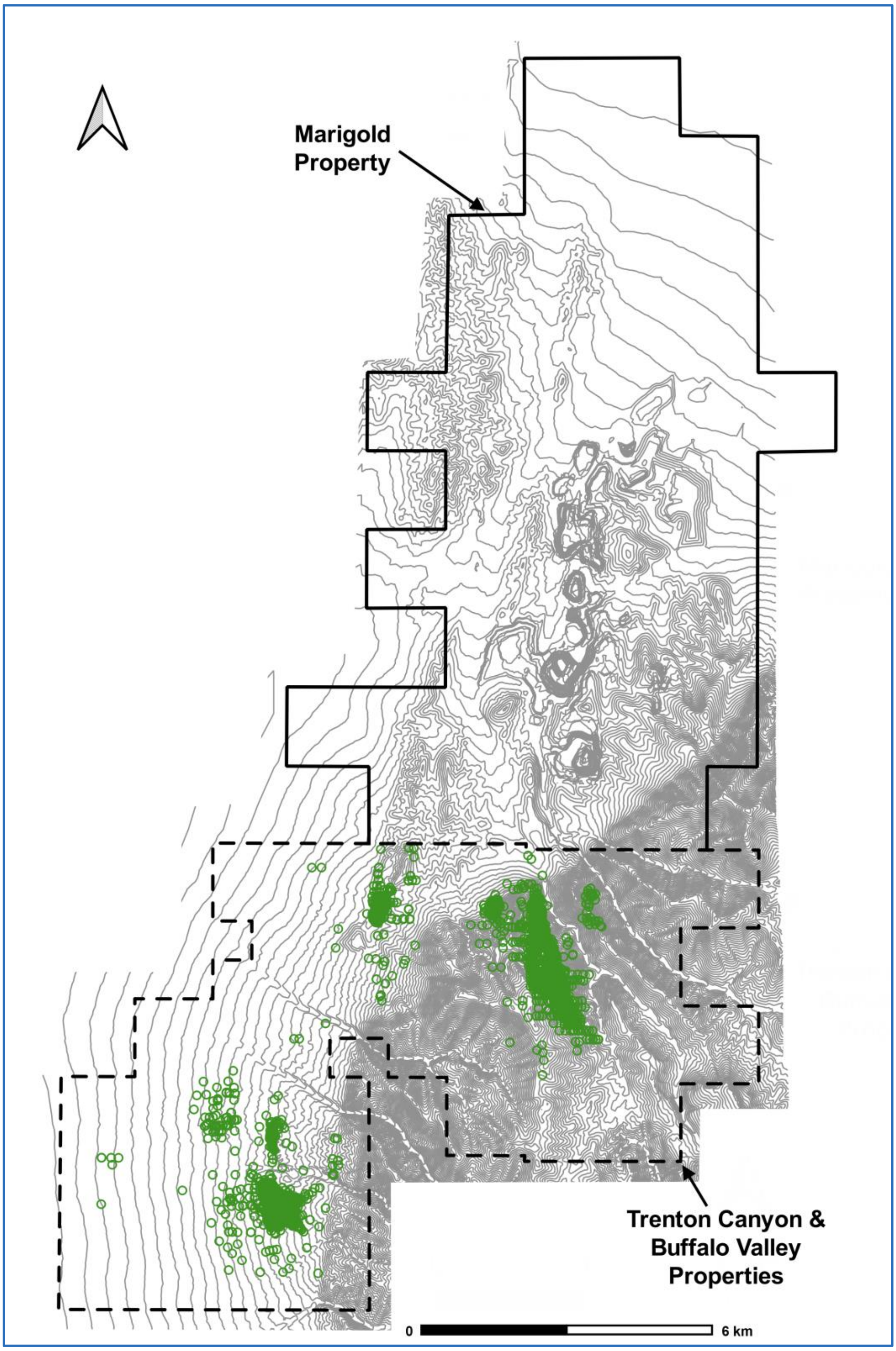
Exploration work on the Trenton Canyon and Buffalo Valley properties consists of drilling, geophysical surveying, remote sensing, geochemical surveying, and mapping.

Gold mineralisation at Trenton Canyon is structurally controlled with significantly less dissemination than at Marigold. The net result of this change in mineralisation style is higher gold grades in a smaller volume of mineralised rock at Trenton Canyon.

SSR has completed 13 exploration diamond core holes on Trenton Canyon totalling 10,131 m, and 249 RC drillholes for 73,165 m. As of December 2021, one diamond core hole has been completed at Buffalo Valley to a depth of 597.5 m.

Figure 10.1 shows a plan view of the area and extent of the work completed on Trenton Canyon and Buffalo Valley.

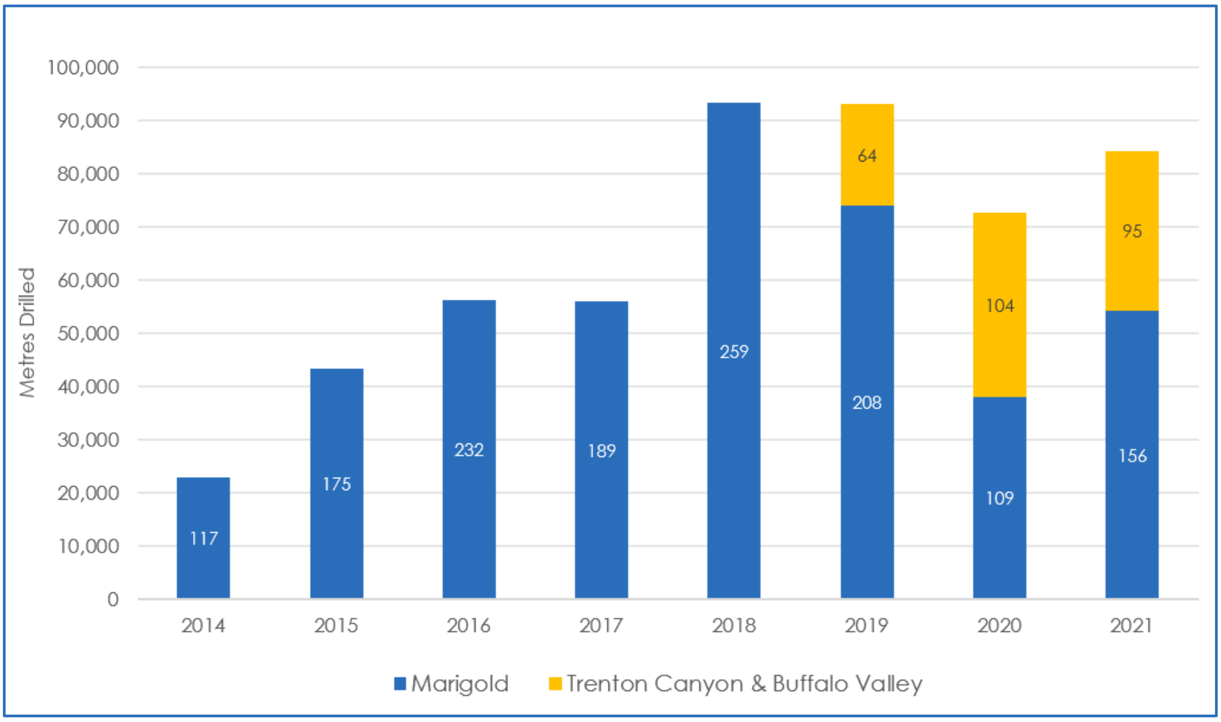
Figure 10.1 Plan View of Drilling Carried out on Trenton Canyon and Buffalo Valley



SSR, 2021

The drilling completed since SSR's acquisition of the Project in 2014 is summarised in Figure 10.2 and shown in plan view in Figure 10.3.

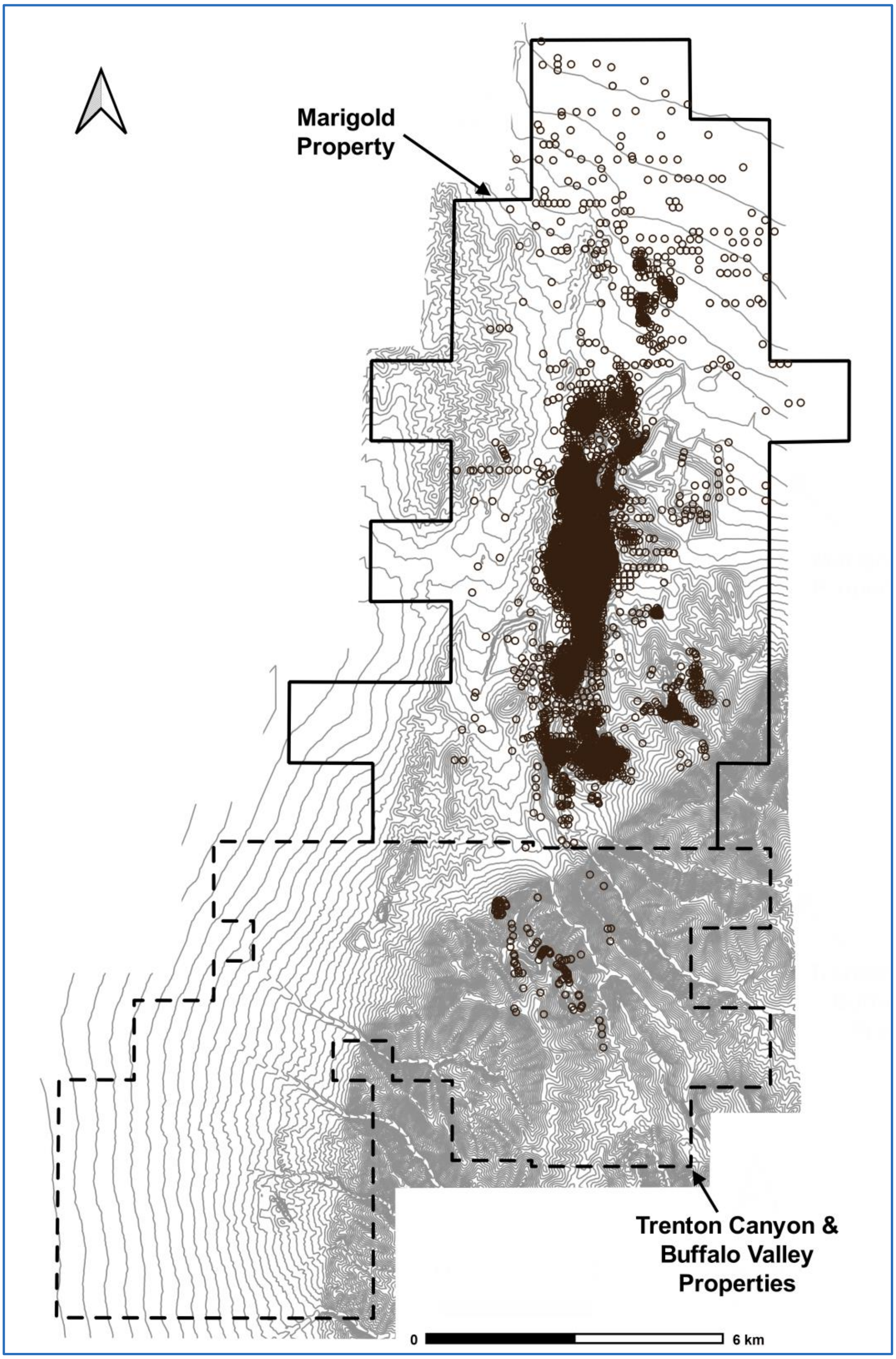
Figure 10.2 Chart of Drilling Completed by SSR since 2014



SSR, 2021

Table 10.1 summarises all of the drilling on the Entire Marigold Property from 1968 through 2021. Figure 10.4 shows the same in plan view.

Figure 10.3 Plan View of Drilling Carried out by SSR Since 2014



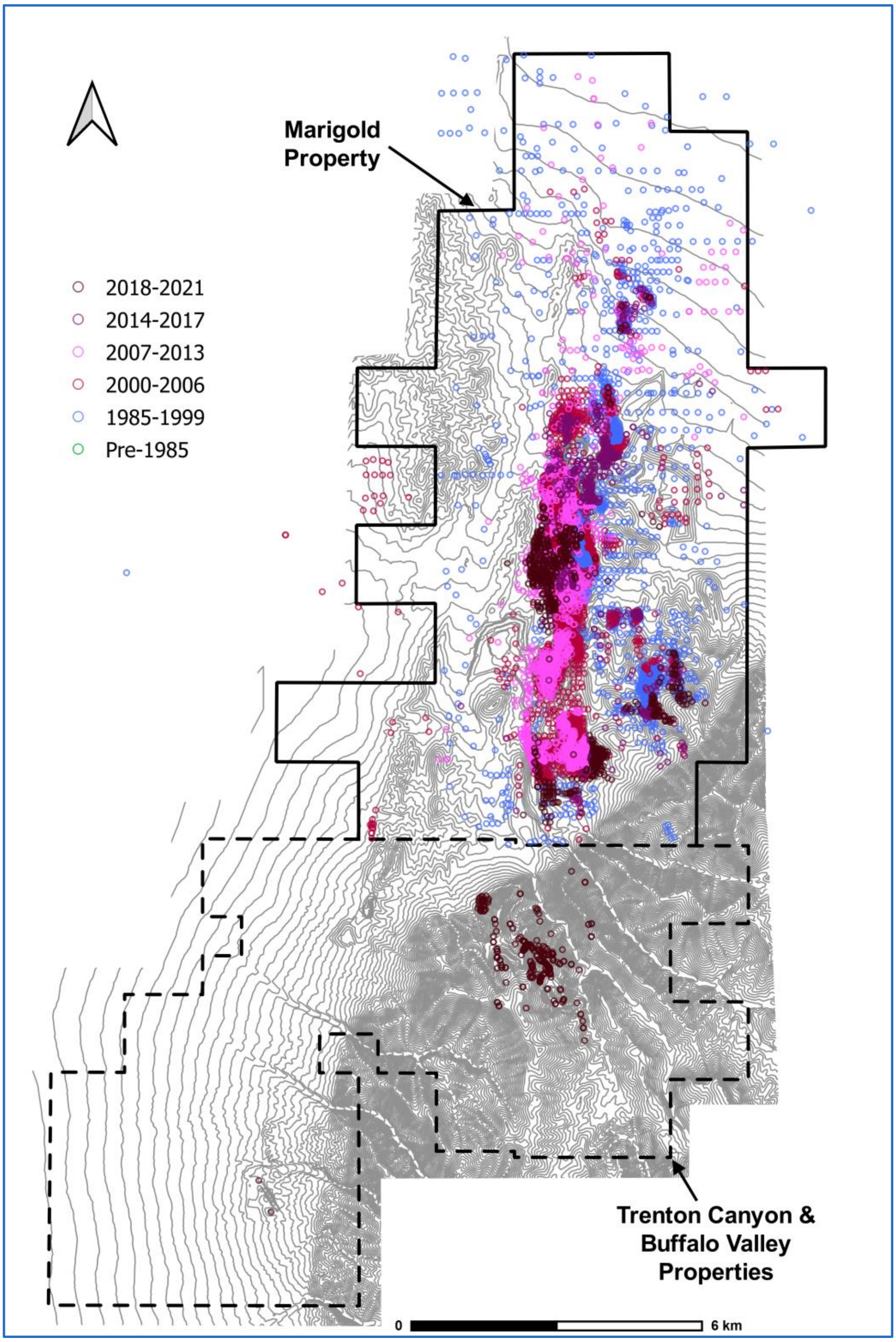
SSR, 2017

Table 10.1 Summary of Drilling History

Drilling Programme	Company	No. of RC Holes	RC Drilling (m)(1)	No. of Diamond Holes	Diamond Drilling (m)(1)	Total Holes	Total Drilling (m)(1)
1968–1985	Various exploration and mining groups	126(2)	7,037(2)	(2)	(2)	126	7,037
1985–1999	Cordex and Rayrock Mines	2,350	333,325	8	2,176	2,358	335,501
1999–2006	Glamis Gold	2,498	484,619	8	2,030	2,506	486,649
2006–2013	Goldcorp	1,856	520,163	14	8,063	1,870	528,226
1968–2006	Newmont and other mining groups (Valmy property)	852	108,326	15	1,037	867	109,363
2014	SSR	116	21,653	1(3)	1,235(3)	117	22,888
2015	SSR	171(5)	39,070	4	4,270(4)	175(5)	43,340(5)
2016	SSR	231	55,147	1	955	232	56,102
2017	SSR	188	54,814	1	1,128	189	55,942
2018	SSR (Marigold)	259	93,276	0	0	259	93,276
2019	SSR (Marigold)	183	63,629	25	10,265	208	73,893
2020	SSR (Marigold)	109	37,955	0	0	109	37,955
2021[6]	SSR (Marigold)	150	52,579	6	1,636	156	52,214
2019	SSR (TCBV)	64	19,112	0	0	64	19,112
2020	SSR (TCBV)	98	28,840	7	5,901	104	34,742
2021[6]	SSR (TCBV)	88	25,213	7	4,827	95	30,040
Total Drilling		9,338	1,944,758	97	43,523	9,435	1,988,280

1. Drill lengths converted from feet to metres.
2. Figures have been rounded and may not match totals.
3. No documentation of drilling method at Marigold is available for these drillholes. However, before RC drilling became widely adopted in the mid-1980s, conventional single-tube drilling was often relied on as the exploration drilling technique. It is suspected that single tube drilling was used during this time period; only occasional diamond drillholes were used. These drillholes are located in areas that have been mined or are outside of the current Mineral Resource area of Marigold.
4. Historical drillholes completed by Newmont at the Trenton Canyon and Buffalo Valley properties are not included in this table as they are currently being validated
5. Drilling to end of December 2021.

Figure 10.4 Plan View of All Drilling to End of November 2021



SSR, 2021

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Exploration activities conducted by three companies between 1985 and 2013 have contributed to most of the assays in the Marigold database. Sampling and analytical procedures for this period are known and documented, and it can be assumed that analytical information acquired prior to 1985 will not impact the current Mineral Resources because sampled volumes collected prior to 1985 have been mined out.

Most of the samples that inform the resource database were generated from RC drill cuttings. In general, the process for collecting RC samples has changed very little since 1985; however, over time, there have been numerous improvements in sample preparation, security and analysis. As an operating mine, Marigold generally followed and continues to follow industry best practice standards.

At the Property, there is an extensive sample storage facility that preserves the raw sample material that supports the resource database. Most of the laboratory pulp reject (since 1987), coarse reject (since 2006), and split diamond drill core are catalogued and stored securely in shipping containers on the Property.

A detailed account of the pre-2014 sampling and analytical protocols is described in the NI 43-101 Technical Report on the Marigold Mine (19 November 2014). This section briefly describes historical procedures and reviews the current procedures and results that support the QC of data collected since such last technical report.

11.1 Sample Preparation and Analysis

A summary of historical analytical methods and assay results that comprise the Marigold and Valmy database is presented in Table 11.1. Except for the Marigold, Pinson and Dee Mine site laboratories, all laboratories listed in Table 11.1 are commercial laboratories that were independent from SSR.

Until the end of 1999, fire assay (FA) with gravimetric finish was the preferred analytical method for determining gold in samples. Since then, all samples have been subjected to first-pass gold cyanide solution assay, and, if results were greater than 0.17 g/t Au, samples were also subjected to FA determination with gravimetric finish at the on-site Marigold mine laboratory or FA with atomic absorption (AA) finish and FA with gravimetric finish for over limits at commercial laboratories.

All the Newmont-provided samples that inform the resource database for the Valmy area were assayed at various commercial laboratories. The preferred assay method was FA with AA spectroscopy finish, followed by gold cyanide solution assay on select samples within the mineralised zone.

Since 2014, all exploration samples from Marigold and the Valmy property are analysed at American Assay Laboratories (AAL), an ISO 17025 certified facility in Sparks, Nevada. AAL is independent from SSR. All samples are subjected to first pass FA determination with an AA finish and FA with gravimetric finish for over-limits. This is followed by a gold cyanide solution assay with an AA finish on samples that have FA values greater than or equal to 0.03 g/t Au. In 2019 and 2020 samples were also analysed at Paragon laboratories, a privately held corporation located in Sparks, NV. Paragon is independent of SSR. Analytical protocols similar to AAL were utilised.

11.2 Sample Security

11.2.1 Sample Security until 2013

The bulk of the data in the Marigold resource assay database was for samples analysed at the secure on-site Marigold mine laboratory. Samples shipped off site were either delivered to the commercial lab by an MMC Exploration Department geologist or technician, or samples were collected from the mine by a laboratory employee. All samples were sent with a manifest listing the number of samples included in the shipment. Exploration personnel were unaware of any instances of tampering with samples either on site or in transit to a laboratory.

11.2.2 Sample Security Valmy Property

Newmont provided scanned copies of driller’s logs, sample manifest sheets, and signed assay sheets from commercial laboratories and geologist logging sheets for all the drillholes that inform the resource database for the Valmy property. Based on the documented evidence, the chances of tampering with the samples either on site or in transit were negligible.

11.2.3 Sample Security 2014–2021

All exploration samples were collected from the mine site by an employee of AAL. All sample dispatches included a manifest listing the sample identifiers and number of samples included in the shipment. AAL/Paragon Laboratories electronically acknowledged the receipt of the samples within 24 hours after physically reconciling the samples with the manifest. SSR exploration personnel were unaware of any instances of tampering with samples either on site or in transit to a laboratory.

Table 11.1 Analytical Methods for Gold for the Marigold Assay Resource Database

Period	Laboratory	Preparation	Analytical Method	Reported DL (Au g/t)
1985–1989	Pinson or Dee Mine site labs	Undocumented	30 g FA, gravimetric finish	0.17
1990–1999	Pinson or Dee Mine site labs or Inspectorate Labs	Undocumented	30 g FA, gravimetric finish	0.17
1987–1998 (Newmont property)	Barringer Laboratories	Undocumented	30 g FA, AA finish 15 g cyanide gold (CN) assay on select samples	FA: 0.17 CN assay: 0.17
	X-Ray Assay Laboratories	Undocumented	30 g FA, gravimetric finish 15 g CN assay on select samples	FA: 0.03 CN assay: 0.03
	Rocky Mountain Geochemical Nevada	Undocumented	30 g FA, gravimetric finish 15 g CN assay on select samples	FA (AA): 0.03–0.003 CN assay: 0.03
	Chemex Labs Ltd.	Undocumented	15 g FA, AA finish 30 g FA, gravimetric finish 15 g CN assay on select samples	FA (AA): 0.06–0.003 CN assay: 0.03
2000–2004 (Newmont property)	Chemex Labs Ltd.	Dry, crush and riffle split for pulverising; pulverise to 100µ	All samples 30 g FA, AA finish 15 g CN assay on select samples	FA (AA): 0.01 CN assay: 0.03
2000–2006	Marigold Mine laboratory	Dry 6–12 hrs @ 310° F; crush >95% –2 mm; riffle split to collect 250–400 g for pulverising; pulverise to >90% –75µ	All samples 10 g CN assay, AA finish If CN assay >0.17 g/t, the 2nd pulp split @ 30 g FA, gravimetric finish	0.03
	American Assay or Inspectorate Labs	Dry 6–12 hrs @ 310° F; crush (using jaw and roll) >90% –2 mm; riffle split to collect 500–1,000 g for pulverising; pulverise to >90% –100µ	All samples 15 g CN assay, AA finish If CN assay >0.17 g/t, the 2nd pulp split @ 30 g FA, AA finish over-limits by 30 g FA, gravimetric finish	0.03

Period	Laboratory	Preparation	Analytical Method	Reported DL (Au g/t)
2006–2013	Marigold Mine laboratory	Dry 6–12 hrs @ 310° F; crush >95% –2 mm; riffle split to collect 250–400 g for pulverising; pulverise to >90% –75µ	All samples 10 g CN assay, AA finish If CN assay >0.17 g/t, the 2nd pulp split @ 30 g FA, gravimetric finish	0.03
	American Assay or Inspectorate Labs	Dry 6–12 hrs @ 310° F; crush (using jaw and roll) >90% –2 mm; riffle split to collect 500–1,000 g for pulverising; pulverise to >90% –100µ	All samples 15 g CN assay, AA finish If CN assay >0.17 g/t the 2nd pulp split @ 30 g FA, AA finish over-limits by 30 g FA, gravimetric finish	0.03
2014–2021	American Assay Laboratories	Dry 6–12 hrs @ 310° F; crush (using jaw and roll) >90% –2 mm; riffle split to collect 500–1,000 g for pulverising; pulverise to >90% –100µ	All samples 30 g FA, AA finish over-limits by 30 g FA, gravimetric finish If FA >0.03 g/t, the 2nd pulp split @ 15 g CN assay, AA finish	FA: 0.003 CN assay: 0.03
2019-2020	Paragon Laboratories	Dry – 6 to 12 hrs @ 310° F; crush (using jaw and roll) >90% minus 2 mm; riffle split to collect 500 to 1,000 g for pulverising; pulverise to >85% minus 75µ	All samples 30 g FA, AA finish Over-limits by 30 g FA, gravimetric finish If FA >0.03 g/t, the 2nd pulp split @ 15 g CN assay, AA finish	FA, 0.003 CN assay, 0.03

11.3 Quality Assurance/Quality Control (QA/QC) Procedures

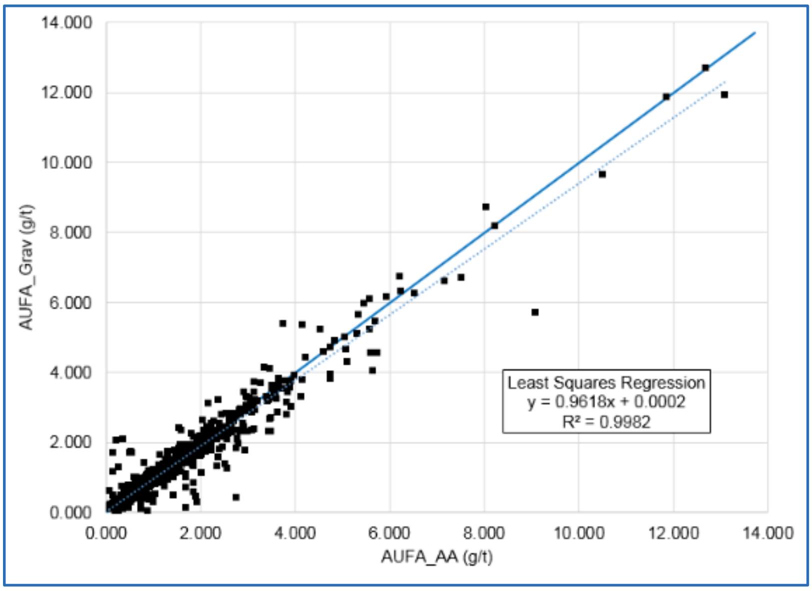
11.3.1 QA/QC Procedures Pre-2014

The oldest hole in the Marigold exploration database is from 1968. Over time, QA procedures for the exploration drillhole database have been varied and inconsistent with current industry best practices.

Because the historical QA/QC procedures at Marigold did not meet current-day best practices, SSR selected a spatial and temporal representation of samples from the well-preserved drillhole sample pulps (from the years 1987 to 2013) stored at Marigold. SSR sent these to a commercial laboratory for analyses. The results of this re-assay programme were discussed in the 2014 NI 43-101 Technical Report on the Marigold Mine (19 November 2014), and it was concluded that there was no systematic error or bias in the accuracy and precision of analytical assays from the period between 1987 and 2013.

As a part of the QA/QC programme, a total of 1,974 samples were assayed for FA with AA finish and gravimetric finish between 1987 and 2003. Of these assay pairs, 1,029 samples were below the as-mined topography and within the mineralised envelopes. This represents 12% of samples that are within the mineralised envelope and below the mined-out topography. The assay results for both the finishes were compared, and results are presented in Figure 11.1 and Figure 11.2.

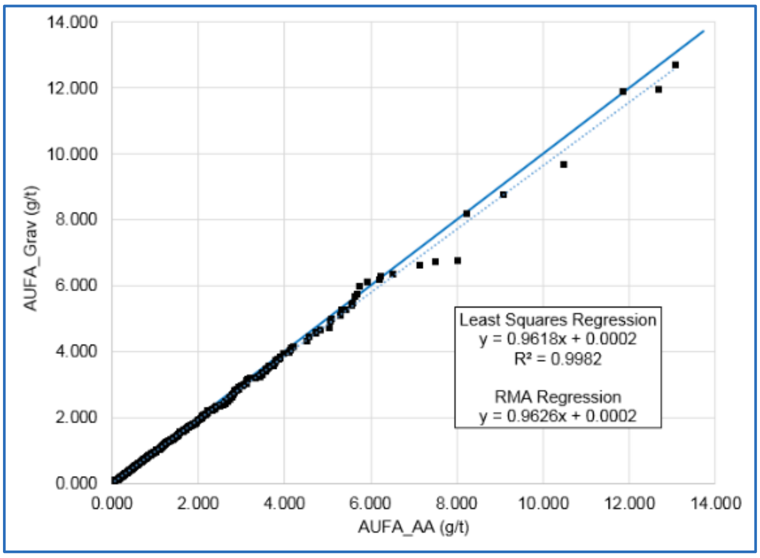
Figure 11.1 Scatter Plot Between FA Gold Values with AA Finish and Gravimetric Finish



SSR, 2018

The scatter shown in the data presented in Figure 11.1 and Figure 11.2 is acceptable (R2 = 0.9982), and the reduced major axis (RMA) regression indicates a bias of 3.7% for all the assay pairs that are below the mined-out topography. These indicate that the assays form similar distributions and can be interchanged, but they do not validate the accuracy or precision of the assay value.

Figure 11.2 Q-Q Plot between FA Gold Values with AA Finish and Gravimetric Finish



SSR, 2018

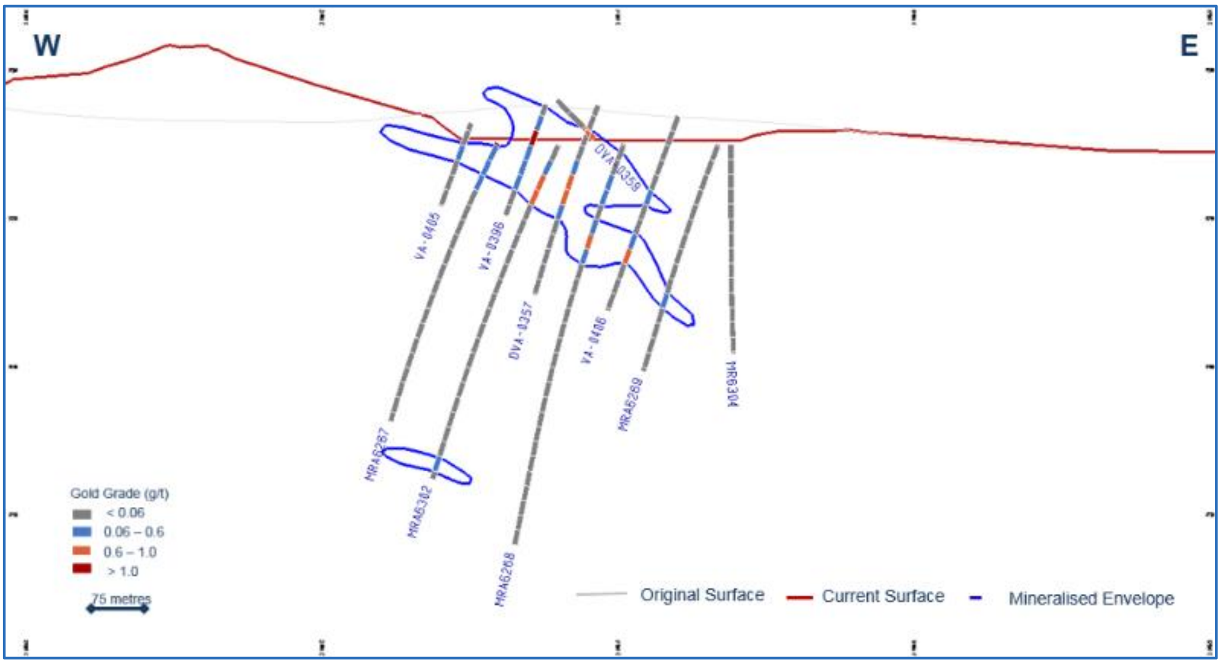
11.3.2 QA/QC Procedures Valmy Property

As at Marigold, the QA/QC procedures followed between 1987 and 1998 did not meet the current day industry standards. Newmont began inserting certified standards in the sample stream in 2000. A total of three QC samples were used, but SSR was unable to evaluate the assay accuracy without the expected gold values for these samples.

Because the historical QA/QC procedures for the Valmy property did not meet current day industry standards, SSR drilled eight drillholes within a resource block of 200 m x 150 m. A total of eleven historical drillholes were within the same block. The cross section comparing the SSR drilling to the historical drilling is presented in Figure 11.3.

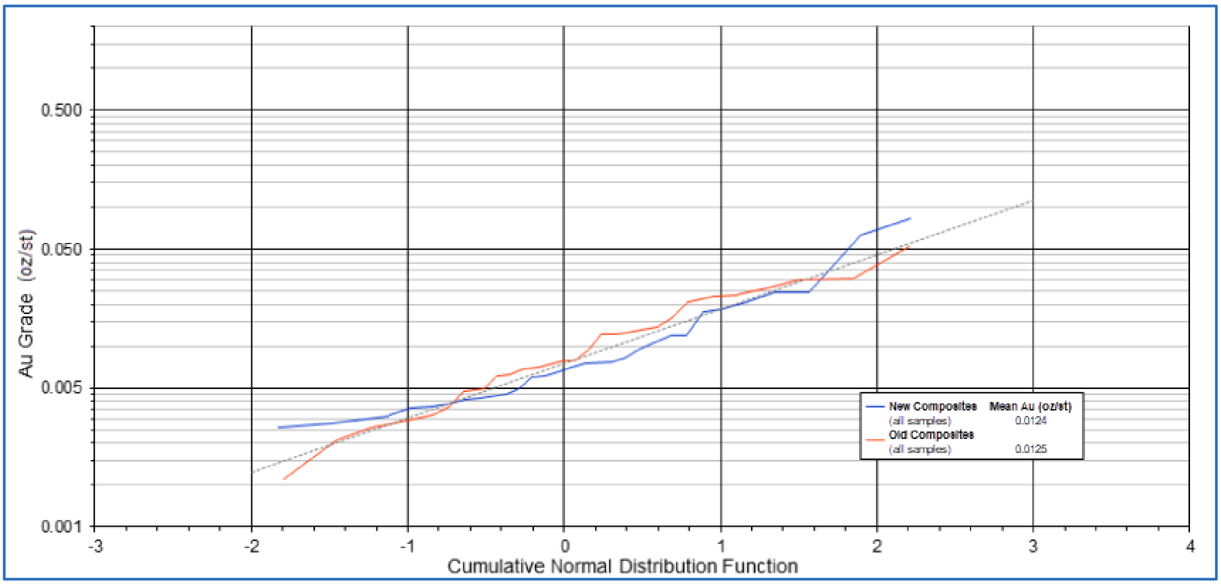
The cumulative normal distribution comparing the SSR drill composites to the composite from the historical drillholes is provided in Figure 11.4.

Figure 11.3 Cross-Section with SSR Drillholes (drillhole number prefix MRA) and Historical Drillholes along Section 8,000N



SSR, 2018

Figure 11.4 Cumulative Normal Distribution Comparing Composites from SSR Drilling and Historical Drilling



SSR, 2018

The nearest neighbour (NN) gold grade model estimates were also compared to the assay results from historical drilling and the new drilling. To compare historical Newmont data to SSR data, two NN models were developed: one estimate used only assay results from the historical database; and a second estimate used only the assay results from the SSR drillholes within the same mineralised envelope. The percentage difference between historical and SSR results was –4%. The results of the NN estimates are presented in Table 11.2.

Table 11.2 Comparison of the NN Mean Gold Grades

Nearest Neighbour Estimate	Mean Gold Grade (g/t)
Nearest Neighbour with Historical Composites	0.624
Nearest Neighbour with SSR Composites	0.600

% Difference (SSR-Historical) is –4%.

The infill drill comparison indicates that there is no systematic error in the historical sampling and assaying methodology when compared to current practices, and, therefore, the historical data can be used to develop the Mineral Resources for the Valmy property.

11.3.3 QA/QC Procedures 2014–2017

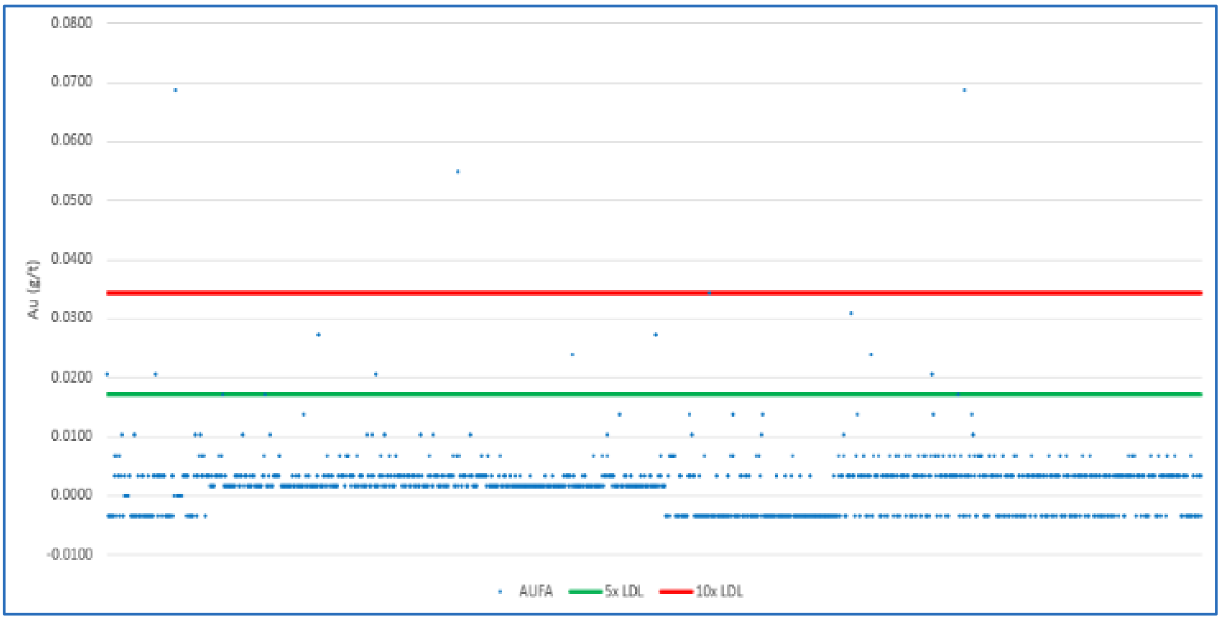
SSR's QA/QC protocol involves the insertion of a certified standards every 20th sample and the insertion of a blank sample every 50th sample. Eleven different certified standards purchased from ROCKLABS and Geo Chem Laboratories were used. In addition to the certified standards and blank material, every 50th sample is sampled in duplicate at the drill site and analysed as a field duplicate.

11.3.3.1 Blanks 2014–2017

Coarse blanks are samples of barren material that are used to detect possible contamination, which is most common during the sample preparation stage. The size of the blanks was similar to the size of the RC samples, and they were processed through the same crushing and pulverising stages as the drill samples. The blank samples were placed one in every 50 samples. Blank results that were greater than 10 times the lower detection limit (LDL) were typically considered failures that required further investigation and possible re-assaying of associated drill samples. The lower detection limit of AAL analyses is 0.003 g/t, so blank samples assaying in excess of 0.03 g/t were considered to be failures.

Between 2014 and 2017, a total of 1,107 blanks were inserted into the sample stream. The results are shown in the Figure 11.5. An assay value greater than five times the LDL is recorded as a warning, and ten times the LDL is deemed a failure limit. Four samples failed (0.36%), but only two samples were significant enough with assay values of 0.068 g/t.

Figure 11.5 Blank Results 2014–2017



SSR, 2018

11.3.3.2 Certified Standards 2014–2017

Certified reference material (CRM) standards were used to evaluate the analytical accuracy and precision of AAL. CRMs were inserted every 20th sample, which represents 5% of the total samples submitted. Three different CRMs were used in any one submission. The CRMs were selected based on the cut-off grade and gold distribution at Marigold mine, being:

- cut-off grade (0.1 g/t)
- mean grade (0.45 g/t)
- 90th percentile (2.3 g/t)

Most of the CRMs used were purchased from ROCKLABS, and Ore Research & Exploration Pty Ltd. CRMs were only used in 2014 for a short period of time. The CRMs were assigned sample numbers in sequence with their accompanying drill samples and inserted into the drill-sample stream. The list of CRMs used between 2014 and 2017 is shown in Table 11.3.

Exploration personnel monitor the assay results on a real-time basis and import the data into the Geology database. Internal validation checks in the database highlight any certified standard assay failures. In the case of normally distributed data, 95% of the standard assay results are expected to lie within two standard-deviation limits of the certified value. All samples outside the three standard-deviation limits were considered to be failures. Failures trigger a re-run of five samples above and five samples below the failed standards, including the failed standard.

Table 11.3 List of Certified Standards used 2014–2017

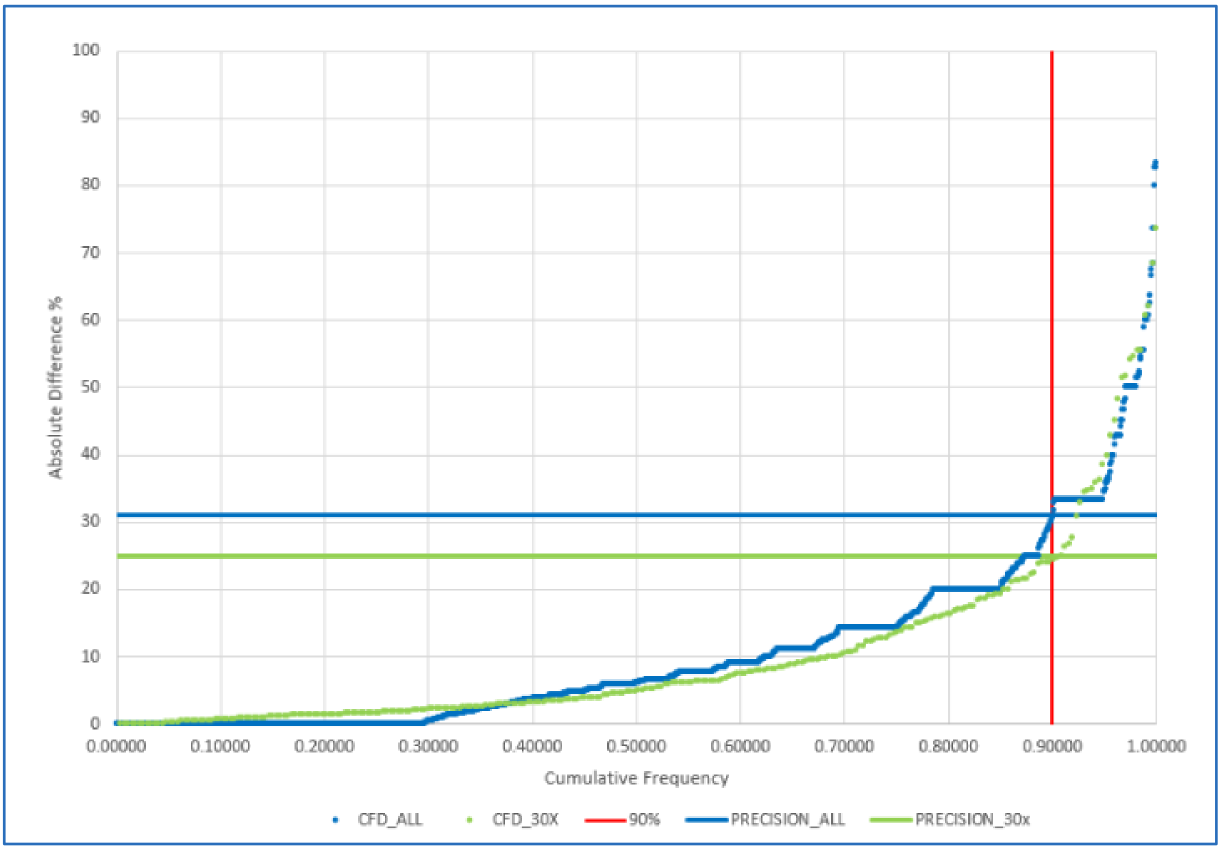
Certified Standard	Expected Gold Value (g/t)	Standard Deviation (g/t)	No. of Samples Assayed
OxD108	0.414	0.012	480
OxJ95	2.337	0.057	361
OxB130	0.125	0.006	1137
OxJ111	2.166	0.058	131
OxJ120	2.365	0.063	627
OxD128	0.424	0.011	758
OREAS 50P	0.727	0.041	37
OREAS 50Pb	0.841	0.031	89
OREAS 6Pb	1.425	0.077	66
OREAS 7Pb	2.770	0.055	13
G312-7	0.220	0.010	111

11.3.3.3 Field Duplicates

Field duplicate samples were collected every 50th sample, and two sample bags marked "A" or "B" were provided to collect an original and a duplicate sample. The secondary sample was obtained from the secondary opening in the rotary sampler. The duplicate sample inserted into the sample stream monitors the precision of the sample collection, crushing, and pulverising stages of sample preparation as well as the analytical stage.

Between 2014 and 2017, 1,650 duplicate samples were collected. Absolute relative difference (ARD) was used to estimate precision, as shown in Figure 11.6. Precision was estimated for all the samples to be at ±31%. Because most samples were below the 0.1 g/t grade used to construct mineralised envelopes, precision was also estimated for samples greater than 30 times the LDL. It was 25%. The estimated precision is considered to be reasonable for coarse field duplicates in gold deposits.

Figure 11.6 Cumulative Frequency Distribution Comparing Original and Field Duplicate Assay Results



SSR, 2018

11.3.4 QA/QC Procedures 2018–2021

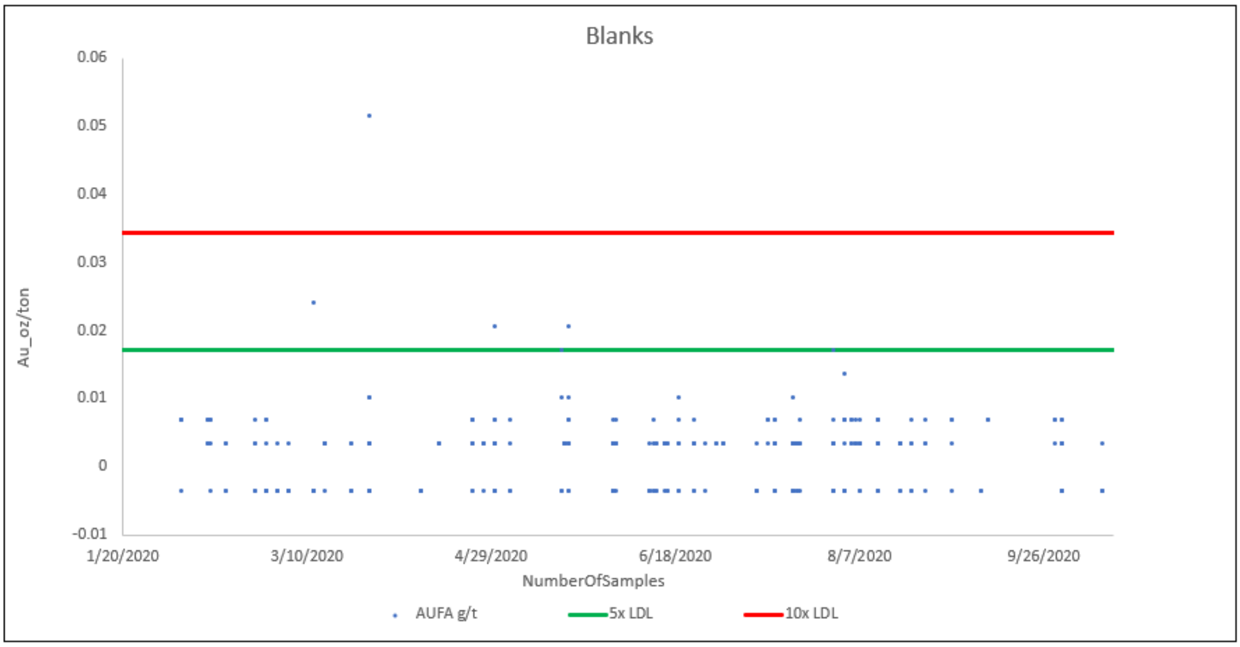
SSR's QA/QC protocol involves the insertion of a certified reference material standards (CRM) every 20th sample and the insertion of a blank sample every 50th sample. Eleven different CRMs, purchased from ROCKLABS and Geo Chem Laboratories, were used. In addition to the CRMs and blank material, a field duplicate is taken at the drill site for every 50th sample.

11.3.4.1 Blanks 2018–2021

Coarse blanks are samples of barren material that are used to detect possible contamination, which is most common during the sample preparation stage. The size of the blanks was similar to the size of the RC samples, and they were processed through the same crushing and pulverising stages as the drill samples. The blank samples were placed one in every 50 samples. Blank results that were greater than 10 times the lower detection limit (LDL) were typically considered failures that required further investigation and possible re-assaying of associated drill samples. The lower detection limit of AAL analyses is 0.003 g/t, therefore blank samples assaying in excess of 0.03 g/t were considered to be failures.

Between 2018 and 2021, a total of 1,609 blanks were inserted into the sample stream. The results are shown in the Figure 11.5. An assay value greater than five times the LDL is recorded as a warning, and ten times the LDL is deemed a failure limit.

Figure 11.7 Blank Results 2018–2021



SSR, 2021

11.3.4.2 Certified Standards 2018–2021

Certified reference material standards (CRM) were used to evaluate the analytical accuracy and precision of AAL. CRMs were inserted every 20th sample, which represents 5% of the total samples submitted. Three different CRMs were used in any one submission. The CRMs were selected based on the cut-off grade and gold distribution at Marigold mine:

- around the cut-off grade (0.1 g/t)
- the mean grade (0.45 g/t)
- around 90th percentile (2.3 g/t) or greater

Most of the CRMs used were purchased from ROCKLABS. Ore Research & Exploration Pty Ltd. CRMs were only used in 2014 for a short period of time. The CRMs were assigned sample numbers in sequence with their accompanying drill samples and inserted into the sample stream. The list of CRMs used between 2018 and 2021 is shown in Table 11.4.

Exploration personnel monitor the assay results on a real-time basis and import the data into the geology database. Internal validation checks in the database highlight any CRM assay failures. In the case of normally distributed data, 95% of the CRM assay results are expected to lie within two standard-deviation limits of the certified value. All samples outside the three standard-deviation limits were considered to be failures. Failures trigger a re-run of five samples above and five samples below the failed CRM, including the failed standard.

Table 11.4 List of CRMs used 2018–2021

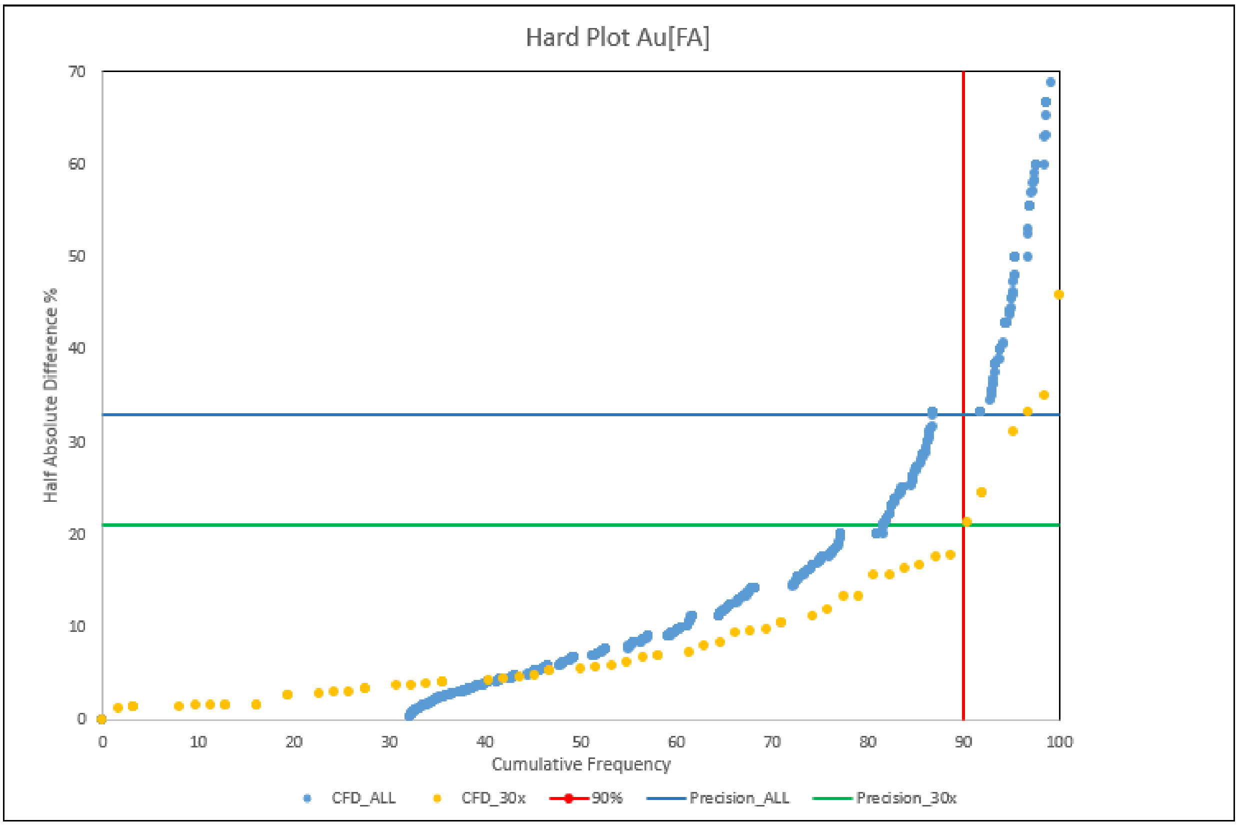
Certified Standard	Expected Au Value (g/t)	Standard Deviation (Au g/t)	No. of Samples Assayed
HiSilK2	3.474	0.087	241
OxJ120	2.365	0.063	648
OxB130	0.0125	0.006	1602
OxJ137	2.416	0.069	457
OxD151	0.430	0.009	894
SG84	1.026	0.025	72
OxD144	0.414	0.11	530

11.3.4.3 Field Duplicates 2018–2021

Field duplicate samples were collected every 50th sample, and two sample bags marked “A” or “B” were provided to collect an original and a duplicate sample. The secondary sample was obtained from the secondary opening in the rotary sampler. The duplicate sample inserted into the sample stream monitors the precision of the sample collection, crushing, and pulverising stages of sample preparation as well as the analytical stage.

Between 2018 and 2021, 1,650 duplicate samples were collected. Absolute relative difference (ARD) was used to estimate precision, as shown in Figure 11.8. Precision was estimated for all the samples to be at ±31%. Because most samples were below the 0.1 g/t grade used to construct mineralised envelopes, precision was also estimated for samples greater than 30 times the LDL. It was 25%. The estimated precision is considered to be reasonable for coarse field duplicates in gold deposits.

Figure 11.8 Cumulative Frequency Distribution Comparing Original and Field Duplicate Assay Results



SSR, 2021

11.4 Opinion on Adequacy of Sample Preparation, Security, and Analytical Procedures

OreWin has reviewed the sample preparation, analytical and security procedures for the various drilling programmes conducted on the Marigold deposit and have determined that they were carried out in accordance with accepted industry standards.

The processes, discussed in the Marigold21TR, are considered adequate for the generation of a quality dataset suitable for the estimation of Mineral Resources and Mineral Reserves.

12 DATA VERIFICATION

The verification for the exploration data collected before SSR acquired Marigold is described in the 2014 NI 43-101 Technical Report on the Marigold Mine (19 November 2014). It includes the results of AMEC Americas Ltd.'s external review and data verification to identify any material issues with the database used to generate the mineral resources.

SSR subsequently acquired the adjacent Valmy property, and the associated data was appended to the Marigold drillhole database.

The appended data for Valmy comprises collar, downhole survey, lithology, and assay information (provided in comma delimited digital files) for 867 drillholes drilled by Newmont, Hecla and Santa Fe Pacific Corp. Newmont provided this information in hardcopy or scanned versions of the originals which were used to verify the database.

MMC's exploration personnel manually checked the entire drillhole database against the original documents for data entry errors. Less than 1% of the drillholes had any issues, and these were subsequently corrected.

As an additional check, SSR acquired the chip trays for 687 drillholes, pulps from 57 drillholes, and sample rejects from 66 drillholes, of which 5% were reviewed for lithology and alteration. The original logging was deemed accurate and was used to construct the lithological models.

The collar positions of 43 Valmy drillholes were verified using differentially corrected GPS methods. The results showed a maximum variance of 4 m in the X/Y planes (easting and northing) and < 1 m in the Z dimension (elevation). This error-shift is less than half the size of a resource model cell and is not material to any resulting estimate. The Valmy data, as appended, was deemed accurate and precise, and appropriate for resource estimation purposes.

For data collected after April 2014, the following verification steps were completed as part of the generation of the Mineral Resources estimate presented in the Marigold21TR:

- The location of planned drillholes was compared to the location of as-built drillholes in real time. Regular field checks were completed on drill and sampling systems.
- Downhole survey intervals that encountered major deviations were reviewed and validated (AMEC, 2014).
- Precision and accuracy of laboratory assay results were verified using a QA/QC programme that followed an industry standard protocol using the blind insertion of blanks and certified standards.
- The elevation of all surveyed drillhole collar coordinates was checked against the original/current/depleted topographic surface to identify any variations of more than one metre. No discrepancies were found.
- Profiles of all mined-out pits, backfilled pits and dumps were cross checked, updated annually, and incorporated into the current topography.

- All data, including collars, downhole survey, assays, and lithology, were imported directly into the geological database without any keyboard input. Data validation was conducted before the records were uploaded to the main database.

Three technical issues were identified in the Marigold Mineral Resources database (these issues have since been resolved):

- Drillholes were missing downhole surveys.
- Some samples were only assayed by cyanide soluble analysis and not by FA.
- Assay results for a high percentage of lower grade samples were recorded as 0.0 oz/st gold.

The first two items were described and resolved in the 2014 NI 43-101 Technical Report on the Marigold Mine (19 November 2014).

The third item is described and resolved in Section 12.1.

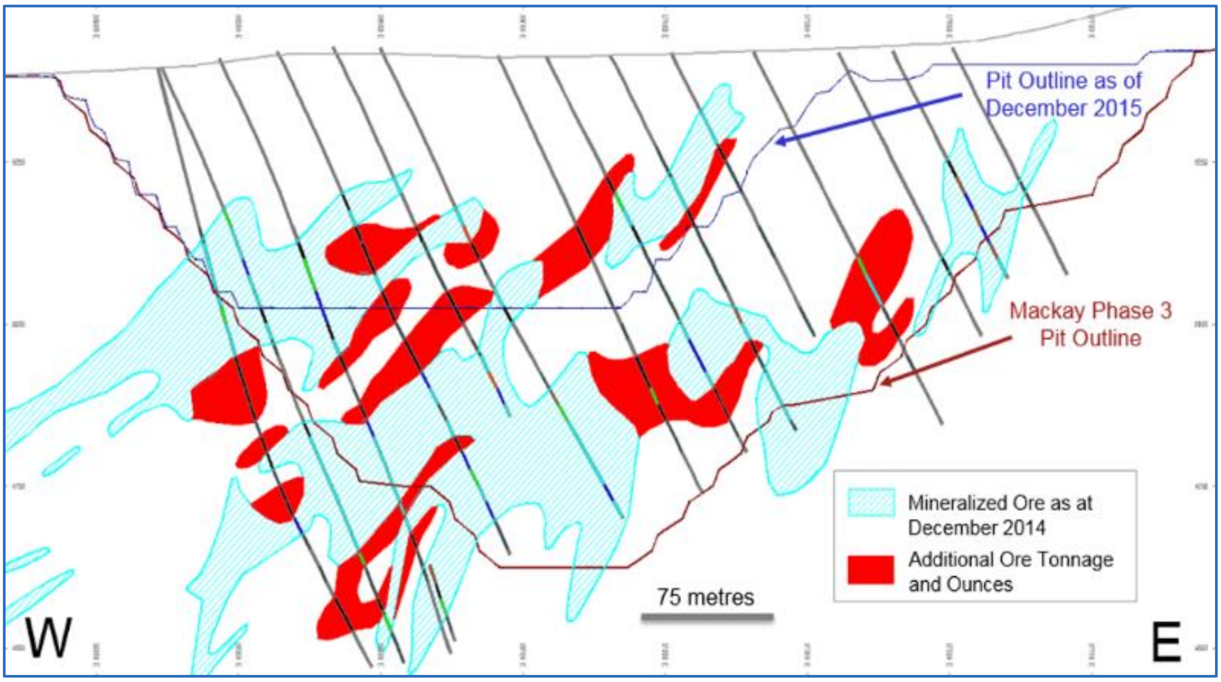
12.1 Marigold Assay Database

As described in the 2014 NI 43-101 Technical Report on the Marigold Mine (19 November 2014), there have been changes in the lower detection limit for cyanide soluble gold assays over time as the ROM cut-off grade has been reduced. Prior to 2009, assay values below detection were entered into the database as 0.0 oz/t. This data artefact was under-representing the mineralised volume of the Mineral Resources estimate at the low-grade range of the analytical distribution and contributing to the positive reconciliation experienced at Marigold.

The issue of below-detection-limit analyses in the database was addressed through a systematic assay programme implemented in 2015 and 2016 (the Assay Programme). A total of 153,023 pulp samples from pre-2009 drillholes reporting a 0.0 oz/st gold cyanide soluble result and located within the reserve pits were recovered from storage and analysed for gold at AAL. Certified standards and blanks were inserted into the pulp sample list at a rate of one standard in 20 samples and one blank in 50 samples. The samples were analysed using a 1 assay ton (30 g) FA with an AA finish, followed by a gold cyanide solution assay with an AA finish for those samples that returned FA results of 0.03 g/t or greater.

The assay programme identified additional mineralised areas, and the incorporation of this lower grade material that had been previously estimated as 0.0 oz/st or deemed as waste, increased the ore tonnage as shown in Figure 12.1.

Figure 12.1 Cross-Section Showing the Increase in Tonnage Estimated as Mineralised



SSR, 2018

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Production began at Marigold in 1989, ore was processed primarily with a rod-and-ball-mill grinding circuit with gold recovery by CIL and carbon-in-column circuits.

In March 1990, heap leaching commenced at Marigold. Since April 1999, all Marigold ore deposits have been processed via truck dump ROM heap leaching.

Cumulative gold production from the Marigold leach pad (through December 2021) is equivalent to 71.1% recovery, and total gold recovery, including recoverable gold inventory in the pad, is estimated at 74.2%.

Gold production data from the leach pad provide the best possible indicator for future processing recoveries because all future-placed ore is similar to ore that has been processed since 1999. Gold recovery from future ore is estimated to be 74.7% based on a review of historical assay and recovery data as well as metallurgical testwork on future ore.

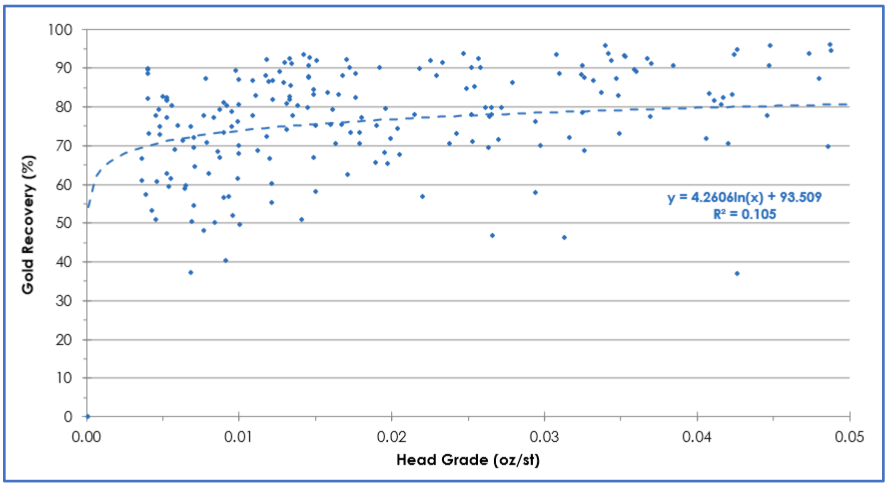
13.1 Metallurgical Testwork

Metallurgical testwork activities include testing methods to improve gold recovery by testing ore samples to guide short and long-range production planning and optimising reagent addition to minimise processing costs.

Metallurgical studies continue to be undertaken on Marigold ore types with respect to heap leach recovery. These studies have been based primarily on both small column (25.4 cm diameter by 1.2 m high, with minus 51 mm ore) and standard bottle roll leach testwork. Testwork has been conducted on a variety of Marigold ores, including representative pit samples taken by ore-control geologists, leach pad grab samples from mine production, and various pit blasthole drill cuttings. Bottle roll testwork has also been conducted on exploration RC drill samples to determine expected gold recovery from deposits that will be mined in the future.

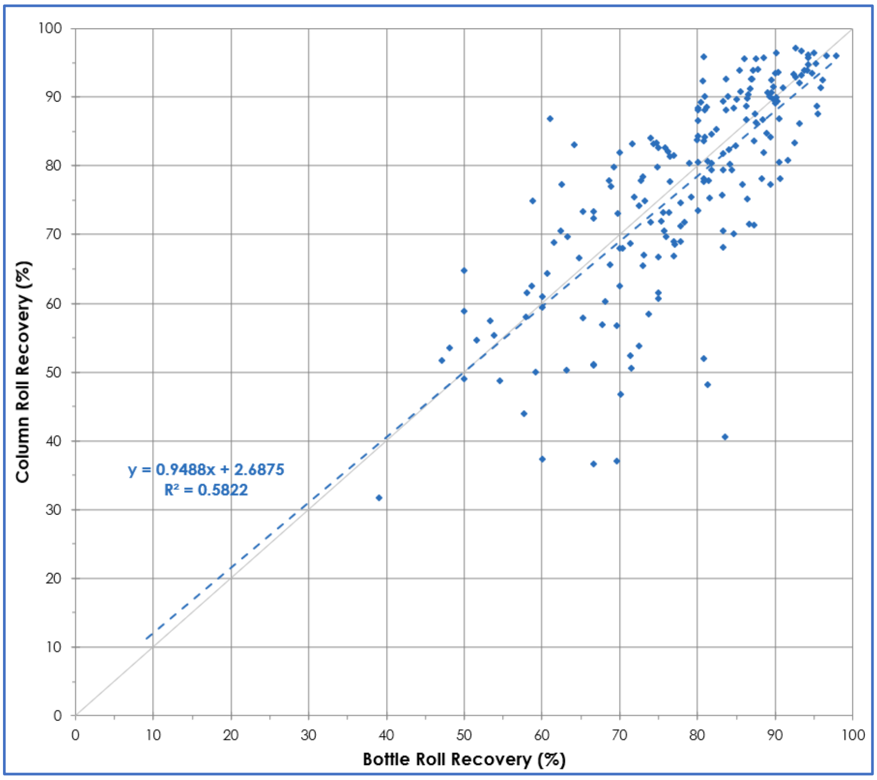
Results of gold recovery versus gold grade for all laboratory column tests are shown in Figure 13.1. In addition to undertaking columns bottle roll tests were also completed on the same samples to develop a trend. The correlation between column and bottle roll tests is good, the relationship is shown in Figure 13.2. The adoption of the bottle roll test enables more metallurgical tests to be undertaken in a shorter time frame, months for columns to days for bottle rolls.

Figure 13.1 Column Test Results – All Marigold Areas



SSR, 2021

Figure 13.2 Bottle Roll vs. Column Recovery – All Marigold Areas



SSR, 2021

13.2 Process Optimisation Metallurgical Testwork

Additional testwork has been carried out as required to optimise the processing variables that are controllable on a large heap leach pad and plant.

These variables include permeability testing undertaken on a number of ore samples with varying clay content. The testing was undertaken on multiple stages to 122 m of compaction. Overall, the blends tested demonstrated relatively consistent permeability on increasing loads. Flow rates for the blends ranged from 178.8–284.2 L/hr/m^2 under no load. Under 122 m effective height loading, flow rates ranged from 34.4 L/hr/m^2 up to 1880.082 L/hr/m^2. All tests resulted in low, but acceptable permeabilities.

13.3 Gold Recovery Modelling

Marigold uses two assay methods: fire assay that measures the total gold in a sample and a second method known as 'cyanide soluble gold'. This technique generates a value that represents the head grade of the ore in terms of the amount of gold in a finely ground sample that can be dissolved by a strong sodium cyanide solution, or the maximum cyanide soluble gold content.

All Marigold blasthole samples are assayed for cyanide soluble gold. Samples from each ore polygon delineated by ore control are selected for fire assay based on the grade distribution for the polygon tonnage and targeting one sample per every 2,000 short tons of ore. Therefore, some samples have two assay values: an AuCN (cyanide soluble) value; and an AuFA (fire assayed) value. The ratio of AuCN / AuFA provides the theoretical maximum gold recovery that can be achieved.

For example, if the AuFA ore grade is 0.10 g/t, and the AuCN ore grade is 0.08 g/t, the ratio is 0.008/0.010 = 0.80. This indicates that the maximum gold recovery from this ore sample is 80%. A ratio greater than 1.0 (100%) is impossible.

Testwork has demonstrated that, generally, all ore at Marigold behaves similarly. The ratio of AuCN / AuFA is an important characteristic of each ore block.

The most recent assessment of the predicted recovery for Marigold ore was conducted in 2017. The 2017 exploration database contains approximately 155,000 pairs of fire assays (field AUFA in the database) and cyanide soluble assays (field AUAA in the database). These assay pairs represent all the mine ore types. On an individual ore block basis, the ratio AuCN / AuFA includes all the local geological variables for that ore block (rock type, degree of oxidation, head grade, etc.). The result is the best estimate of maximum recovery. Figure 13.3 shows AuFA plotted against AuCN for all data pairs.

A best-fit linear regression shows the AuCN / AuFA ratio is 0.8037:1 (~80% recovery).

The LOM actual leach pad recovery is 74% (including in-process gold inventory through December 2021).

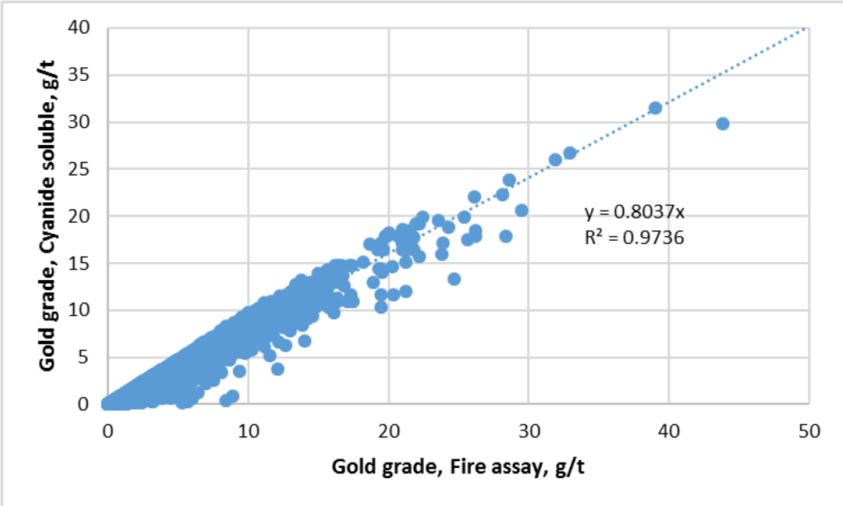
An adjustment factor can be calculated using the chemical maximum AuCN / AuFA recovery and the actual pad recovery:

Actual: 74% / Chemical: 80% = 0.92

Therefore, the estimated recovery from the ROM heap leach can be expressed as:

Heap Leach Recovery = AuCN / AuFA x 0.92

Figure 13.3 Exploration Database (2017) AuCN vs. AuFA – All Data



SSR, 2018

13.4 Summary and Recommendations

Marigold ore types behave metallurgically very similarly based on testwork and operating performance. To predict future gold recovery it is recommended that the following studies and work be undertaken:

- Assessment of the AuCN : AuFA ratio be undertaken regularly using updated exploration and blast hole data.
- Ongoing column and bottle roll metallurgical test on heap leach feed composites to determine maximum possible gold recovery
- Metallurgical testwork on any future ore sources to develop geometallurgical properties and parameters.
- Further studies and assessment of heap leach recoverable Au inventory.

14 MINERAL RESOURCE ESTIMATES

14.1 Introduction

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

SSR has prepared the Mineral Resources estimate for Marigold effective as at 31 December 2021. The Mineral Resources estimate is based on all available data for Marigold as of 31 December 2021.

Mineral Resources are reported exclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration.

14.2 Drillhole Database

The digital drillhole database used for this estimate contains a total of 9,066 drillholes with a total length of 1,865,818 m. (SSR uses geoXpedite, a commercially available geology database management system.)

The drillhole database includes collar coordinates, downhole surveys, assays, rock types and oxidation details in separate tables. The database included all the gold assays from the Assay Programme and all the data from the Valmy property purchased from Newmont. All relevant validation checks were conducted while importing the data into the database. Fire-assay equivalent and cyanide-assay equivalent gold values were calculated, as discussed in Section 12.1, after importing the comma delimited format files into MineSight. Once imported, the database was checked for errors using the validation tools available in MineSight.

14.3 Domains

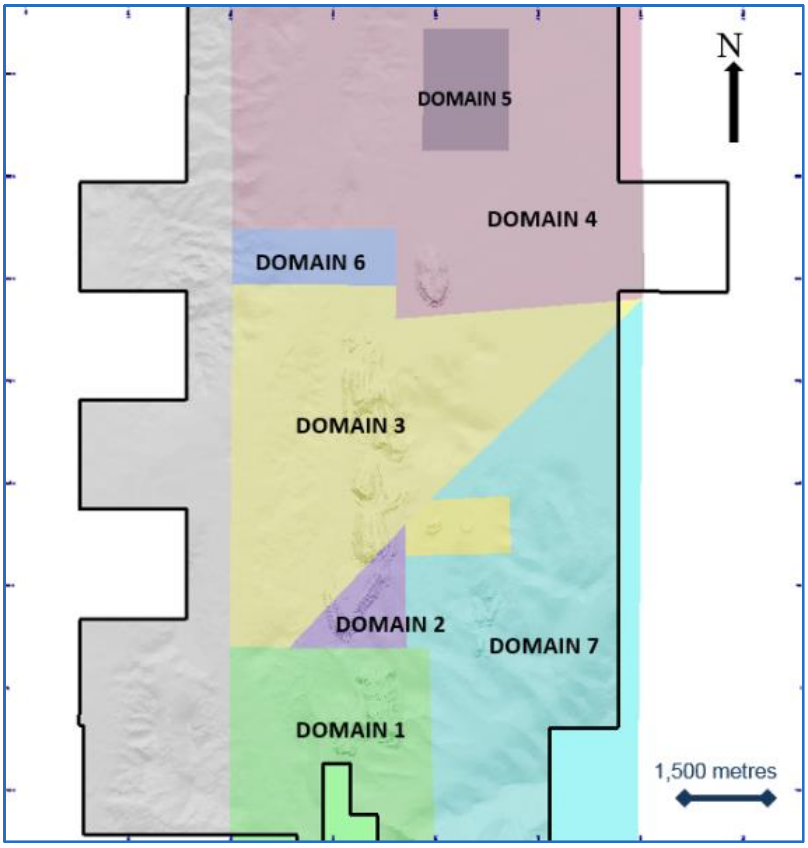
The gold mineralisation at Marigold is closely associated with the intersection of high-angle fault structures and favourable horizons that intersect these structures. Favourable host rocks in the Antler Sequence are the debris flow horizon in the Edna Mountain Formation, the interbedded limestone/sandstone/siltstone and conglomerate in the Antler Peak Formation, and the conglomerate in the Battle Formation. Favourable host rocks in the Valmy Formation are quartzite and interbedded quartzite-argillite.

The Marigold deposit is divided into seven broad domains based on: orientation of the mineralising structures; density of structures; orientation of the mineralised zones; and grade distribution.

Figure 14.1 shows the following seven broad domain areas, which include the following:

- DOMAIN 1 Basalt and Antler pit areas
- DOMAIN 2 Target
- DOMAIN 3 Mackay (HideOut, East Hill, Herco North)
- DOMAIN 4 Mackay North (8Sx, 8S, 8N)
- DOMAIN 5 5N/5NE
- DOMAIN 6 TZN
- DOMAIN 7 Valmy pit

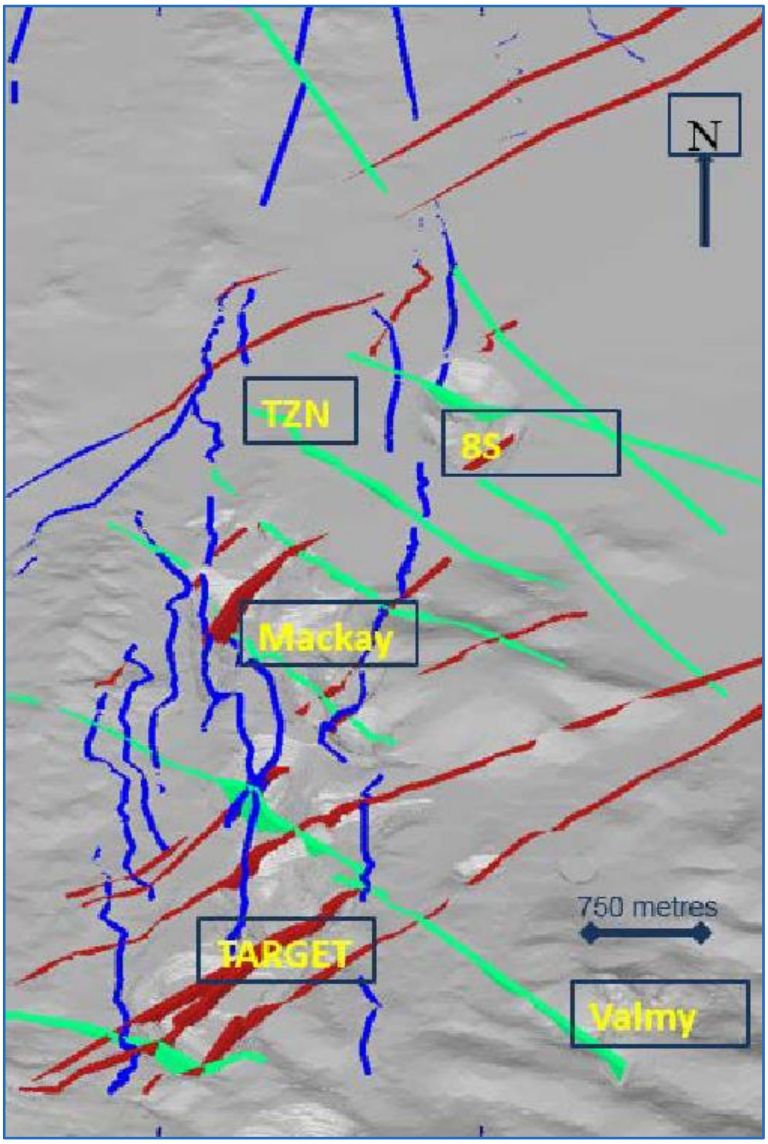
Figure 14.1 Location of the Seven Major Domains over Depleted Topography (as at 31 December 2017)



SSR, 2018

Geological mapping and drillhole data were used to identify the major structural orientations that control the distribution of mineralisation at Marigold. These structural orientations trend north–south, north-east and north-west and are shown on Figure 14.2.

Figure 14.2 Oblique Plan View Showing the Major Structures

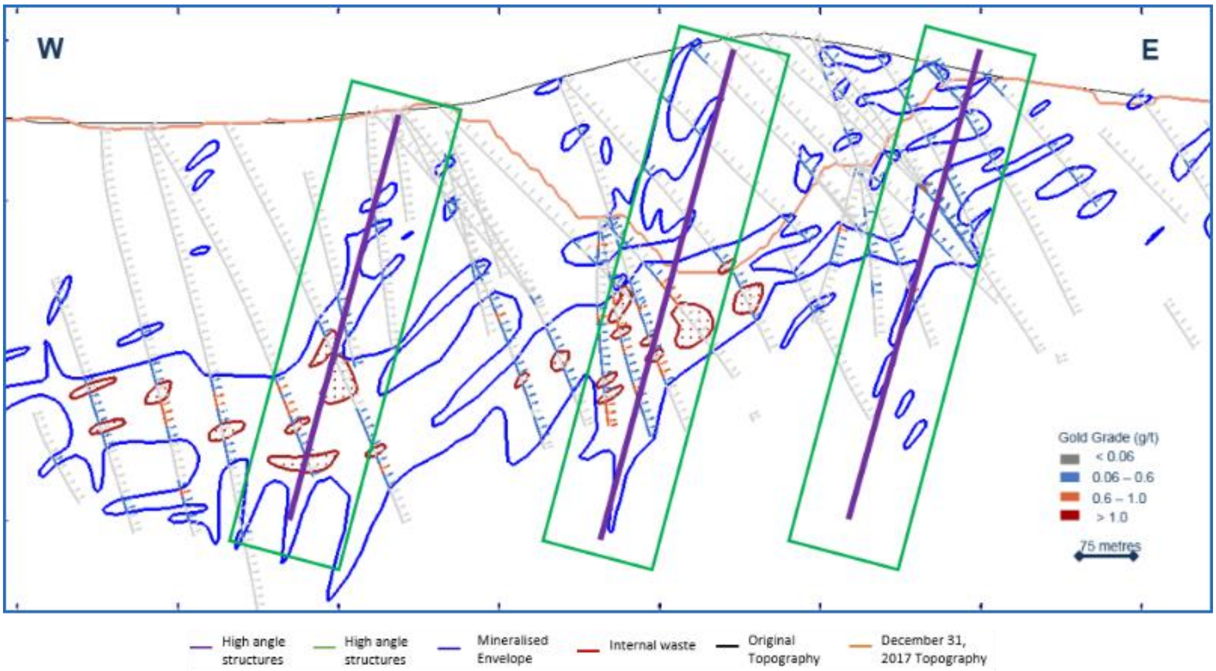


NS (blue), NE (green) and NW (red) with respect to pit locations
SSR, 2018

An envelope of 30 m around the high-angle structures was developed around the interpreted structures to represent the high-angle domains. Figure 14.3 shows a typical cross section with interpreted structures and high-angle domain envelopes.

The first drill intersection of the formational contact and the interpreted structural data were used to generate the bottom surface for Alluvium, the bottom of Havallah Formation, the top of Antler Sequence and the top of the Valmy Formation. The Antler and Valmy Formations are considered two different formational domains for the exploratory data analysis and grade estimation process.

Figure 14.3 Typical East–West Cross-Section along 10,300 N



SSR, 2018

The base of the oxidised and transition zones was interpreted with respect to geological logging and analytical data.

14.4 Geological Interpretation

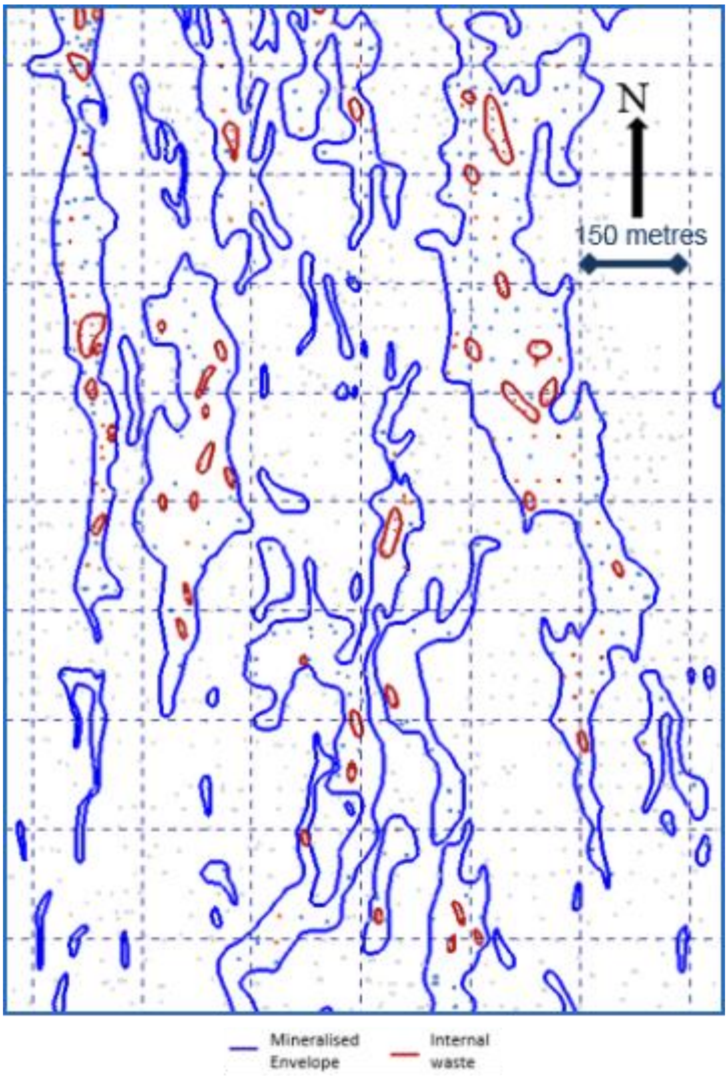
Geological interpretations of structures and rock types were initially conducted on east–west cross sections every 30 m, with select north–south long sections and oblique sections as part of the iterative process.

Mineralised envelopes were delineated using a breakeven cut-off greater than or equal to 0.1 g/t bench (7.6 m) composite gold values in cross sections (east–west) 30 m apart with a clipping of 15 m on either side. Bench composites were used to define the ore zones instead of mineralised drillhole widths because selective mining is not considered an option. The addition of the lower grade gold values from the assay programme expanded the mineralised envelopes. The mineralised envelopes define the ore zones within which the gold grades were estimated. All known and interpreted structures were considered when the mineralised envelopes were generated.

The internal waste was delineated within the mineralised envelopes wherever possible. In the previous estimates, the internal waste envelopes were defined by connecting these intervals between drillholes on sections and into the preceding and succeeding sections. Based on the large positive tonnage reconciliation and grade control information gathered over the previous 3–4 year period, no effort was made to connect these intervals unless there was a continuity on the preceding and succeeding cross sections. The internal waste was defined as small envelopes encompassing composites that were less than 0.1 g/t Au inside the mineralised envelope. A typical cross section is shown in Figure 14.3.

The complex nature of the mineralised envelopes made it impractical to create 3D wireframes. The mineralised and waste envelopes from the cross sections were sliced at 7.6 m bench plans and were used to define the mineralised envelopes on each bench. The mineralised envelopes from the bench plans were reviewed and verified on cross section in an iterative process and any volume discrepancies were corrected on plans and sections. A typical bench plan is shown in Figure 14.4.

Figure 14.4 Typical Bench Plan (level=5,000)



SSR, 2018

14.5 Exploratory Data Analysis

Exploratory data analysis (EDA) was conducted to:

- Understand the gold distribution and recognise any systematic spatial variation of gold grade with respect to major structures and rock units;
- Identify distinctive geologic domains that should be evaluated independently in the resource estimation;
- Identify any data and analytical errors not identified in the data verification process; and
- Improve the quality of the estimation by understanding the classical statistics of the dataset.

The EDA process involved visual inspection of the raw assay data to establish structural and mineralisation trends. Bench composites (7.6 m) were created to match mining selectivity; these composites were reviewed, and those composites within the mineralised envelopes were flagged by domain using the following criteria:

- Location – Basalt and Antler Pits, Target II, Mackay, Mackay North 1, Mackay North 2, 5N/5NE and Valmy pits;
- Formation – Antler, Valmy; and
- Structural domain – high-angle or low-angle domain.

There are 31,971 bench composites flagged within the mineralised envelopes. Table 14.1 provides the basic statistics for gold grades by domain.

Table 14.1 Basic Au g/t Statistics of 7.6 m Bench Composites within the Mineralised Envelopes by Domain

Domain Location	Formation	Structural Domain	Statistic (Au g/t)					
			No. of Samples	Min.	Max.	Mean	Std Dev	CV
Basalt	Antler	Low Angle	1,398	0	5.64	0.4	0.44	1.1097
	Valmy		4,934	0	13.03	0.63	0.94	1.4921
Target II	Antler	Low Angle	550	0	3.22	0.27	0.31	1.1481
		High Angle	978	0	5.72	0.37	0.38	1.0401
	Valmy	Low Angle	1,047	0	3.97	0.29	0.33	1.1221
		High Angle	1,610	0	4.03	0.34	0.35	1.0294
Mackay	Antler	Low Angle	3,716	0	8.85	0.38	0.57	1.5173
		High Angle	1,089	0	9.04	0.48	0.69	1.3854
	Valmy	Low Angle	13,189	0	21.84	0.43	0.71	1.657
		High Angle	9,196	0	15.8	0.45	0.79	1.779
TZN	Antler	Low Angle	157	0.08	0.62	0.19	0.11	0.6079
	Valmy		1,222	0	9.74	0.56	0.85	1.528
Mackay North (8S, 8Sx, 8N)	Antler	Low Angle	2,116	0	86.62	1.04	2.53	2.4393
	Valmy		166	0	1.59	0.31	0.28	0.9284
5N/5NE	Antler	Low Angle	387	0	7.51	0.65	0.94	1.449
	Valmy		23	0.09	0.91	0.24	0.19	0.7753
Valmy	Valmy	Low Angle	2,936	0	7.65	0.45	0.62	1.3895

14.5.1 Outlier Restriction

Bench composites were examined for the presence of local high-grade outliers, which are closely associated with the high-angle structures and favourable rock types. The high-grade outliers were restricted to a certain grade and distance during the grade interpolation process instead of being capped to a specific grade value (see Table 14.2).

Table 14.2 Outlier Restriction Values and Distance for Various Domains

Domain Location	Formation	Structural Domain	Outlier Range (m)	Outlier Au (g/t)
Basalt	Antler	Low Angle	15.2	2.23
	Valmy		22.9	4.11
Target II	Antler	Low Angle	15.2	1.71
		High Angle	15.2	1.37
	Valmy	Low Angle	22.9	2.06
		High Angle	22.9	2.40
Mackay	Antler	Low Angle	15.2	2.75
		High Angle	15.2	2.05
	Valmy	Low Angle	22.9	5.14
		High Angle	22.9	6.20
Mackay North (8S, 8Sx, 8N)	Antler	Low Angle	15.2	8.57
	Valmy		15.2	2.06
5N/5NE	Antler	Low Angle	15.2	3.60
	Valmy		15.2	3.60
TZN	Antler	Low Angle	15.2	3.43
	Valmy		15.2	3.43
Valmy	Valmy	Low Angle	15.2	2.74

14.6 Material Density

There has been no change to the methodology used to assign density to different formations described in the 2014 NI 43-101 Technical Report.

The density used in the cell model at depth (from original topographic surface) for different material is summarised in Table 14.3.

Table 14.3 Summary of Density for Different Material

Material	Depth (m)	Density
Alluvium/Backfill	>0.00	2.10
Havallah	>0.00	2.48
Valmy/Antler	0.0–533	y=2.4076+(0.0001*DEPTH)
Valmy	>533	2.64

14.7 Variograms

Correlograms were used in this estimation of Mineral Resources as a tool to describe the pattern of spatial continuity or strength of the spatial similarity of a variable with separation distance and direction. A correlogram measures the correlation between data values as a function of their separation distance and direction. Correlograms were generated using the domain coded composite data using SAGE2001 software (Isaaks & Co.). Structural information from mapping and interpreted structures from the orientation of gold grades were used as a guide to select the along-strike, across-strike, and along-dip directions.

The correlogram was completed for different domains, and the parameters are shown in Table 14.4.

Table 14.4 Correlogram Parameters Used to Estimate Different Domains

Domain Location	Structural Domain	First Structure			Second Structure			Direction/Dip			Nugget		
		X	Y	Z	X	Y	Z	X	Y	Z	C0	C1	C2
Basalt	Low Angle	77	22	8	90	71	265	261/31	169/3	74/59	0.269	0.47	0.26
Mackay and Target II	High Angle	21	96	11	41	263	176	232/7	322/–2	275/20	0.315	0.44	0.25
	Low Angle	9	15	18	83	290	187	102/–77	348/–5	77/12	0.246	0.54	0.22
Mackay North (8S, 8Sx, 8N) and 5N/5NE	Low Angle	15	112	33	54	235	274	81/76	55/–13	327/6	0.181	0.573	0.246
TZN	Low Angle	47	24	11	93	235	56	292/71	92/18	4/–6	0.279	0.378	0.343
Valmy	Low Angle	27	26	7	169	312	30	70/20	355/15	285/15	0.15	0.55	0.3

14.8 Cell Model and Grade Estimation

The Mineral Resource cell model was created using MineSight v15.80-3. The model extents and the cell sizes are summarised in Table 14.5.

Table 14.5 Cell Model Limits

Item	Minimum*	Maximum*	Extent*	Cell Size* (ft)	Number of Cells
Eastings	–3,000	29,000	32,000	20	1,600
Northings	–8,000	34,000	32,000	25	1,680
Elevation	3,000	8,500	32,000	25	220

* Expressed in Imperial units

The cell dimension was selected based on drillhole spacing; approximately one-third of the drill spacing and cell heights match the future mine bench heights. The model attributes are shown in Table 14.6.

Table 14.6 Model Attributes

Field	Description
TOPO	Percentage of cell below the 31 December 2021 topography
ORE	Ore or waste cells: Ore=1, Waste = 10
ORE%	Percentage of ore within the cell
AUNN	Gold value for NN model
AUKR	Gold value for kriged estimate
AUPAY	Gold value for payable gold grade
CAT	Resource category: Indicated=2, Inferred=3
SDOM1	Low/high-angle structural domain: low angle=2, high angle=5
SDOM2	Low/high-grade domain: low-grade block=2, high-grade block=1
SDOM3	Location: Basalt=1, Target=2, Mackay=3, Hercules=4, 5N/5NE=5
RCODE	Formation/rock unit: Alluvium=1, Havallah=2, Antler=3, Valmy=4, Backfill/dump=6
REDOX	Oxidation state: Oxides=1, Transitional=2, Sulfides=3
TCF	Tonnage conversion factor
ROYL	Royalty
REC	Recovery

The histograms of the composites within the mineralised envelopes for the various domains were generated. These histograms indicated a skewed distribution, with approximately 20% of the bench composites grades for all the domains with a gold grade below 0.1 g/t, indicating internal dilution. The limits of gold mineralisation within the mineralised envelopes are difficult to interpret manually with these lower grade ranges. A probabilistic approach is required to identify the higher grade and lower grade cells to avoid overestimation of tonnages and smearing of higher grades into lower grade cells. The chosen method used indicators that set a value of one to each bench composite that had a gold value greater than or equal to 0.14 g/t Au and a value of zero to composites less than 0.14 g/t Au. The values between zero and one were then estimated into the model cells using ordinary kriging.

The distribution of the indicator estimates (values between zero and one) was compared to the frequency distribution of the nearest neighbour grade model to determine the probability (percentage) that a cell has a grade of 0.14 g/t or higher (high-grade domain). The percentages are different in different domains and show a close continuity to the composites and NN model. The probability thresholds as percentages used in different domains are shown in Table 14.7.

Table 14.7 Probability Percentages for Cells Au>0.14 g/t

Domain	Probability (%)
Basalt	65
Target II	58
Mackay	38
Mackay North 2 (8S, 8Sx, 8N)	64
5N/5NE	60
Mackay North 1 (TZN)	48
Valmy	36

Before the cells were estimated, the cell model was tagged for the following:

- The depleted pre-mining topography as of 31 December 2017 was used to tag the percentage (TOPO) of in-situ material followed by 31 December 2017 surface topography to incorporate all the dumps and backfills;
- The ore and waste envelopes developed on bench plans were used to tag the ore material /internal waste (ORE) and percentage of ore material (ORE%) in each cell;
- The rock type/formation surfaces were used to tag the RCODE variable in the cell model;
- The surface developed for the top of the transitional zone and fresh material was used to tag the REDOX variable in the model;
- The structural domain (SDOM1) was tagged using the high-angle structural envelopes; and
- The grade domain (SDOM2) was tagged using probability percentages.

The composites were back-tagged using the cell model for the different domains and attributes described here.

The cells were then estimated for gold using ordinary kriging in 90 separate calculations.

HideOut and 8Sx mineral centres identified in 2014 and 2015 are located below the historical waste dumps. The material in these dumps was mined during the late 1990s and early 2000s when cut-off grades were higher than the current cut-off grades. While drilling these mineral centres, the samples from these waste dumps were also assayed for gold. A majority of these samples returned gold values higher than our current cut-off grade.

To confirm the grades, a total of 37 sonic drillholes were drilled in 2016. These drillholes confirmed the gold grades in the dumps or mineralised stockpiles. A total of 372 holes drilled between 2010 and 2017 in the waste dumps was considered for this estimation. This stockpile was demarcated using the original and current topography. The samples within these surfaces were selected and bench composited to 7.6 m. The cells were then estimated for gold using inverse distance cubed (ID3) in two separate calculations. The search parameters used to estimate the cells within the stockpile are shown in Table 14.8.

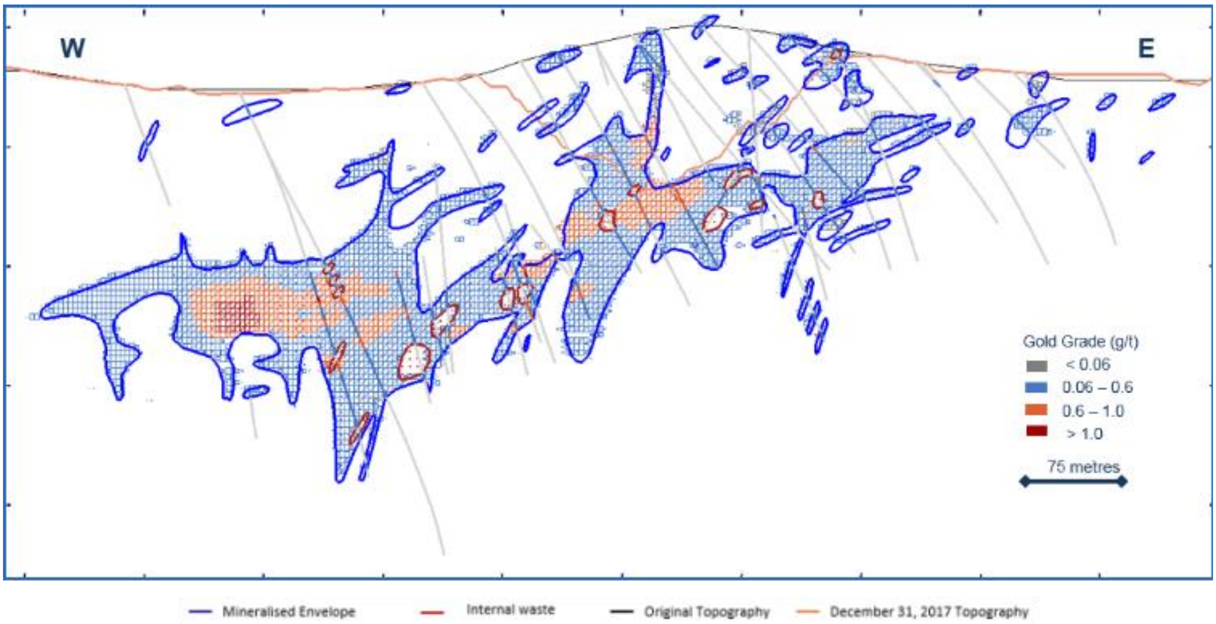
Table 14.8 Estimation Parameters for Mineralised Stockpiles

Domain	Min. No. of Composites	Max. No. of Composites	Outlier Range (m)	Outlier Au (g/t)	Search Ellipsoid Distance and Orientation						
					X Search (m)	Y Search (m)	Z Search (m)	Max. Search (m)	Z Axis	X Axis	Y Axis
Mineralised Stockpile	1	8	12.2	0.342	150	150	15	150	0	0	0
	3	8	12.2	0.342	91	91	15	91	0	0	0

14.9 Model Validation

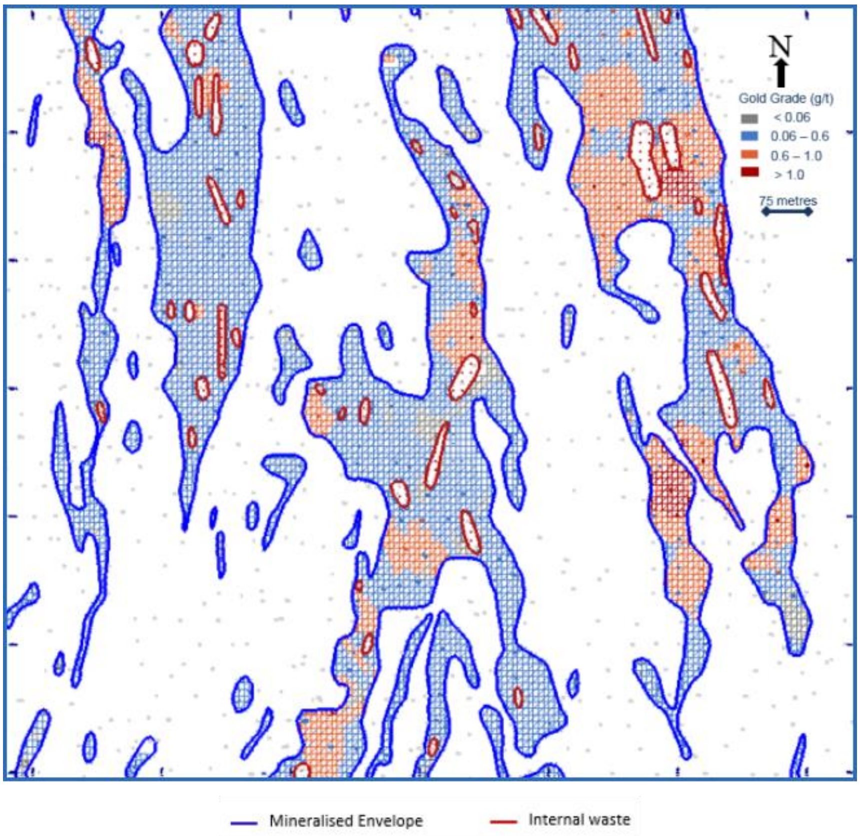
The cell model was validated both visually and statistically. Visual validation compares the composites and the estimated model grades in both plan and section. Plans and sections were also checked for smearing of grades across stacked ore/mineralised zones, and no smearing was identified. This validates the kriging parameters used to estimate the cells. A typical cross-section and plan with estimated grades are shown in Figure 14.5 and Figure 14.6, respectively.

Figure 14.5 Typical East–West Cross-Section along 10,400N looking North, with Estimated Cell Grades Au g/t



SSR, 2018

Figure 14.6 Typical Plan 4,950 Elevation, with Estimated Whole Cell Grades Au g/t

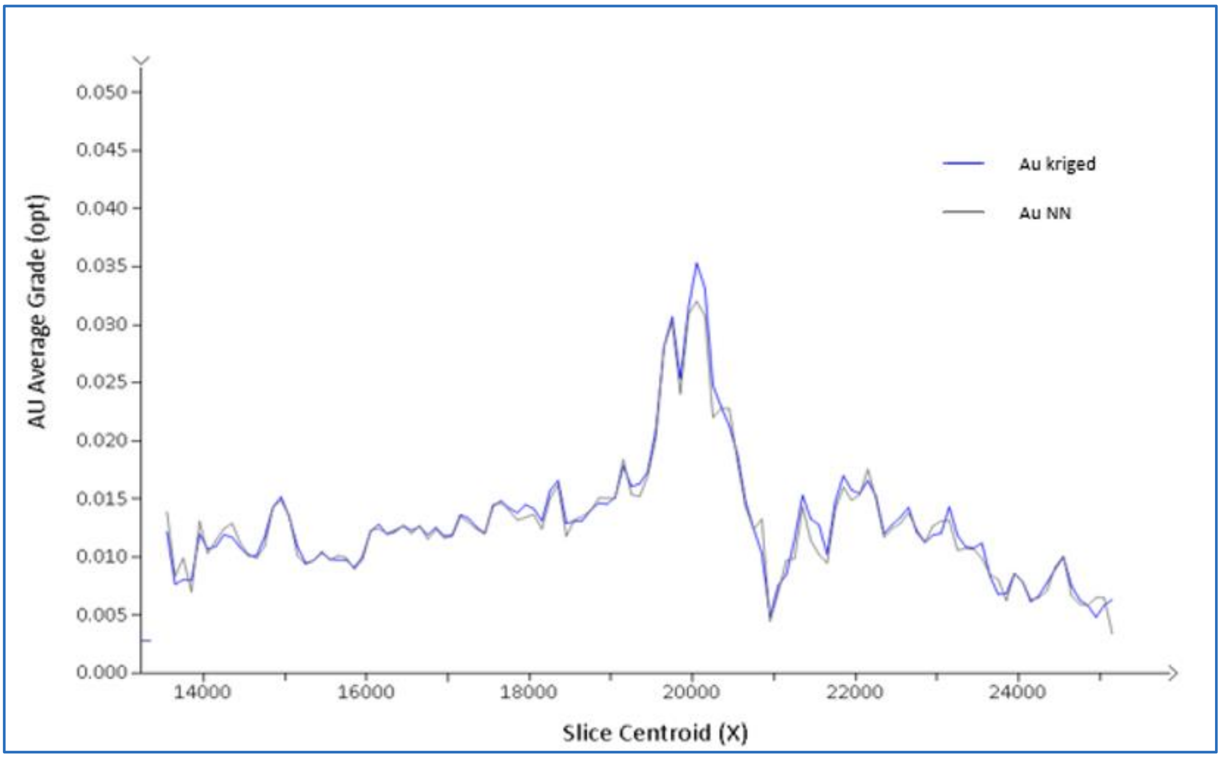


SSR, 2018

Checks for global bias were conducted on a domain basis, and the relative percent differences of the kriged mean gold grades were checked against the nearest neighbour estimates; the difference was less than ±5%.

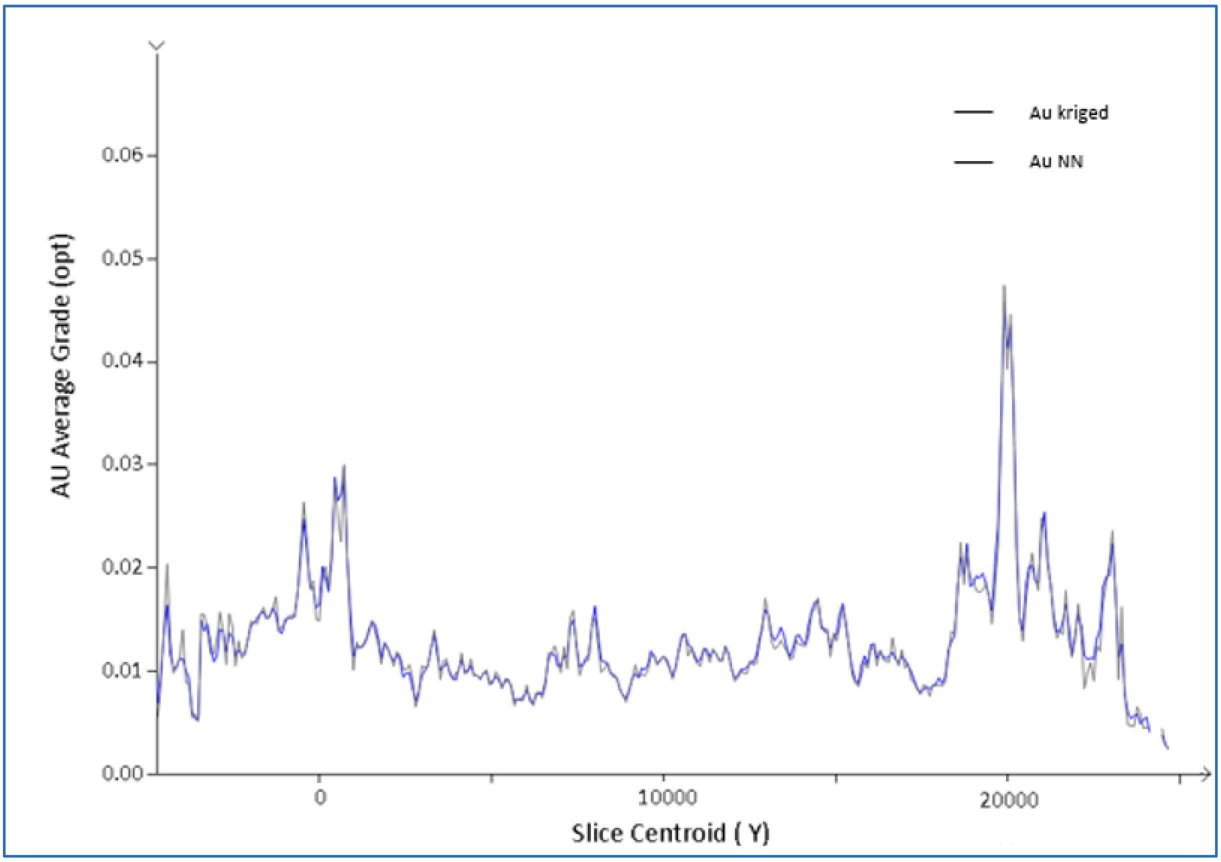
Swath plots were generated to compare the nearest neighbour gold grades and the kriged gold grades. These plots shown on Figure 14.7, Figure 14.8, and Figure 14.9 demonstrate good correlation.

Figure 14.7 Swath Plot Along Eastings



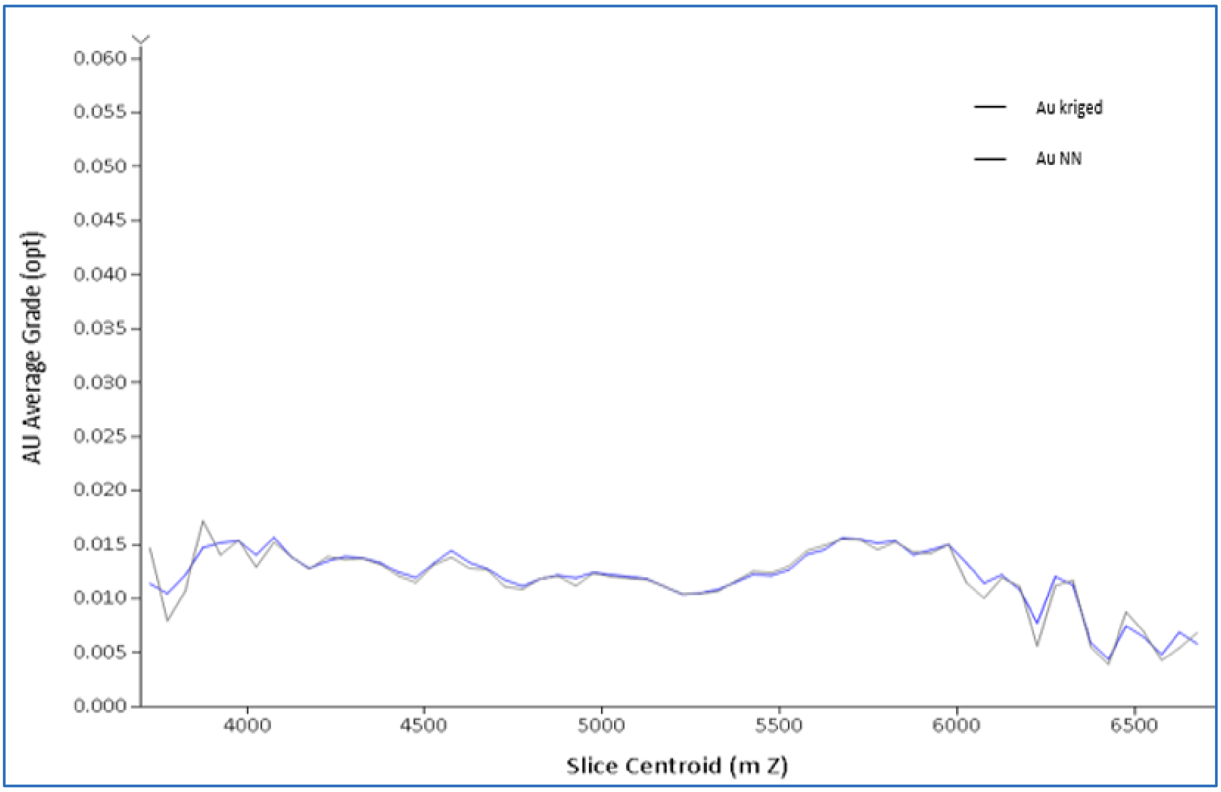
opt = ounces per short ton
Au NN is nearest neighbour estimates; Au Kriged is ordinary kriged estimates
SSR, 2021

Figure 14.8 Swath Plot Along Northings



opt = ounces per short ton
Au NN is nearest neighbour estimates; Au Kriged is ordinary kriged estimates
SSR, 2021

Figure 14.9 Swath Plot Along Elevation



opt = ounces per short ton
Au NN is nearest neighbour estimates; Au Kriged is ordinary kriged estimates
SSR, 2021

14.10 Resource Classification

There has been no change to the Mineral Resource classification methodology that was described in the most-recent NI 43-101 Technical Report on the Marigold Mine (SSRTR18).

The model cells were classified as Inferred or Indicated based on the parameters in Table 14.9. The sample spacing and the nature of the mineralisation do not warrant classification of any resources in the Measured category.

Table 14.9 Resource Classification Parameters

Category	Minimum Composites	Distance to First Composite (m)	Distance to Second Composite (m)
Indicated (CAT=2)	2	36	50
Inferred (CAT=3)	1	78	–

Two resource classification envelopes/polygons were used to classify the Mineral Resources within the mineralised stockpiles. One polygon was digitised based on a distance of 30 m from the exterior composite for Indicated resources and at a distance of 50 m for Inferred Mineral Resources.

14.10.1 Ore Reconciliation

Reconciliation between resource model estimates and mined production is the most effective means of validating a cell model estimate.

Production since the acquisition of Marigold by SSR has been mainly in Mackay Phase 1 and Mackay Phase 3. Mining is currently underway in Mackay Phase 2 and Mackay Phase 5. The reconciliation for these phases is presented in Table 14.10.

Table 14.10 Ore Reconciliation for the Period between 2018 and 2021

Item	Tonnage (Mt)	Gold Grade (g/t)	Contained Gold (Moz)
Actual mined	97.4	0.39	1.22
Resource model	94.5	0.41	1.23
Difference	2.95	–0.02	0.01
% Difference	3%	–4%	–1%

Reconciliation between the Mineral Resources model and the grade control model is reasonable. This demonstrates that the Mineral Resources model is able to adequately predict the tonnages and grades for the previous four-year period and can be used to estimate Mineral Reserves.

14.11 Mineral Resources

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

Mineral Resources for Marigold were calculated based on an optimised pit at a payable gold grade of 0.065 g/t (Au assay factored for recovery, royalty and net proceeds per cell) using an assumed gold price of $1,750/oz.

SSR is unaware of any current environmental, permitting, legal, title, taxation, socio- economic, marketing, political, or other relevant factors that could materially affect the Mineral Resources estimate (exclusive of Mineral Reserves) as at 31 December 2021 presented in Table 14.11 and Table 14.12.

Table 14.11 Summary of Marigold Mineral Resources Estimate Exclusive of Mineral Reserves (as at 31 December 2021) Based on $1,750/oz Gold Price

	Mineral Resources							
	Measured		Indicated		Measured + Indicated		Inferred	
	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)
Marigold	–	–	115.3	0.43	115.3	0.43	21.8	0.36
Total	**–**	**–**	**115.3**	**0.43**	**115.3**	**0.43**	**21.8**	**0.36**

1. The Mineral Resource estimate was prepared in accordance with NI 43-101.
2. The Mineral Resource estimate is based on an optimised pit shell at a cut-off grade of 0.065 g/t payable gold (gold assay factored for recovery, royalty, and net proceeds), with a gold price assumption of $1,750/oz.
3. The Mineral Resources estimate is reported below the as-mined surface as at 31 December 2021 and is exclusive of Mineral Reserves.
4. The point of reference for Mineral Resources is the entry to the carbon columns in the processing facility.
5. Metallurgical recoveries used are, on average, 67% for gold.
6. Mineral Resources are reported exclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. SSR has 100% ownership of the Project.
8. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
9. Totals may vary due to rounding.

Table 14.12 Details of Marigold Mineral Resources Estimate Exclusive of Mineral Reserves (as at 31 December 2021) Based on $1,750/oz Gold Price

Mineral Resources	Tonnage (Mt)	Au Grade (g/t)	Cut-off Grade (Au g/t)	Metallurgical Recovery (%)
Measured	–	–	–	–
Indicated	115.3	0.43	0.065	66%
Measured + Indicated	**115.3**	**0.43**	**0.065**	**66%**
Inferred	21.8	0.36	0.065	75%

1. The Mineral Resource estimate was prepared in accordance with NI 43-101.
2. The Mineral Resource estimate is based on an optimised pit shell at a cut-off grade of 0.065 g/t payable gold (gold assay factored for recovery, royalty, and net proceeds), with a gold price assumption of $1,750/oz.
3. The Mineral Resources estimate is reported below the as-mined surface as at 31 December 2021 and is exclusive of Mineral Reserves.
4. The point of reference for Mineral Resources is the entry to the carbon columns in the processing facility.
5. Metallurgical recoveries used are, on average, 67% for gold.
6. Mineral Resources are reported exclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. SSR has 100% ownership of the Project.
8. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
9. Totals may vary due to rounding.

14.12 Subpart 1300 of US Regulation S–K Mining Property Disclosure Rules

The Mineral Resources reported in the Marigold21TR are suitable for reporting as Mineral Resources using Subpart 1300 of US Regulation S-K Mining Property Disclosure Rules (S-K 1300).

15 MINERAL RESERVE ESTIMATES

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

This section describes the methodology and parameters used to estimate the Mineral Reserves for Marigold. The Mineral Reserves estimate as of 31 December 2021 considers all information used in the Mineral Resources estimate as at 31 December 2021 presented in Section 14.

Lerchs-Grossman pit optimisations were run on the Mineral Resources cell model at a range of gold prices.

The ultimate pits and subsequent phase designs were developed from the $1,350/oz optimisation runs. Inter-ramp angles are 37° in mined fill and range between 47° and 49° in rock. The gold price assumption was based on an internal assessment of recent market prices, long-term forward curve prices, and consensus among analysts regarding price estimates.

Mining costs are based on historical values and budgeted costs that include an incremental haulage component using estimated haul cycle times and pit depths. Processing and general and administrative (G&A) costs were estimated based on historical values and budgeted costs. Estimated sustaining capital costs, royalties, severance taxes, and reclamation costs were also included in the optimisation costs.

The Mineral Reserves estimate for Marigold was calculated using the as-mined surface at 31 December 2021 with the following assumptions and parameters:

- The reserve classification converts Indicated Mineral Resources to Probable Mineral Reserves within the pit design. There is no Measured Resources category in the Mineral Resources model, and Inferred Mineral Resources are not considered ore when calculating the Mineral Reserves;
- The mining recovery is 100% within the pit design;
- The Mineral Resources were not diluted (see Section 14 for reconciliation data). Internal dilution included in the Mineral Resource estimate is considered adequate;
- The Mineral Reserves estimate assumes that mining operations will continue to use the current Marigold mining methods, as described in Section 16; and
- The estimated cut-off grade was 0.0019 oz/st payable Au or 0.065 g/t payable Au (Au assay factored for recovery, royalty and net proceeds).

SSR is unaware of any current environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Reserves estimate as at 31 December 2021.

15.1 Mineral Reserves Estimate

Mineral Reserves have been classified using the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects. The Mineral Reserves estimate is summarised in Table 15.1 and Table 15.2.

Table 15.1 Summary of Marigold Mineral Reserves Estimate (as at 31 December 2021) Based on $1,350/oz Gold Price

Marigold	Mineral Reserves						
	Proven		Probable		Total		
	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Tonnage (Mt)	Au Grade (g/t)	Contained Gold (koz)
In Situ	–	–	203.8	0.48	203.8	0.48	3,173
Leach Pad							237
Total	**–**	**–**	**203.8**	**0.48**	**203.8**	**0.48**	**3,410**

1. The Mineral Reserve estimate was prepared in accordance with NI 43-101.
2. The Mineral Reserve estimate is based on metal price assumptions of $1,350 gold.
3. The Mineral Reserve estimate is reported at a cut-off grade of 0.065 g/t Au.
4. Economic analysis for the Mineral Reserve has been prepared using long-term metal prices of $1,600/oz.
5. No mining dilution is applied to the grade of the Mineral Reserves. Dilution intrinsic to the Mineral Reserves estimate is considered sufficient to represent the mining selectivity considered.
6. The point of reference for Mineral Reserves is the entry to the carbon columns in the processing facility.
7. SSR has 100% ownership of the Project.
8. Metals shown in this table are the contained metals in ore mined and processed.
9. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
10. Totals may vary due to rounding.

Table 15.2 Details of Marigold Mineral Reserves Estimate (as at 31 December 2021) Based on $1,350/oz Gold Price

Mineral Reserve Classification	Tonnage (Mt)	Au Grade (g/t)	Contained Gold (koz)	Cut-off Grade (Au g/t)	Metallurgical Recovery (%)
Proven	–	–	–	–	–
Probable	203.8	0.48	3,173	0.065	74.69
Leach Pad	–	–	237	–	–
Total Proven + Probable	**203.8**	**0.48**	**3,410**	**0.065**	**74.69**

1. The Mineral Reserve estimate was prepared in accordance with NI 43-101.
2. The Mineral Reserve estimate is based on metal price assumptions of $1,350 gold.
3. The Mineral Reserve estimate is reported at a cut-off grade of 0.065 g/t Au.
4. Economic analysis for the Mineral Reserve has been prepared using long-term metal prices of $1,600/oz.
5. No mining dilution is applied to the grade of the Mineral Reserves. Dilution intrinsic to the Mineral Reserves estimate is considered sufficient to represent the mining selectivity considered.
6. The point of reference for Mineral Reserves is the entry to the carbon columns in the processing facility.
7. SSR has 100% ownership of the Project.
8. Metals shown in this table are the contained metals in ore mined and processed.
9. All ounces reported represent troy ounces, and g/t represents grams per metric tonne.
10. Totals may vary due to rounding.

15.2 Cut-off Grade

The estimated cut-off grade for Mineral Reserves was based on a $1,350/oz gold price and current operating costs and metallurgical performance. Factors used to estimate the cut-off grade are outlined in Table 15.3, and include refining charges, royalties, and net proceeds tax.

An average recovery rate of 74.9% was used to estimate the cut-off grade based on the average of model recoveries from the 2019 Strategic Business Plan.

Table 15.3 Key Economic Parameters for Mineral Reserves Estimate

Material Type	Unit	Ore	Rock Waste	Dump
Gold Price (per ounce)	$/oz	1,350		
Oil Price (per barrel)	$/bbl	55		
Mining Cost (per tonne)	$/t	1.991	1.813	1.560
Processing Cost (per ore tonne)	$/t	1.669		
G&A (per ore tonne)	$/t	0.868		
Average Process Recovery (formula)	%	74.9%		
Refining Charge (per ounce)	$/oz	0.79		
Internal Cut-off	g/t	0.065		

15.3 Royalties, Net Proceeds and Excise Tax

NSR royalty payments vary between 0% and 10% of the value of production net of off-site refining costs, which is equal to an annual average range of 3.7% to 10%, as further described in Section 4.

The State of Nevada imposes a yearly tax on the net proceeds of all mining operations conducted within the state, plus a yearly property tax on all fixed and mobile equipment used by the mining operation. The net proceeds tax is based on the income from the sale of all products from the mine minus: the royalties; mine, plant, and administration expenses sourced in the State of Nevada; development expenses paid during the year; prescribed depreciation of tangible assets according to set, pre-defined classifications contained in state regulations; and reclamation expenditures incurred during the year of the tax. A net proceeds tax of 5% was applied to the Mineral Reserves estimation.

In 2021 the State of Nevada enacted Assembly Bill 495, effective 1 July 2021, which is an annual excise tax on gold and silver revenue. Under the bill, the tax rates vary based on the taxpayer's Nevada gross revenue. A 0.75 % rate is imposed on Nevada gross revenue of more than $20 million but not more than $150 million in a taxable year (defined as the calendar year). A rate of 1.10 % applies to Nevada gross revenue exceeding $150 million in any tax year. The LOM average rate is about 0.9%.

15.4 Dilution

No mining dilution was applied to the grade of the cells. Dilution intrinsic to the Mineral Resources model is considered sufficient to represent the stated mining selectivity.

15.5 Mining Recovery

Mining recovery was assumed to be 100% of the Indicated Mineral Resources. Inferred Mineral Resources were assigned as waste.

15.6 Subpart 1300 of US Regulation S–K Mining Property Disclosure Rules

The Mineral Reserves reported in the Marigold21TR are suitable for reporting as Mineral Reserves using Subpart 1300 of US Regulation S-K Mining Property Disclosure Rules (S-K 1300)

16 MINING METHODS

Marigold uses standard open pit mining methods at a LOM sustained mining rate of approximately 250,000 tpd. The mine conducts conventional drilling and blasting activities with a free face trim row blast to ensure stable wall rock conditions. Electronic detonators are used to control the timing of the blasthole detonation.

Drilling and blasting occurs on 15.2 m benches. One grade control sample is taken from each blasthole with the sub-drilling excluded. Mining occurs on 15.2 m benches when prestripping waste or mining ore areas with the P&H electric shovel. 7.6 m benches are mined using the smaller hydraulic shovels to minimise the dilution that would otherwise occur from dozing a 15.2 m high face to these smaller shovels Blasting is done with an ammonium nitrate and fuel oil (ANFO) blend and a sensitised ANFO emulsion. The ore control mark-out procedure includes blast movement analysis for 90% of ore production blasts.

The Marigold geotechnical management plan (GMP) includes highwall monitoring using three radar systems which provide full coverage for the (largest) Mackay pit, or can be deployed in smaller pits, if required. Routine monitoring of waste dumps, leach pads and inactive pits using INSAR data is performed by a third party on a monthly basis.

Loading operations are currently performed using one electric shovel and three hydraulic shovels. Waste and ore haulage is performed with a fleet of 300 t primary haul trucks.

Equipment maintenance is performed on site for all equipment. There are no contract mining operations on site, other than for blasting as detailed in Section 16.7.

16.1 Geotechnical, Hydrological, Pit, and Other Design Parameters

Historically, Marigold pits have been designed with inter-ramp angles (IRAs) at 48° to 50°. The primary rock, a quartzite in the Valmy Formation, dips in a westerly direction at 40° to 70°. The east highwall, which has rock dipping out of the face, is designed at 48° to 50°. The west highwall, which has rock dipping favourably into the face, is designed at 50°. Achieved IRAs range between 48° and 50°. Because many of the interim and final pit walls are within the Valmy Formation, the steeper 50° angle is thought to be achievable for pit designs within the same rock unit (Knight Piésold, 2014). Call & Nicholas, Inc. (CNI) consultants perform an annual audit of activities and provide guidance if any issues arise with slope stability. A 2019 CNI Slope Stability Study of the Red Dot design based on the results of a 2018 geotechnical core drilling program recommended flattening the slope of the west wall of Red Dot to 47° to 49° and the east wall to 45°. The results of this study were used to inform the ultimate pit design for Mackay / Red Dot pit.

The Marigold geotechnical management plan (GMP) was implemented in 2011. The GMP is continually updated with information as mining progresses.

In 2012, a robotic highwall monitoring station was installed at a primary mining location to survey prisms placed strategically on highwall catch benches. The survey instrument was replaced with a highwall radar monitoring system in 2015, and a second system was added in 2017 and a third system in 2019. These allow for 360° monitoring of highwalls in the Mackay pit or multiple areas within other pits. These three radars provide coverage 24 hours per day. Threshold values with respect to movement are programmed into the system. If these values are exceeded, notifications are sent across the wireless network to the dispatch control centre and to the geotechnical team. If the movement is significant, the notifications are sent to senior management.

Mining below the regional water table commenced in 2020 using a combination of in-pit sumps and emulsion blasting, These short-term solutions were adopted, pending the completion of permitting and construction of primary dewatering facilities. The Mackay 2019 EIS approved dewatering to allow mining below the water table. The mine dewatering plan is discussed in Section 14.

Haul road and ramp widths are designed for two-way traffic that accommodates 300 t class haul trucks. The total road width, including berms and ditches, is 36.4 m. The roads follow topography external to the pit and do not exceed a 10% grade. Ramps inside the pits are also designed at a 10% maximum grade.

Waste dumps are placed in lifts of 15.2–45.5 m high, with benches left on the outside edges for a final 3:1 slope pushdown. There have been no waste dump stability issues on the Property.

The leach pad is similarly built with lifts of 6.1 m to 12.2 m high, with benches left on outside edges for a final 3:1 slope pushdown. The leach pad is permitted to a 121.2 m height above the plastic liner at the base. As each new leach pad cell is designed and permitted, a geotechnical analysis is completed. There have been no leach pad stability issues on the Property.

16.1.1 Open Pit Geotechnical Reports Review

A review of previous geotechnical studies was conducted in 2021 to confirm that studies completed to date are appropriate and to identify any gaps or areas of residual concern, (PSM, 2021).

The following reports for Marigold were provided and form the basis of the review:

- 2018 – NI 43-101 Technical Report on the Marigold Mine (31 July 2018) (SSRTR18)
- 2019 – CNI Slope Stability Study of the Red Dot design
- 2021 - CNI site visit recommendations
- 2021 - CNI analysis of soil slopes
- 2021 - Piteau Associates (Piteau) Mackay pit dewatering system design

The available reporting does not represent all the data that may be available, particularly in view that mining has been ongoing since 1988. Moreover, the 2018 NI 43-101 Technical Report on the Marigold Mine (SSRTR18) indicates Knight Piésold involvement in 2014 and with CNI involvement since 2015.

16.1.1.1 Overview of Geotechnical Report Review

Below is a summary of comments that represent perceived gaps in the geotechnical reporting for the Marigold open pit:

- The CNI stability analyses of the overall slopes are considered to have an element of conservatism owing to approach in assigning rock mass strengths and utilising a linear Mohr-Coulomb strength envelope. With use of Hoek & Brown strengths, higher FOS for overall slopes could be anticipated in some areas.
- Further consideration of the potential impact of faults on large scale pit wall stability is recommended. The stability assessments do not address the potential impact:
  - On western pit walls of thrust faults dipping moderately to the east.
  - Potential wedges between faults parallel to the primary bedding fabric.
  - Faults dipping steeply to the east which can form shallow wedges plunging to the south and which may impact the north wall once below the water table, where pore pressures may influence wedge stability.
- The CNI batter face angle and berm width designs, without appropriate consideration of blasting are not considered sound. Such designs, with proposed batter face angles nominally 10° steeper than typically achieved would potentially allow loose material to fall whilst faces are being dug and also result in berms being filled with rill. It may be more effective to dig batters to nominally 63° and have berm widths closer to design or presplitting to achieve BFA's above 70° where steeper inter-ramp slope angles can be considered (south and west walls) and which could also consider double benching.

There are limited concerns with waste dump and leach pads as these are developed with 3H:1V (~18°) overall angles and neither have presented stability issues on the property.

16.1.2 Pit Optimisations and Designs

Pit optimisations and subsequent pit designs were completed by Marigold personnel in 2020 using the current Mineral Resources estimate.

Optimisations used the Lerchs-Grossman algorithm. MMC developed operating mining costs for the existing mining fleet during the pit optimisation process. The mining cost for the pit shells was based on the total mining net of haulage mining costs, which are presented in Table 15.3, in addition to ore and waste haulage costs that were incorporated into the cell model.

The ROM leach recovery model, as developed by MMC, was also incorporated into the Mineral Resources cell model. To facilitate the calculations and the Mineral Resources tabulations, variables were incorporated into the model for recovered gold [gold x recovery] and payable gold [gold x recovery x (1–royalty)]. Payable gold cut-off grades were established at 0.065 g/t Au and 0.104 g/t Au, respectively, for incremental cut-off and breakeven cut-off. Incremental cut-off is based on pit rim routing, so the only mining cost change is the increment between the ore and waste mining costs. Breakeven cut-off includes the ore mining cost.

The mining and processing costs for the evaluation include sustaining capital costs. The mining costs also include the Marigold analytical laboratory because most of the on-site lab work involves assaying production blastholes for ore control. The processing costs also include sustaining capital and the full site reclamation costs.

Overall slope angles used in the optimisation are presented in Table 16.1.

Table 16.1 Overall Slope Angles by Azimuth

Pit	Slope Angle (Degrees)
All Pits in Reserves	47.0-49.0
East Wall Mackay	45.0
Fill Material	35.0

Twelve Lerchs-Grossman pit optimisations were run at gold prices from $800/oz to $1,500/oz: $100/oz increments from $800/oz to $1,000/oz; $50/oz increments from $1,000/oz to $1,400/oz; and $100/oz increments from $1,400/oz to $1,500/oz.

The $1,350/oz gold price cone was selected as a guide to develop the ultimate pit and subsequent pit phase designs.

Geotechnical review recommendations provided by Knight Piésold (2014) and confirmed by CNI on pit slope geometry were incorporated into the pit designs. Berm/catch bench widths range from 7.2–8.2 m in rock and from 7.2–15.4 m in fill and are designed for every 15.1 m bench height.

16.2 Pit Phases and Timing

The pit optimisation for the LOM plan used a Lerchs-Grossman algorithm with an internal recoverable gold value of 0.065 g/t. The optimised pit was built into an ultimate pit design that includes access and takes into account geotechnical considerations for designed highwall angles.

The overall design has three distinct areas: the main Mackay pit, the North Mackay pits, and the Valmy area pits. Figure 16.1 shows the ultimate pit configurations, including current backfill.

The Mackay ultimate pit is an expansion, consolidation, and deepening below the water table of four existing pits into a single pit of approximately 4.6 km long, 1.8 km wide, and 430 m deep. It contains more than 60% of the mineral reserve tonnage. For sequencing purposes, the ultimate pits are designed into 15 logical development stages.

Tonnages for each mining phase are shown in Table 16.2.

Table 16.2 Mining Phase Design Summary

Phase Name	Ore (kt)	Waste (kt)	Strip Ratio
5N2	3,051	11,030	3.62
8SExt	16,539	61,224	3.70
EB	10,236	59,764	5.84
H1	2,344	24,507	10.46
M4P1	3,229	3,147	0.97
M4P2	35,232	72,496	2.06
M5	779	427	0.55
M7	11,113	35,475	3.19
M9	15,374	40,677	2.65
Mud1	1,311	6,293	4.80
Mud2	958	4,652	4.85
RD	72,386	259,298	3.58
TZ	18,026	98,890	5.49
VS	9,216	39,649	4.30
VN	4,757	10,531	2.21
Total	**204,550**	**728,061**	**3.56**

*Differences between the Mineral Reserve and LOM quantities used in the economic analysis are due to differences between planned and actual 31 December 2021 face positions
* Totals may not match due to rounding

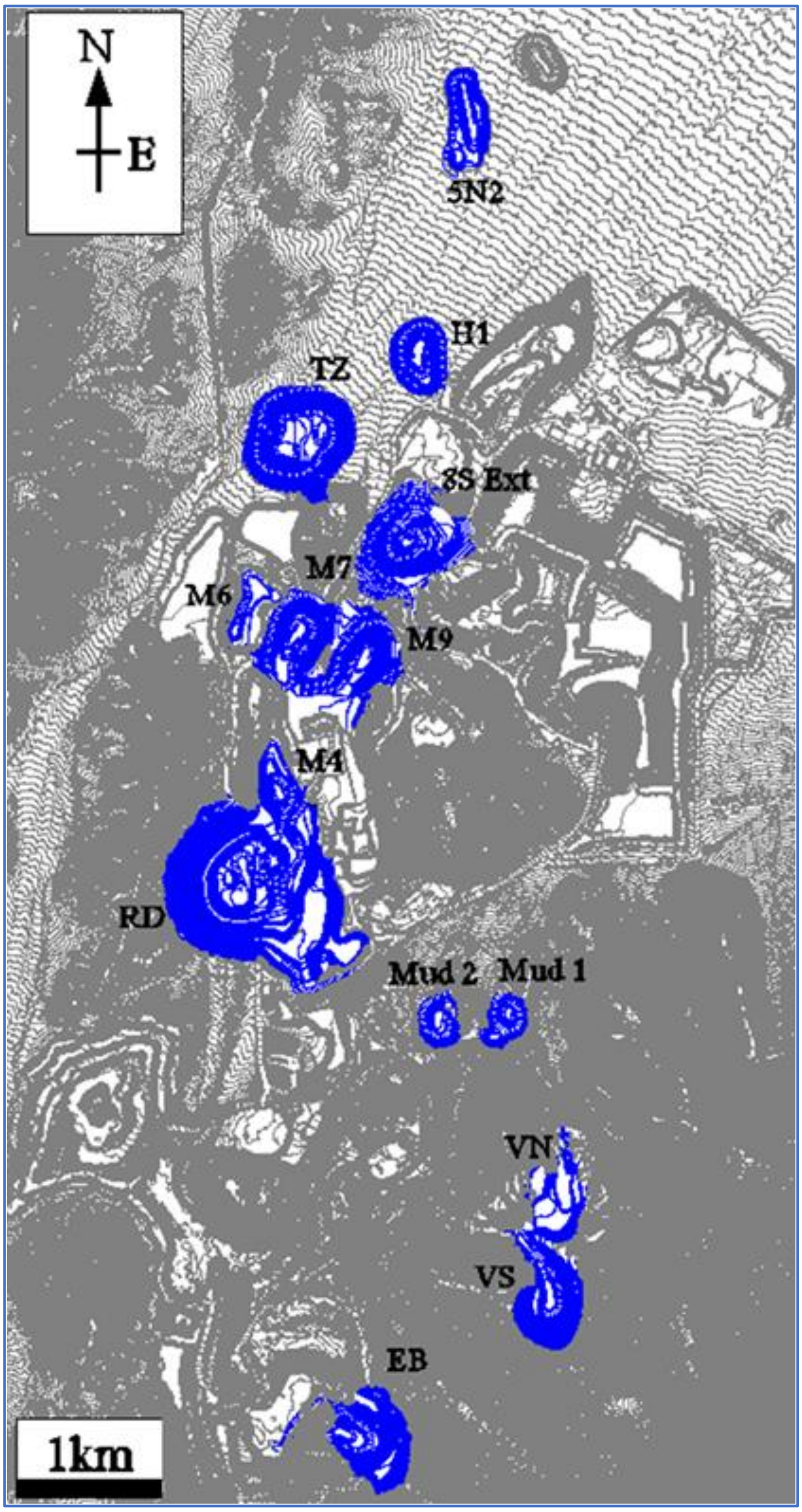
16.3 Production Rates, Mine Life, Dimensions and Dilution Factors

Mining is scheduled 24 hours per day, 363 days per year on a rotation of two 12-hour shifts. The current mine plan provides 17 years of operational life, including 11 years of active mining followed by 6 years of processing the heap leach pad.

In order to meet near-term LOM production rates, the existing shovel fleet of four units will be maintained by deferring retirement of the smaller EX5500 hydraulic shovel to 2023. The haul fleet averages 25 x 300 t class units and will peak at 28 trucks. Short term variations in mine fleet requirements are managed by delaying retirement of older units when they are scheduled to be replaced. The average sustained mining rate is 90.4 Mtpa over the first 10 years of the remaining 11 year mining life while ore delivery to the ROM leach pad is at an average annual rate of 19.7 Mt. Average payable gold production over the 10 years of full production is approximately 222,000 ounces per year. In general, ore will be mined on 15.2 m benches.

The mineralised zones are structurally controlled and strike in a generally northern direction. They vary in width throughout the Property from one metre or less up to 40 m long and 49 m wide. In the LOM model, there is no dilution or mining loss added to the Mineral Reserves for planning and scheduling.

Figure 16.1 Marigold Ultimate Pit (end of year 2032)



SSR, 2021

16.4 Stripping Requirements

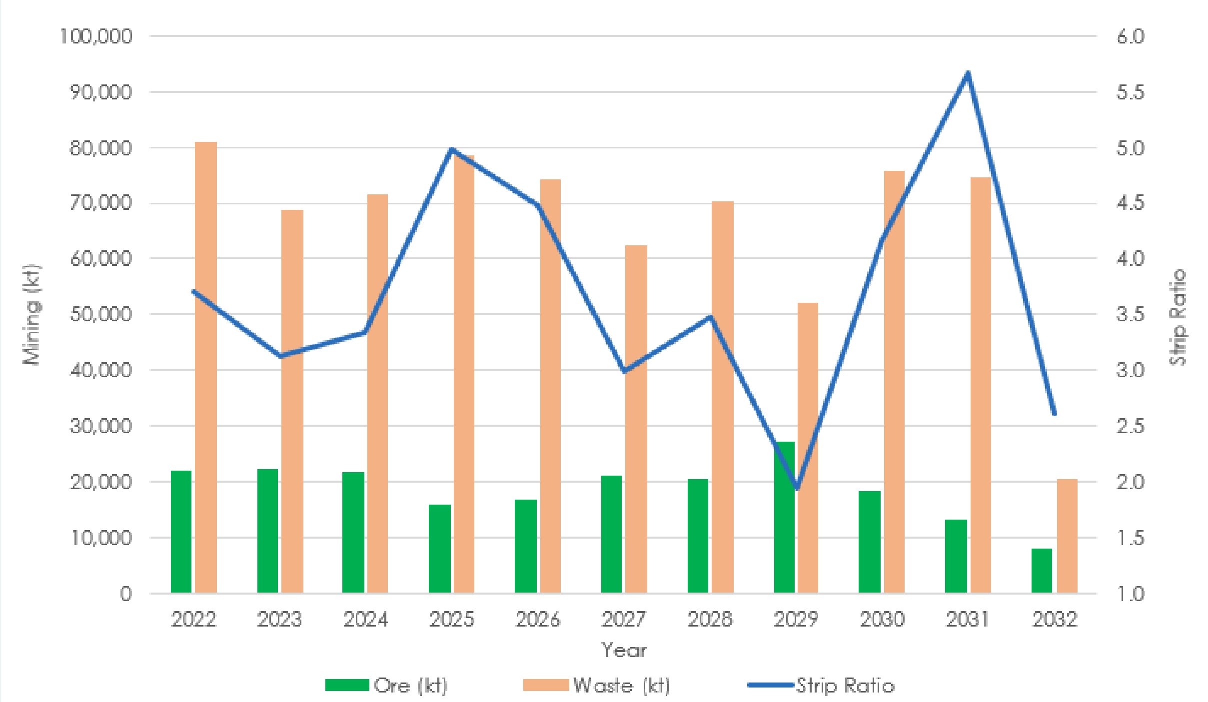
The LOM strip ratio is 3.6:1. Stripping requirements are consistent over the life of the main Mackay pit area at an average strip ratio of 3.3:1. The stripping requirements for the other two areas, Mackay North and Valmy, are planned to be above the LOM average at 6.6:1 and 4.6:1, respectively. Table 16.3 and Figure 16.2 show the annual production schedule for the LOM, including ore tonnes mined, waste tonnes mined, and strip ratio.

Table 16.3 Annual Production Schedule Tonnes Mined

Year	Ore (kt)	Waste (kt)	Strip Ratio
2022	21,818	80,800	3.70
2023	22,010	68,638	3.12
2024	21,411	71,419	3.34
2025	15,713	78,276	4.98
2026	16,538	74,096	4.48
2027	20,857	62,370	2.99
2028	20,207	70,152	3.47
2029	26,912	52,024	1.93
2030	18,189	75,674	4.16
2031	13,103	74,301	5.67
2032	7,792	20,313	2.61
Total	**204,550**	**728,061**	**3.56**

*Differences between the Mineral Reserve and LOM quantities used in the economic analysis are due to differences between planned and actual 31 December 2021 face positions
* Totals may not match due to rounding

Figure 16.2 Mine Annual Production Schedule



SSR, 2021

16.5 Required Mining Fleet and Machinery

The equipment list for the Marigold mining fleet is presented in Table 16.4. Capital replacement of mining equipment is scheduled throughout the LOM plan as sustaining capital when a piece of equipment reaches the end of its useful life and cannot be repaired or rebuilt economically. Sustaining capital is not planned within the last five years of the LOM plan because it is assumed that equipment life can be stretched out and replacements are difficult to justify near the end of the Property life. The sustaining capital replacement costs are included in the reserve optimisation calculation costs. Capital costs are discussed in Section 21. As of the date of the Marigold21TR, MMC does not employ contract mining services, except with respect to blasting, as discussed in Section 16.7.

Table 16.4 Marigold Mining Fleet Equipment List

Number of Pieces	Equipment Name and Class
1	P&H 4100 XPC electric shovel
2	Komatsu PC7000 hydraulic shovels
1	Hitachi EX5500 hydraulic shovel
1	Caterpillar 992 wheel loader
8	Hitachi EH5000 300 t haul trucks
17	Komatsu 930E 300 t haul trucks
1	Caterpillar 789B haul truck
3	Caterpillar 789B water trucks
3	Ingersoll Rand DML drills
3	Atlas Copco PV271 drills
4	Caterpillar 834 and 854 wheel dozers
6	Caterpillar D10 and D11 track dozers
3	Caterpillar 16H and 16M motor graders
3	Lube / fuel trucks
1	Caterpillar 637 scraper
1	Caterpillar 789 Lowboy heavy hauler

16.6 Ore Control Drilling and Method

Blasthole sampling is used to define ore zones. A grade control sample is taken every 15.2 m of drilling. The sample is manually collected from a cross-section of the cone of drill cuttings. The procedure includes removal of the sub drill material. Ore Control personnel periodically audit the performance of the blast hole samplers and provide feedback on compliance to standard. Benches are mined 15.2 m with an electric or hydraulic shovel in stripping and bulk ore mining areas.

If ore is encountered in the stripping areas on the 15.2 m benches, it is mined at that bench height to maintain pit productivity. A dilution factor is added to the monthly survey using a 1.0 m rind around ore shapes at the calculated grade for the shape. This is added to the surveyed tonnage for the bench and reported as ore mined during the month.

Each blasthole sample is analysed for gold at the on-site laboratory facility. A cold cyanide digestion is performed on each sample to determine the quantity of cyanide soluble gold contained in the sample. Due to the non-destructive analysis method of the cold cyanide leach, it generally does not measure the total amount of gold in a sample. At Marigold, about one in every five blasthole samples containing 0.10 g/t (historically, 0.003 oz/st) cyanide soluble gold is assayed for total gold content using FA with a gravimetric finish. Samples from each ore polygon delineated by ore control are selected for fire assay based on the grade distribution for the polygon tonnage and targeting one sample per every 2,000 short tons of ore. The FA results (Au g/t) from the blastholes and exploration drillholes in the pit area, and cyanide soluble assay results (Au g/t) are used to determine a fire-assay-to-cyanide-soluble ratio for the pit area. This ratio is applied to all remaining cyanide soluble assays in the blast to calculate a total gold value contained in each blasthole.

FA grades associated with each blasthole are entered into the grade control (blasthole) model. The blast pattern is then converted to a blasthole cell model with cell sizes of 3.05 m x 3.05 m x 7.6 m. The blasthole data is kriged using ordinary kriging in two dimensions on the bench. If there is sufficient volume above the cut-off grade to make a mineable shape of ore, this is blocked out and surveyed in the pit (indicated by ore flags for mining) to be sent to the leach pad for processing.

16.7 Drilling and Blasting

Blasthole drilling is performed with three Atlas Copco PV271 rigs that drill with both rotary and hammer drill bits as well as three Ingersoll Rand DML rigs that drill with hammer bits. The rigs drill 22.2 cm diameter blastholes. The PV271 rigs can drill to 16.8 m in a single pass. The DML rigs can drill to 10.4 m in a single pass.

The normal explosive is a heavy ANFO (blend of ANFO and emulsion) which is placed by a combination of both contractor and Marigold employees. An emulsion product is also used for wet holes to manage groundwater in the winter and fall and help break up the rock in areas of the pit that are more difficult to dig.

The blast patterns are adjusted for rock conditions. Typically, the patterns are 7.3 m x 6.4 m for the 15.2 m benches. To help break the toe of the bench, 1.5 m of sub drilling is added to each hole. The ore host rock generally breaks easily with blasting, and this provides a good ROM leach feed to the pad. Electronic detonators are used to control the timing of the blasthole detonation. The typical fragmentation is P_{80} of 20.3 cm.

A trim blast is performed around the limits of the mining on final highwall configurations. This is a four-row pattern that is shot to a free face to minimise blast damage and vibration into the highwalls. Historically, a presplit blasting pattern has been used on final highwalls to ensure good wall conditions and minimise the potential for a wall failure. A new crest and catch bench are formed every 15.2 vertical metres of mining that ranges from 6.7–9.1 m depending on the highwall angle.

16.8 Loading Operations

Loading operations are performed with one electric Komatsu 4100 XPC rope shovel with a 52.8 m^3 dipper, two diesel hydraulic Komatsu PC7000 hydraulic shovels, and one diesel hydraulic Hitachi EX5500 shovel. Double-sided loading is typically used where there is adequate working room. Digging faces are defined by ore control and are marked in the field with flags and on maps that are provided to the operators. All loading units are equipped with a high-precision digging screen that is a component of the Modular Dispatch system. The screen, located in the operator's cab, updates in real time to show the location and grade of the ore material being mined. Dig boundaries are typically adjusted to allow for movement associated with blasting.

16.9 Hauling Operations

Excavated rock is loaded into haul trucks and sent to either a waste dump or a leach heap based on the average gold grade of the material. Waste rock is hauled to the multiple waste stockpile locations or to previously mined-out areas for backfilling pits. Pit backfilling, where not mandated by permit to eliminate pit lakes in certain satellite pits, has positive impacts at Marigold: it reduces costs associated with haulage distance and helps address the lack of dump space due to permitting restrictions and current land position. Backfilling plans are reviewed and adjusted to minimise the potential for sterilising future mineralisation. Minimising the waste haulage distance to the nearest facility improves mining productivity and minimises haulage costs. Ore is hauled to the leach pad facility and stacked in lifts for processing. Pit and dump progression stages at the end of each of each year of the LOM plan are presented in Figure 16.3 to Figure 16.13.

Marigold has a mixed fleet of Hitachi and Komatsu 300 t class haulage trucks for ore and waste haulage.

A Modular Dispatch system is used to optimise fleet management. Trucks are sent haulage assignments according to priorities set for the loading units and which loading unit requires a truck at that time.

Annually, from December to February, there is snow, fog, and freezing temperatures at the Property. However, there is a minimal amount of haulage downtime due to the weather in most years.

16.10 Mine Support

Mine support functions are performed using different quantities and types of equipment. These include water trucks, dozers and graders as well as other non-operated ancillary equipment such as the radar highwall monitoring units. Mine support functions include ripping leach pads after a panel is completed, monitoring slope stability, maintaining roads and access points, and developing exploration drill pads. This work is completed with a fleet of Caterpillar D8, D10 and D11 class track dozers and Caterpillar 18, 16H and 16M motor graders.

Current mine support fleet numbers are included in Table 16.4.

16.11 Mine Maintenance

Mine maintenance is an integral function of the mining operations and relates to the day-to-day upkeep of the mining equipment. Activities such as preventive maintenance, equipment rebuilds and fixing equipment on breakdowns are all included in the mine maintenance function. The objective is to provide efficient maintenance of the mining fleet, thereby increasing reliability and availability of this equipment through effective strategies, planning and continuous improvement. High levels of equipment availability and reliability facilitate operational and delivery performance, resulting in asset intensity reduction, and reduced direct operational and maintenance costs.

16.12 Mine General and Administration

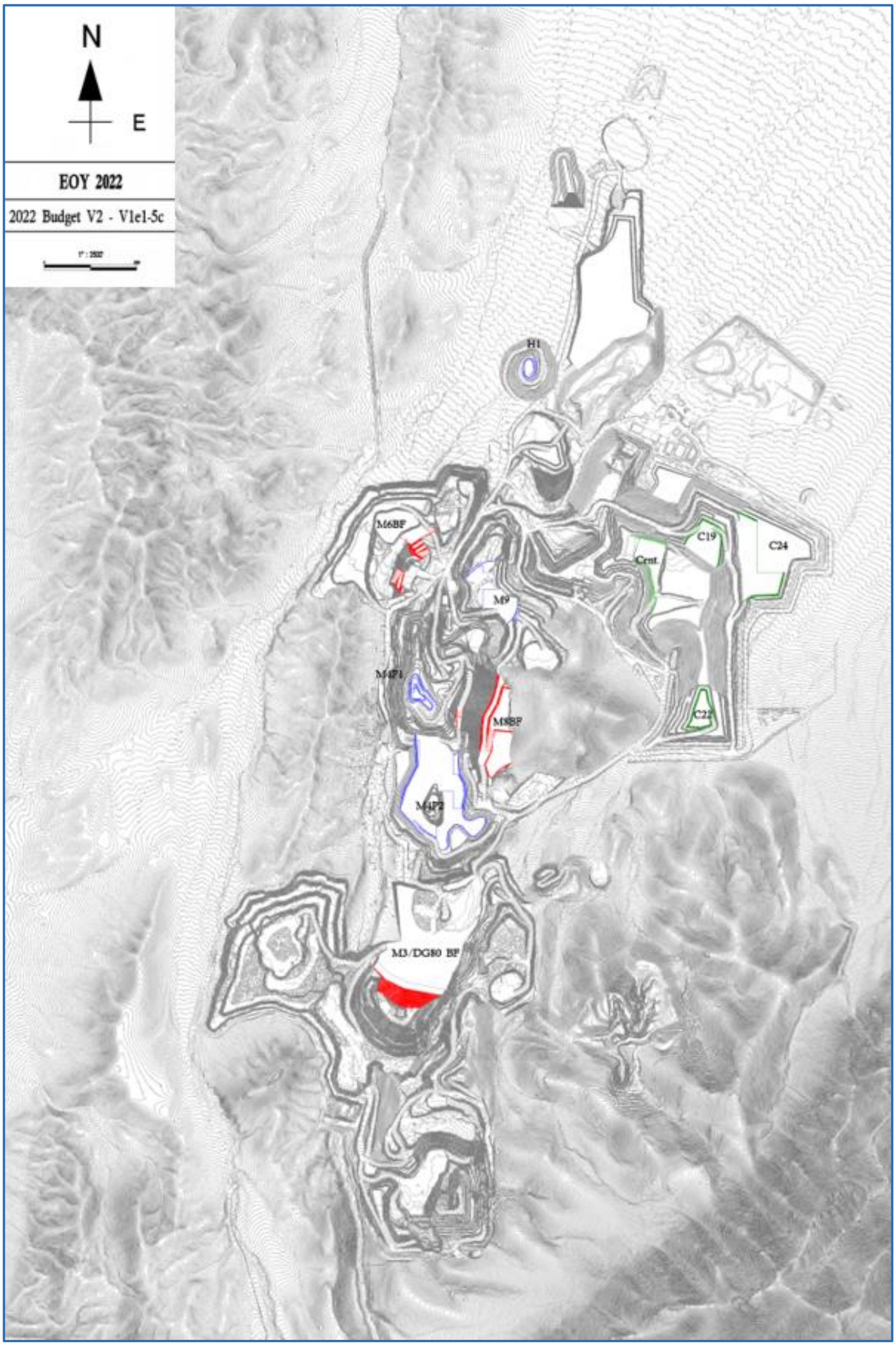
Mine G&A refers to all day-to-day supervision and engineering support of mining operation activity. Expenses included in the mine G&A are mine salary labour charges and fringe benefits, mine office supplies, safety supplies, equipment rentals and leases, light-vehicle tires, miscellaneous contract services, travel expenses, training, and tax and freight charges.

16.13 Mine Safety

Marigold has one mine rescue and emergency response team which is trained to competently assess accident conditions and fight fires. There is one ambulance and one small fire truck available on site and a rescue trailer that is used in emergencies. The Property is set up with hydrants and appropriate connectors, hoses, and wrenches at strategic locations. For mobile equipment fires, the Property is set up with large water trucks equipped with water cannons.

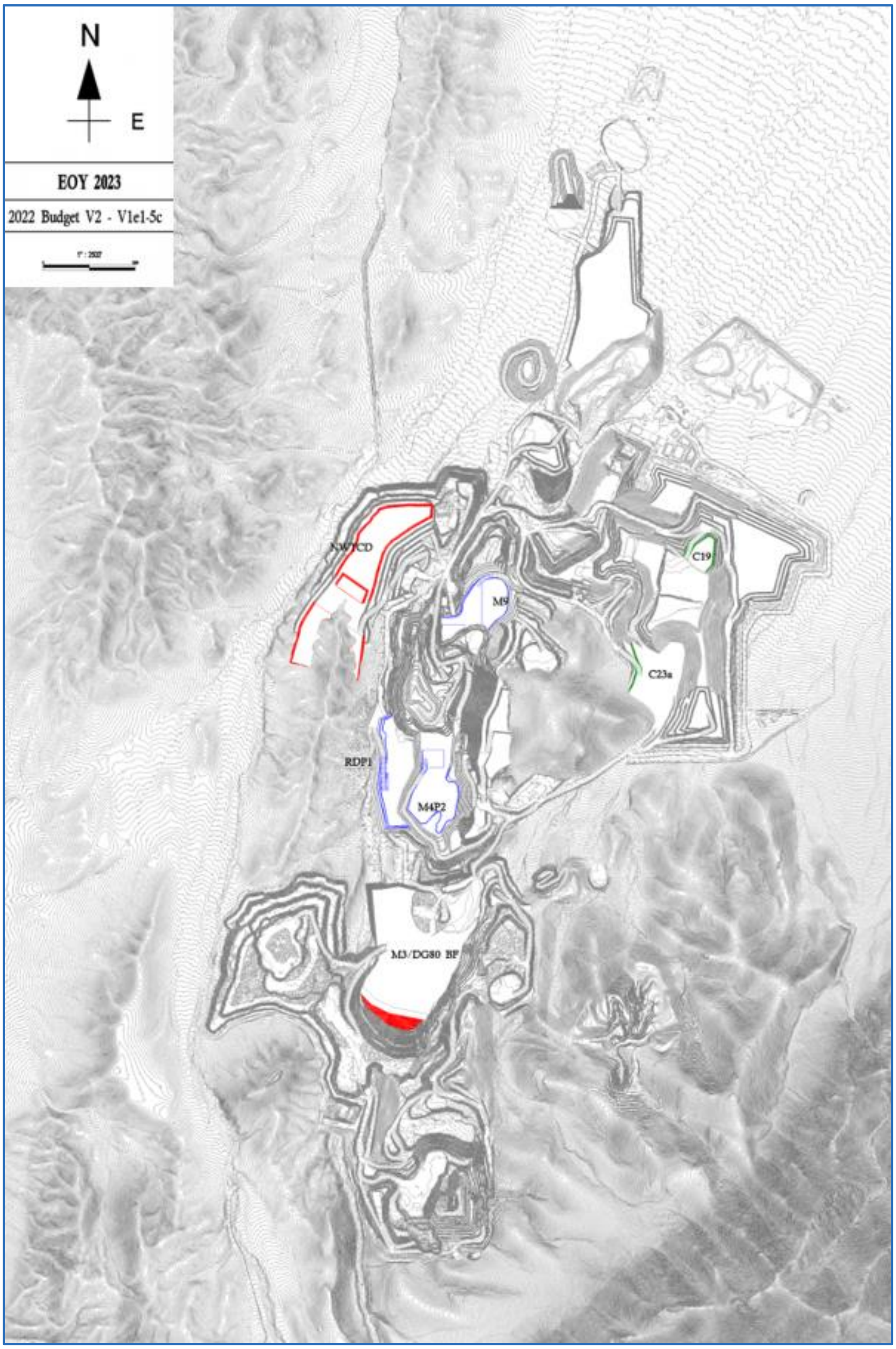
Marigold also has access to and can call either the Valmy Fire Department (5 km away) or Battle Mountain Fire Department (24 km away), when required. There is a monthly training session for the Marigold rescue team to ensure effective participation in any recovery operations in the event of a mine incident.

Figure 16.3 End of Production Plan – Year 2022



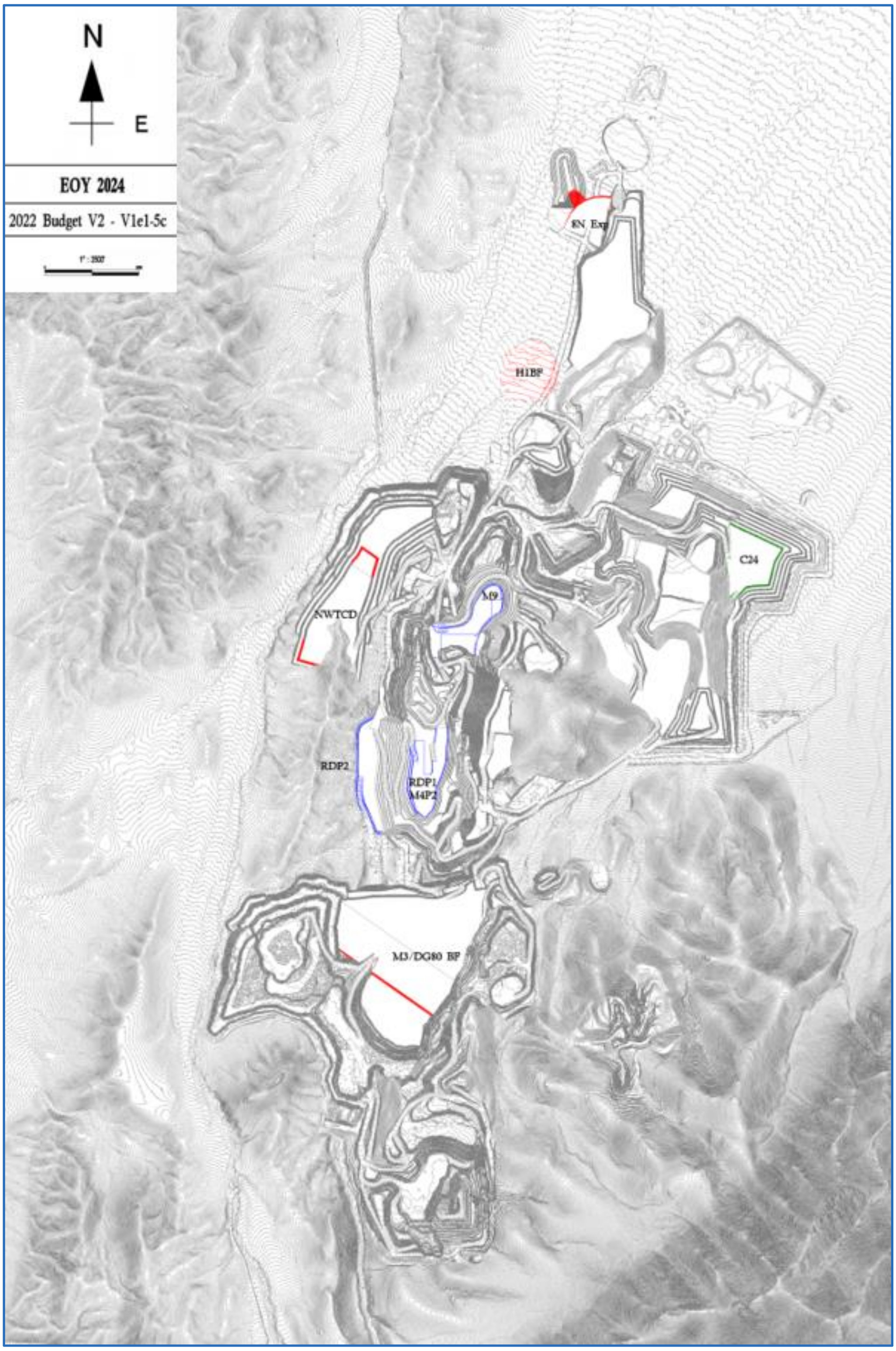
SSR, 2021

Figure 16.4 End of Production Plan – Year 2023



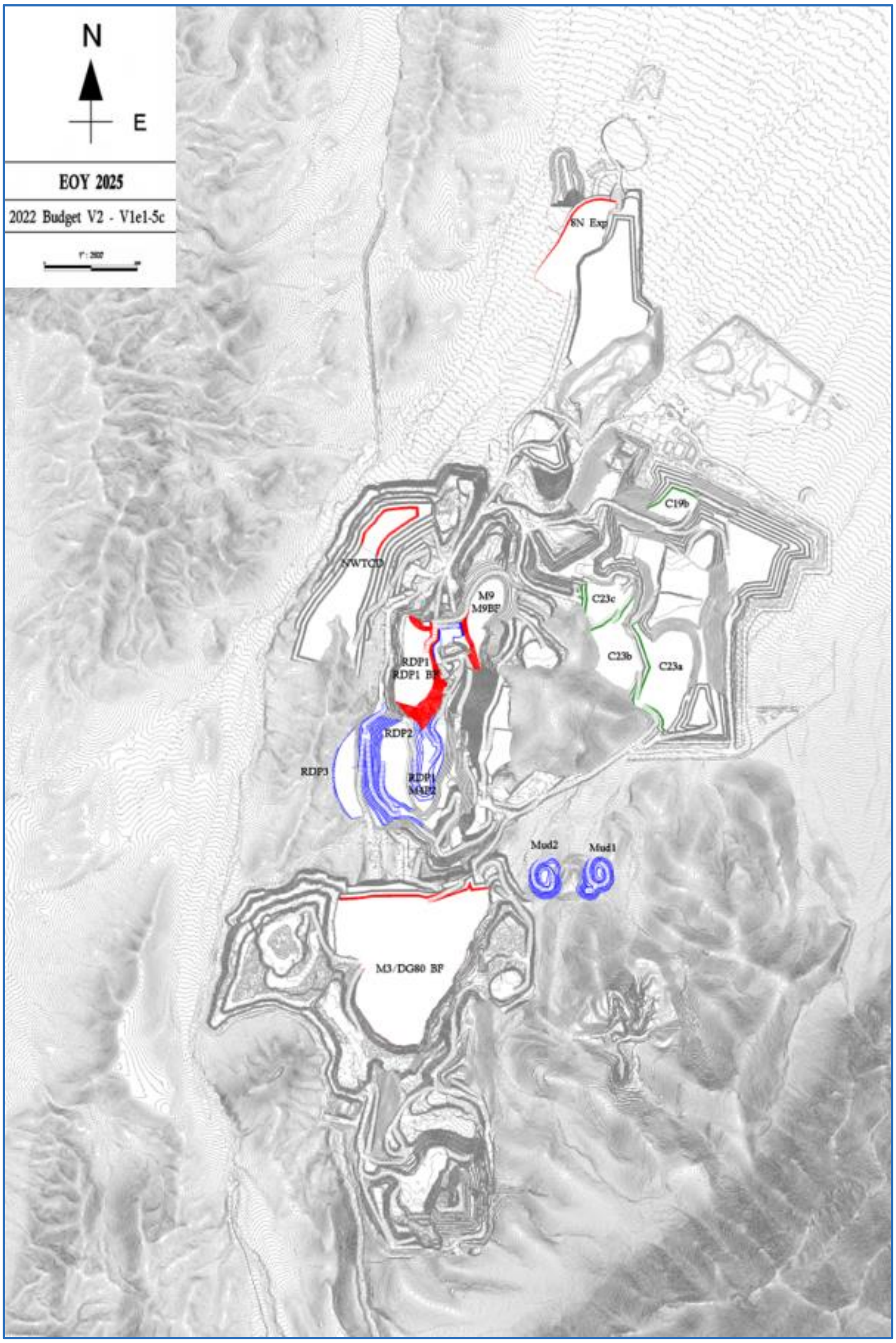
SSR, 2021

Figure 16.5 End of Production Plan – Year 2024



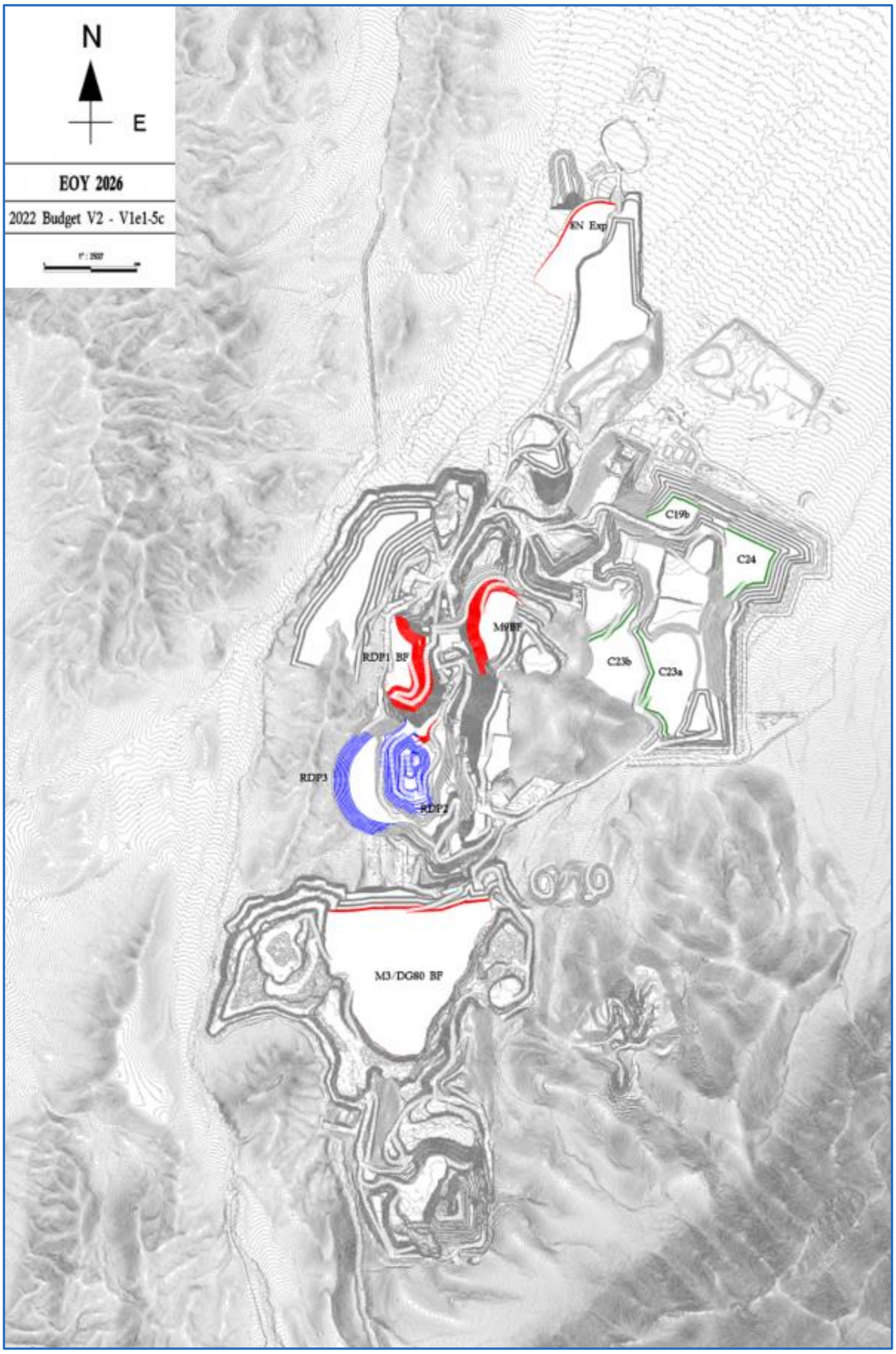
SSR, 2021

Figure 16.6 End of Production Plan – Year 2025



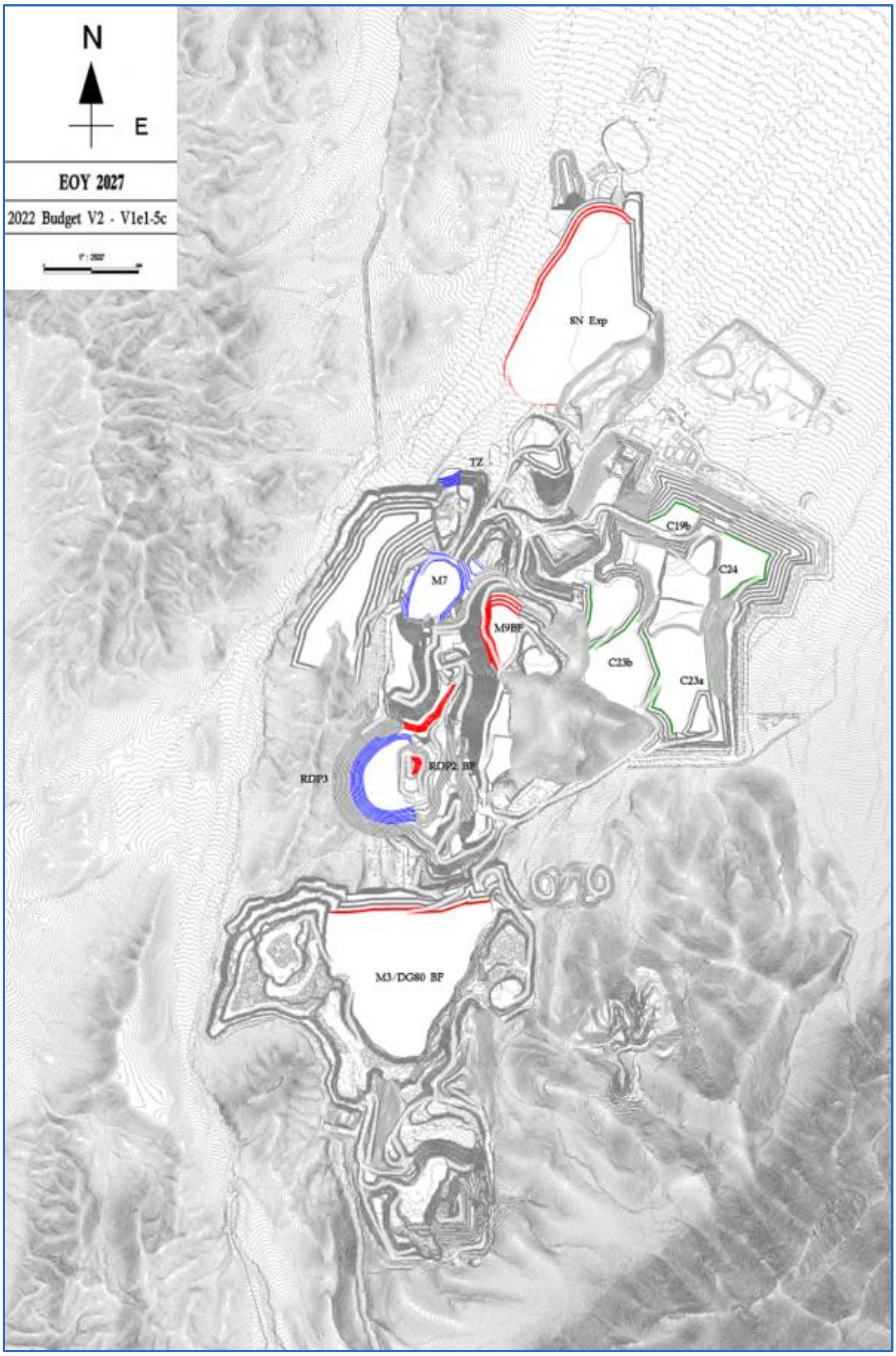
SSR, 2021

Figure 16.7 End of Production Plan – Year 2026



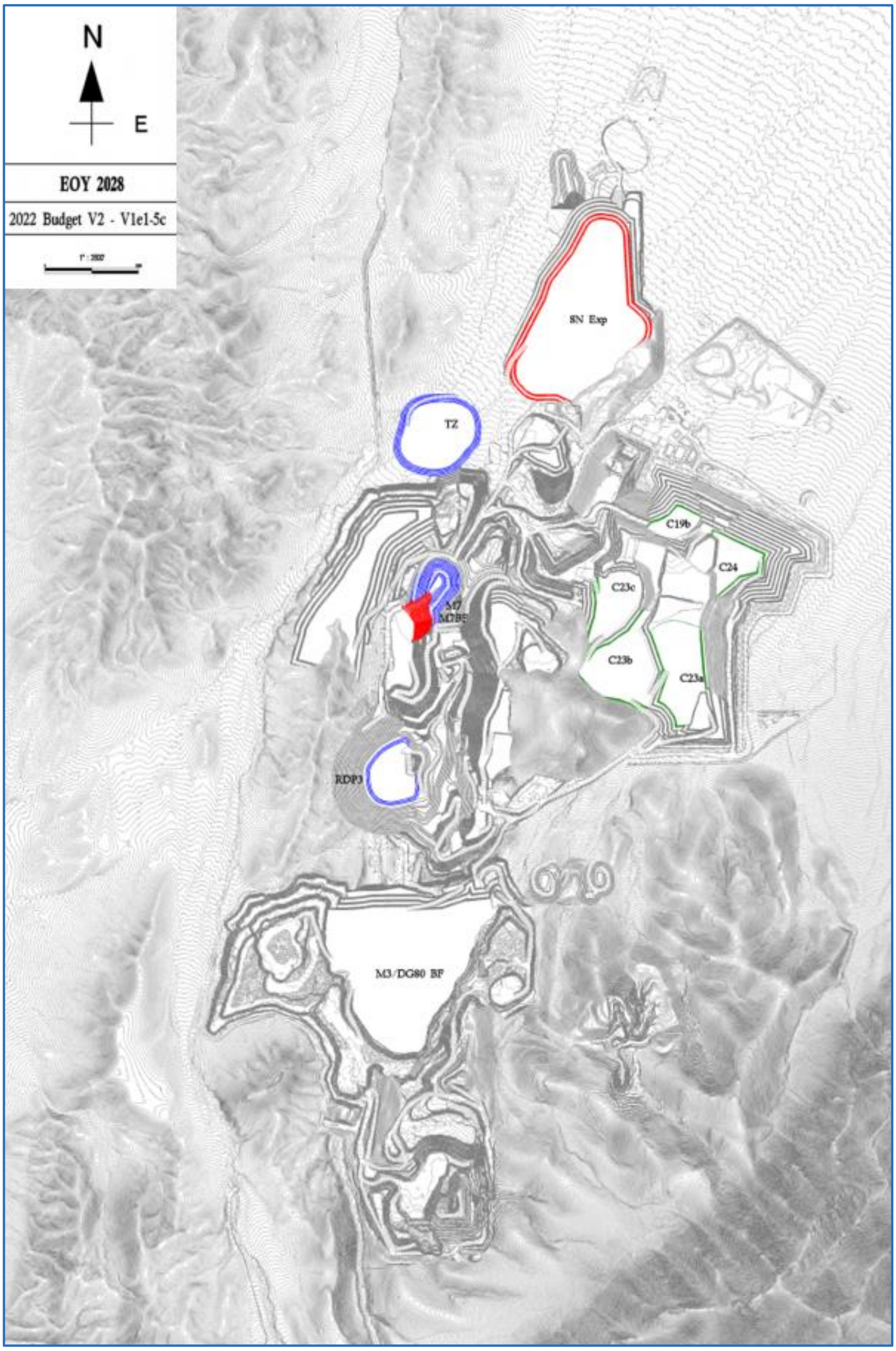
SSR, 2021

Figure 16.8 End of Production Plan – Year 2027



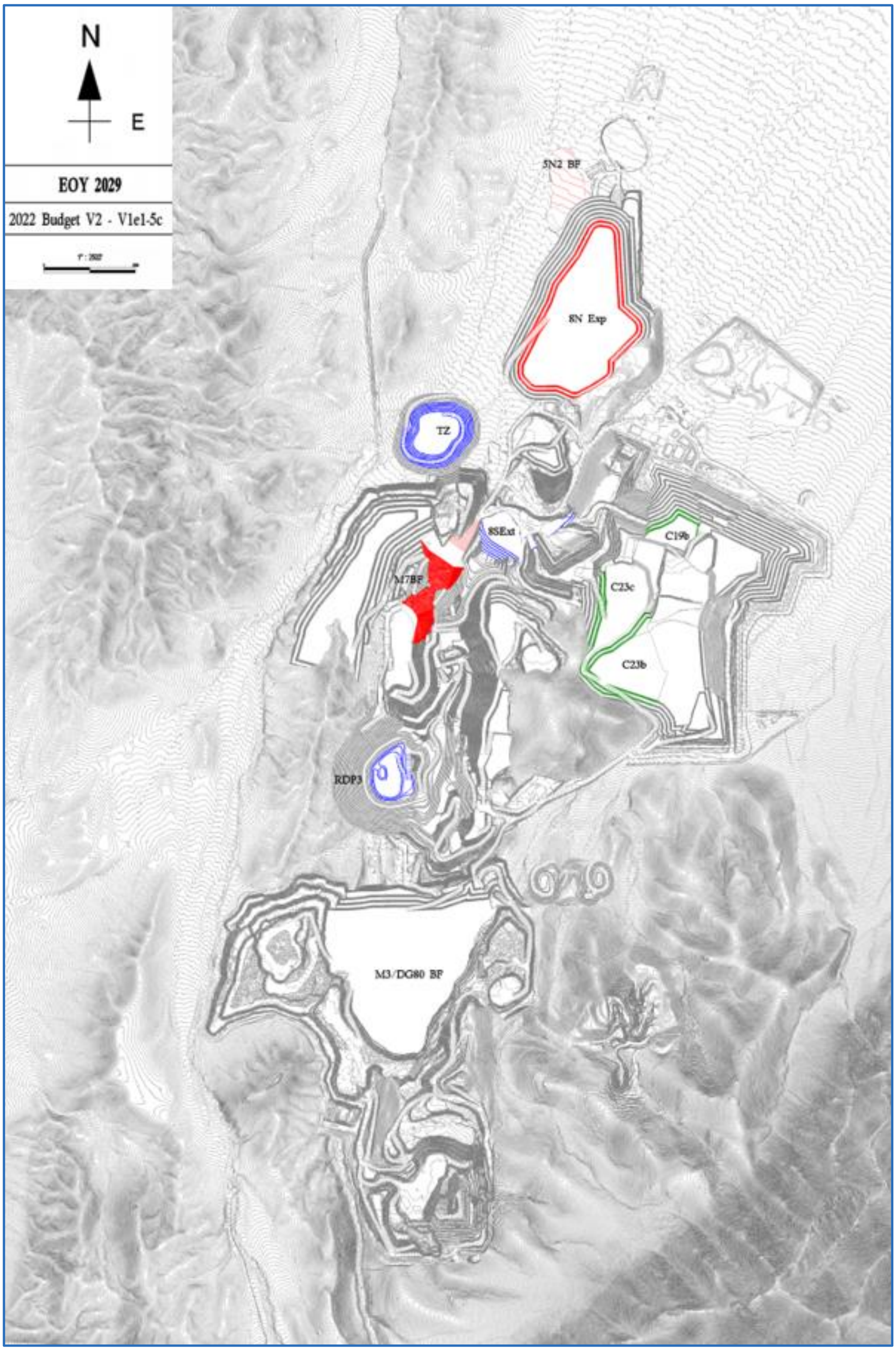
SSR, 2021

Figure 16.9 End of Production Plan – Year 2028



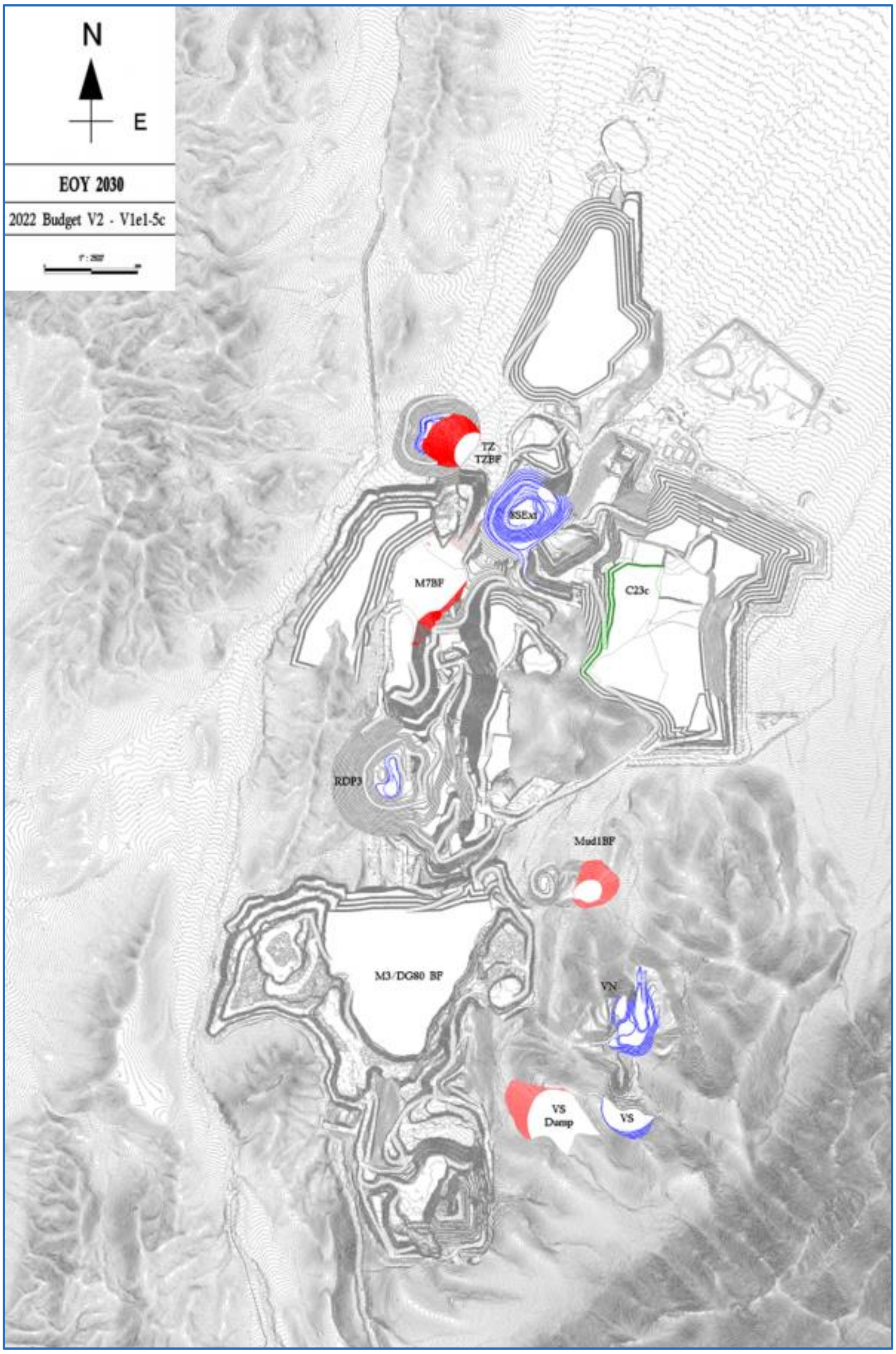
SSR, 2021

Figure 16.10 End of Production Plan – Year 2029



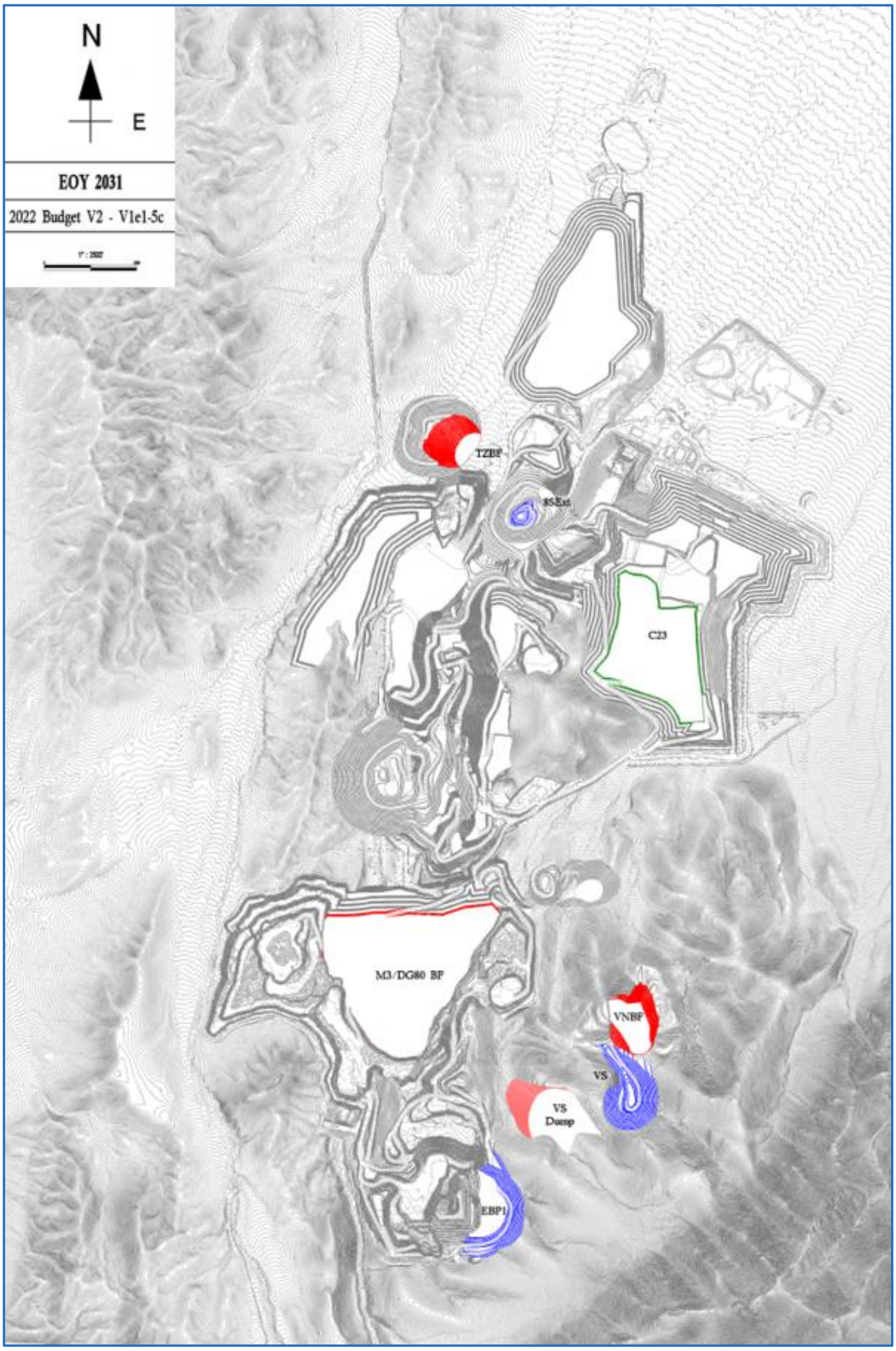
SSR, 2021

Figure 16.11 End of Production Plan – Year 2030



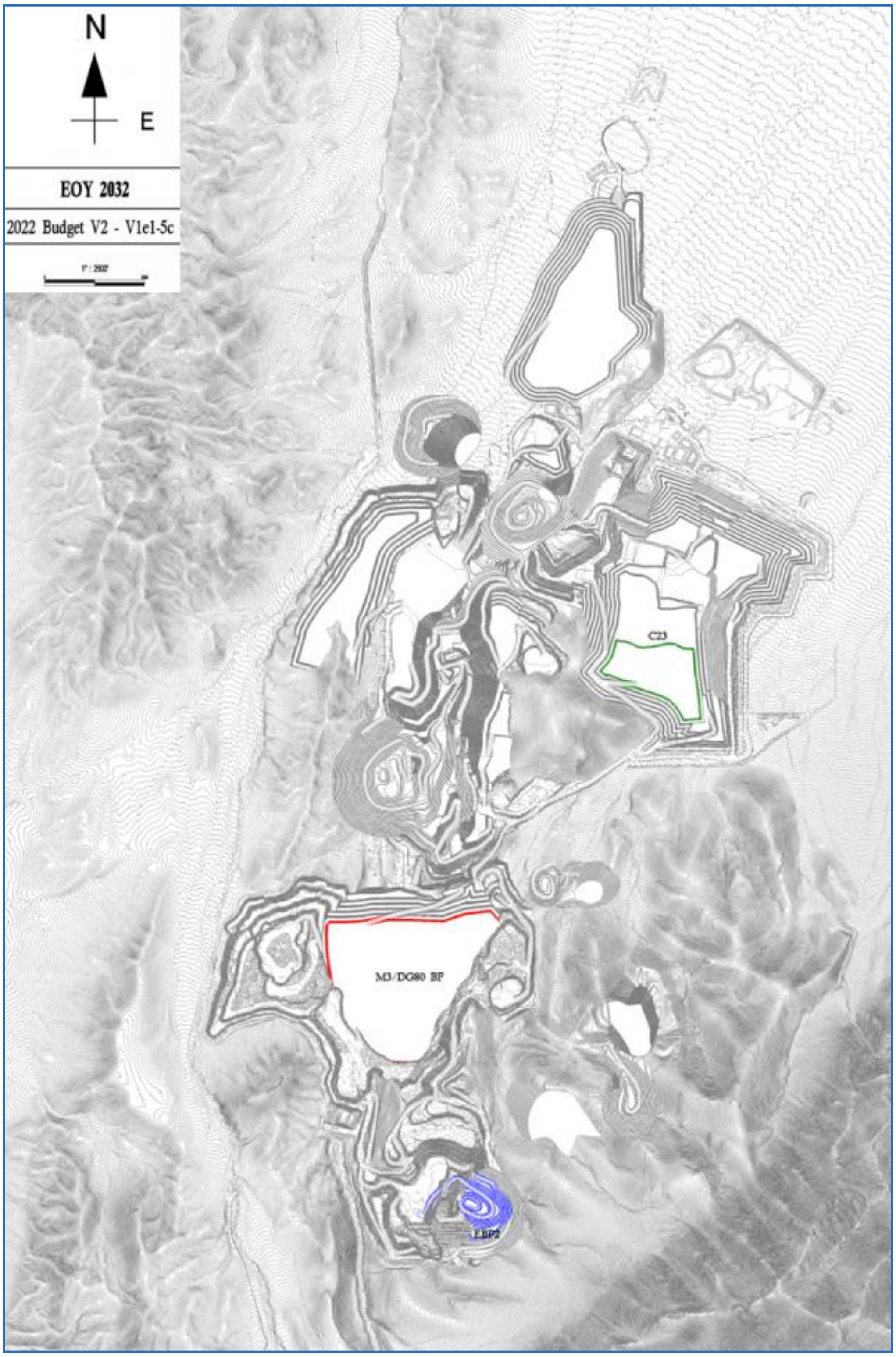
SSR, 2021

Figure 16.12 End of Production Plan – Year 2031



SSR, 2021

Figure 16.13 End of Production Plan – Year 2032



SSR, 2021

16.14 Mine Dewatering

The Marigold Mine Plan of Operations (PoO) Amendment for the Mackay Optimization Project record of decision in October 2019, allowed mining to be carried out below the water table in the expanded Mackay pit. The approved dewatering system incorporated a pit dewatering design by Piteau Associates that consisted of a series of water wells to be located around the periphery of the ultimate pit to extract water for mine operations use and infiltration. Infiltration is by means of a series of rapid infiltration basins (RIBs) located in an area of deep alluvium cover about 5 km north of the operations area. The initial area selected for the RIB location was relocated to an adjacent land section. Permitting delays associated with this relocation have resulted in short-term mine water diversion by means of temporary discharge permits into a local drainage. Trial RIBs are expected to be permitted and constructed in mid-2022 and approval for the expanded RIB field is expected to be in place by early 2023.

The dewatering system is developed in stages with the initial design incorporating 14 dewatering wells, each with a nominal sustainable pumping rate of 1.89 m^3/min.

Figure 16.14 shows existing and planned well sites. New wells are developed in advance of the mining elevations required to support the LOM plan. Recent monitoring and modelling of pumping and drawdown rates indicate that the current number of wells included in the design is conservative and potentially not all will be required to achieve the required drawdown.

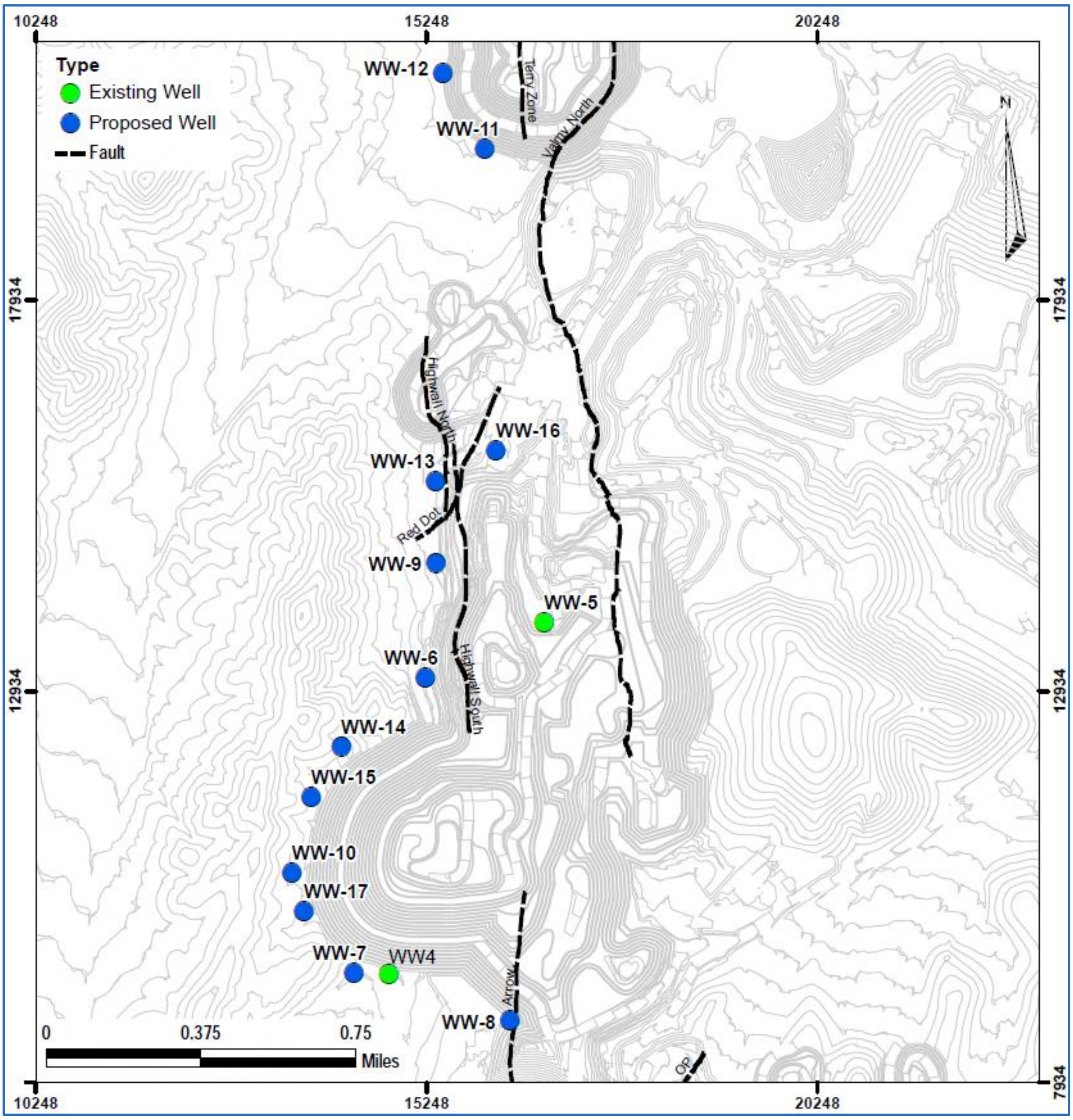
Some dewatering water is diverted for mine use with the majority delivered by pipeline to the RIB field north of the mine for re-infiltration. The RIBs are located in areas of thick alluvium which facilitates rapid infiltration back into the aquifer and also provides the benefit of attenuation of naturally elevated arsenic levels in the ground water before it reaches the existing water table. Initial testwork indicates that water treatment will not be necessary prior to infiltration but the economic modelling includes a provision for water treatment, should it prove necessary in the future.

Trial RIBs will be permitted and constructed in mid-2022 to allow infiltration performance to be verified and the RIB cell design and configuration to be finalised. Initial RIB design criteria are summarised in Table 16.5.

The RIB design being permitted includes a total of 14 RIBs. Figure 13.20 shows the conceptual layout of the RIBs and spoil piles with the majority located on (BLM) 'Section 30'.

The location of the RIB area relative to the mining operation is shown in Figure 18.1.

Figure 16.14 Existing and Proposed Dewatering Wells

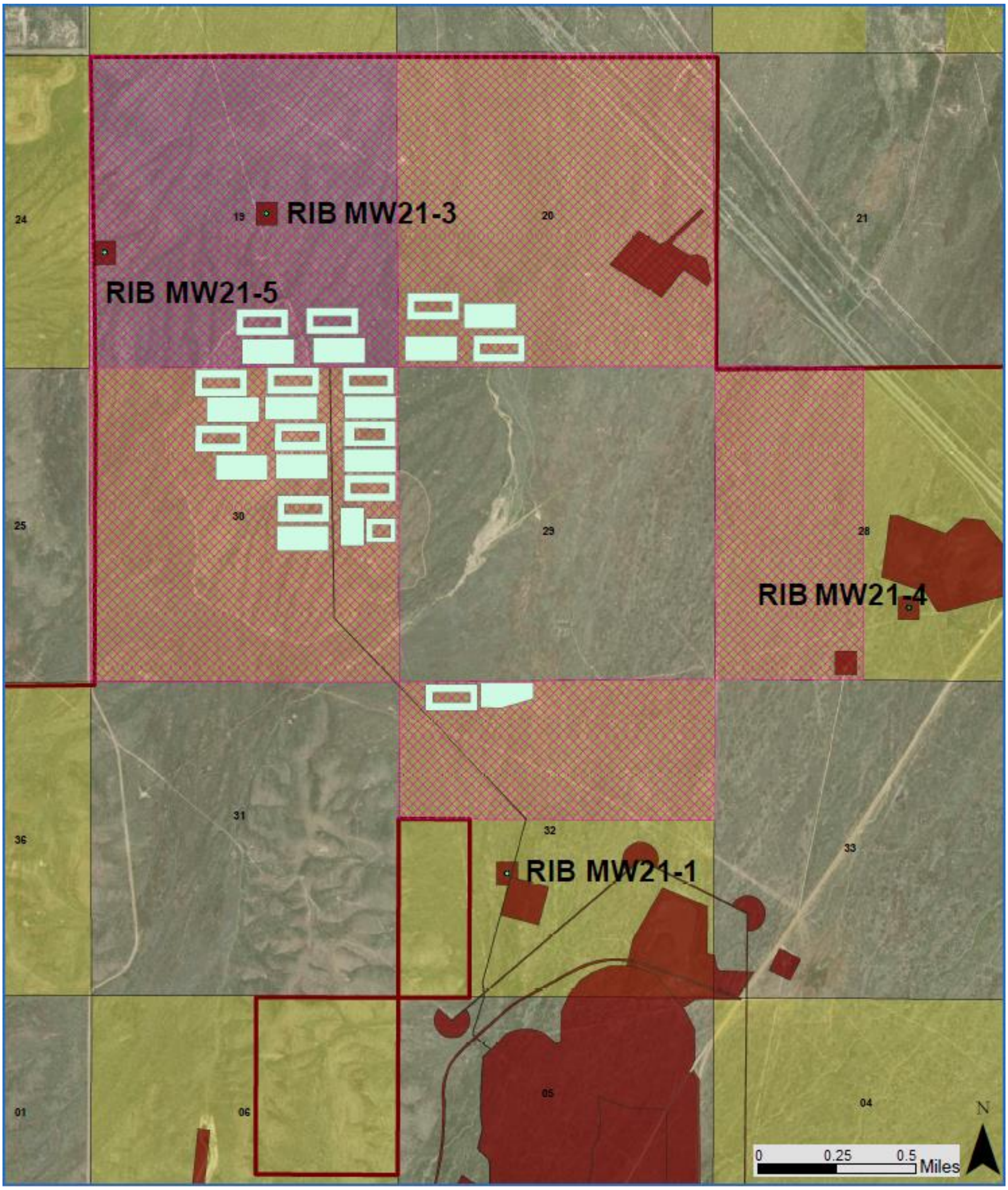


Piteau, 2021

Table 16.5 RIB Design Criteria

RIB Cell Design Attribute	Unit	Dimensions (m)
Basin floor length	m	210
Basin floor width	m	59
Basin crest length	m	247
Basin crest width	m	106
Minimum basin depth	m	6.1
Excavation/dump slope	H:V	3:1
Minimum spacing between cells	m	122
Access road width	m	7.3
Infiltration capacity	m/day	0.43
Infiltration capacity per cell	m^3/min	3.8
Cell availability	%	50

Figure 16.15 Conceptual Layout of RIBs and Spoil Piles



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SSR, 2021

17 RECOVERY METHODS

17.1 Introduction

The Marigold processing facilities combine industry standard run-of-mine (ROM) heap leaching, carbon adsorption, carbon desorption and electro-winning circuits to produce a final precious metal (doré) product.

The Marigold heap leach and gold recovery circuit is typical in the industry for treating solutions containing gold cyanide. A simplified flowsheet for the process is shown in Figure 17.1.

17.1.1 Ore Stacking on Leach Pad

Ore processing is undertaken via stacking and leaching on a ROM heap leach pad. ROM ore is delivered to the leach pad by haulage truck and stacked in 6.1 to 12.2 m lifts. Pebble lime is added to the haulage trucks from a storage silo to control pH prior to dumping. Fresh ore is ripped and cross-ripped prior to commencement of leaching. The available pad area is divided into manageable cells for inventory and irrigation control. These cells provide control of irrigation duration and time between lifts to manage future ore placement.

17.1.2 Leaching Solution to the Pad

A series of header and sub header lines distribute the barren solution to the pad with application by drip-tubing on the surface and impact sprinklers on side slopes. The overall barren solution application rate to the leach pad is 0.122–0.143 L/min/m^2.

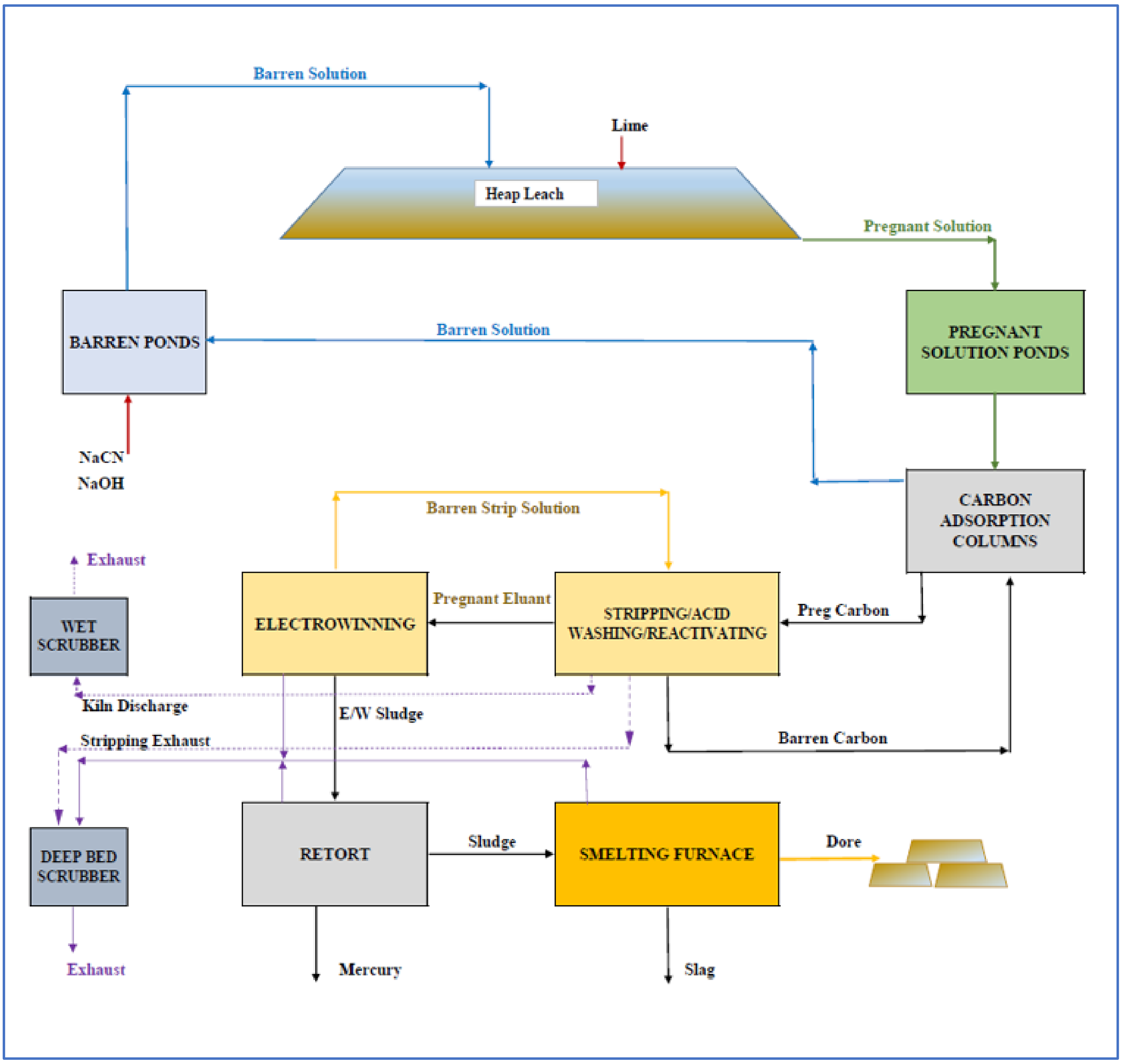
The Marigold heap leach solution processing facilities consist of two barren ponds, six pregnant ponds, and one stormwater/overflow pond. Pregnant pond 1 is inactive due to a leak. Ancillary facilities include solution pumps and piping, two separate sodium cyanide addition facilities, two sodium hydroxide addition systems (barren solution pH adjustment) and four locations for antiscalant addition.

The heap leach pad was originally constructed in 1990 and has since expanded as required, with ongoing expansion of solution processing facilities to match production rate and leach area. Barren leach solution (cyanide-bearing solution, very low in gold grade) is applied selectively to different areas of the pad, or cells. At any given time, approximately 0.5 million square metres of pad area is being leached, with other areas draining or being made ready to accept ore for the next lift.

The barren leach solution is pumped to the leach pad by two independent barren solution distribution systems. Combined barren solution flow capacity from the two pumping systems is 53 m^3/min. Sodium hydroxide is added to the barren solution in the pond after the carbon column discharge. Sodium cyanide is added to the barren solution at the spillway between barren ponds one and two.

The new ore placed on the heap leach pad in cells, is leached for a targeted 120 days.

Figure 17.1 Simplified Marigold Processing Flowsheet



SSR 2021

17.1.3 Pregnant Solution

Pregnant solution (gold bearing) from the leach pad is collected into the pregnant solution pond(s) and pumped to seven parallel carbon column trains, each with five columns, to recover gold from solution. Column discharge solution reports to the barren ponds before the solution is recycled back to the leach pad.

17.1.4 Carbon Processing

Loaded carbon from the carbon columns is transported by a dedicated truck to the carbon processing facility where gold is eluted (re-dissolved) from the carbon in strip vessels (two 3 t capacity carbon vessel). The precious-metal-bearing solution is passed through two 2.1 m^3 electro-winning cells in parallel where the metals are plated out of the solution. The electro-winning barren solution is recycled back through the strip vessel until the batch process is complete.

17.1.5 Refining

The plated material (sludge) resulting from electrowinning is collected in a filter press and then retorted for drying and mercury removal. After retorting, the sludge is mixed with flux and smelted in a propane fired furnace for final precious metal recovery.

Stripped carbon is screened to remove the fine carbon, acid washed to remove carbonate scale, and thermally reactivated to remove any organic contamination, as required, before returning to the carbon columns.

17.1.6 Ventilation

Ventilation from the strip circuit pregnant and barren solution tanks, electro-winning cells, retort and smelting furnace is directed to a deep bed scrubber (sulfur-impregnated activated carbon) where any vapourised mercury is recovered prior to exhaust.

The kiln discharge is vented to a wet scrubber that uses water mist to condense mercury and recover it as elemental mercury. After demisting, the air is also passed through sulfur-impregnated carbon to recover any remaining vapourised mercury prior to exhaust.

17.1.7 Planned Processing Upgrade Projects

A number of ongoing improvement project are planned, these include:

- With the increasing height of the heap leach pads, barren booster pumps are planned to be installed to maintain solution flow rates at 53 m^3/min as the pad grows taller and further from the pump locations.
- Installation of mobile telemetry and instrumentation to be able to remotely monitor individual area barren application rates. In addition, telemetry on primary pregnant and barren flowmeters.
- Further ventilation upgrades on the refinery to improve mercury removal, decrease mercury volatilisation, and improve working temperature within the buildings.

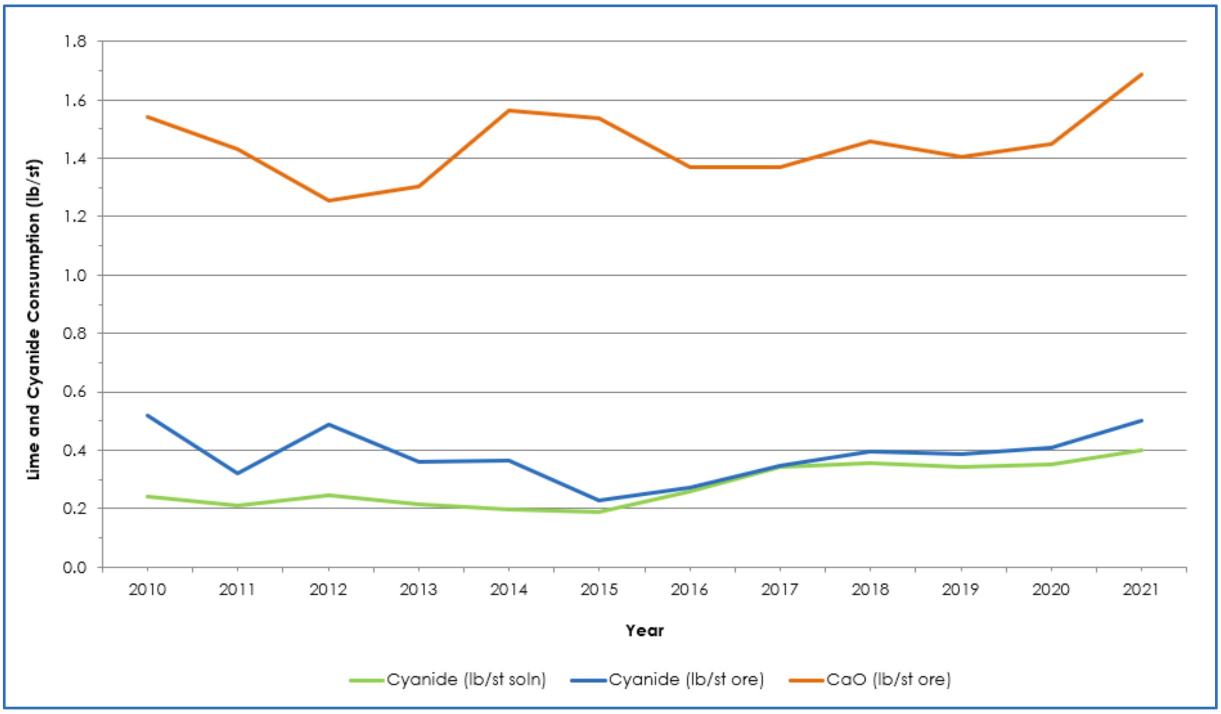
17.1.8 Reagents

Reagent consumption rates are within industry norms for the types of ores processed.

Consumption rates for the two most expensive reagents, sodium cyanide (NaCN) and lime (CaO), vary depending on ore type.

Average annual reagent unit consumption rates of the two key reagents, cyanide and lime (CaO) for the period 2010–2021 are shown in Figure 17.2.

Figure 17.2 Average Annual Reagent Consumption



SSR, 2021

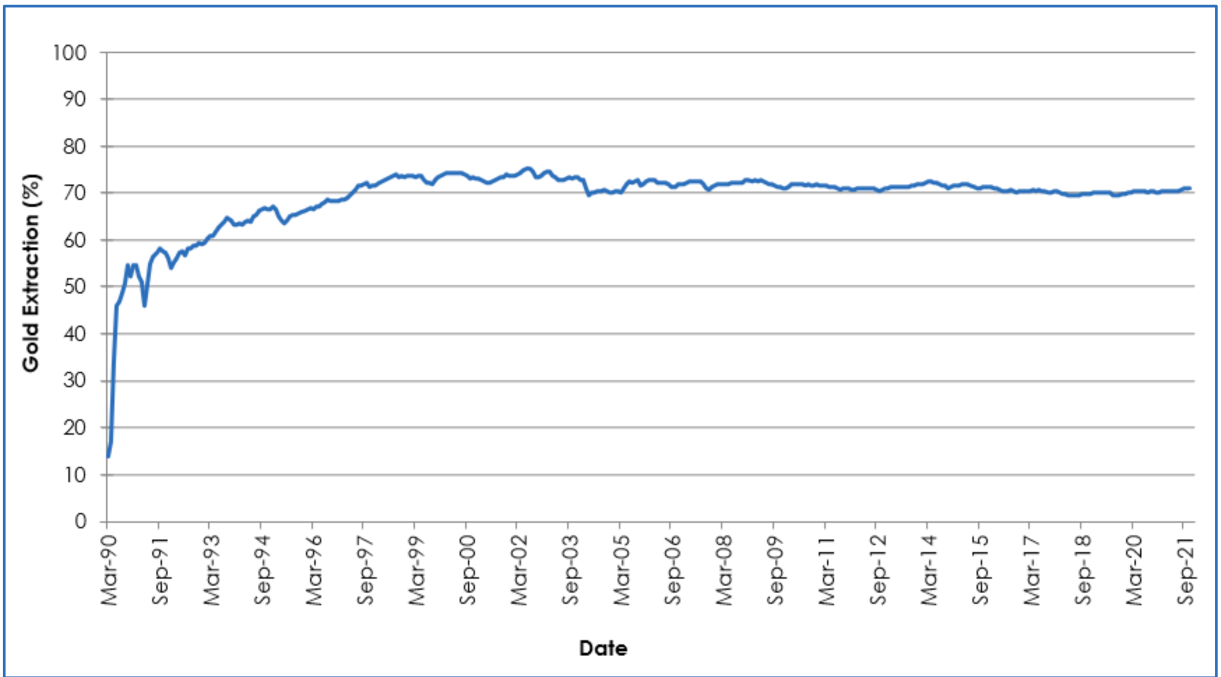
17.2 Gold Recovery

17.2.1 Recovery from Heap Leaching

From March 1990 through December 2021, gold recovery from the heap leach pad is 71.1%. This recovery was achieved with 90–120 day primary leach cycles and an overall mass-of-solution to mass-of-ore ratio of 1.28:1.

The gold recovery trend achieved from March 1990 through December 2021 from the Marigold heap leach is shown in Figure 17.3.

Figure 17.3 Marigold Heap Leach Pad Gold Recovery Curve from March 1990 through December 2021



SSR, 2021

18 PROJECT INFRASTRUCTURE

The overall site layout of the Property is shown in Figure 18.1. Additional details on the LOM plan can be found in Section 16.

18.1 Site Access, Power and Water

18.1.1 Site Access

Marigold is accessible via Interstate Highway 80 in northern Nevada and is approximately 5 km south–south-west of Valmy in Humboldt County. The site access road supports two lanes of traffic and consists of hard-packed clay and gravel.

18.1.2 Power

The power supply for Marigold is provided by NV Energy Inc. via a 120 kV transmission line to site. Site power draw is 5 MW. After exiting the main substation, power is distributed through a 25 kV distribution grid. The main electrical substation is shown in Figure 18.3 and Figure 18.4.

18.1.3 Operations Water Supply

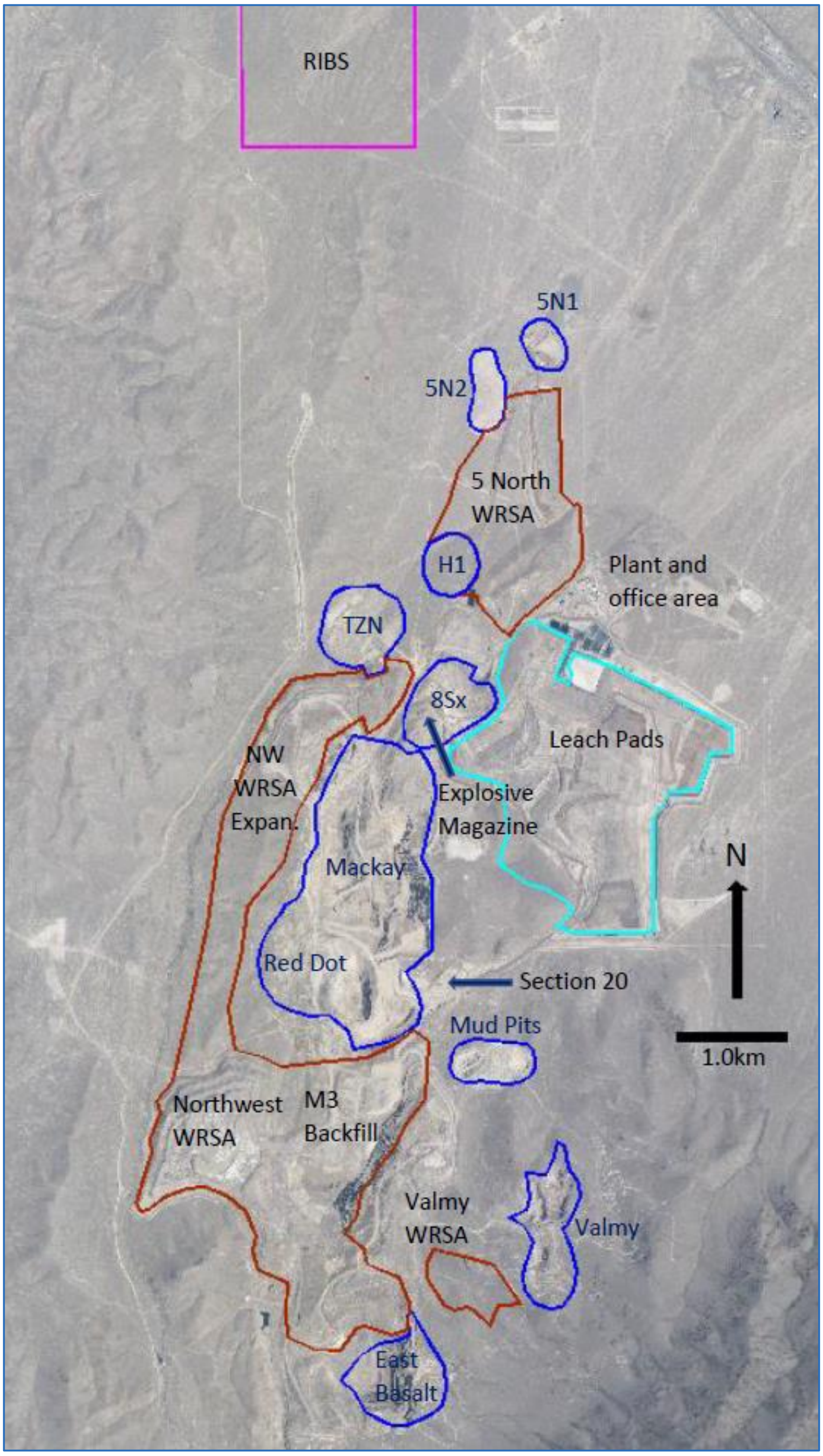
Water for Marigold is supplied from three existing groundwater wells located near the access road to the Property. Marigold owns groundwater rights and collectively allows up to 3.134 Mm^3 of water consumption annually, the majority of which is used as makeup water for process operations. On average, total freshwater makeup is 2.4 m^3/min. The well pump parameters are listed in Table 18.1, and the locations of the pumps are shown in Figure 18.2.

Table 18.1 Pump Assets

Pump Asset	Pump Capacity (hp)	Power Consumption (kW)
793-PMP-001	75	56
793-PMP-002	150	112
793-PMP-003	150	112

Discussion of the extraction and infiltration of pit water is included in Section 16.14.

Figure 18.1 LOM Site Map Showing Final Pit Limits, Waste Dumps, and Leach Pad



MMC, 2021

18.2 Buildings and Facilities

18.2.1 Buildings and Facilities in Main Plant and Offices Area

The buildings and facilities described below are located in the main plant and offices area as shown in Figure 18.3 and Figure 18.4:

- Truck shop and mobile maintenance warehouse: The Marigold truck shop complex is located near the mine entrance. It is a four-bay shop sized for 300 t class haul trucks. The shop contains a tool crib, oil and lubricant bulk storage, ten offices, locker rooms, training room and warehouse. A covered warehouse storage yard is located adjacent to the admin building complex.
- Mill building: The mill building consists of facilities supporting the metal recovery operations, including the refinery and metallurgical laboratory. Adjacent to the mill building is the thickener water storage tank and remaining CIL tanks from the 1989 flowsheet.
- Crushing plant: The crushing plant is used to produce stemming for blastholes, road material and over liner for heap leach pad. The crusher is a remnant from the 1989 flowsheet.
- Heap leach carbon columns: The heap leach carbon columns are an integral part of the gold recovery process, which is detailed in Section 17.
- Wash bay: The wash bay is located next to the truck shop and consists of one covered bay. The wash bay building also contains a settling pond for water recycling.
- Administration building and light vehicle (old) shop: The main administration building encompasses most site-support departments and includes a small warehouse facility, the shovel and drill shop (former truck shop), light-vehicle maintenance bay and the assay laboratory. Adjacent to this building are trailers which provide additional office space.
- Assay laboratory: The assay laboratory supports ongoing mine operations, including grade control and gold solution analysis.
- Motor control centre (MCC): The motor control centre houses controls for the pumps and boosters for the barren and pregnant solution ponds.

18.2.2 Additional Buildings and Facilities on Site

Additional buildings and facilities on site include:

- Site access building
- Potable water treatment building
- Process line-out building
- Radio shop
- Safety building
- Hose shop and storage
- Tire pad
- Fuel stations

18.2.3 Additional Facilities on 'Section 20'

Additional facilities are located on 'Section 20', which is identified in Figure 18.1. These facilities include:

- Welding and fabrication shop
- Dispatch / MineCare office and mine operations line-out building
- GPS dispatch receiver
- Diesel tanks and fuelling station

18.3 Explosives Magazine

The explosives magazine is located a safe distance from the plant and offices area as identified in Figure 18.1.

18.4 Tailings Storage Facility and Water Diversion

The TSF was decommissioned and reclaimed. The only remaining activity concerning the TSF is ongoing monitoring.

The Trout Creek water diversion structure and flood control dam is located west of the former Basalt Pit. It is designed for a 100-year storm event.

18.5 Leach Pads and Solution Ponds

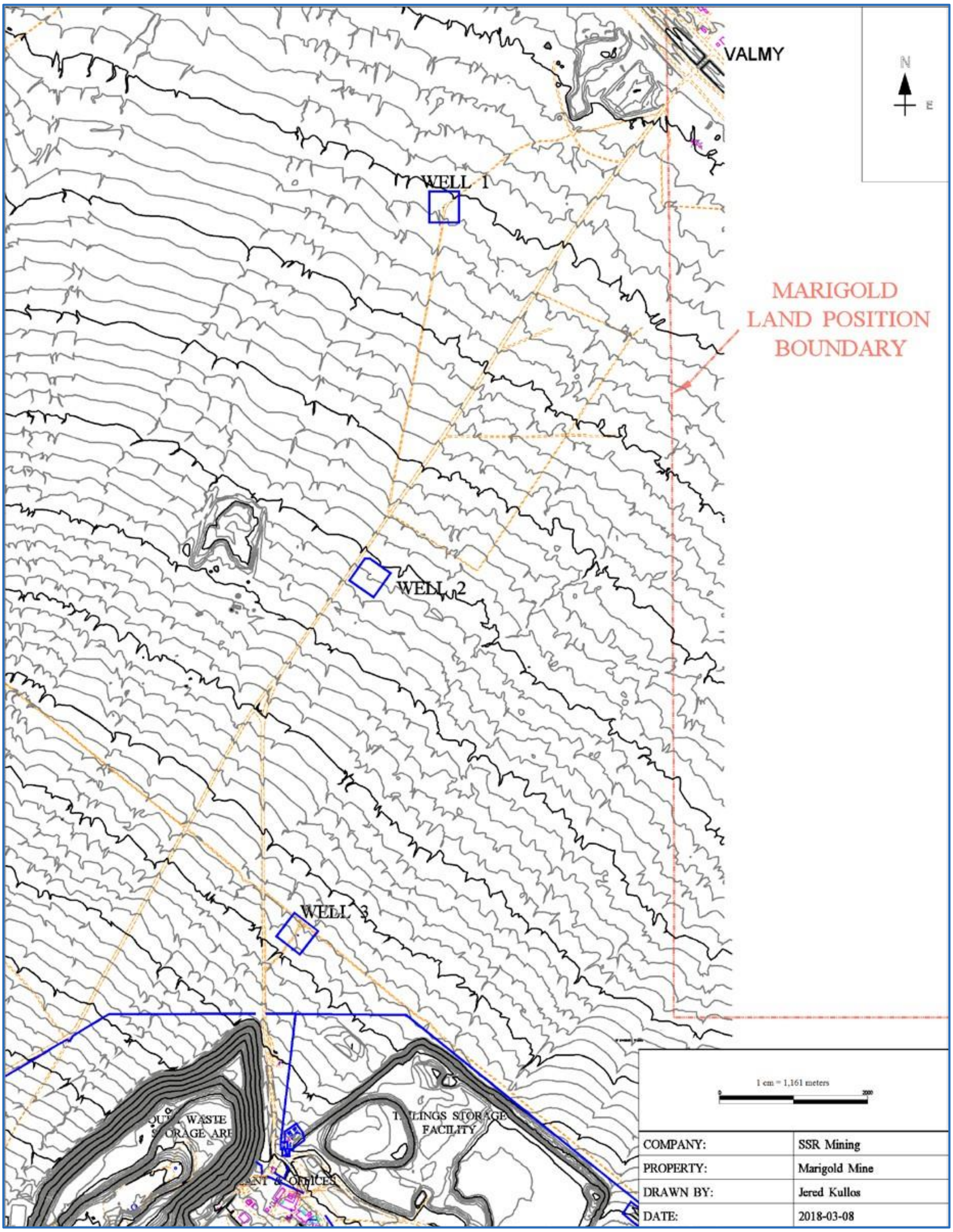
The leach pad is discussed in detail in Section 17 and is shown in Figure 18.1.

Details on the barren and pregnant solution ponds can be found in Section 17.

18.6 Waste Dumps

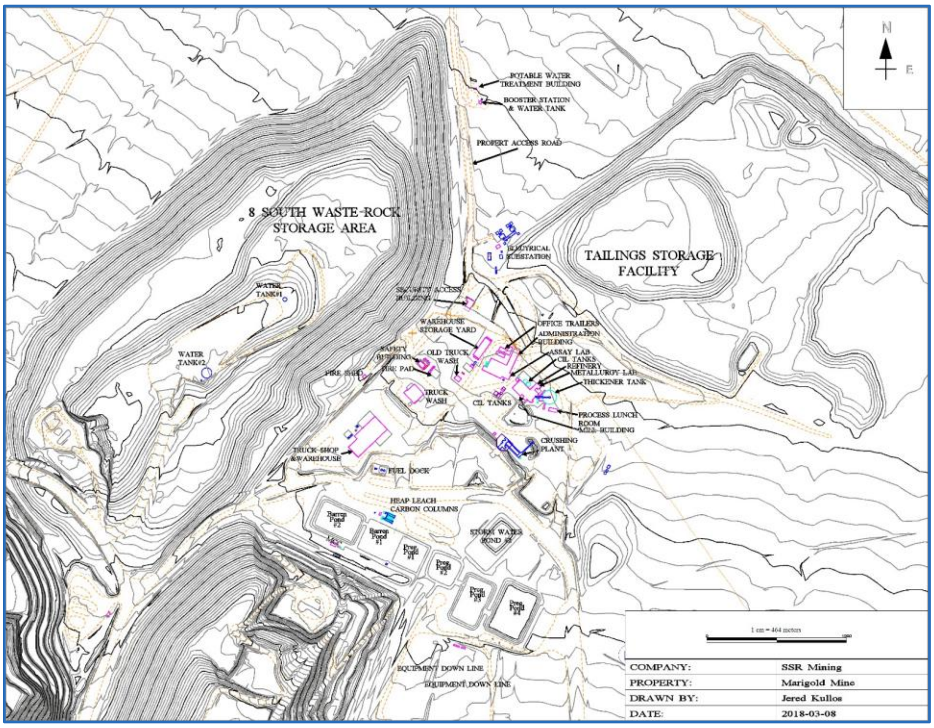
Details on completed, in progress, and future waste dumps can be found in Section 16. The general location of planned and current waste dumps is shown in Figure 18.1.

Figure 18.2 Well Sites



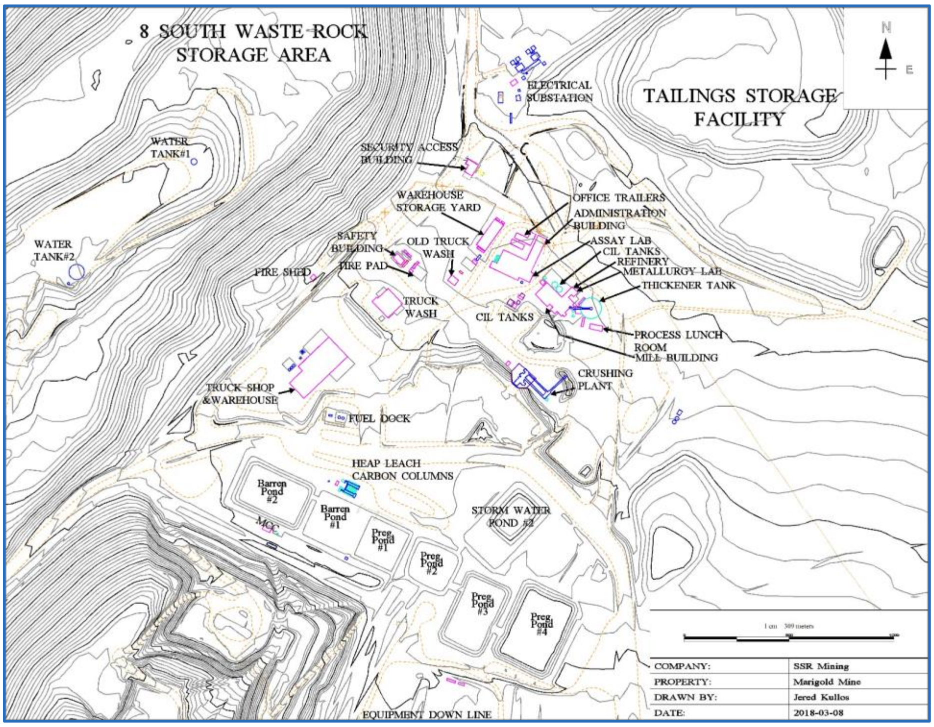
SSR, 2018

Figure 18.3 Main Infrastructure Area



SSR, 2018

Figure 18.4 Plant, Shops and Offices



SSR, 2018

19 MARKET STUDIES AND CONTRACTS

19.1 Marketing and Metal Prices

The metal prices used in the Marigold21TR are based on an internal assessment of recent market prices, long-term forward curve prices, and consensus among analysts regarding price estimates. For the economic analysis in the Marigold21TR, the metal prices shown in Table 19.1 were used.

Table 19.1 Metal Prices

Metal	Unit	Average	2022	2023	2024	2025	2026	>2026
Gold Price	$/oz	1,647	1,800	1,740	1,710	1,670	1,600	1,600
Silver Price	$/oz	21.56	24.00	23.00	22.00	21.00	21.00	21.00

Marigold currently produces gold/silver doré bars. The doré refining terms are typical and consistent with standard industry practices and reflect similar contract conditions for doré refining worldwide.

The doré is securely transported by road freight to a refinery where it is refined into gold bullion. The bullion is sold by SSR to banks that specialise in the purchase and sale of gold bullion.

No external consultants or market studies were directly relied on to assist with the sales terms and commodity price projections used in the Marigold21TR. The relevant QP agrees with the assumptions and projections presented in this section of the Marigold21TR.

19.2 Contracts

There are a number of acceptable refineries with the capacity to refine doré. Currently, SSR has entered into a non-exclusive refining agreement with Asahi Refining USA, Inc., and the terms and conditions of this contract are within industry norms. The transportation and refining costs for the doré and other operating costs are also in accordance with industry standards.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 Environmental Studies

Significant portions of the Property exist on public lands administered by the BLM. Therefore, the majority of environmental studies related to mining activities are conducted under BLM authority as part of the NEPA regulations, which require various degrees of environmental impact analyses dictated by the scope of the proposed action. Marigold has undergone several significant NEPA actions in the normal course of operational planning; the most recent is an amendment to the existing PoO to permit the future mining of all pits to their planned maximum depths.

The environmental baseline studies to support the Environmental Impact Statement (EIS) process were initiated in 2013. These baseline studies completed in preparation for the Plan of Operations – Mackay Optimization Project Amendment included, but were not limited to, socioeconomics, air quality impacts, cultural and archaeological resources, groundwater model, pit lake model, screen-level ecological risk assessment (SLERA), waste rock/material characterisation, water characterisation, sage grouse habitat evaluation, evaluations for flora and fauna, and feasibility evaluation and pilot testing for rapid infiltration basins. A list of the baseline studies and reports is shown in Table 20.1.

Table 20.1 Baseline Studies

Study Media	**Documents/Reports Included Baseline Studies and Data Compiled for Marigold Mine Mackay Optimization EIS**
Hydrology/Water Quality/Geochemistry	Groundwater Model Report, Waste rock Management Plan, Water Characterisation Report, Water Management Plan, Pit Lake Model Report, Screening Level Ecological Risk Assessment Report
Air Quality	Air Quality Assessment
Flora/Fauna	Habitat Evaluations (including sensitive special surveys), Migratory Bird Surveys, Plant Surveys, Weed Management Plan, Raptor Nest Survey, Bat Survey, Sage Grouse Habitat Survey
Socio-Economic	Economic Impact Report
Cultural Resources	Cultural Resource Survey

The final EIS record of decision approving the amended plan of operations was received 30 October 2019.

Scope of the amended plan of operations included:

- Increasing surface disturbance by 833 ha acres on private and public lands.
- Consolidation of multiple pits into three larger pits with associated expansion of pits, waste rock storage areas and leach pads.
- Mining below the historic water table requiring installation of facilities to extract and dispose of excess groundwater.

The approval allowed for infiltration of excess dewatering water by way of rapid infiltration basins (RIBs) on private (leasehold) land north of the mine. An alternative location on adjacent BLM land is in the process of being approved. RIB testing, approval and construction, and the associated water pollution control permit issuance is expected by early 2023. In the interim, mine dewatering and infiltration is proceeding according to the LOM plan by means of temporary surface discharge permits allowing water diversion into local watercourses.

Subsequent to the EIS, a minor modification was submitted and approved through the BLM and the NDEP to increase the total approved disturbance to 3,296 ha; which was related to converting some land for heap leach cell 19B construction, modifying waste rock storage facilities, and converting some land to infill.

SSR has a reasonable expectation that all necessary operating permits will be granted within the required timeframes to meet the LOM plan.

20.2 Environmental Permits

Specific federal, state and local (Humboldt County, Nevada) regulatory and permitting requirements apply to Marigold activities. Marigold currently holds active, valid permits for all current facets of the mining operation, including, but not limited to, those permits listed in Table 20.2.

Table 20.2 Marigold Mine Permits 31 December 2021

Permit Name	Permit Number
Plan of Operations	NVN-065034 (previously N26-88-005P)
Reclamation Permit and Bond	0108
Water Pollution Control Permit (including Petroleum Contaminated Soils Permit)	NEV0088040
Stormwater General Discharge Permit	NVR300000
Title V Air Quality Operating Permit	AP1041-2967
Class II Air Quality Operating Permit	AP1041-3666
Mercury Operating Permit to Construct: Phase II air)	AP1041-2254
EPA/RCRA ID	NVD986766954
Industrial Artificial Pond Permit	39502
Jurisdictional Waters of the U.S. Determination	N/A (no jurisdictional waters) (August 2019 determination)
Class III Landfill Waiver	SW1764
Hazardous Materials Permit (State of Nevada)	97207
Potable Water Permit	HU-1103-NTNC
Septic Permit	GNEVOSDS09-0016
	GNEVOSDS09-S0341
	GNEVOSDS09-L0252

Permit Name	Permit Number
DOT Hazardous Materials Registration	061521550469DF
Liquefied Petroleum Gas – Class 5 License	5-3482-01
Trout Creek Dam Permit (including Dam/Impoundment Permit)	J-666
Water Rights	83256 (Changed 3691 (Certificate 583))
	2324 (Certificate 584)
	86582
	86583
	86584[1]
	86585[1]
	87235-87242
	76425S01, 76425S02, 76425S03
	88986
	90787
	91141[1]
	90788
	3282 (Certificate 499)
	V01898
	2216 (Certificate 498)
County Conditional Use Permit	UH-15-07
MSHA ID	26-02081

1. As at November 2021, permit is pending with the State of Nevada Division of Water Resources
Certain permits listed here are renewed annually and may be issued under a different permit number.

Given the number of active permits at Marigold, some degree of permit modification or renewal effort is typically underway. With the exception of water-related permits already discussed, approved permits are in place for all planned mining activities.

20.3 Environmental Impacts

At present, there are no known environmental issues that impact the ability to extract Mineral Resources at the Property. Specifically, no threatened or endangered species are known to exist at the site; there are no year-round watercourses on the Property; groundwater impact of mining has been addressed and all environmental regulations and permit conditions are continuously being met. Cultural resource surveys have been conducted across the Property, and an approved programme of avoidance, distance buffer and mitigation measures are in place as part of the existing PoO.

Waste rock is managed in several designated surface storage areas within the Property boundary, concurrently reclaimed to 3:1 slopes when the sequence of mining operations allows, and then re-vegetated with native seed mixes. When possible, older pits are backfilled with waste rock. To date, all waste rock encountered at Marigold has been oxide in nature and non-acid-generating as confirmed by quarterly sampling. There are no waste rock areas with observed runoff or stability concerns.

The only tailings area at Marigold operated during a limited period from 1989 to 1999; this area has been reclaimed and revegetated, and the State Engineer's office no longer lists it as a permitted dam.

20.4 Environmental Monitoring Programme

Marigold has an extensive monitoring programme in place for both groundwater quantity and quality and seasonal surface water quantity and quality. Results from this programme as well as long-term trend data are reported to both state and federal agencies. Air, geochemical, vegetation, wildlife, and industrial health monitoring are also conducted regularly according to permit requirements. Agency representatives from the Nevada Division of Environmental Protection, Nevada Department of Wildlife, and Bureau of Land Management also conduct routine compliance inspections on a quarterly basis.

20.5 Reclamation and Closure

MMC engages in concurrent reclamation practices and is bonded for all permitted features, as part of the Nevada permitting process. Current bonding requirements are based on third-party cost estimates to reclaim all permitted features at the Property. Both the BLM and State of Nevada review and approve the bond estimate, and the BLM holds the financial instruments providing the bond backing.

State regulatory requirements mandate a formal closure plan be filed two years before the facility initiates closure. Both the BLM and State require a tentative closure plan as part of normal NEPA and operating permit requirements. Marigold has filed and maintained these closure plans, which, in conjunction with standard reclamation and re-vegetation of all disturbed areas, include discussions on removal of most infrastructure, monitoring, and notably long-term heap leach drain down solution management. Marigold's currently approved closure plan describes a series of evapotranspiration cells to manage long-term solution drain down following an approximate two-year period of active solution volume reduction through evaporation.

Costs associated with all reclamation and closure activities are discussed in Section 21 and are reflected in the agency-approved bond amount.

20.6 Community Relations and Social Responsibilities

There are currently no outstanding negotiations or social requirements regarding operations at the Property. The nature of NEPA and large-scale state permits involve public comment periods as well as public meetings. Recently held meetings generated minimal concern from the community, and local county government has been consistently supportive of continued mine operations at Marigold. There are no formal discussions required with local stakeholders or Native American tribal representatives, but mine management does meet informally to provide general updates and to discuss proposed donation/support requests.

Community support and engagement is well established at Marigold, and mine management provides regular updates with respect to the Property to local stakeholders and regulators.

21 CAPITAL AND OPERATING COSTS

21.1 Introduction

Costs related to the development of reserves are based on a combination of historic site costs for fixed costs and a zero-base cost method for calculating variable costs. The variable costs are based on tonnage mined, tonnage processed, or hours worked for mining, maintenance, process and administration costs. The total planned spend is divided by tonnes mined for mining and maintenance unit costs, and ore tonnes stacked for process and administration unit costs.

21.2 Capital Costs

LOM project capital costs (excluding closure costs) are summarised in Table 18.1

Table 21.1 Summary of Capital and Reclamation Costs

Capital Costs	**Total ($M)**
Exploration and Development	9.1
Sustaining Capital	348.9
Mine Development	10.3
Total Capital Costs	**368.3**
Reclamation	71.8
Total Capital and Reclamation	440.1

Sustaining capital costs include:

- Replacement of mining equipment as it reaches its economic life during the remaining 11 years of mining. The majority relates to replacing haul trucks and excavators but is also covers drills and mine support equipment. Equipment replacement represents approximately 25% of future sustaining capital costs.
- Major equipment rebuilds and component replacement. In order to maintain equipment availability for the extended equipment lives, major equipment is programmed for rebuilds at set points during its economic life. Approximately 50% of future sustaining capital is capitalised parts and maintenance costs associated with these rebuilds. Major components with a life of more than one year are capitalised.
- Costs associated with on-going expansion of the leach pad and associated process infrastructure represents about 8% of future capital.
- Dewatering and permitting costs total about 17% of future sustaining capital, with the majority associated with dewatering infrastructure (wells, pipelines, rapid infiltration basins) that are required to lower the water table in advance of planned mine development.

The costs associated of reclamation and closure activities at Marigold were estimated to be $71.8M with the majority of the costs incurred from 2033 through to 2045.

21.3 Operating Costs by Category

The LOM operating costs estimate is $10.05/t of processed ore. Operating costs per tonne for the LOM and next five years of operations are shown in Table 21.2.

Table 21.2 Summary of Operating Costs

Operating Costs	Total LOM ($M)	$/t Ore	
		Years 1–5	LOM
Mining	1,469	7.53	7.18
Processing	373	1.57	1.82
Site Support	214	0.92	1.05
Total Operating Cost	**2,056**	**10.01**	**10.05**

Totals may vary due to rounding

21.3.1 Mine Operating Costs

The LOM operating cost estimates include:

- Hauling
- Blasting
- Loading
- Road and dump maintenance
- Drilling
- Mine engineering and administration
- Maintenance
- Dewatering

21.3.1.1 Production Drilling

Depending on rock conditions, a combination of hammer drilling and rotary drilling is used at the Property.

The major operating cost categories for drilling in the LOM plan are labour, fuel and consumable supplies, including drill hammers, drill bits and drill steel.

21.3.1.2 Blasting

The major operating cost categories for blasting in the LOM are labour, ammonium nitrate, emulsion, contract blasting labour and support, and blasting accessories. These categories comprise more than 95% of the total blasting costs. Ammonium nitrate is the primary blasting agent, and, in areas of hard rock or when meteoric water exists from perched groundwater, rain or snow, an emulsion product is used as a supplementary blasting agent.

21.3.1.3 Loading

The major operating cost categories for loading are labour, fuel for the PC7000 shovels, power for the P&H 4100 shovel, and ground engaging tools (GET), which include bucket teeth and other steel parts for all loading equipment.

21.3.1.4 Hauling

The major operating cost categories for hauling are labour, fuel, tires, and wear parts.

21.3.1.5 Roads And Dumps

The major operating cost categories for the support equipment fleet are labour, fuel, tires, dust suppression, and GET.

21.3.1.6 Maintenance

Mine maintenance costs associated with the LOM plan are for preventative and repair maintenance on the mine operations mobile production equipment and mobile support equipment. Maintenance costs are developed from historical data and planned work that is based on hours that the equipment accumulates during normal mining activities.

The major operating costs for mine maintenance are labour, maintenance repair parts, on-site contract labour, lube oils and greases, filters, hydraulic hoses, maintenance supplies, small tools and welding supplies.

21.3.1.7 Dewatering

Dewatering operating costs are mainly associated with (mains) power consumption for the dewatering wells.

21.3.1.8 Processing

Processing costs over the LOM include all costs required to recover the gold from the rock after it is mined and placed on the leach pad. This includes the cost of chemicals to process the ore, pumping costs to get the barren solution to the leach pad, pumping costs to get the pregnant solution to the carbon columns for gold recovery after it returns from the leach pad, and the costs associated with the extraction of the gold from the carbon to produce the final doré product shipped from Marigold.

A total of 85% of the operating costs for processing are labour, cyanide, lime, power, maintenance supplies and leach supplies. The remaining 15% of the costs are for other supplies, reagents and final off-site refining costs required to produce doré to a standard that meets the criteria defined by the London Bullion Market Association (LBMA).

The Marigold laboratory is under the direction of the Processing Department and operating costs include expenses associated with sampling, assaying and supplies related to leaching and refining.

21.3.2 G&A

G&A costs for the LOM include accounting and site administration, warehousing, safety, human resources, and environmental. These costs are related to supporting the operations groups in the mine, maintenance and processing departments.

The major operating cost for this group is labour, taxes, insurance, transportation expenses, and legal and audit expenses make up a large portion of the remaining costs.

22 ECONOMIC ANALYSIS

22.1 Introduction

This economic analysis presents the key economic performance indicators for Marigold, including cash costs, all-in sustaining costs (AISC) and net present value (NPV), based on a 5% discount rate and mid-year cash flows approach. Cash flow projections commenced on 1 January 2022 and are estimated over the remaining LOM based on estimates of sales revenue, site production costs, capital expenditures, and other cash flows, including taxes and reclamation expenditures, all presented on a real cash flow basis.

This economic analysis is based on the latest Marigold LOM plan that excludes Inferred mineralisation. Differences between the economic analysis quantities and the Mineral Reserve in Section 15 are the result of actual end of 2021 face positions used to report the Mineral Reserve being different to those predicted in the LOM plan. These differences are not considered material.

Marigold produces gold doré which is refined into gold bullion and, in turn, sold to bullion banks. The financial model includes recoverable gold on the leach pad and gold doré on hand as at 1 January 2022, all of which is sold over the remaining LOM. There is expected to be approximately 2,375 koz recoverable gold stacked over an active mining period of eleven years. LOM production includes an additional 161 koz payable gold that are on the leach pad as at 1January 2022, for a total production of 2,536 koz payable gold. Reclamation is expected to continue for thirteen years after the last mining is completed. Gold production continues through 2038. The final reclamation occurs in 2045.

Cash inflows from sales assume all production within a period is sold, with minimal working capital movements, using a LOM average gold price of $1,647/oz.

The estimates for site production costs, sustaining capital and reclamation expenditures have been developed specifically for Marigold and are presented in earlier sections of the Marigold21TR.

Based on SSRs projections as set forth in the Marigold21TR, Marigold will incur LOM cash costs of $1,009 per payable ounce of gold sold and AISC of $1,154 per payable ounce of gold sold over the LOM to 2038. The after-tax NPV using a 5% discount rate and mid-year cash flows approach is $860M over the LOM.

Key project economic indicators are summarised in Table 22.1.

Table 22.1 Marigold Key Economic Indicators

Item	Unit	Amount
Oxide Processed		
Heap Leach Quantity Placed	Mt	205
Au Feed Grade	g/t Au	0.48
Total Gold Produced		
Total Payable Gold	koz	2,536
Gold Recovery	%	74.7[1]
5-Year Annual Average		
Total Payable Gold Produced	koz/yr	215
Free Cash Flow	$M/yr	72
Total Cash Costs (CC)	$/oz payable gold	1,042
All In Sustaining Costs (AISC)	$/oz payable gold	1,278
Key Financial Results		
LOM Total Cash Costs (CC)	$/oz payable gold	1,009
LOM All In Sustaining Costs (AISC)	$/oz payable gold	1,154
LOM Site Operating Costs[2]	$/t treated	10.07
After-Tax NPV	$M	860
Discount Rate	%	5
Mine (processing) Life	years	17

1. Recovery includes impact of starting pad inventory
2. Includes operating cost plus $0.02/t refining cost
3. Differences between the Mineral Reserve and LOM quantities used in the economic analysis are due to differences between planned and actual 31 December 2021 face positions

22.2 Mine and Leaching Production Statistics

Mined material is either placed on the waste dumps or directly onto the leach pad over the course of eleven years of active mining. SSR has estimated its gold grades and recovery rates for each period to determine the recoverable ounces stacked. The annual production figures were obtained from the LOM plan. Total LOM production includes 164 koz recoverable gold that is on the leach pad as of1 January 2022.

A summary of estimated mine production and gold production over the LOM is shown in Table 22.2.

Table 22.2 Mining and Leaching Production

Year	Total Mined (kt)	Ore Mined (kt)	Au Grade (g/t)	Waste Mined (kt)	Gold Recovery (%)	Recover-able Gold Stacked (koz)	Gold Produced (koz)
2022	102,616	21,818	0.53	80,798	76.4%	282.2	230.0
2023	90,646	22,010	0.38	68,637	76.2%	203.6	260.1
2024	92,828	21,410	0.42	71,418	76.4%	218.3	200.4
2025	93,988	15,713	0.50	78,275	74.9%	190.1	201.9
2026	90,633	16,538	0.40	74,095	76.1%	161.3	182.3
2027	83,225	20,857	0.40	62,369	74.0%	198.5	138.3
2028	90,358	20,207	0.64	70,151	73.8%	305.5	302.7
2029	78,934	26,911	0.43	52,023	71.5%	265.5	278.6
2030	93,861	18,188	0.47	75,673	72.4%	198.2	220.3
2031	87,403	13,103	0.68	74,299	75.6%	215.6	209.8
2032	28,105	7,792	0.72	20,313	75.6%	136.0	162.1
2033	–	–	–	–	–	–	77.7
2034	–	–	–	–	–	–	29.9
2035	–	–	–	–	–	–	15.0
2036	–	–	–	–	–	–	10.0
2037	–	–	–	–	–	–	7.0
2038	–	–	–	–	–	–	10.0
Total	**932,597**	**204,547**	**0.48**	**728,050**	**74.7%**	**2,374.9**	**2,535.9**

1. Gold produced from 2033 onwards is derived from the residual recoverable gold remaining in the leach pad when mining is completed and is recovered through continued leaching from 2033 to 2038.
2. Recoverable Gold Stacked on Pads refers to gold content of ore stacked on the pads in that period that is recoverable by the leaching process. Gold Produced refers to the amount of gold recovered from the heap in that period and processed to product for sale. The difference between the values in these columns is due to the lag effect of the leach cycle on gold dissolution in the heap and ounces already in the pads as of 1 January 2022.
3. The LOM production quantities differ from the Mineral Reserve due to differences between planned mining and actual end of 2021 face positions.
4. Overall leaching recovery excludes impact of previously placed recoverable ounces.
5. Differences between the Mineral Reserve and LOM quantities used in the economic analysis are due to differences between planned and actual 31 December 2021 face positions.
6. Totals may vary due to rounding.

22.3 Sales and Refinery Process

The gold doré is poured at site and is transported by road via a secure vehicle to Asahi Refining USA, Inc. (Asahi) in Salt Lake City, Utah, which is approximately five hours away. SSR has entered into a non-exclusive refining agreement with Asahi, and the terms and conditions of this contract are within industry norms. The transportation and refining costs for the doré are also in accordance with industry standards.

Marigold or its agent sells all the gold (doré or refined bullion) to bullion banks.

22.4 Revenue

Annual revenue is determined by applying forecast metal prices to the estimated annual payable metal for each operating year. Sales prices have been applied to all LOM production without escalation.

To determine the metal price assumptions used to calculate revenue, SSR reviewed consensus forecasts. Consistent with the financial modelling approach, these consensus forecasts and metal price assumptions are expressed in constant 2022 dollars.

Forecast metal prices used to inform the economic model are shown in Table 19.3.

Table 22.3 Forecast Metal Prices

Metal	Unit	Average	2022	2023	2024	2025	2026	>2026
Gold Price	$/oz	1,647	1,800	1,740	1,710	1,670	1,600	1,600
Silver Price	$/oz	21.56	24.00	23.00	22.00	21.00	21.00	21.00

22.5 Operating Costs

Operating costs for Marigold, which include mining, processing, and site support, have all been estimated. Unit LOM and 5-year operating costs are summarised in Table 22.4.

Table 22.4 Unit Operating Costs

Operating Costs	Total LOM ($M)	$/t Ore	
		Years 1–5	LOM
Mining	1,469	7.53	7.18
Processing	373	1.57	1.82
Site Support	214	0.92	1.05
Total Operating Cost	**2,056**	**10.01**	**10.05**

22.6 Royalties

Marigold is subject to a variety of NSR royalty payments, payable to various parties under the terms of the leases, as described in Section 4.4. The annual average NSR royalty payments range from 3.7% to 10.0%.

22.7 Cash Costs and AISC

Over the production life cash costs are estimated to average $1,009 per payable ounce of gold sold, and AISC is estimated to average $1,154 per payable ounce of gold sold as shown in Table 22.5.

Table 22.5 Operating Costs per Payable ounce of Gold Sold

Operating Costs	**Value ($/payable oz of gold sold)**
Mine Operations	579
Processing	147
General and Administration	84
Inventory Adjustment	54
Royalties and Refining (net of silver credits)	144
Subtotal Cash Costs	**1,009**
Sustaining Capital	138
Development/Exploration	8
Total AISC	**1,154**

1. Inventory adjustment represents carrying values of starting leach pad and doré inventory at 1 January 2022, which are released into cash costs over the LOM through to 2038 as the associated gold ounces are sold.
2. Payable ounces of gold sold over the LOM total 2,535.9 koz.
3. Totals may vary due to rounding.
4. Cash costs and AISC per payable ounce of gold sold are non-GAAP financial measures.

Average annual cash costs per payable ounce of gold sold range from $868 to $1,201 during the eleven years of active mining and leach pad stacking. Table 22.6 summarises the cash costs and AISC over the LOM.

Table 22.6 Cash and AISC Unit Costs

Year	Cash Costs ($/payable oz of gold sold)	AISC ($/payable oz of gold sold)
2022	988	1,261
2023	913	1,233
2024	1,081	1,287
2025	1,116	1,318
2026	1,167	1,307
2027	1,201	1,449
2028	952	1,042
2029	868	937
2030	912	972
2031	919	990
2032	878	912

1. Cash costs include mine operations, processing, G&A, inventory adjustment, royalties and refining charges (net of silver credits). AISC includes cash costs and sustaining capital.
2. Totals may vary due to rounding.
3. Cash costs and AISC per payable ounce of gold sold are non-GAAP financial measures.

22.7.1 Taxation

Marigold is subject to Nevada Net Proceeds of Minerals Tax, Nevada property and sales taxes, and U.S. federal income tax. The economic analysis calculates these taxes in accordance with legislation enacted as at 1 January 2022. Property and sales taxes are accounted for in the operating costs of the mine.

22.7.1.1 Nevada Net Proceeds of Minerals Tax

The State of Nevada imposes a 5% net proceeds tax on the value of all minerals extracted in the State. This tax is calculated and paid based on a prescribed net income formula applied only to income and expenses from mining, disallowing deductions for exploration and related-party financing costs. This tax is a deductible expense for US federal income tax.

22.7.1.2 Nevada Excise Tax

In 2021 the State of Nevada enacted Assembly Bill 495, effective 1 July 2021, which is an annual excise tax on gold and silver revenue. Under the bill, the tax rates vary based on the taxpayer's Nevada gross revenue. A 0.75 % rate is imposed on Nevada gross revenue of more than $20 million but not more than $150 million in a taxable year (defined as the calendar year). A rate of 1.10 % applies to Nevada gross revenue exceeding $150 million in any tax year. The LOM average rate is about 0.9%.

22.7.1.3 Nevada Property Tax

Humboldt County assesses property tax on 35% of the total appraised value of Marigold's real and personal property. The effective LOM current property tax rate is adjusted to reflect planned increases in the mine mobile fleet and leach pad areas. This property tax is a deductible expense for U.S. federal income tax.

22.7.1.4 Humboldt County Sales Tax

The Nevada sales tax rate for Humboldt County is 6.85%. Supplies and materials used in mining operations are taxed by the vendor at this rate. This sales tax is not recoverable but is a deductible expense for US federal income tax.

22.7.1.5 US Federal Income Tax

Federal income tax is determined under regulations that came into effect on 1 January 2022. Under these regulations, which removed alternative minimum tax, the mine is subject to a federal income tax rate of 21%.

22.8 Excluded Costs

Exploration costs unrelated to the delineation of existing Mineral Reserves have been excluded.

22.9 Sensitivity Analysis

The after-tax NPV calculation is based on the cash flows for the Property from and after 1 January 2022. Marigold is expected to generate $1,315M in pre-tax cash flow and $1,166M in after-tax cash flow over the LOM. The after-tax NPV using a 5% discount rate is $860M over the LOM.

Table 22.7 and Table 22.8 shows the results of sensitivity analysis from changes in discount rate, gold price, operating costs and sustaining capital. The cash flow used to evaluate Marigold is presented in Table 19.8.

Table 22.7 Marigold21TR Gold Price Sensitivity

After-Tax NPV ($M)	Long-Term Gold Price ($/oz)							
Discount Rate	**1,000**	**1,200**	**1,350**	**1,400**	**1,600**	**1,750**	**1,800**	**2,000**
Undiscounted	516	733	895	949	1,166	1,329	1,383	1,600
5%	472	657	796	842	1,027	1,166	1,212	1,397
10%	418	565	676	713	**860**	970	1,007	1,155
12%	350	453	530	556	659	737	762	866
15%	329	419	487	509	599	667	689	779

Table 22.8 Marigold21TR Gold Price Sensitivity

Variable	Change from Base NPV5% ($M)				
	-20%	**-10%**	**–**	**10%**	**20%**
Capital Cost	1,096	978	860	742	623
Operating Costs	915	887	860	832	805

Table 22.9 Cash Flow

Item	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M	$M
Revenue																									
Heap Leach - Gold Revenue	**4,176**	414	453	343	337	292	221	484	446	352	336	259	124	48	24	16	11	16	0	0	0	0	0	0	0
By-Product Revenue	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-
Net Revenue	**4,177**	414	453	343	337	292	221	484	446	353	336	259	124	48	24	16	11	16	-	-	-	-	-	-	-
Realisation Costs																									
Freight and Refining	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-
Royalties	**364**	40	43	37	36	28	24	53	40	22	19	12	6	2	1	1	0	1	-	-	-	-	-	-	-
Total - Realisation Costs	**367**	41	43	38	36	28	24	53	41	22	19	12	6	2	1	1	0	1	-	-	-	-	-	-	-
Operating Costs																									
Mining	**1,469**	150	139	147	152	146	136	137	132	133	137	62	-	-	-	-	-	-	-	-	-	-	-	-	-
Processing - Heap Leach	**373**	31	31	31	30	30	30	31	32	30	29	27	20	11	3	3	2	2	-	-	-	-	-	-	-
Site Support	**214**	19	18	18	17	17	17	17	16	16	16	16	6	6	5	4	2	2	0	0	0	0	0	0	0
Total - Site Operating Costs	**2,056**	200	188	196	199	193	183	184	180	179	182	104	26	17	8	7	4	3	0	0	0	0	0	0	0
Operating Surplus / (Deficit)	**1,755**	173	222	109	102	71	14	247	225	151	135	143	93	29	15	8	7	12	–0	–0	–0	–0	–0	–0	–0
Capital Costs																									
Sustaining	**349**	57	77	35	41	26	34	27	19	13	15	5	0	–	–	–	–	–	–	–	–	–	–	–	–
Closure	**72**	–	–	–	–	–	–	0	0	0	0	0	8	8	7	6	5	8	10	6	4	5	2	1	1
Development/Exploration/Working and Other	**19**	6	6	6	–	–	0	–	0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total - Capital Costs	**440**	63	83	41	41	26	34	27	20	14	15	6	8	8	7	6	5	8	10	6	4	5	2	1	1
Net Cash Flow Before Tax	**1,315**	110	139	68	61	46	-20	220	205	138	120	137	85	21	9	2	2	4	-11	-7	-5	-5	-2	-1	-1
Tax	**148**	19	17	13	11	3	-1	23	25	16	14	13	5	-0	-1	-2	-2	-3	-1	-0	-0	-0	-0	-0	-0
Net Cash Flow After Tax	**1,166**	91	122	55	50	42	-19	196	180	121	105	124	80	22	10	4	4	6	-9	-7	-5	-5	-2	-1	-1

Totals may vary due to rounding

23 ADJACENT PROPERTIES

The QP's have been unable to verify the information in this Section. The information is not necessarily indicative of the mineralisation on the property that is the subject of this Marigold21TR.

Marigold is located near the northern limits of a regional belt of ore deposits commonly referred to as the Battle Mountain-Eureka trend. This north–north-west striking alignment of mines and prospects. It is the second most prolific gold belt in Nevada after the Carlin trend, and it includes variants of Carlin Type Gold Deposits (CTGD), distal type sediment hosted deposits as well as skarn and copper–gold porphyry systems.

Three major gold deposits lie adjacent to the SSR property. Nevada Gold Mines' Phoenix mine is ~10km south-east of the Buffalo Valley property, i-80 Gold Corp's Lone Tree mine is ~7 km north-east of Marigold, and Waterton Global Resource Management's Converse project is ~6 km west of Marigold. There are also several inactive mines and exploration and/or development projects that can be found within a 19 km radius of the property.

Reported production and Mineral Resources for these adjacent properties are presented in Table 23.1.

Table 23.1 Past Production and Mineral Resources for Adjacent Properties

Property	Owner	Years of Production	Gold Produced (Moz)	Stated Mineral Resources and Mineral Reserves (gold unless otherwise stated)		
				Mineral Reserves	Measured and Indicated Mineral Resources	Inferred Mineral Resources
Phoenix[1]	Nevada Gold Mines	2006–Present	unknown	2.9 Moz gold (0.58 g/t) 840 Mlb copper @ 0.18%	5.28 Moz	0.34 Moz
Lone Tree Complex[2]	i-80 Gold Corp.	1991–2012	4.53	n/a	610 koz of Au @ 1.51g/t	2.76 Moz @ 1.6 g/t
Converse[3]	Waterton	–	–	n/a	6.12 Moz	0.59 Moz

1. Nevada Gold Mines, May 2021; Investor Day Presentation
2. i-80 Gold Corp., 2021; Technical Report, filed 21 October 2021
3. Chaparral Gold, 21 October 2014; website, deposit sold to Waterton Global Resource Management in 2014

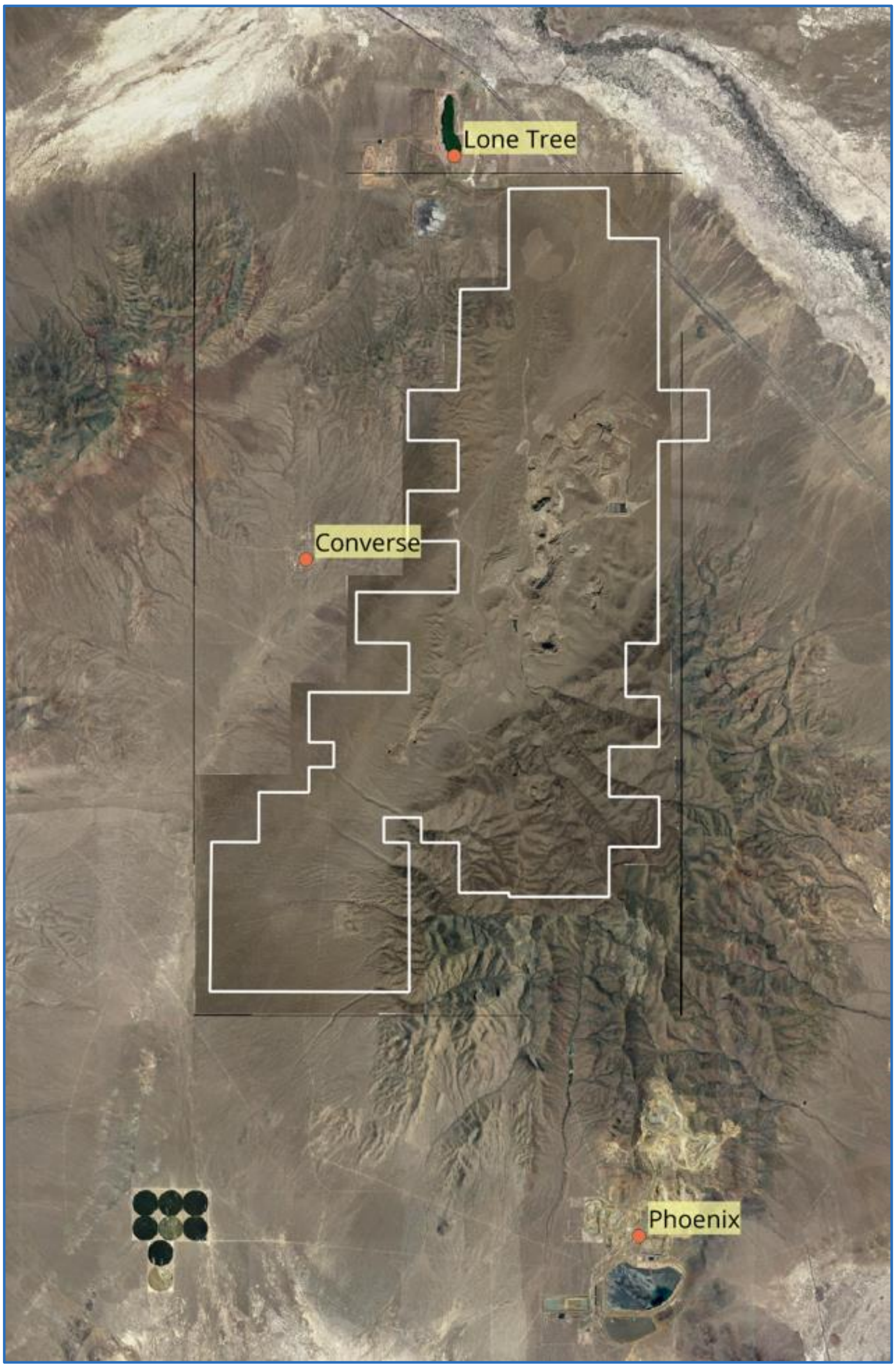
Phoenix mine is currently operating by Nevada Gold Mines and is polymetallic Au-Cu-Ag porphyry system that has been in production since 2006. The mine includes various deposit types, all structurally controlled by north-west trending faults.

Lone Tree is considered a distal-disseminated deposit that may be genetically related to a porphyry-type system, mineralisation was structurally controlled by north–north-west trending faults.

At Converse, gold mineralisation is hosted within a skarn that developed within the Havallah Formation. No production has occurred at Converse to date.

A plan map of mine properties adjacent to Marigold is presented in Figure 23.1.

Figure 23.1 Plan Map Showing Marigold Property Outline and Mineralisation Relative to Adjacent or Nearby Mines or Published Deposits



The outer property boundary is shown as white outline
SSR, 2017

24 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information

25 INTERPRETATION AND CONCLUSIONS

Mineral Resources and Mineral Reserves in the Marigold21TR meet the CIM Definition Standards on Mineral Resources and Reserves 2014 (CIM Definition Standards) and conform to the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

The estimate of Mineral Resources presented in Table 14.11 and the estimate of Mineral Reserves presented in Table 15.1 were prepared for Marigold with an effective date of 31 December 2021.

The estimate of Mineral Resources was prepared using a domain-controlled, ordinary kriging technique with verified drillhole sample data derived from exploration activities conducted by various companies from 1968 to 2021.

The conversion of Mineral Resources to Mineral Reserves used industry best practices to determine operating costs, capital costs, and recovery performance. Therefore, the estimates are considered to be representative of actual and future operational conditions.

Based on an evaluation of the available data from the Marigold mine, the authors of this report have drawn the following conclusions.

Possible areas of uncertainty that could materially impact the estimate of Mineral Reserves at Marigold include the commodity price assumptions, capital and operating cost estimates, estimation methodology, pit dewatering, and the geotechnical slope designs for the pit walls. These reasonably foreseeable impacts of the uncertainties in the cost, operations and estimation assumptions are discussed here:

- Commodity price assumptions: If the price of gold drops significantly below the cost of production for a significant period of time, it becomes uneconomic to extract the gold.
- Capital/operating cost estimates: If the operating cost of a major contributor to the operation, such as explosives, labour or fuel, increases more than has been reasonably estimated, the profit generated from the sale of gold ounces will decrease. And similarly, if the estimated capital cost to expand a heap leach pad or rebuild equipment, for example, is significantly more than anticipated, the additional capital input required may impact the profitability of the operation.
- Mineral Resource estimation methodology: The impact of the estimation methodology on the economic viability will be minimal because the applied methodology meets industry standards and has been verified by independent/external consultants.
- Mineral Reserves estimation methodology: The impact of the estimation methodology on the economic viability will be minimal because the applied methodology meets industry standards and has been verified by independent/external consultants and has been validated by historical reconciliation with mine production.

- Geotechnical slope designs for pit walls: Marigold has operated for approximately 30 years, and the mining conditions and stable wall angles for the different rock types are well understood. There may be a risk that unidentified fault plane(s) and wall conditions encountered below the water table require the angle of a pit slope wall to be lowered to overcome potential multi-bench failure. Lowering the slope angle of the wall would mean that more waste material would need to be mined to reach the ore zone. Mining more waste than anticipated will increase the cost of production per ounce of gold and will negatively impact the project economics. Alternatively, ore defined as Mineral Reserves could be left in the ground un-mined if the cost to remove overlying waste rock exceeds the value of the recoverable metal.

There are a number of active environmental permits at Marigold, and some degree of permit modification or renewal effort is typically always underway. The Marigold21TR was prepared with the latest information regarding environmental and closure cost requirements and has indicated that work is in progress with regard to the renewal or extension of additional environmental permits.

The Marigold21TR presents the LOM plan for Marigold as of 31 December 2021. Mining commenced on the Marigold deposit in 1988 with an expected mine life of eight years; now, approximately 30 years of continuous gold production later, the latest LOM plan still foresees an eleven-year mine life. The future development for Marigold is planned as a large open pit ROM heap leach operation, which exploits Mineral Resources exceeding 5 Moz contained gold.

In total, the LOM plan states that Marigold will produce 2,536 koz of gold over an active mining period of eleven years with residual leaching over a further six years to 2038. LOM production includes an additional approximately 164 koz payable gold sold that is on the leach pad as at 1 January 2022.

Marigold will operate at an average total material movement rate of 250,000 tpd, or 90.4 Mtpa over the next ten years. Reclamation is expected to continue for an additional seven years following the last gold production. Going forward, operational efficiency and cost control measures remain key areas of focus for optimum margins, increasing Marigold's medium to long-term potential and enabling the conversion of additional Mineral Resources into Mineral Reserves.

Based on SSR's projections as set forth in the Marigold21TR, Marigold will incur average annual cash costs of $1,009 per payable ounce of gold sold and AISC of $1,154 per payable ounce of gold sold over the processing LOM to 2038. The after-tax NPV using a 5% discount rate is $860M over the LOM.

Several optimisation studies were initiated in 2017 to investigate opportunities to further increase Marigold's operating efficiency. These studies include haulage profile optimisation, expansion equipment studies and equipment productivity improvements. Indications from the operational excellence programme over the past four years show improvements that have translated into improved per unit operating costs.

SSR has initiated exploration and Mineral Resources and Mineral Reserves development activities to enhance Marigold's operating margins and extend the mine life. Further studies will examine the deep sulfide-hosted gold and could include further drilling evaluation and metallurgical testwork.

All QPs have reviewed the conclusions and agree with the findings of the Marigold21TR.

26 RECOMMENDATIONS

SSR should continue its commitment to safe gold production and continuous progress within the guidelines of its environmental and social license to operate drive improvements at Marigold. The following recommendations include work that has already been identified by SSR and in some cases is in progress.

26.1.1 Processing

Pursue an upgrade to the barren pumping system in order to maintain a solution to ore ratio in excess of 1.5 as the leach pad increases height and new expansions are further from the barren ponds. An upgrade to the pumping system will aid in reducing the current WIP inventory and decrease the likelihood of building inventory in the future. Perform a trade -off study between CIC efficiency loss at high flow vs addition CIC trains with increased efficiency over the life of mine plan. The additional column trains to create a one-pass recovery system are a significant improvement to the system however there is still opportunity to optimise the flow rates through the columns and pull ounces forward through increased efficiency.

26.1.2 Metallurgy / Analytical

Investigate sample processing automation throughout the assay lab to decrease potential for bias and increase representivity. Continue work on fully implementing the ICP-OES to reduce detection limits for gold on leach pad, plant, and blasthole samples. Continue to conduct metallurgical test work with the goal of understanding all future leach ore at Marigold and how test results compare to resource model predictions. Perform more detailed test work on the sulfide ore types to better understand the value of this material at Marigold in the future. Utilise the new LECO machine for sulfur and carbon speciation both in current Marigold ore but also in conjunction with drilling activities being performed for near pit expansions. These data can be utilised to optimised reagent addition as well as reduce operational risks associated with preg-robbing material.

26.1.3 Mineral Resources

Incorporate geological data (from pit mapping) and hard boundaries (from faults that offset mineralisation) into the resource model. Costs associated with this project are minor.

Re-assay all samples that report the cyanide soluble gold assay values as zero and have not been assayed by the FA method outside of the current LOM pit designs. This should be conducted in a phased-in manner and will help convert Mineral Resources to Mineral Reserves and increase the volume of Mineral Resources and Mineral Reserves.

Collect additional density samples from core holes and in pit, where required, to obtain an improved spatial distribution of density values. Attempt to obtain additional samples from the upper levels of the deposit at between 0–152.4 m deep. It is planned by SSR that one sample be collected for every 9.1 m (30ft) downhole from surface. The density testwork could be completed at Marigold's on-site laboratory and a proportion of these samples should be sent to a commercial laboratory for QA/QC purposes.

Upgrade the Mineral Resources classifications and infill drilling programme. Systematically design infill drill programs to increase the confidence of the model estimates based on the LOM plan within sparsely drilled areas and before ultimate pit walls are finalised.

26.1.4 Mine Planning

Develop and evaluate a digital twin of the mine haulage network utilising industrial mathematics to iterate on material destinations over the LOM and optimise haulage profiles. Code projections of dewatering progress to the mine planning model. Record weekly plan variances, explanations, and associated actions for trending.

26.1.5 Exploration Drilling

Conduct RC exploration drilling to target the lateral extensions of structures known to contain mineralisation. This drilling could target near-surface, higher grade oxide mineralisation. The estimated cost for this project is between $3M and $5M spent over a period of 3–5 years.

26.1.6 Mine Operations

The Marigold operations team anticipates undertaking work focused on improving quality of ore delivered to leach pads and tactical fleet resourcing optimisations for improved cost efficiencies in the haulage cycles. To improve utilisation of existing dispatch tools onsite as well as implementation of industrial mathematics-based haulage simulation tools for strategically optimised efficiencies throughout the LOM. Training of dispatch personnel for operation of updated fleet management systems onsite to optimise load / haul fleet resourcing and positively improve site productivity should be undertaken. Site will also deploy simulation software for strategic haulage network planning. This haulage simulator can be used to identify opportunities for mine planners and operations personnel to optimise material destinations.

26.1.7 Maintenance Operations

The Marigold maintenance teams is committed to remain focused on improved maintenance operations at the site with the aim of increasing equipment availabilities and reducing unit costs. Projects underway include disciplined work planning and execution and consumables wear optimisation.

Following improvements experienced from previous years' initiatives, Marigold's maintenance teams remain focused on improving quality of planned work execution at the site. Key areas of focus include plan compliance improvements, Komatsu PC7000 shovel availability increases, and coordination with supply chain for improved parts availability. These projects are primary enablers to ensuring site production requirements may be met.

In addition to systematic improvements, site has undertaken multiple trials to improve upon life of wear parts and maintenance consumables in the operation. These improvements include Shovel GET wear analysis, engine air filter pre-cleaners (de-risks potential supply chain shortages), and truck bed liner wear packages. Scale of sustaining improvements are pending based upon successful trials within the operation.

27 REFERENCES

This section lists the references used in support of the Marigold21TR.

AMEC Americas Ltd., 2014. Marigold Drill Hole Deviation Study. Memorandum, Prepared for Silver Standard Resources Inc., Dated 21 May 2014. (AMEC, 2014)

Call & Nicholas Inc, 2019. Slope Stability Study of the Red Dot Design, Marigold Mine, July 2019. (CNI, 2019a)

Call & Nicholas Inc,2019. Marigold Mine Site Visit Recommendations 6–7 July 2021, August 2019. (CNI, 2019b)

Call & Nicholas Inc, 2019. Analysis of Soil Slopes – H1, 5N1 and 5N2, October 2019. (CNI, 2019c)

Carver, J.N., Rathnam, K., Rice, T., and Yeomans, T.J., 2018. NI 43-101 Technical Report on the Marigold Mine, Humboldt County, Nevada, USA, 31 July 2018. (SSRTR18)

Cline, J.S., Hofstra, A.H., Muntean, J.L., Tosdal, R.M., and Hickey, K.A., 2005. Carlin-type gold deposits in Nevada: Critical geologic characteristics and viable models, Economic Geology 100th Anniversary Volume, p. 451–484. (Cline et al., 2005)

Cook, H.E., 2015. The Evolution and Relationship of the Western North American Paleozoic Carbonate Platform and Basin Depositional Environments to Carlin-type Gold Deposits in the Context of Carbonate Sequence Stratigraphy, in Pennel, W.M., and Garside, L.J., eds., New Concepts and Discoveries, Geological Society of Nevada Symposium Proceedings, Reno/Sparks, Nevada, May 2015, v. 1, p. 1-80. (Cook, 2015)

Cook, H.E. and Corboy, J.J., 2004. Great Basin Paleozoic carbonate platform; facies, facies transitions, depositional models, platform architecture, sequence stratigraphy, and predictive mineral host models; field trip guidebook; metallogeny of the Great Basin Project, 17–22 August 2003, 135 p. (Cook and Corboy, 2004)

Cook, H. E. and Taylor, M. E., 1977. Comparison of continental slope and shelf environments in the Upper Cambrian and lowest Ordovician of Nevada, in The Society of Economic Paleontologists and Mineralogists, Special Publication No. 25 pp. 51 – 81. (Cook and Taylor, 1977)

Cox, D.P., 1992. Descriptive model of distal-disseminated Ag-Au, U.S. Geological Survey Bulletin 2004, 19 p. (Cox, 1992)

Cox, D.P. and Singer, D.A., 1990. Descriptive and grade-tonnage models for distal-disseminated Ag-Au deposits: A supplement to U.S. Geological Survey Bulletin 1693, U.S. Geological Survey Open-File Report 90-282, 7 p. (Cox and Singer, 1990)

Doebrich, J.L. and Theodore, T.G., 1996. Geologic History of the Battle Mountain Mining District, Nevada, and Regional Controls on the Distribution of Mineral Systems in Coyner, A.R., and Faney, P.L., eds., Geology and Ore Deposits of the American Cordillera, Geological Society of Nevada, Symposium Proceedings, Reno/Sparks, Nevada, April 1995, pp. 453-483. (Doebrich and Theodore, 1996) du Bray, E.A., 2007. Time, space, and composition relations among northern Nevada intrusive rocks and their metallogenic implications, Geosphere, v.3, p. 381–405. (du Bray, 2007)

Emsbo, P., Hofstra, A.H., Lauha, E.A., Griffin, G.L., and Hutchinson, R.W., 2003. Origin of high-grade gold ore, source of ore fluid components, and genesis of the Meikle and neighboring Carlin-type deposits, northern Carlin trend, Nevada, Economic Geology, v. 98, p. 1069– 1100. (Emsbo et al., 2003)

Fithian, 2015. Geology, Geochemistry, and Geochronology of the Marigold Mine, Battle Mountain-Eureka Trend, Nevada, M.Sc. Thesis, Golden, Colorado, Colorado School of Mines, 120 p. (Fithian, 2015)

Fithian, M.T., Holley, E.A., and Kelly, N.M., 2018, Geology of gold deposits at the Marigold mine, Battle Mountain district, Nevada: Reviews in Economic Geology, v. 20, p. 121–155.

Glamis Gold Ltd. 2001. Glamis Marigold Mine Millennium Project 'Section 31' Technical Report and Reserve Summary for the Glamis Marigold Mine July 2001. (Revised). (Glamis Gold, 2001)

Grauch V.J.S., Rodriguez B. D., and Wooden J.L., 2003. Geophysical and Isotopic Constraints on Crustal Structure Related to Mineral Trends in North-Central Nevada and Implications for Tectonic History Economic Geology, April 2003, v. 98, pp. 269-286. (Grauch et al.,2003)

Hamilton, W., 1987. Crustal extension in the Basin and Range Province, southwestern United States, in Coward, M.P., Dewey, J.F., and Handcock, P.L., eds., Continental Extensional Tectonics, Geological Society Special Publication No. 28, pp. 155-176. (Hamilton, 1987)

Hofstra, A.H. and Cline, J.S., 2000. Characteristics and models for Carlin-type gold deposits, Reviews in Economic Geology, v. 13, p. 163–220 (Hofstra and Cline, 2000).

Ilchik, R.P. and Barton, M.D., 1997. An amagmatic origin of Carlin-type gold deposits, Economic Geology, v. 92, p. 269-288. (Ilchik and Barton, 1997)

Johnston, M.K. and Ressel, M.W., 2004. Carlin-type and distal disseminated Au-Ag deposits: Related distal expressions of Eocene intrusive centers in north-central Nevada in Controversies on the origin of World-class gold deposits, Part 1: Carlin-type gold deposits in Nevada, by J.L. Muntean, J. Cline, M.K. Johnston, M.W. Ressel, E. Seedorff, and M.D. Barton: Society of Economic Geologists Newsletter, v. 59, p. 12-14. (Johnston and Ressel, 2004)

Kester, M., 2015. On infrared absorption band position variation as a result of gold mineralization in a distal disseminated gold deposit at the Marigold Mine, Humboldt Co., Nevada, Senior Thesis, South Dakota School of Mines and Technology, 29 p. (Kester, 2015)

Ketner, K.B, 2008. The Inskip Formation, the Harmony Formation, and the Havallah Sequence of Northwestern Nevada—An Interrelated Paleozoic Assemblage in the Home of the Sonoma Orogeny. US Department of the Interior U.S. Geological Survey. Professional Paper 1757. (Ketner, 2008)

Ketner, K.B, 2013. Stratigraphy of Lower to Middle Paleozoic Rocks of Northern Nevada and the Antler Orogeny US Department of the Interior U.S. Geological Survey. Professional Paper 1799. (Ketner, 2013)

Knight Piésold Ltd. (KPL), 2014. Marigold Mine – Review of Rock Mechanic Considerations, dated 24 July 2014. REF. NO. NB101-201/24. Vancouver, British Columbia, Canada. (Knight Piésold, 2014)

Large, R.R., Bull, S.W., and Maslennikov, V.V., 2011. A carbonaceous sedimentary source-rock model for Carlin-type and orogenic gold deposits, Economic Geology, v. 106, p. 331–358. (Large et al., 2011)

Magee Geophysical Services LLC, 2014. Gravity Survey over the Marigold Mine Property, Humboldt County, Nevada. August 2014. (Magee, 2014)

Magee Geophysical Services LLC, 2014. Gravity Survey over the Marigold Mine Property, Humboldt County, Nevada. September 2016. (Magee, 2016)

McKee, E.H., 2000. Potassium-argon chronology of Cretaceous and Cenozoic igneous activity, hydrothermal alteration, and mineralization, in Theodore, T.G., Geology of pluton-related gold Mineralization at Battle Mountain, Nevada, Monographs in Mineral Resource Science, no. 2, p. 121–143. (McKee, 2000)

McGibbon, D.H., 2004. Marigold Summary and Tour Guide (Internal report), pp. 1-3. (McGibbon, 2004)

McGibbon, D H., 2005, Geology of the Antler and Basalt Gold Deposits, Glamis-Marigold mine, Humboldt County, Nevada, in Rhoden, H.N., Steininger, R.C., and Vikre, P.G., eds., Geological Society of Nevada Symposium 2005: Window to the World, Reno, Nevada, May 2005, pp. 399–409. (McGibbon, 2005)

McGibbon, D.H., and Wallace, A.B., 2000. Geology of the Marigold Mine area: in Theodore, T.G., 2000, Geology of pluton-related gold mineralization at Battle Mountain, Nevada; Monographs in Mineral Resource Science No. 2: Center for Mineral Resources, Tucson, Arizona, pp. 222–240. (McGibbon and Wallace, 2000)

Muntean, J.L., Cline, J.S., Simon, A.C., and Longo, A.A., 2011. Magmatic-hydrothermal origin of Nevada's Carlin-type gold deposits, Nature Geoscience, v. 4, p. 122–127. (Muntean et al., 2011)

Muntean, J.L. and Cline, J.S., 2018, Diversity of Carlin-Style Gold Deposits: Reviews in Economic Geology, v. 20, p. 1-5

OreWin, 2022. Marigold 2021 Project Update Report.

Pells Sullivan Meynink, 2021. Geotechnical Review: Marigold Gold Project. Internal memo by PSM Consult Pty Limited. (PSM, 2021)

Piteau Associates, Marigold Mine Mackay Pit Dewatering System Design 4180-R03, January 2021. (Piteau, 2021)

Ressel, M.W., and Henry, C.D., 2006. Igneous Geology of the Carlin Trend, Nevada: Development of the Eocene Plutonic Complex and Significance for Carlin-Type Gold Deposits, Economic Geology, v. 101, p. 347-383. (Ressel and Henry, 2006)

Roberts, R.J., 1964. Stratigraphy and Structure of the Antler Peak Quadrangle, Humboldt and Lander Counties, Nevada: U.S. Geological Survey Professional Paper 459-A, 93 pp. (Roberts, 1964)

Roberts, R.J. 2002. A Passion for Gold, an Autobiography. University of Nevada press 1st Edition. Reid, R.F. (Roberts, 2002)

Sillitoe, R.H., and Bonham, H.F., 1990. Sediment-hosted gold deposits: Distal products of magmatic-hydrothermal systems, Geology, v. 18, p. 157–161. (Sillitoe and Bonham, 1990)

Theodore, T. G., 1991. Preliminary geologic map of the North Peak Quadrangle, Humboldt and Lander counties, Nevada. USGS Open-File Report. 91-429. (Theodore, 1991a)

Theodore, T. G., 1991. Preliminary geologic map of the Valmy Quadrangle, Humboldt and Lander counties, Nevada. USGS Open-File Report. 91-430. (Theodore, 1991b)

Theodore, T.G. (2000). Geology of Pluton-related Gold Mineralization at Battle Mountain, Nevada. Tucson, Arizona: centre for Mineral Resources, the University of Arizona. (Theodore, 2000)

Wallace, A.R., Ludington, S., Mihalasky, M.J., Peters, S.G., Theodore, T.G., Ponce, D.A., John, D.A., and Berger, B.R., 2004. Assessment of metallic mineral resources in the Humboldt River Basin, northern Nevada, U.S. Geological Survey Bulletin 2218, 309 p. (Wallace, 2004)

Waterton Global Resource Management website, 2018: www.watertonglobal.com

Wright, James L., 2016 Marigold Property Gravity Survey. (James L. Wright, 2016)

Wyld, S.J., Rogers, J.W., and Copeland, P., 2003. Metamorphic Evolution of the Luning-Fencemaker Fold-Thrust Belt, Nevada: Illite Crystallinity, Metamorphic Petrology, and 40Ar/39Ar Geochronology, The Journal of Geology, v. 111, p. 17-38. (Wyld et al., 2003)

Zoback, M.L., McKee, E.H., Blakely, R.J., and Thompson, G.A., 1994. The Northern Nevada rift: Regional tectonomagmatic relations and middle Miocene stress direction, Geological Society of America Bulletin, v. 106, p. 371-38.

CERTIFICATE of AUTHOR

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects Part 8.1.

a) Name, Address, Occupation:

Bernard Peters
OreWin Pty Ltd, 140 South Terrace, Adelaide South Australia 5000, Australia
Mining Engineer, employed as Technical Director – Mining.

b) Title and Date of Technical Report:

Marigold 2021 Technical Report (Marigold21TR) effective date 31 December 2021 (the "Technical Report")

c) Qualifications:

I graduated from the University of Melbourne, Australia with a Bachelor of Engineering in Mining Engineering in 1986. I am a Fellow of the Australasian Institute of Mining and Metallurgy (no. 201743). I have practised my profession continuously since 1986 and have experience in mining operations and consulting at and for projects in various countries including Australia, Bolivia, Canada, Democratic Republic of the Congo, Indonesia, Kazakhstan, Kyrgyzstan, Mongolia, Peru, Philippines, Russia, South Africa, Turkey, and USA. I have managed and been responsible for studies with multidisciplinary teams of professionals in the mining industry including geology, mining engineering, processing and infrastructure. As a result of my qualifications and experience, I am a Qualified Person as defined in National Instrument 43-101.

d) Site Inspection:

I have not visited the site due to travel restrictions.

e) Responsibilities:

I am responsible for the overall preparation of the Marigold21TR and, the Mineral Reserve estimates and Sections 1 to 6; Section 13; Sections 15 to 27.

f) Independence:

I am independent of SSR Mining Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g) Prior Involvement:

I have been working on various aspects of the studies of the project since 2019.

h) Compliance with NI 43-101:

I have read National Instrument 43-101 and Form 43-101FI and the Technical Report has been prepared in compliance with same.

i) Disclosure:

As of 23 February 2022, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: 23 February 2022

/s/Bernard Peters

Bernard Peters

Technical Director – Mining

OreWin Pty Ltd

CERTIFICATE of AUTHOR

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects 30 June 2011, Part 8.1.

a) **Name, Address, Occupation:**
Sharron Sylvester
OreWin Pty Ltd, 140 South Terrace, Adelaide South Australia, 5000, Australia
Geologist, employed as Technical Director – Geology.

b) **Title and Date of Technical Report:**
Marigold 2021 Technical Report (Marigold21TR) effective date 31 December 2021 (the "Technical Report")

c) **Qualifications:**
I graduated from the University of Adelaide, Australia with a Bachelor of Science Degree in Geology in 1989. I am a Member of the Australian Institute of Geoscientists (2512) and a Registered Professional Geologist (10125). I have practised my profession continuously since 1989 and have experience in the assessment, modelling, and resource estimation of mineral deposits, underground and open-pit mine geology, project management, and due diligence and valuation. I have extensive experience in a variety of geological terrains and commodities, including copper, gold, base metals, ferrous metals, and construction materials. As a result of my qualifications and experience, I am a Qualified Person as defined in National Instrument 43-101.

d) **Site Inspection:**
visited the Project on 18–19 February 2020. The site visit included briefings from mining, geology, and exploration personnel; discussions with technical staff; and review of the existing infrastructure and facilities around the Project site.

e) **Responsibilities:**
I am responsible for the preparation of the Mineral Resources, Sections 1 to 12; Section 14; and Sections 23 to 27.

f) **Independence:**
I am independent of SSR Mining Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g) **Prior Involvement:**
I have been working on the Mineral Resources of the project since 2019.

h) **Compliance with NI 43-101:**
I have read National Instrument 43-101 and Form 43-101FI and the Technical Report has been prepared in compliance with same.

i) **Disclosure:**
As of 23 February 2022, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: 23 February 2022

/s/Sharron Sylvester

Sharron Sylvester

Technical Director – Geology

OreWin Pty Ltd

Bernard Peters

Technical Director – Mining

OreWin Pty Ltd

CONSENT OF QUALIFIED PERSON

TO: SSR Mining Inc. (the "**Corporation**")

I, Bernard Peters, am an author of the technical report entitled the "Marigold 2021 Technical Report" with an effective date of 31 December 2021 (the "**Technical Report**").

Pursuant to Section 8.3 of National Instrument 43-101 – *Standards of Disclosure for Mineral Projects*, I hereby consent to the public filing of the Technical Report, and to the use of extracts from, or a summary of, the Technical Report in the annual information form on Form 10-K, and related press release, of the Corporation dated 23 February 2022 (the "**Disclosure Document**").

I confirm that I have read the Disclosure Document and that the Disclosure Document fairly and accurately represents the information contained in the sections of the Technical Report for which I am responsible.

Dated: 23 February 2022

/s/Bernard Peters

Bernard Peters
Technical Director – Mining
OreWin Pty Ltd

OreWin

Sharron Sylvester

Technical Director – Geology

OreWin Pty Ltd

CONSENT OF QUALIFIED PERSON

TO: SSR Mining Inc. (the "**Corporation**")

I, Sharron Sylvester, am an author of the technical report entitled the "Marigold 2021 Technical Report" with an effective date of 31 December 2021 (the "**Technical Report**").

Pursuant to Section 8.3 of National Instrument 43-101 – *Standards of Disclosure for Mineral Projects*, I hereby consent to the public filing of the Technical Report, and to the use of extracts from, or a summary of, the Technical Report in the annual information form on Form 10-K, and related press release, of the Corporation dated 23 February 2022 (the "**Disclosure Document**").

I confirm that I have read the Disclosure Document and that the Disclosure Document fairly and accurately represents the information contained in the sections of the Technical Report for which I am responsible.

Dated: 23 February 2022

/s/Sharron Sylvester

Sharron Sylvester
Technical Director – Geology
OreWin Pty Ltd

OreWin Pty Ltd ACN 165 722 574
140 South Terrace Adelaide 5000
P +61 8 8210 5600 **E** orewin@orewin.com **W** orewin.com